



# ERNIP Part 3 - Procedures for Airspace Management

Airspace Management Handbook for the  
Application of the Concept of the Flexible Use  
of Airspace

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# 1 Section 1 - Introduction

## 1.1 Introduction to the ASM Handbook

### 1.1.1 Purpose

1.1.1.1 The purpose of the ASM Handbook is to provide additional descriptions of the ASM functions and Air Traffic Management (ATM) related processes and procedures, complementary to the provisions of the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA), that are required to apply and exploit the Flexible Use of Airspace Concept.

1.1.1.2 The “flexible use of airspace” is introduced in the Article 2 of the “Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for creation of the single European sky (the framework Regulation)”:

*22. ‘flexible use of airspace’ means an airspace management concept applied in the European Civil Aviation Conference area on the basis of the ‘Airspace management handbook for the application of the concept of the flexible use of airspace’ issued by Eurocontrol;*

### 1.1.2 Status

1.1.2.1 The ASM Handbook provides the “procedures for airspace management” as they are mentioned in the Annex I, Part A, point 4(f) of the “Commission Implementing Regulation (EU) 2019/123 from 24 January 2019 laying down detailed rules for the implementation of air traffic management (ATM) network functions”.

1.1.2.2 The ASM Handbook should be regarded as a set of actions intended as procedures and best practices to support the harmonisation of flexible ASM throughout the ECAC area. It should not be considered as a substitute for official national regulations in individual ECAC States or for the ASM Part of the ICAO European Region Air Navigation Plan.

### 1.1.3 Scope

1.1.3.1 The ASM Handbook complements the EUROCONTROL Strategies and Specifications insofar as they relate to or have an influence on the flexible use of airspace. It describes the FUA concept and structure, providing guidance material in the form of processes, procedures and best practice in order to assist States in their organisation and operation of the Flexible Use of Airspace throughout the ECAC area.

#### **1.1.4 Relationship with the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA)**

1.1.4.1 EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (EUROCONTROL Document: EUROCONTROL-SPEC-0112; 10 January 2009) provides details of procedures and requirements for the implementation and application of the Flexible Use of Airspace Concept and also facilitates implementation matters regarding operational coordination between civil and military ATM partners.

1.1.4.2 EUROCONTROL Procedures for Airspace Management - The ASM Handbook - is intended to serve as the reference guidance material to the elements contained in the EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA). Its structure and content relate to this role. It does not repeat the content of the EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA) but provides additional elements to ASM working arrangements for the harmonised implementation of processes and procedures.

#### **1.1.5 Applicability**

1.1.5.1 The ASM Handbook is applicable to those civil and military entities responsible for and/or involved in air traffic management that operate in the airspace under the responsibility of ECAC Member States.

#### **1.1.6 Conventions**

1.1.6.1 The conventions used the ASM Handbook are:

- a) "Shall" – indicates a procedure that must be implemented to achieve the minimum objectives of the procedure and the conformity with the FUA concept;
- b) "Should" - indicates a recommendation or best practice, which may or may not be satisfied by all systems claiming conformity to the FUA concept and the FUA specification;
- c) "May" - indicates an optional element.

## **1.2 Background**

### **1.2.1 ASM Objective**

1.2.1.1.1 The objective of ASM is to achieve the most efficient use of the airspace based on actual needs and, where possible, to avoid permanent airspace segregation while optimizing the network performance.

### **1.2.2 Introduction to the FUA Concept**

1.2.2.1.1 The ECAC States' representatives and the European Organisation for the Safety of Air Navigation (EUROCONTROL) developed, in the Airspace & Navigation Team (ANT), three documents to assist with the Implementation and the Application of the FUA Concept:

- a) The "ANT Report on Organisational Structures and Procedures Required for the Application of the Concept of the Flexible Use of Airspace";
- b) The "Guidance Document for the Implementation of the FUA Concept" which provide the necessary information to plan for the implementation of the Concept;
- c) The "EUROCONTROL Guidelines - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace" which is designed to assist the application of the FUA Concept in the ECAC States.

1.2.2.1.2 The ANT Report on the Organisational Structures and Procedures Required for the Application of the Concept of the Flexible Use of Airspace, [EUROCONTROL Doc. 94. 70. 08] published in March 1994, was adopted by the 4th Meeting of the ECAC Ministers of Transport (MATSE/4) on the 10<sup>th</sup> of June 1994. The ANT Report made 18 specific recommendations, which were developed and formed the basis of the Guidance Document for the Implementation of the Concept and the First Edition of the ASM Handbook for the Application of the Concept.

## 1.3 Structure of the Handbook

The ASM Handbook consists of 7 sections preceded by the Edition History, a Checklist, a Table of Contents and a list of Annexes.

- Section 1** contains an Introduction, relationship with documents and historical background.
- Section 2** contains a brief overview of the FUA concept, describes the flexible airspace structures and procedures, explains the relationship between the FUA concept and existing airspace structures, and the relationship between the components of the Air Traffic Management (ATM).
- Section 3** explains in detail how the ASM functions have to be applied at the Strategic - ASM Level 1 to develop, approve and enforce common national policies through National and International Collaborative Airspace Planning.
- Section 4** explains in detail how the ASM functions have to be applied at the Pre-Tactical - ASM Level 2 to fully exploit the FUA concept.
- Section 5** explains in detail how the ASM functions have to be applied at the Tactical - ASM Level 3 to fully exploit the FUA concept.
- Section 6** summarises the various methods for the publication of ASM information in support of the FUA concept at the three levels.
- Section 7** explains the methods used to evaluate the effectiveness of the current application of the FUA concept (FUA indicators etc.).

### Annexes

**References** provides more detailed information on the implementation of the FUA concept.

### Definitions

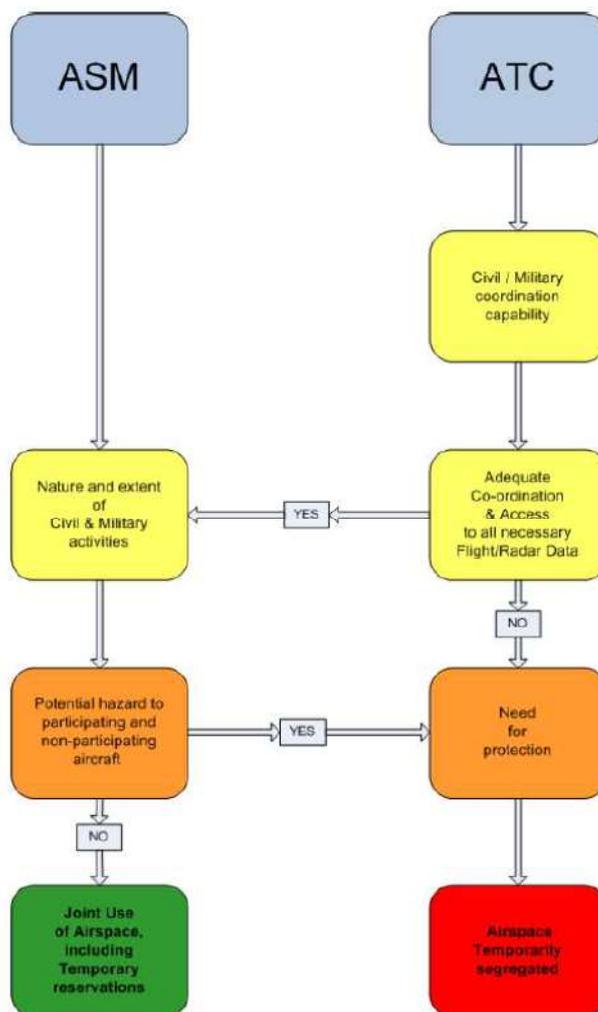
### Acronyms

## **2 Section 2 – The concept of Flexible use of Airspace**

### **2.1 General Introduction**

#### **2.1.1 The basis of the FUA Concept**

- 2.1.1.1 The basis for the FUA concept is that airspace should no longer be designated as either military or civil airspace but should be considered as one continuum and used flexibly on a day-to-day basis. Consequently, any necessary airspace segregation should be of a temporary nature.
- 2.1.1.2 One of the major objectives is the more efficient use of airspace by civil and military users through the implementation of the FUA concept. Airspace Management Cells (AMCs) will ensure that there is a more effective sharing of ECAC airspace through joint civil/military strategic planning and pre-tactical airspace allocation.
- 2.1.1.3 The FUA concept has increased the flexibility of airspace use and has provided ATM with the potential to increase the air traffic system performance. It allows the maximum common use of airspace by appropriate coordination between civil and/or military users.
- 2.1.1.4 The application of the FUA concept ensures that, through the daily allocation of flexible airspace structures, any necessary segregation of airspace is based on real usage within a specific time period and airspace volume (See Figure 1).



**Figure 1: Process to determine requirement for temporary segregation of airspace within the FUA concept**

2.1.1.5 FUA concept is also applicable to enhancing airspace usage based on any temporary airspace structures as a function of achieving increased airspace capacity and flight efficiency.

2.1.1.6 The application of the FUA concept aims at:

- a) implementation of the most optimal airspace configuration to accommodate civil and military airspace requirements;
- b) an increase of flight efficiency by a reduction in distance, time and fuel thereby providing environmental benefits;
- c) the establishment of an enhanced Air Traffic Services (ATS) route network and associated sectorisation providing for capacity increase;
- d) improving the efficient use of airspace in Free Route Airspace (FRA);
- e) more efficient ways to separate Operational and General Air Traffic where required;
- f) enhanced real time civil/military coordination;

- g) a reduction of ATC workload;
- h) a reduction in airspace segregation/reservation needs to better reflect actual military requirements;
- i) a potential increase in mission effectiveness.

## **2.1.2 Application of the FUA concept**

2.1.2.1 Effective application of the FUA concept requires the establishment of a national High-Level Airspace Policy Body (HLAPB) in each of the ECAC States. This body is tasked with the continuous reassessment of national airspace, the progressive establishment of new flexible airspace structures and the introduction of procedures for the allocation of these airspace structures on a day-by-day basis. The States are required to establish adequate real time civil/military coordination facilities and procedures so as to fully exploit the FUA concept. The practical application of the FUA concept relies on National or sub-regional Airspace Management Cells (AMCs) for the daily allocation and promulgation of flexible airspace structures and on the Centralised Airspace Data Function (CADF) within the Network Manager (NM). NM is in charge for the dissemination of the daily availability of non-permanent ATS routes and daily allocation of areas, including associated information (e.g. restrictions, mandatory intermediate points etc.) for FPL purposes, particularly relevant in the Free Route Airspace.

## **2.2 THE THREE ASM LEVELS**

### **2.2.1 Introduction**

2.2.1.1 The FUA Concept is based on three Levels of ASM, which have been identified as:

- a) Strategic ASM - ASM Level 1,
- b) Pre-Tactical ASM - ASM Level 2, and
- c) Tactical ASM - ASM Level 3.

2.2.1.2 The three ASM Levels correspond with civil/military ATM coordination tasks. Each Level is related directly to and impacts on the others. The following paragraphs describe the FUA concept of operation at the three ASM Levels.

### **2.2.2 ASM Level 1 - National and International Airspace Policy**

2.2.2.1 Strategic ASM at ASM Level 1 consists of a joint civil and military process within a national<sup>1</sup> HLAPB, which formulates the national ASM policy and carries out the necessary strategic planning work, taking into account national and international airspace users' requirements.

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<sup>1</sup> HLAPB can be established at sub-regional level as appropriate (e.g. FAB)

- 2.2.2.2 In order to maintain a flexible airspace organisation, ECAC States continually assess their national airspace, Free Route Airspace and route structures. At ASM Level 1, the States determine the working structures for ASM Levels 2 and 3 and give them the authority required to carry out their tasks. The States lay down the procedures to be followed at these tactical and pre-tactical levels and agree on priority rules and negotiation procedures for airspace allocation at ASM Levels 2 and 3.

### **2.2.3 ASM Level 2 - Day-to-Day Allocation of Airspace**

- 2.2.3.1 Pre-Tactical - ASM Level 2 consists of the day-to-day management and temporary allocation of airspace through national or sub-regional AMCs and in coordination with the NM. It can start at D-6 and carries on the Day of Operations with updates of the airspace plans.

- 2.2.3.2 AMCs are joint civil/military ASM focal points which have the authority to conduct ASM within the framework of the States airspace structures, priority rules and negotiation procedures as laid down by the national HLAB. From D-6 to D-2, AMCs collect available information and publish DRAFT AUPs as far as required. At D-1, after coordination as described in 4.8.2, AMCs promulgate the airspace allocation as an Airspace Use Plan (AUP). Changes to the airspace plan are notified via UUPs as described in 4.8.3 and 4.8.5.

- 2.2.3.3 The available information notified with DRAFT AUPs from D-6 to D-2 is published on the NOP Portal. Information notified via AUP at D-1 and any UUPs afterwards are consolidated in EAUP/EUUP, daily published on the NOP Portal and used via B2B service to provide information to Aircraft Operators (AOs) for flight planning purposes.

### **2.2.4 ASM Level 3 - Real Time Use of Airspace**

- 2.2.4.1 Tactical - ASM Level 3 consists of the real time activation, deactivation or real time reallocation of the airspace allocated at ASM Level 2 and the resolution of specific airspace problems and/or traffic situations between civil and military ATS units and/or controlling military units and/or controllers, as appropriate. Real time access to all necessary flight data, including controllers' intentions, with or without system support, permits the optimised use of airspace and reduces the need to segregate airspace (see Figure 1).

## **2.3 FLEXIBLE AIRSPACE STRUCTURES AND PROCEDURES**

### **2.3.1 General**

- 2.3.1.1 The FUA concept uses airspace structures and procedures that are particularly suited for temporary allocation and/or utilisation, such as Conditional Routes (CDR1s), Temporary Reserved Areas (TRAs), Temporary Segregated areas (TSAs), Cross-Border Areas (CBAs), Reduced Coordination Airspace (RCA) and Prior Coordination Airspace (PCA). In order to improve the airspace utilisation in both a fixed route network and a free route environment, these airspace structures will be implemented according to the specific requirements.

- 2.3.1.2 The use of these airspace structures is enabled through specific processes and procedures described hereafter.

## 2.3.2 Conditional Routes

2.3.2.1 A Conditional Route (CDR1) is an ATS route or a portion thereof which can be planned and/or used under certain specified conditions only. CDR1s permit the definition of more direct and alternative routes by complementing and linking to the existing ATS route network.

2.3.2.2 CDR1s can be established at ASM Level 1:

- through areas of potential temporary reservations (e.g. TRA or TSA), with availability conditions resulting from associated military activities; and/or
- to address specific ATC conditions (e.g. traffic restrictions or ATC sectorisation compatibility) with availability conditions resulting from purely civil needs.

2.3.2.3 The properties of CDR1s, including their alignment and route designator, are published in national Aeronautical Information Publications (AIPs).

### 2.3.2.3.1 CDR1s have the following characteristics:

2.3.2.3.1.1 CDR1s are available for flight planning during times published in the national AIP, unless they are made unavailable by the EAUP/EUUP(s) published daily.

2.3.2.3.1.2 CDR1s are plannable for stated time periods and so published in AIPs. CDR1s can either be established on an H 24 basis or for fixed time periods or at fixed flight level bands. CDR1s should be coordinated with neighbouring States to the maximum extent possible in order to create consistent segments of CDR1 across borders. The CDR1s availability/unavailability shall be provided by the EAUP/EUUP(s) published daily.

2.3.2.3.1.3 Information on the unavailability of a CDR1 (or any portion thereof) for flight plan purpose, shall be notified via AUP/UUP and published via EAUP/EUUP through the publication of RSA/FUA restriction affecting its availability and/or explicit CDR1 unavailability as more appropriate. It remains a State responsibility to decide whether an AIS notification (e.g. NOTAM) is required as additional publication. In case an additional AIS notification is published, States are responsible for ensuring consistency between relevant publications (e.g. NOTAM and AUP/UUP information). Any unavailability of a CDR1 not affecting flight planning can be treated tactically when appropriate. Even in case of notified unavailability of CDR1 for flight planning, tactical utilisation may be granted based on defined tactical coordination procedures between responsible ATS and/or controlling military units, whenever applicable.

### 2.3.3 Temporary Airspace Restriction and Reservation

2.3.3.1 The Temporary Airspace Allocation (TAA) process consists in the allocation process of airspace of defined dimensions assigned for the temporary reservation/segregation (TRA/TSA) or restriction (D/R) and identified more generally as an "AMC-manageable" area.

2.3.3.2 Two different types of airspace reservation can be established taking into consideration the activity that would take place associated with the transit possibility:

- Temporary Reserved Area (TRA);
- Temporary Segregated Area (TSA).

*Note: In the context of the FUA Concept, all TRAs and TSAs are airspace reservations subject to management and allocation at ASM Level 2.*

2.3.3.3 The TAA Process gives States considerable flexibility in the use of airspace. TRAs/TSAs are established at ASM Level 1, allocated (by AMCs) at ASM Level 2 in response to daily requests for specific periods, and activated at ASM Level 3 for periods corresponding as closely as possible to the real time civil or military airspace users' requirement. In order to conduct several activities in the area, the TRA and TSA may be subdivided at ASM Level 1 and published as such in the AIP. The activation/de-activation process of the subdivided areas allows for the accommodation of daily changes in traffic situations and airspace users' requirements.

2.3.3.4 TRAs/TSAs are established in response to the need for civil, military, R&D, training, test flights or activities of a temporary nature. TRAs/TSAs are established in accordance with national policy and allocated by AMCs for specific activities. If, due to the nature of these activities, segregation is needed to protect participating and non-participating traffic, only TSA applies. In these cases, any tactical crossing of the areas when activated should not be allowed.

2.3.3.5 Whenever an area is planned to be used for activities not always requiring a segregation to protect not-participating aircraft, it should be designated as TRA. In this way it would be possible to improve the flexibility in the usage, allowing tactical crossing when the activity inside doesn't require a protection of not-participating traffic.

2.3.3.6 In addition, TRAs/TSAs, as AMC-manageable parts of the airspace structures, supplement, replace or modify, where possible, existing airspace structures such as Danger (D) or Restricted (R) areas. However, in some situations, for example in airspace over the high seas, or because of difficulty in the notification of airspace status to airspace users in some ATS classes of airspace, or because of national legal requirements, States may have a continuing requirement to retain D and R areas.

2.3.3.7 Active airspace reservations are crossed or avoided depending on the level of coordination (including civil/military coordination) and the status of the activity in the area. This will remain the case in Free Route Airspace.

2.3.3.8 There should be a potential for airspace reservations to be reconfigured to meet different task needs.

- 2.3.3.9 In areas where coordination procedures (including civil/military coordination procedures) and airspace crossing conditions permit, the airspace users are allowed to flight plan routings through airspace reservations. In some cases, tactical re-routing will be provided if airspace reservation is not available for crossing. The expected maximum additional length of a tactical re-routing shall be promulgated through national AIS publications. In other cases, when such airspace is not available for crossing, 5LNC will be defined to facilitate flight planning clear of the airspace reservation and ensure required separation from the activity. The promulgation of these 5LNCs shall be ensured through national AIS Publication. If these points are to be used only for avoidance of airspace reservations, specific conditions for the use of these points for flight planning shall be published. An overall standardisation of the separation from airspace reservations will be required, in the longer term, especially for cross-border operations. Publication of activation time of airspace reservations should be considered. Note: The possibility of using geographical coordinates should be considered.
- 2.3.3.10 If necessary, the States could decide to increase the time beyond the scheduled activity for which an active RSA is protected, in order for any submitted flight plans potentially crossing an RSA could be rejected by IFPS. This additional time allocation is known as Buffer Time (BT) and it could be added before and/or after the scheduled activity. The main goal when implementing buffer times is to ensure a greater protection against the time uncertainty of a civil flight flying towards an RSA boundary. In simple terms, this uncertainty may come from various factors such as ATFCM slot tolerance (-5; +10min), and/or EOBT tolerance (-15; +15min), not capture by IFPS during its validation of the FPLs, performed against the EOBT.
- 2.3.3.11 The following techniques are available when implementing RSA buffer times:
- a) at the AMC level, the AUP/UUP RSA activation sent to NM is longer than the activity, thus ensuring a "delta" time (buffer time) before and after the RSA activity.
  - b) the request for an RSA activation from the appropriate AA entity (e.g. squadron) includes already a "delta" time (buffer time) before and after the scheduled activity (*example: scheduled military activity of 2h, from 10.00 to 12.00. The squadron asks for the RSA reservation from 09.45 to 12:15, which includes a buffer time of 15 min before and after the planned military activity*).
  - c) as variation of a) or b), it is possible to split the allocation of the RSA from the required buffer time. The reason is to clearly differentiate and visualise the buffer time from the activity inside the RSA. Therefore, the buffer time periods are activated as a standalone activation in the AUP/UUP (*example: military activity of 2h, from 10.00 to 12.00, will be notified as activation of the buffer time from 09.45 to 10.00, then activation of the RSA from 10.00 to 12.00, and finally the activation of the end buffer time from 12.00 to 12.15*).
  - d) activation of the FBZ, attached to the RSA, longer than the activation of the RSA with a "delta" time (buffer time) before and after the RSA activity (*example: military activity of 2h from 10.00 to 12.00, RSA activation from 10:00 to 12:00 and the FBZ activation from 09:45 to 12:15*).

The above techniques to implement buffer times deliver the required transparency for all the airspace users for their flight planning activity.

**Note:** As a reminder in this context, an activated RSA (or FBZ), in order to have an impact on a flight plan (FPL), shall have defined and activated a FUA restriction. In the absence of an activated FUA restriction, an active RSA (or FBZ) is not having any impact on flight planning. In this case, any FPL which crosses an active RSA (or FBZ) is accepted. It is evident the implementation of buffer times make sense only if a FUA restriction is active.

2.3.3.12 Flexibility in defining and implemented buffer times should be considered:

- not all RSAs need buffer times,
- the RSAs which need buffer times might not need these buffers 24/7,
- the buffers values could be different during a year, “before activation” values could be different than “after activation” values and
- the buffer time values might be dependant of the season and traffic pattern.

Therefore, the utilisation and time values of the buffer times could be reviewed regularly (e.g. annually). States should avoid implementing multiple buffers for an RSA.

2.3.3.13 Regarding the time values of the buffer times, a generic value could be +/- 15 minutes, mainly related to ATFCM slot tolerance and EOBT tolerance. This value might capture many flights with an actual take-off time that diverges from the EOBT used by IFPS for FPLs validation which subsequently and causes a potential infringement of the allocated RSAs. It should be acknowledged that there might still be situations (ad-hoc activation of an RSA, P3 RSA activation not generating an FPL suspension if less than 1 hour from the EOBT, long haul flights already airborne etc.) where it doesn't prevent a flight heading towards an RSA activated boundary, hence the ATC intervention being still necessary.

## 2.3.4 Cross-Border Areas

2.3.4.1 A Cross-Border Area (CBA) is an airspace restriction or reservation established over international borders for specific operational requirements. This may take the form of a TSA or TRA. CBAs are established to allow military training and other operational flights on both sides of a border. CBAs, not being constrained by national borders, can be located so as to benefit both GAT and OAT operations. CBAs, combined with the potential use of CDR1s through them, permit the improvement of the airspace structure in border areas and assist in the improvement of the ATS route network. CBAs can also improve operations across the borders in an FRA environment.

2.3.4.2 Political, legal, technical and operational agreements between the States concerned are required prior to the establishment of CBAs. Formal agreements for the establishment and use of CBAs have to address issues of sovereignty, defence, legality, liability, operations, the environment and Search and Rescue.

## 2.3.5 Prior/Reduced Coordination Airspace Procedures

2.3.5.1 A Prior Coordination Airspace (PCA) is a volume of airspace of defined dimensions within which individual GAT is permitted to fly outside an authorised published ATS route segment or an allowed DCT between two waypoints, only after prior co-ordination initiated by GAT controllers with OAT controllers.

2.3.5.2 The PCA procedure, as another way of booking airspace, involves a given block

of controlled airspace within which military activities can take place on an ad hoc basis with individual GAT transit allowed under rules specified in Letters of Agreement (LoAs) between the units concerned.

- 2.3.5.3 A Reduced Coordination Airspace (RCA) is a volume of airspace of defined dimensions within which GAT is permitted to fly outside an authorised published ATS route segment or an allowed DCT between two waypoints, without requiring coordination between controllers.
- 2.3.5.4 When OAT traffic is of low intensity, the need for civil/military coordination of GAT flying outside an authorised published ATS route segment or allowed DCT between two waypoints, unnecessarily increases controller workload. The RCA procedure is usually applied for a very large area such as the entire FIR/UIR, but also for critical ACC sectors which have different capacity figures according to the existence of military activity or not.
- 2.3.5.5 Before GAT is permitted to fly outside an authorised published ATS route segment or allowed DCT between two waypoints, the OAT controller responsible for the separation between OAT and GAT, must have ready access to all necessary flight and radar data, including controller's intentions, on all relevant GAT within his area of responsibility.
- 2.3.5.6 These procedures for PCA and RCA are defined for tactical operations and are applicable both in a fix ATS route network and in a Free Route Airspace environment.

## 2.4 PARTICULAR APPLICATION OF THE FUA CONCEPT

### 2.4.1 ATS Routes

- 2.4.1.1 Under ICAO provisions, an ATS route is a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.

*Note 1 – The term "ATS route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route etc.*

*Note 2 – An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.*

- 2.4.1.2 The term "Permanent ATS Route" is used in this Handbook to designate all ATS routes other than Conditional Routes (CDR1s). A Permanent ATS Route is therefore a permanently designated route, which is not subject to daily management at ASM Level 2 by AMCs. Nevertheless, a Permanent ATS Route can be closed, but only under specific conditions specified at ASM Level 1 and published by NOTAM, e.g. for large scale military exercises.

## **2.4.2      Airspace Restrictions - R, D, P Areas**

- 2.4.2.1      Some aerial activities, which pose a potential risk to other users may not be possible to plan the day before operation. In these circumstances, States may retain or establish R, D or Prohibited (P) areas for safety and notification reasons.
- 2.4.2.2      When an airspace restriction is manageable at ASM Level 2, the FUA concept recommends that, where possible, R and D areas are replaced or modified by TRAs or TSAs. Those States, which have a continuing requirement to retain R and D areas should, however, allocate and activate such areas in the same way as TRAs or TSAs. The AIP identifies as “AMC-Manageable Areas” those R and D areas managed and allocated at ASM Level 2.
- 2.4.2.3      Any remaining R, D and P areas that are not suitable for ASM Level 2 management remain unaltered from traditional utilisation and are identified as such in the AIP.

## **2.4.3      Free Route Airspace**

- 2.4.3.1      Free Route Airspace forms an integral part of the overall European ATM network, interfacing vertically and/or laterally with adjoining fixed route operations airspace.
- 2.4.3.2      Airspace reservations will remain, and as all airspace users will have equal access to Free Route Airspace, harmonised application of the FUA Concept and Civil/Military Coordination will be taken into account in order to ensure harmonised procedures and service provision for the benefit of all the airspace users. OAT en-route shall benefit in a similar way from the implementation of Free Route Airspace. Existing or new OAT route structures/areas and civil flows should be compatible.
- 2.4.3.3      Procedures shall be developed between the Network Manager Operations Centre and all interested parties to ensure a harmonised application of procedures for the avoidance of airspace reservations when active.
- 2.4.3.4      States may decide to implement Free Route Airspace on a structurally limited basis, for example by restricting the available entry/exit points for certain traffic flows and/or requiring aircraft to route via published or ad hoc intermediate points<sup>2</sup>, which could increase predictability and reduce the number of potential conflicts. Another example could be temporary implementation of FRA operations (e.g. during the night or the weekend).
- 2.4.3.5      ASM in Free Route Airspace will differ from that of the fixed Route Network in that AOs will no longer be given information on which routes are available but will need to know which airspace is available/not available. For the transit period of a given flight through Free Route Airspace, the airspace users will need to know the activity of all pertinent airspace reservations to enable the selection of a flight path that will avoid them. This may include routing via published or unpublished intermediate points to ensure adequate separation from active airspace

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<sup>2</sup> ERNIP Part 1, Chapter 9: “In order to benefit from the best operating conditions, airspace users may be allowed to use any unpublished intermediate points defined by geographical coordinates or by bearing and distance for flight planning. Such possibility shall be clearly promulgated in national AIS publications. Where such utilisation is not possible, publication of intermediate 5LNC points shall be ensured.”

reservations/NPZs is maintained. ATC units, corresponding military units, airspace users and the Network Manager will need to know and share the same updated information with regard to the status of the airspace reservations.

#### **2.4.4 Controlled Airspace**

2.4.4.1 In controlled airspace CDR1s, TRAs/TSAs and/or AMC-manageable R or D areas are designated at ASM Level 1 as “pre-determined” airspace structures to be allocated or deactivated at ASM Level 2 by AMCs on a day-to-day basis and used at ASM Level 3 under conditions known by both civil and military airspace users and control units involved.

#### **2.4.5 Uncontrolled Airspace**

2.4.5.1 Uncontrolled airspace is by definition ICAO airspace classes F and G.

2.4.5.2 It is recognised that a major difference between upper and lower airspace, and therefore a potential difficulty, is that the lower airspace introduces the element of uncontrolled airspace and therefore an unknown traffic environment. This is particularly the case where a portion of controlled airspace (ICAO classification A to E inclusive), borders a portion of uncontrolled airspace (classification F or G). The main difficulty related to the application of FUA is the way of informing in real time the users and/or the ATS Providers about the current airspace structure and associated status. In order to guarantee the safety and the access to the airspace information to the wider audience, the implementation of FUA in uncontrolled airspace should be addressed with caution considering the local special requirements (see 5.6.3.6) and the local procedures, with due attention to the possibility to apply procedure 3. A dedicated local safety assessment should be performed.

2.4.5.3 Under the ICAO system of airspace classes, classification A excludes VFR; in classes B, C and D airspace VFR traffic are required to obtain an ATC clearance to operate; therefore, airspace with those classifications can be considered as a known traffic environment. In class E airspace, although under the heading of controlled airspace, VFR traffic is not required to obtain an ATC clearance or carry a radio and, therefore, this airspace has to be considered as an unknown traffic environment.

2.4.5.4 Implementation of FUA in the lower airspace therefore requires a distinction to be made between the FUA in a known traffic environment including the Terminal Areas (CTA, CTR, and ATZ) and the FUA in an unknown traffic environment.

2.4.5.5 As with the upper airspace, the application of FUA in the lower controlled airspace, is centred upon flexible airspace structures (see para 2.3) being made available to the various users according to the usual FUA procedures. Some member States have a requirement to accommodate certain flying activities, such as glider flying, in controlled airspace wherein that activity would not normally be possible. In addition, depending upon the legal structure of the airspace, it may not be possible to change the airspace classification in real time. Therefore, a need is identified to provide for the establishment of temporary segregated airspace which classification may not change but where the requirements for ATC services are temporarily suspended. Aircraft other than the temporarily accommodated aircraft will not be cleared into that volume of

airspace whilst it is segregated.

- 2.4.5.6 The procedures for activation, deactivation and operating within the segregated volume of airspace should be contained in a written agreement agreed between the appropriate ATS authority and the responsible aircraft operating entity.

## 2.5 TRANSITION TO THE FUA CONCEPT

**2.5.1** A State adopting the FUA concept is committed to reassess current national airspace and route structures with the aim of implementing a flexible airspace organisation.

**2.5.2** The resulting transition from its current airspace situation into the flexible airspace organisation under the FUA concept can be summarised as follows (Table 1):

WITHOUT FUA		WITH FUA	
Basic ATS routes	→	"Permanent" ATS routes	
Temporary routes, Week-end routes, Complementary routes, Selected tracks, Link routes, Off-load routes etc...	→	CDR1s	
TRAs, Type C areas, etc.	→	TRAs or TSAs and, where applicable, CBAs (TRA or TSA by its nature)	
R (TRA) or D (TRA) D or R to be manageable at ASM Level 2	→	TRAs or TSAs or, if not possible, AMC-Manageable Areas	
D or R not manageable at ASM Level 2	→	D or R with possibility of reduced use known by the AMCs the day before operations	
Different blanket approval and/or prior coordination procedures for off-route GAT	→	PCA/RCA procedures	

**Table 1: Transition to the FUA concept**

## 2.6 ATS/ASM/ATFCM RELATIONSHIP

### 2.6.1 General

2.6.1.1 As an integral part of ATM, ASM should work in close cooperation with both ATS and ATFCM.

2.6.1.2 An airspace structure reorganised to increase the accessibility of more airspace is accepted as essential to increasing the capacity of the ATS system and reducing GAT delays. Therefore, Area Control Centre (ACC) sector capacity figures will improve in response to the different route and airspace organisation resulting from the daily AMC allocation.

2.6.1.3 In order to achieve an improvement in airspace use, the link between ASM and ATFCM is harmonised at all the three Levels including compatibility between ATS, ASM and ATFCM procedures and timetables.

2.6.1.4 During an initial phase, all related pre-tactical ASM Level 2 and ATFCM activities, will take place within a common agreed timetable as illustrated in Annex 3.

## **2.6.2 ASM/ATFCM Relationship at Strategic Level - ASM Level 1**

- 2.6.2.1 Both ASM and ATFCM have a Strategic Planning Phase. In ASM Level 1, this consists of a periodical review of the use made of the airspace using traffic statistics and forecasts.
- 2.6.2.2 ATFCM Level 1 identifies choke points, sector capacity and demand imbalances, which should be examined in parallel with the ASM Level 1 review. This national periodical review process involving both airspace & route planners, ACCs/FMPs and AMC, should keep pace with the development of improved navigation capabilities, advanced ATC techniques and changes in user requirements.
- 2.6.2.3 The planning and establishment of FRA, permanent ATS routes and CDR1s is conducted nationally and at sub-regional level within the framework of a coordinated and cooperative European-wide airspace organisation. This cooperative and continuous planning process is performed within the specialised NETOPS Team Sub-Group (RNDSG).
- 2.6.2.4 The Route Availability Document (RAD) enables ATC to maximise capacity by defining route restrictions that prevent disruption to the organised system of major traffic flows through congested areas with due regard to Aircraft Operator requirements. The RAD is therefore based primarily on permanent ATS routes, CDR1s, DCTs and FRA restrictions. The RAD includes a number of permanent routeing suggestions to assist AOs in the preparation of their flight plans; these suggestions are advisory and not mandatory.
- 2.6.2.5 The establishment of FRA should assess the potential implementation of NPZs and the related ASM/ATFCM procedures for their classification and management.
- 2.6.2.6 In addition, routeing scenarios in conformity with the RAD are implemented by the NM/NMOC after coordination, through the teleconference procedure, with FMPs and AOs concerned. These routeing scenarios become mandatory for the period expected to be critical. Exceptions are made for State aircraft where the scenario would compromise a diplomatic clearance.
- 2.6.2.7 An international review of CDR1s has also to be undertaken periodically for a given region to assess from practical experience of ACCs/FMPs and AMCs the benefits gained from the use of CDR1s in terms of sector capacity increase and/or better traffic distribution, in addition to the shorter routeing provided. This review of CDR1s usage will allow the identification of predefined CDR1 scenarios, if possible, for the following summer, to be used during the pre-tactical ATFCM phase by the NM in coordination with FMPs concerned, to solve any ATFCM problems.
- 2.6.2.8 An international review of the application of FUA concept in Free Route Airspace at network level should be undertaken periodically in order to assess, from practical experience of ACCs/FMPs and AMCs, the effectiveness of the process and procedures applied and the efficiency of the interface among different regions where FRA is implemented. In specific, the review of areas' usage allows the identification of pre-defined airspace scenarios to be used during the pre-tactical ASM/ATFCM phase by the NM in coordination with AMCs and FMPs concerned. This assessment should also include the definition and management

of NPZs across FRA regions, if necessary.

### **2.6.3 ASM/ATFCM Relationship at Pre-Tactical Level - ASM Level 2**

2.6.3.1 In the pre-tactical ASM/ATFCM phase, the NM highlights areas of insufficient ATC capacity. Routeing scenarios following the RAD or using predefined scenarios for critical ACC sectors have then to be considered to solve capacity shortfalls in coordination with ACCs/FMPs concerned.

2.6.3.2 User requirements necessitating segregated airspace form the basis for requests and allocation of TRAs and TSAs. The usage of predefined airspace scenarios may be promoted to improve airspace utilisation, especially across States boundaries and in FRA.

2.6.3.3 Clear procedures between FMPs and AMCs needs to support the effective management of NPZs to minimise the required restrictions for FPLs purposes.

### **2.6.4 ATC/ASM/ATFCM Relationship at Tactical Level - ASM Level 3**

2.6.4.1 If a reduction in the activation time of a TRA or TSA is agreed between units, the subsequent release of airspace enables civil ACCs to open certain CDR1s which were not available and/or re-route traffic flows in FRA at short notice. Similarly, ATS units responsible for OAT and/or controlling military units are able to use TRAs or TSAs at short notice taking into account the general ATFCM plan as well as the impact on implemented pre-defined airspace scenarios. To enlarge or combine TRAs or TSAs civil ACCs may be able to allocate, at short notice, some flight levels of an ATS route segment, or within FRA, for temporary OAT use.

2.6.4.2 The use of the RCA procedure, by direct agreement between the control units (ATS units and/or controlling military units) involved, reduces the GAT controller's workload by suppressing the need for individual coordination of any GAT flying outside an authorised published ATS route segment or allowed DCT between two waypoints. This will facilitate the GAT controller's tasks allowing more direct routeings and permits radar vectoring around major high-density crossing-points.

2.6.4.3 Under these circumstances, the difference between ATS, ASM and ATFCM may become blurred. A civil ATC unit can be tasked with ATC, ASM and, through its FMP, ATFCM responsibilities simultaneously.

2.6.4.4 For example, the identification by the ACC of a TRA or TSA early deactivated and available for use of a CDR1 or of the corresponding volume of airspace in FRA is an ASM Level 3 task. The identification of particular CDR1s or of a certain volume of airspace in FRA required to resolve an ACC/sector or another ACCs capacity problem is more a Pre-Tactical ATFCM task. The consequent re-routeing of the GAT flow on short notice is a tactical ATFCM task. Finally, the control of GAT on the newly re-opened CDR1, or in a new available volume of airspace is an ATC task of the ACC. The control, coordination, safe and expeditious conduct of air traffic, including the resolution of GAT and OAT conflicts, remains within the ATS remit.

2.6.4.5 It remains as well the ATS responsibility for the tactical management of NPZs in FRA environments, ensuring effective traffic flows. This could imply the rerouting of traffic through active NPZ volumes whenever feasible and subject to the FMP coordination.



## **3 Section 3 : STRATEGIC AIRSPACE MANAGEMENT (ASM LEVEL 1)**

### **3.1 General**

3.1.1.1 Strategic ASM at ASM Level 1 consists of a joint civil and military process established in each ECAC State by the "National High-Level Airspace Policy Body (HLAPB)". The HLAPB formulates the national ASM policy and carries out the necessary strategic planning work, taking into account national and international airspace users and ATS providers' requirements. Based on States agreement an HLAPB could be established at FAB level.

3.1.1.2 In those Member States where both civil and military authorities are responsible or involved in ASM, the HLAPB should be a joint civil-military body as referred in EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (GEN-PRPL-01-01). The HLAPB should consist of the highest possible level of representation from the respective Ministry of Defence (MOD) and Ministry of Transport (MOT) and/or other regulatory entities (e.g. NSAs). In case of HLAPB established at FAB level, appropriate civil and military representation should be granted.

3.1.1.3 The main function of the HLAPB is therefore to ensure a safe and efficient use of the national/FAB airspace structure and ATS route network and to provide a continuum and transparency of operational handling at national borders based on harmonised agreements derived from collaborative airspace planning with neighbouring States.

3.1.1.4 This is to be achieved through the development, approval and enforcement of common national policies for an effective airspace allocation and review process, taking into account the needs of all stakeholders, including national security and defence needs, environmental issues as well as any particular neighbouring States requirements.

### **3.2 NATIONAL COLLABORATIVE AIRSPACE PLANNING**

#### **3.2.1 Strategic Objectives**

3.2.1.1 The Strategic Objectives for the HLAPB are those described in EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (GEN-PRPL-02-01). In case of HLAPB established at FAB level, specific written agreement will define its strategic objectives.

### 3.2.2 Responsibilities

3.2.2.1 The permanent HLAPB is required to establish a joint civil and military process to perform the following minimum functions, as set in the *EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (GEN-PRPL-02-02)*.

3.2.2.2 In addition, the HLAPB should:

- a) formulate the national policy for airspace management the "Airspace Charter" (template presented at Annex 4 should be used);
- b) periodically reassess the national airspace structure and ATS route network with the aim of planning, as far as possible, for flexible airspace structures and procedures in the upper and lower airspace (including Terminal Areas);
- c) validate activities requiring airspace segregation and assess the level of risk for other airspace users;
- d) conduct a safety assessment when planning for the establishment of FRA, CDR1s, TRAs, TSAs, CBAs, AMC-manageable D and R areas, NPZs, as required;
- e) change or modify, if required and if practicable, D and R areas into temporary allocated airspace;
- f) take into account the FUA concept when planning for airspace classifications;
- g) coordinate major events such as large scale military exercises planned well in advance of the day of operation, which require additional segregated airspace, and notify these activities by AIS publication;
- h) establish a list of days covering extended holiday periods when military operations are likely to be reduced, allowing the availability of CDR1s, and notify this status change by AIS publication (AIP Supplement);
- i) periodically review the procedures and efficiency of ASM Level 2 operations, the submission of airspace requests by the national Approved Agencies (AAs), and the negotiating procedures and priority rules for airspace allocation;
- j) periodically review the procedures and efficiency of ASM Level 3 operations, the prompt exchange and dynamic update of all necessary flight plan and radar data, and the use of adequate civil/military coordination facilities; and
- k) provide a continuum and transparency of operational handling at national borders through collaborative airspace planning and harmonised airspace management procedures with neighbouring States.

3.2.2.3 In case of HLAPB established at FAB level, specific written agreement will define its functions and responsibilities.

### **3.2.3 Principles**

#### **3.2.3.1 General**

3.2.3.1.1 Principles sustaining the above Strategic Objectives and Functions of the HLAPB are mainly related to safety, consultation, cooperation and environment issues.

#### **3.2.3.2 Safety**

3.2.3.2.1 The generic safety requirements are those described in EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (SAFE-REQU-01, SAFE-REQU-02, SAFE-REQU04 and SAFE-REQU-03).

3.2.3.2.2 Safety should be the paramount concern for the HLAPB in carrying out its responsibilities. Safety performance levels shall be maintained or enhanced, and the planning of airspace arrangements shall take account of obligations imposed by higher authorities and safety regulation requirements.

3.2.3.2.3 The HLAPB will to the extent possible conform to international best practices and ensure that the airspace change processes, procedures and instructions are compatible with appropriate military and civil aviation safety procedures.

3.2.3.2.4 When considering and refining a proposal for an airspace change, the HLAPB should review, if required, the safety assessment of each case as supplied by the customer, to ensure that national and FAB/international plans evolve in an overall risk-reducing manner.

#### **3.2.3.3 Consultation**

3.2.3.3.1 Consultation with airspace users, service providers and other relevant bodies should be conducted with the aim of obtaining consensus, wherever possible, before making changes in the planning or design of airspace arrangements.

3.2.3.3.2 The HLAPB is charged with reconciling civil and military operational needs without affording preferential treatment to either, and ensuring that airspace planning takes into account all user interests.

#### **3.2.3.4 Cooperation**

3.2.3.4.1 Close cooperation should be maintained with national and international partners to ensure that national airspace planning and policies are consistent with national and international commitments and programmes.

#### **3.2.3.5 Environment**

3.2.3.5.1 The environmental impact of airspace design and planning is to be taken into account at the earliest possible stage when revising airspace procedures and arrangements.

3.2.3.5.2 The HLAPB is also required to ensure, where appropriate, that any changes, which may have an adverse impact on the noise disturbance in the vicinity of an airport, are the subject of proper consultation with all those concerned.

### **3.2.4 Collaborative Working Organisation \***

- 3.2.4.1 A National Airspace Management Advisory Committee<sup>3</sup> could be established by the HLAPB. This advisory body will be consulted for advice and views on any major matter concerned with airspace management. However, depending on the size of the ATS organisation and the mandate of the HLAPB, the tasks dedicated to the National Airspace Management Advisory Committee can be carried out inside the HLAPB, as a supplementary function.
- 3.2.4.2 The main task of National Airspace Management Advisory Committee is to assist the HLAPB in the development of airspace policies, configurations and procedures in order that due attention is given to the diverse requirements of all airspace users and ATS providers, civil and military.
- 3.2.4.3 The Committee may be chaired by the Chairman of the HLAPB, with membership covering the whole spectrum of the aviation community in the State and remaining under constant review.
- 3.2.4.4 Most of the National Airspace Management Advisory Committee business will be conducted by correspondence, but the Committee will meet in Plenary Session on request.
- 3.2.4.5 A proposal, which may originate within the HLAPB or be initiated by a member organisation, will be circulated to the National Airspace Management Advisory Committee members for comments. If the proposal does not originate within the HLAPB itself, then the HLAPB views need also to be circulated.
- 3.2.4.6 If the matter is straightforward, a consensus will easily emerge from which the HLAPB will then frame associated changes to legislation and/or alter airspace boundaries or associated procedures.
- 3.2.4.7 If the matter is more complex, then a sub-committee or working group may be set up by the HLAPB in which all interested members may play a part in formulating a report. A Plenary Session of the Committee will then be required to discuss the report and offer advice to the HLAPB.
- 3.2.4.8 The National Airspace Management Advisory Committee should be seen as a discussion board, which operates on the principle that those who have a voice in the formulation of policies are more likely to abide by those policies. Such a principle therefore relies heavily on mutual trust and interest.

### **3.2.5 Common Airspace Policy Formulation and Review Process**

- 3.2.5.1 This procedure will be commonly applied by each ECAC State to the development of all policies relevant to the planning of en-route and off-route airspace arrangements, airspace and related procedures, and regulatory functions which HLAPB exercises on behalf of all airspace users (civil and military) and ATS providers.
- 3.2.5.2 In the context of the Common Airspace Policy Formulation and Review Process,

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\*As defined in the paragraph 1.1.2 the "Collaborative Working Organisation" and the associated activities should be considered as "recommended practices".

<sup>3</sup> Normally, such Committee is not required at FAB level.

"Policy" refers to: "a standing decision rule which gives guidance on acceptable and unacceptable types of action to those with executive responsibility."

- 3.2.5.3 The Common Airspace Policy Formulation and Review Process falls into six stages:
- identification of need;
  - analysis of the potential impact;
  - decision to proceed;
  - consultation;
  - approval; and
  - publication;
- 3.2.5.4 The flowchart presented at Figure 2 illustrates the activities, considerations and requirements of the Common Airspace Policy Formulation and Review Process.
- 3.2.5.5 Proper coordination and agreement with the appropriate civil and military aviation organisations is a critical element of the process and should be carried out before any external consultation takes place.
- 3.2.5.6 An Impact Assessment (IA) describing the overall impact of a regulatory measure or policy change, including a safety case, an environmental assessment, a legal assessment and a cost benefit analysis, will be initiated and/or conducted, if required, by the HLAPB when formulating policy or initiating legislative change.
- 3.2.5.7 Policies are to be subject to periodic reviews. The criteria for review will be set out in the policy statement. The length of the review period should take into account the scale of impact of the new or revised policy.
- 3.2.5.8 If established at FAB level, the HLAPB could be responsible for some or all steps of the Common Airspace Policy Formulation and Review Process, except for the publication that should remain a national responsibility.

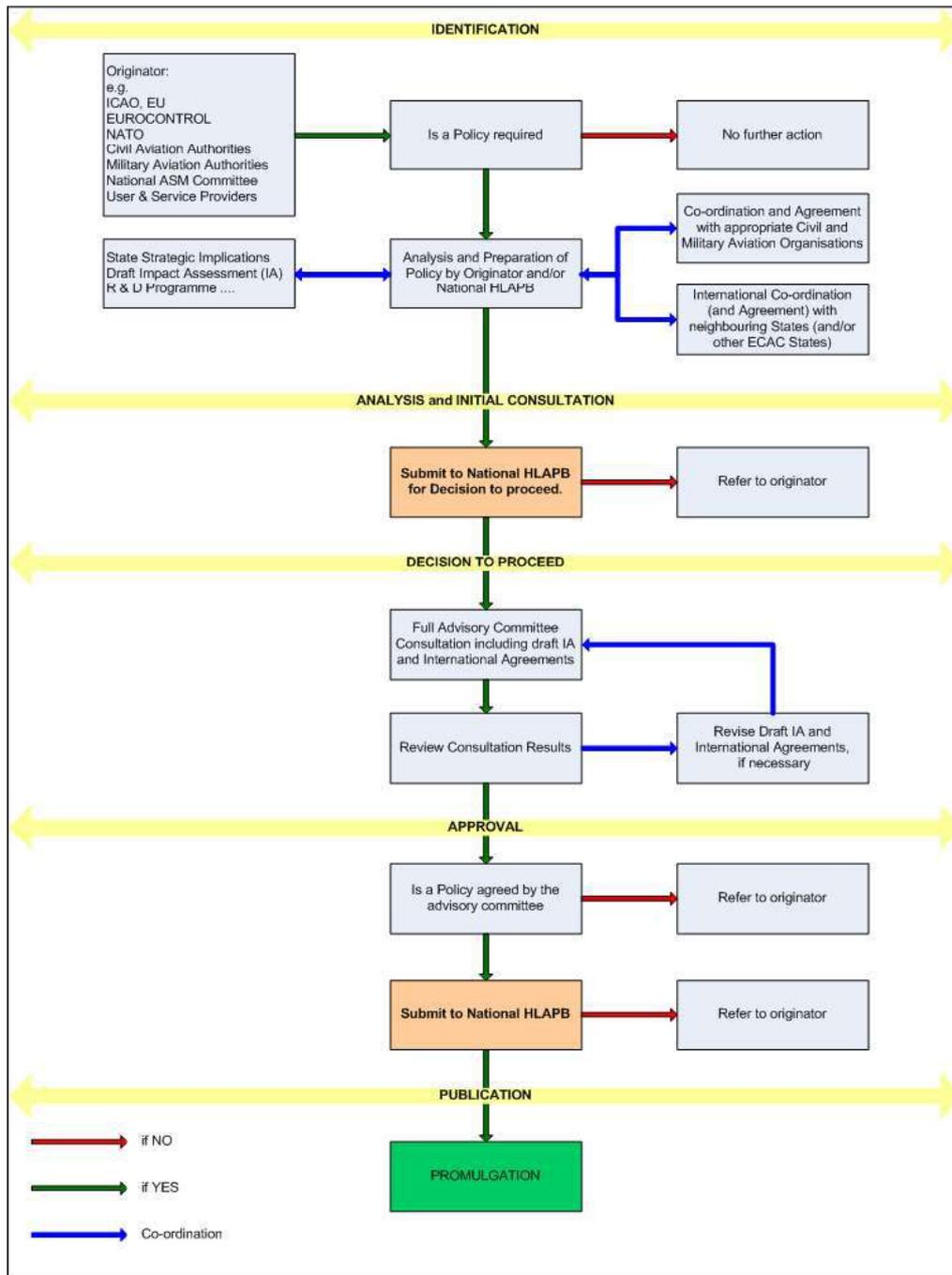


Figure 2: Common Airspace Policy Formulation and Review Process

### 3.2.6 Common Airspace Change Process

- 3.2.6.1 This procedure will be applied in the development of a common "Airspace Change Process" to be established by each ECAC State to ensure that proposed changes to airspace are initiated, considered, refined, approved and implemented in a safe and controlled manner, and in accordance with the policies and procedures laid down by the HLAPB.
- 3.2.6.2 In the context of the Common Airspace Change Process, "Clients" refers to: "those allowed requesting changes to airspace" (e.g. airspace users, ATS providers etc.).
- 3.2.6.3 The Client, on identifying a possible requirement to change airspace, will inform the HLAPB, which will then be available to offer advice on aspects concerning the guidelines, design, safety management and consultation. Ownership of the proposal will always remain with the Client.
- 3.2.6.4 The Client will carry out, if required, an initial informal consultation and, in the event of a deadlock situation or undue delay, may refer the problem to the HLAPB for advice. The HLAPB may then make a judgement, perhaps after further consultation with the objector, to decide how the objection should be handled.
- 3.2.6.5 On completion of the informal consultation, the Client will submit a formal proposal with full details of the change.
- 3.2.6.6 The HLAPB will be responsible, where necessary, for conducting the case study, formal consultation, proposal refinement, approval and establishment phases of the process.
- 3.2.6.7 The flowchart presented at Figure 3 illustrates the phases and activities of the Common Airspace Change Process.
- 3.2.6.8 On completion of the formal consultation and eventual refinement, the HLAPB will formally accept the project and agree on a completion date with the Client. The Client will be responsible for developing and subsequently publishing the ATC operational procedures, if so required.
- 3.2.6.9 For some major changes (e.g. involving extensive new procedures, cross-border airspace etc.), States should estimate a sufficient time (which must be reflected in the target completion date) to conduct the formal process in order to comply with the two AIRAC cycles required by ICAO for promulgation. Some changes may be concluded in less than the stated period but, where such changes are subject to publication by AIRAC cycle, unless a full AIRAC cycle can be gained, no reduction can be initiated.
- 3.2.6.10 All significant airspace changes will be subject to review by the HLAPB to ensure that they efficiently serve the purposes for which they were designed. The period between introduction and review will vary according to the complexity and purpose of the airspace. The time of the review will be agreed by the HLAPB and the Client prior to introduction of the changes.
- 3.2.6.11 If established at FAB level, the HLAPB could be responsible for some or all steps of the Common Airspace Change Process, except for the implementation, including publication that should remain a national responsibility.

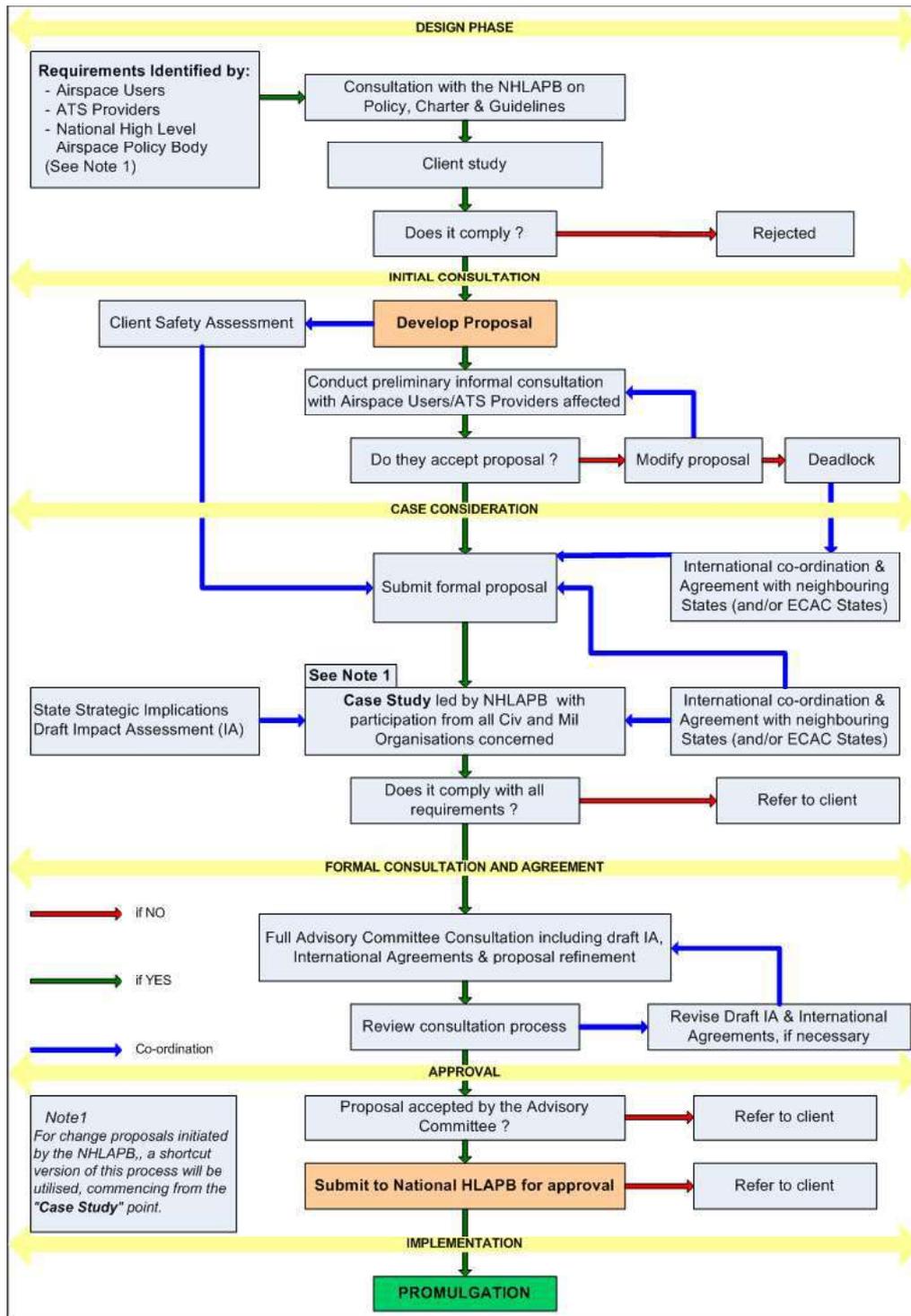


Figure 3: Common Airspace Change Process

### **3.2.7 ASM Level 1 Process for delineation of Free Route Airspace**

- 3.2.7.1 With reference to the definition of FRA, the delineation of daily structures and restrictions should be based on clear criteria established at ASM Level 1.
- 3.2.7.2 Ensuing from the national collaborative and integrated airspace planning, States should apply a common process aiming at:
- a) defining clearly the assumptions to be taken into consideration when delineating the airspace;
  - b) guaranteeing that these assumptions will be published in the appropriate LoAs in order to maintain a reference for subsequent future reviews of the airspace structure;
  - c) making a clear distinction between the strategic delineation of the airspace and the operational use of it at the tactical level.
- 3.2.7.3 National high-level policy bodies should establish the defined criteria, taking into account all airspace users and ANS providers, as well as the various issues regarding the impact of the potential free route airspace on the adjoining airspace structures, procedures and ATFCM measures in force including:
- a) the location of the Free Route Airspace (within a State's borders, adjacent to the border, cross-border location);
  - b) the classification of the airspace within which Free Route Airspace will be implemented;
  - c) the location and extent of any reserved, segregated airspace;
  - d) the definition and implementation of NPZs, if necessary;
  - e) the associated altitude and/or flight level blocks;
  - f) the impact of Free Route Airspace on adjacent airspace structures;
  - g) the impact of Free Route Airspace on the capacity of the ATC sector(s);
  - h) the separation criteria between traffic inside the ad hoc structure and transiting and/ or circumnavigating traffic;
  - i) the airspace users allowed to request and use the ad hoc structure;
  - j) the ANS providers and Air Defence (AD) units allowed to delineate and to control, if required, the ad hoc structure;
  - k) the mandatory ATS to be provided;
  - l) the mandatory coordination process, both national and international in the case of locations adjacent to or across a national border;
  - m) the mandatory coordination means;
  - n) the required airspace design tool allowing the display of the Free Route Airspace structure on the Controller Working Positions (CWP) concerned.

- 3.2.7.4 By definition, the implementation of Free Route Airspace offers the possibility of more freedom to manoeuvre and optimise the flight trajectory. However, there will still be a requirement for ASM and ATFCM at ASM Levels 2 and 3. The flight trajectory should be continuously optimised to meet the best balance between the users' needs, the prevailing flight circumstances, the requirement to ensure safety, and overall ATM efficiency. It should take into account actual weather conditions, airspace availability, any FUA structures and capacity/load relationships in the en-route or terminal airspace, or at airports.

The flight trajectory could be defined based on:

- a) specific entry/exit points to the Free Route Airspace
  - b) specific tracks between published waypoints or reporting points;
  - c) specific tracks based on headings;
  - d) specific flight level limitations
  - e) pre-determined coordination transfer points.
- 3.2.7.5 In order to accommodate airspace users' requirements, ASM Levels 2 and 3 should be able to delineate ad hoc structures (see para 3.2.8.2.2) according to short notice and/or real time demands. These areas may encompass all current FUA structures (TRA/TSA, CBA, AMC manageable D or R areas etc.) associated with the appropriate required separation and/or spacing means, as well as additional areas acting as holding areas or extended TMA airspace, created in order to guarantee flight safety in case of any ATFCM constraints (e.g. circumnavigation of adverse weather, technical limitations of ATS ground equipment etc.).
- 3.2.7.6 Different methods could be adopted when delineating ad-hoc areas:
- a) location in latitude/longitude of the dedicated points, associated with a level block;
  - b) the radius of the area centred on a point (defined by geographical coordinates), associated with the level block;
  - c) specific volume around a flight (e.g. 5NM from a flight);
  - d) specific tracks flown between published reporting points or based on a drawing on a chart (e.g. air to air refuelling or civil photo missions)
  - e) in relation to a navigational aid.

## **3.2.8 Dynamic Airspace Management**

### **3.2.8.1 General**

- 3.2.8.1.1 The intent of Dynamic Airspace Management (DAM) is to establish processes exploiting the airspace in a dynamic manner as close as practical to the time of operations to better accommodate users' requirements in accordance with ever evolving network operations. As such, the DAM process should complement ASM activities usually conducted at ASM Level 2 as described in Section 4 but restricted to a limited timeframe (i.e. the day before operations).
- 3.2.8.1.2 The DAM process refers to the use of additional procedures for the delineation and allocation of airspace, and the associated dissemination of information with

the aim of enhancing the current FUA process to respond to specific airspace requirements and/or route optimisation.

- 3.2.8.1.3 DAM addresses the planning, allocation and use of dynamic airspace structures to exploit optimum airspace capacity as a part of defining airspace configurations. This may be achieved through either existing airspace structures or those delineated ad hoc.
- 3.2.8.1.4 The elements of the dynamic airspace structure planning are:
- a) greater choice of routes by including route options supplemented by suitable alternatives as a function of modularity of airspace reservation or restriction;
  - b) greater flexibility to respond to short notice military operational requirements for existing or additional portion of airspace;
  - c) provision of proactive route activation/airspace reservation or restriction allocation through a collaborative decision making process to accommodate short-term changes in routeings and civil traffic demand in coordination with airspace reservation or restriction requests, adjusted to match the military training and operational profile.
- 3.2.8.1.5 Once an adequate information awareness system is in place, 'ad hoc structures', whether routes or areas, would be established on an ad hoc basis to meet operational needs at shorter notice than the usual ASM Level 1 process. The establishment of such ad hoc structures at ASM Level 2 or ASM Level 3 should follow the general design and safety management criteria.
- 3.2.8.1.6 Prior to implementing any DAM process at the three ASM levels, the following topics must be addressed and referred to in order to enhance the Basic FUA concept:
- a) **Delineation of Airspace Structures:** ASM Level 1 establishes airspace structures and defines their conditions of use through a series of options based on sub-division of temporary airspace reservations or restrictions and an increased number of related CDR1 routes where suitable (e.g. outside FRA environment), as well as identification of pre-defined airspace scenarios. ASM Level 1 also defines and establishes processes and procedures allowing for the delineation of additional ad hoc airspace structures at ASM Levels 2 and 3 as appropriate.
  - b) **Allocation of Airspace Structures:** At ASM Level 2, the airspace planning and allocation process enables the allocation of specific airspace configurations, based on a predefined airspace scenarios and/or an ad hoc airspace structure, in response to specific airspace requirements and/or route optimisation. At ASM Level 3, a decision-making process needs to be implemented, allowing all partners involved to discuss, modify and agree at short notice (i.e. as near real time as possible) on the allocation/reallocation of airspace on the day of operations.
  - c) **Dissemination of Information on Airspace Structures:** ASM system supported tools are used at ASM Levels 2 and 3 in order to inform all airspace users and providers affected by any airspace changes resulting from the DAM process, and to increase common situational awareness.

- 3.2.8.1.7 Within these dynamic airspace structures planning, allocation and using processes, permanent ATS routes and available CDR1s should be plannable, while predefined airspace scenarios and/or ad hoc temporary airspace reservations or restrictions would remain inactive until formally allocated.
- 3.2.8.1.8 The DAM process enables all airspace users to follow preferred and flexible flight profiles and provides for two major benefits:
- a) equitable treatment in allocation of airspace and trajectories required at short notice;
  - b) aircraft operators to increase their awareness of possible routeing options.

## 3.2.8.1.9 Summary table

ASM		ASM Level 1	ASM Level 2	ASM Level 3
Airspace Delineation	Basic FUA	- Airspace Design Process - Establishment of airspace structures (with a limited number of scenarios)		
	Dynamic Airspace Management	- Establishment of airspace structures offering greater choice of route options and flexibility to extend/ sub-divide military training areas - Ad hoc Airspace Delineation Process	Ad Hoc Structure	Ad Hoc Structure
Airspace Allocation	Basic FUA	Priority Rules and Negotiation Process	Current AMC Process	Limited to real time activation / deactivation
	Dynamic Airspace Management	'Modus Operandi' of predefined scenarios	Enhanced AMC Process moved closer to time of operation	Collaborative Decision-making Process at very short notice
Information, Collection and Dissemination	Basic FUA	AIP NOTAM	AUP / UUP EAUP/EUUP	Tel / Fax / Radio / NOTAM / Data Processing
	Dynamic Airspace Management	Airspace Data Repository	Airspace Data Repository	Airspace Data Repository Tel / Radio / Data Link Digital NOTAM

Table 2: Enhanced Basic FUA Process with Dynamic Airspace Management

### **3.2.8.2 Delineation of dynamic airspace structures**

#### **3.2.8.2.1 ASM Level 1 Process for design of dynamic airspace structures enabling activation of predefined airspace configurations**

3.2.8.2.1.1 The design of an ATS route structure, including CDR1s and OAT routes and of temporary airspace reservations or restrictions (TRA/TSA/CBA), including predefined airspace scenarios, at national ASM Level 1 and the traffic distribution at Strategic ATFCM Level are developed in close correlation within the framework of the European Network Operations in a coordinated and cooperative process at national, sub-regional and regional level:

- a) the route architecture should be planned to include adjustable elements in order to accommodate variations in expected traffic demand;
- b) in an FRA environment, modularity of temporary airspace reservations or restrictions and/or identification of pre-defined airspace scenarios, especially across State boundaries, should be promoted to introduce more flexibility to accommodate civil/military demands, while
- c) the traffic distribution conforms with the set of predefined airspace configurations in order to derive the best possible capacity.

#### **3.2.8.2.2 ASM Level 1 Process allowing the delineation of ad hoc structures at ASM Levels 2 & 3**

3.2.8.2.2.1 With reference to the definition of DAM (contained in paragraph 3.2.8.1.2), the daily delineation of ad-hoc structures at ASM Levels 2 and 3 should be based on clear criteria established at ASM Level 1.

- a) resulting from the national collaborative and integrated airspace planning, States should apply a common process aiming at:
- b) defining clearly the assumptions to be taken into consideration when delineating the airspace;
- c) guaranteeing that these assumptions will be published in the appropriate LoAs in order to maintain a reference for subsequent future reviews of the airspace structure;
- d) making a clear distinction between the strategic delineation of the airspace and the operational use of it at tactical level.

3.2.8.2.2.2 High-level policy bodies should establish the defined criteria, taking into account all airspace users and ANS providers, as well as the various issues regarding the impact of the potential ad hoc structure on the current airspace structures, procedures and ATFCM measures in force:

- a) the location of the ad hoc structure (within a State's borders, adjacent to the border, cross-border location);
- b) the classification of the airspace within which the ad hoc structure will be implemented;
- c) the airspace status (reserved, segregated);
- d) the associated altitude and / or flight level blocks;
- e) the impact of the ad hoc structure on the current airspace structure;

- f) the impact of the ad hoc structure on the capacity of the ATC sector(s);
- g) the separation criteria between traffic inside the ad hoc structure and transiting and / or circumnavigating traffic;
- h) the airspace users allowed to request and use the ad hoc structure;
- i) the ANS providers and Air Defence (AD) units allowed to delineate and to control, if required, the ad hoc structure;
- j) the mandatory ATS to be provided;
- k) the mandatory coordination process, both national and international in the case of locations adjacent to or across a national border;
- l) the mandatory coordination means;
- m) the required airspace design tool allowing the display of the ad hoc structure on the Controller Working Positions (CWP) concerned.

3.2.8.2.2.3 In busy and congested airspace, a significant number of flights operate on published ATS routes. In less constrained airspace there might be more freedom to manoeuvre and optimise the flight trajectory. Both cases, however, offer a possibility of ad hoc routeings at ASM Levels 2 and 3, subject to sector workload, e.g. in case of early closure of an AMC Manageable Area. The flight trajectory should be continuously optimised to meet the best balance between the users' needs, the prevailing flight circumstances, the requirement to ensure safety, and overall ATM efficiency. It should take into account actual weather conditions, airspace availability and capacity/load relationships in the en-route or terminal airspace, or at airports. The ad hoc routing could be defined based on:

- a) specific tracks between published reporting points;
- b) specific tracks based on headings;
- c) random coordination transfer points.

This freedom to manoeuvre for optimisation of flight trajectory is emphasised in a FRA environment, where dynamic management of temporary airspace structures (e.g. TSA/TRA), including ad hoc delineation of airspace structures, should be exploited.

3.2.8.2.2.4 Similarly, and in order to better match the airspace users' requirements, ASM Levels 2 and 3 should be able to delineate ad hoc areas according to short notice and/or real time demands.

3.2.8.2.2.5 These areas may encompass all current FUA structures (TRA/TSA, CBA, AMC manageable D or R areas etc.) associated with the appropriate required separation and/or spacing means, as well as additional areas acting as holding areas or extended TMA airspace, created in order to guarantee flight safety in case of any ATFCM constraints (e.g. circumnavigation of adverse weather, technical limitations of ATS ground equipment etc.).

3.2.8.2.2.6 Different methods could be adopted when delineating ad hoc areas:

- a) location in latitude/longitude of the dedicated points, associated with the level block;
- b) the radius of the area centred on a point (defined by geographical coordinates), associated with the level block;

- c) a specific volume around a flight (e.g. 5 NM from a flight);
  - d) specific tracks flown between published reporting points or based on a drawing on a chart (e.g. air to air refuelling or civil photo missions);
  - e) in relation to a navigational aid.
- 3.2.8.2.2.7 The use of a common airspace design tool allowing the representation of the area and its display on the current traffic situation picture may be required. It would ease the collaborative decision-making process between the partners concerned in presenting an ad hoc area (impact assessment) and to avoid any misunderstanding in the definition of its volume and its location.
- 3.2.8.2.2.8 The HLAPB should establish an efficient coordination process between all airspace users and ANS providers, allowing the delineation of ad hoc structures at ASM Levels 2 and 3. During the process development, care should be taken that operations on short notice will not be hindered by other activities already allocated; furthermore, the HLAPB should be informed of any discrepancies in order to review the process, ensuring that it serves efficiently the purposes for which it was designed initially.
- 3.2.8.2.2.9 The ASM Level 2 and 3 negotiation rules should be published in the LoAs established at ASM Level 1. These rules should clearly define the civil/military coordination process, the circumstances (nature of activity, civil/military coordination capability, etc.) and the conditions (ad hoc airspace classification, coordination procedures, etc.) under which the ad hoc structures could be delineated. Coordination between all parties involved (civil and military airspace users, ANS providers, NM, adjacent AMCs), should be conducted in order to maintain consistency with the current airspace structures, while ensuring that operational and safety requirements are met and that ad hoc structures do not impact on ATFCM measures in force.
- 3.2.8.2.3 **Delineation of ad hoc structures at ASM Level 2**
- 3.2.8.2.3.1 According to the criteria and processes established at ASM Level 1, the AMCs should be able to perform ad hoc structure delineation at short notice in order to respond quickly and effectively to airspace users' requirements.
- 3.2.8.2.3.2 The AMCs should apply standard procedures, including the collection, analysis and conflict resolution of the airspace requests and the airspace allocation. However, due to the inherent short time span, these basic procedures should be conducted simultaneously with a close coordination process involving all airspace users, ANS providers, adjacent AMCs concerned and the NM.
- 3.2.8.2.3.3 The methods used to delineate ad hoc routeing and areas should comply with the guidelines established at ASM Level 1.
- 3.2.8.2.3.4 The use of a common airspace design tool may ease the coordination process in guaranteeing the exchange of harmonised airspace data information and in ensuring that short-notice operations and associated ad hoc airspace delineation will not be hindered by other activities that have already been allocated at ASM Level 2 but are not yet occurring.

### 3.2.8.2.4 **Delineation of ad hoc structures at ASM Level 3**

- 3.2.8.2.4.1 According to ASM Level 1 criteria and processes, ASM Level 3 should be able to perform real time delineation of ad hoc airspace structures in order to better match the airspace users' needs and to accommodate the traffic flow requirements in optimising the flights' trajectories.
- 3.2.8.2.4.2 Adequate real time coordination facilities (airspace design tool, direct controller-controller communication means, etc.) should be required and accurate procedures should be published in relevant LoAs.
- 3.2.8.2.4.3 The methods used to delineate ad hoc routings and areas should comply with the guidelines established at ASM Level 1.
- 3.2.8.2.4.4 The use of a common airspace design tool may ease the coordination process in guaranteeing the exchange of harmonised airspace data information and in allowing all parties concerned to assess in real time the impact of the ad hoc structure on the current air traffic picture. It also permits the automatic and simultaneous display of the new airspace structure on all CWP's concerned.

### 3.2.8.3 **Airspace Allocation Process**

#### 3.2.8.3.1 **Dynamic Airspace Allocation Process at ASM Level 2**

- 3.2.8.3.1.1 Pre-tactical ATFCM activities for an optimised capacity management allow the NM together with ACCs/FMPs concerned to identify capacity shortfalls which can be solved by a better airspace allocation early in advance. Then, at pre-tactical ASM Level 2, the activation of airspace configurations to resolve a substantial capacity issue or military operational requirement is coordinated directly between the NM and designated AMCs (in addition to standard coordination with ACCs/FMPs) providing them with wider information on overall traffic demand.
- 3.2.8.3.1.2 Equally, the use of a more dynamic route activation/airspace allocation to accommodate local, sub-regional and regional short-term needs entails closer coordination between AMCs, ACCs/FMPs and NM in order to assess the impact of local AMC decisions on the overall traffic situation.
- 3.2.8.3.1.3 This coordination is supported by various systems allowing for the required exchange of information between them as illustrated in Figure 4 below.

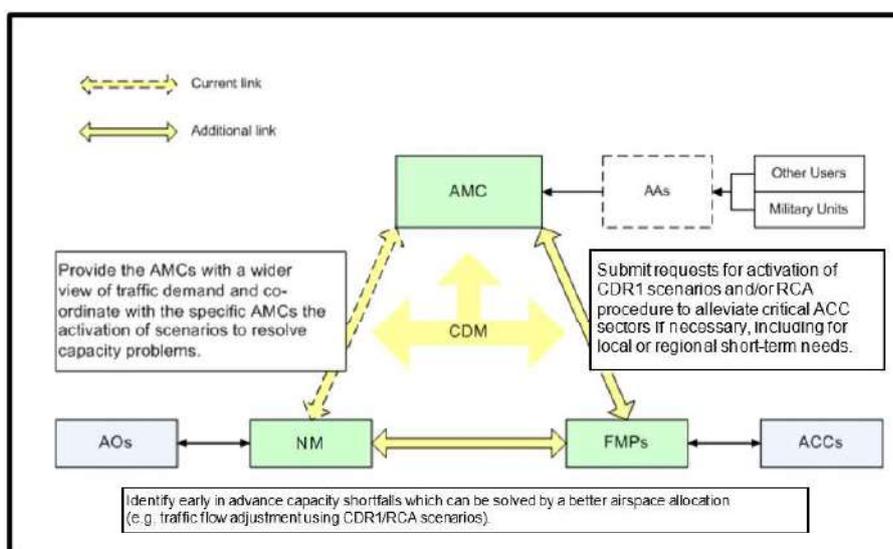


Figure 4: AMC, FMP and NM co-ordination process

3.2.8.3.1.4 The airspace allocation process at ASM Level 2 should also respond to specific short notice airspace requirements and/or route optimisation. It should ensure that within such a reduced time window (e.g. up to a few hours before operations), the AMC can still collect, coordinate and assess the airspace request with all parties concerned as illustrated above in Figure 4, before determining airspace and routing allocations.

### 3.2.8.3.2 Dynamic Airspace Allocation Process at ASM Level 3

3.2.8.3.2.1 The ASM Level 3 airspace allocation, as described in Chapter 5.5, is commonly an activation / deactivation process of airspace structures in accordance with ASM Level 2 allocation decisions published in the AUP/UUPs. However, there is a need for the dynamic allocation process that could be conducted both at pre-tactical and tactical level.

3.2.8.3.2.2 At ASM Level 3, airspace could be requested and delineated within a very short period of time, i.e. as close to real time as possible. The airspace allocation at tactical level could be done directly between civil and military units concerned based on explicit rules and procedures laid down in their LoA.

3.2.8.3.2.3 The dynamic allocation process at ASM Level 3 requires the establishment of an efficient Collaborative Decision Making (CDM) process, based on active coordination between the actors involved.

3.2.8.3.2.4 The narrowing of the AMC time window and the shift towards ASM Level 3 allocation does not imply a degradation of the responsibility levels, but only refers to a change in:

- a) actors involved in the negotiation process;
- b) the time available; and
- c) the required advance notice of the decision taken, including notification to airborne traffic.

3.2.8.3.2.5 The goal of the ASM Level 3 airspace allocation decision-making process illustrated in Figure 5 below is to enable the actors to improve mutual knowledge of the forecast/current situations and of each other's constraints, preferences and capabilities. It consists of proactive negotiation and resolution of potential short-term/actual airspace problems. It requires the development of new system-supported tools and/or the enhancement of the present technical facilities or an extension of those identified for ASM Level 2.

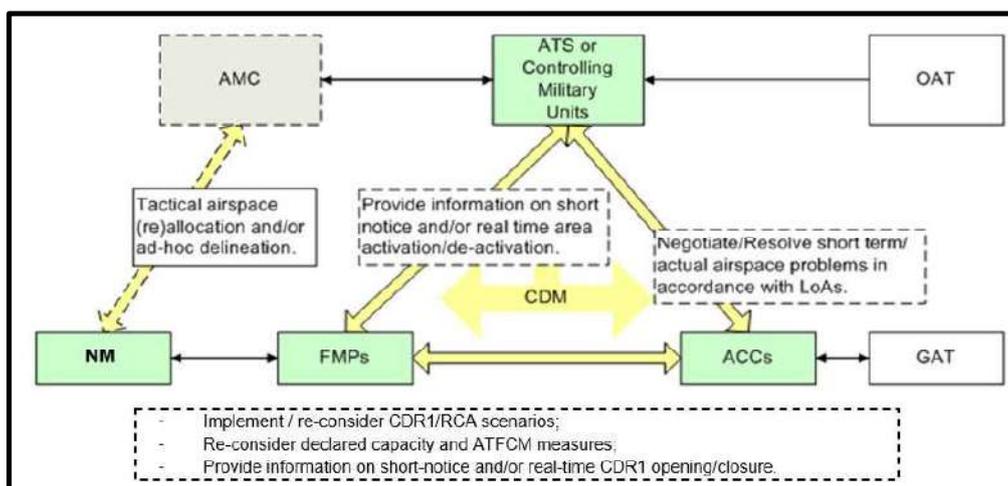


Figure 5: Establishment of a CDM process for dynamic airspace allocation ASM Level 3

### 3.2.8.4 Dissemination of Information on Short-notice Changes to Airspace Status

#### 3.2.8.4.1 Current AUP/UUP Process

3.2.8.4.1.1 Within the current AUP/UUP process described in Section 6, the dissemination of dynamic airspace allocation decisions is based on broadcasting information via NOP Portal and eAMI messages for B2B service.

3.2.8.4.1.2 Such AMC decisions on dynamic airspace allocation are also notified directly to AOs based on the personalized addressing of those potentially interested through NM, by e.g. Re-routing Proposal (RRP) messages.

#### 3.2.8.4.2 Airspace Data Repository

3.2.8.4.2.1 In order to get full benefits from dynamic airspace allocation and to overcome the limitations of the current mechanisms for the dissemination of information, a common airspace data pooling system is to be set-up as the 'Airspace Data Repository'.

3.2.8.4.2.2 The ADR is based on a link between the European AIS Database (EAD), the NM Environment Database and is able to provide a collaborative distributed environment for the storage, exchange and dissemination of up-to-date and accurate airspace data between airspace users and ATM providers.

### 3.2.8.4.3 **ATM Units Communication**

3.2.8.4.3.1 There is a need to ensure, in particular, the real time notification to all ATM parties concerned, including the NM, if required, with up-to-date information on the short-term allocation and/or current use of airspace.

### 3.2.8.4.4 **Controller - Pilot Communication**

3.2.8.4.4.1 Bringing the pre-tactical and tactical timeframes closer together also implies that short notice or real time changes to airspace status stemming from the dynamic airspace allocation process could effectively affect airborne traffic.

3.2.8.4.4.2 There is therefore a need to establish a process to inform users in-flight. There are different possibilities to inform pilots on these airspace changes, i.e. through AO on a dedicated frequency, ATC and data link.

### 3.2.8.4.5 **Flight Plan Updates**

3.2.8.4.5.1 More generally, so as to ascertain the necessary update of flight plans affected by short notice or real time changes to airspace status, current flight plan processing and distribution processes should be enhanced in order to provide FPL changes up to and including the airport of destination, through the use of standard criteria for FPL processing so as to cover the following issues:

- a) a clear definition of the responsibility of the IFPS as regards FPL amendments close to the EOBT (i.e. until an agreed time before EOBT);
- b) similarly, the definition of responsibility of the ATSU concerned in FPL amendments (from an agreed time before EOBT);
- c) when the flight is airborne, the establishment of a process permitting the IFPS to consider the change to the initial FPL, allowing all ATSUs concerned (including the airport ATSU) to assess and validate this change and ensuring the distribution of this change to the appropriate addressees.

Based on the D-1 AUP and UUP process, AOs should update their flight plan according to the changes proposed until an agreed time, e.g. 1 hour, before EOBT. Any change that has occurred based on the D-1 AUP and UUP process after the agreed time before EOBT may still be processed through re-filing of the flight plan pending assessment and validation of the ATSU(s) concerned. Real time changes to airspace status are tactically processed through ATSUs following a standard current flight plan change process.

### 3.3 INTERNATIONAL COLLABORATIVE AIRSPACE PLANNING

#### 3.3.1 General

3.3.1.1 Airspace organisation and management should evolve to a more collaborative function at an international level in order to support the ECAC collective responsibility for all aspects of planning, design, maintenance, update, civil/military coordination, regulation and airspace legislation. The main objective is to optimise the airspace structure of the entire ECAC airspace so as to be more responsive to the airspace users' needs.

#### 3.3.2 Airspace Configurations

3.3.2.1 In terms of international collaborative airspace planning, the Airspace Strategy introduces the Airspace Configuration Concept as the solution to improve the CDM process at a European level. The airspace configurations are to be comprised of predefined fixed and flexible airspace structures, including temporary airspace reservations, if feasible pre-defined airspace scenarios, routing options or optimised trajectories and optimum ATC sectorisation capable of being dynamically adapted to traffic demand. Airspace configurations are to be activated, through a CDM process, depending upon the driving strategic objective(s) for a particular geographic area and/or time period.

3.3.2.2 Airspace Configurations are aimed at responding to differing strategic objectives (capacity, flight efficiency, environmental) at airspace network level. Airspace Configurations result from improvements to the organisation of the airspace and Airspace Network Management. Airspace Configurations provide for a more integrated approach between airspace structures (including optimum trajectories and Terminal Airspace) and airspace network management with more flexibility in the latter. Furthermore, Airspace Configurations respond to more strategic objectives (they extend beyond demand and capacity balancing).

3.3.2.3 The composition of en-route and terminal routes, optimized trajectories, airspace reservations and ATC sectors into airspace configurations is defined and dynamically managed together to respond flexibly to different performance objectives, which vary in time and place. The same applies when managing Free Route Airspace.

3.3.2.4 Airspace configurations are activated through integrated collaborative decision making processes at national, sub-regional (FAB) and European airspace network level.

3.3.2.5 The airspace configurations are to ensure that safety, flight efficiency, airspace capacity and environmental protection are taken into account of when developing methodology for a particular airspace configuration to be applied.

3.3.2.6 Processes and procedures should be developed to enable coordinated access to different airspace configurations e.g.:

- a) weekend routes;
- b) CDR1s and other routes on other busy days;
- c) Cross Border / FIR/UIR Boundary Operations;

- d) night routes;
- e) direct routes;
- f) free route airspace;
- g) pre-defined airspace scenarios.

### **3.3.3 ASM over the High Seas**

- 3.3.3.1 The provisions described hereunder are complementary to the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (Chapter 3.3).
- 3.3.3.2 The basis of the agreement reached on the Concept of the Flexible Use of Airspace by the ECAC States is that it should not be in contradiction with the Chicago Convention and its Annexes or the United Nations Convention on the Law of the Sea. Access to high seas airspace cannot be denied, nor can State aircraft be forced to participate in the application of the FUA concept. Any procedure or agreement developed must not give the operators of State aircraft the perception that their operations could be restricted in any way. Therefore, the procedures and/or agreements must also acknowledge that negotiating the use of the airspace is the ideal; however there would be circumstances when only notification of operation would be possible or operational considerations may preclude either negotiation or notification.
- 3.3.3.3 The procedures in this Handbook are a set of guidelines for ECAC States with regard to the application of the FUA concept over the high seas.
- 3.3.3.4 As regards airspace reservations, over the high seas only D areas, as introduced in ICAO Annex 2 – Rules of the Air, may be established. In this context it should be noted that such areas are to be established without prejudice to the rights and duties of States under the Convention on International Civil Aviation (Chicago Convention) and its Annexes, or the 1982 UN Convention on the Law of the Sea. However, the States should introduce the flexible management of such D areas to the extent possible and based on the actual use of airspace.
- 3.3.3.5 The CBA concept as it is described in the present document is applicable in sovereign airspace. For “danger areas” established over the high seas with due regard to ICAO requirements, and used jointly across international FIR/UIR boundaries, the States concerned shall coordinate and establish procedures for allocation and notification in written agreements, reflected as necessary in their respective national AIP.
- 3.3.3.6 The FUA concept may be employed over the high seas in a manner consistent with the principles used for airspace of sovereign territory. When so applied, it should be recognized that State aircraft of all other States can exercise their right to fly in any airspace over the high seas under the principle of “due regard” as described in the Chicago Convention, (Article 3 a) and d)). However, State aircraft should comply with the ICAO provisions to the extent possible.

- 3.3.3.7 Civil aircraft and State aircraft operating in accordance with ICAO provisions are required to comply with the provisions of Annex 2 which apply without exception over the high seas. In particular, the provisions of Annex 2, paragraph 3.6.1.1 regarding the requirement to obtain a clearance before operating as a controlled flight, and paragraph 3.6.5.1 regarding the requirement to establish two-way communication with the unit providing air traffic control service, are to be observed.
- 3.3.3.8 In order to provide added airspace capacity and to improve efficiency and flexibility of aircraft operations, States should establish agreements and procedures providing for a flexible use of airspace including that reserved for military or other special activities. The agreements and procedures should permit all airspace users to have safe access to such airspace. When applicable, such agreements and procedures should be established on the basis of a sub-regional agreement.
- 3.3.3.9 Similarly, the criteria for the establishment of CDR1s and FRA over the high seas are the same as those for CDR1s and FRA in sovereign airspace. The establishment of CDR1s is an ASM Level 1 responsibility. In addition, States should take into account the potential requirement for ASM Level 3 coordination to re-route traffic off a CDR1 or to avoid a danger area, due to activities over the high seas.

### **3.3.4 Early Access to Weekend Routes Process**

#### **3.3.4.1 General**

- 3.3.4.1.1 The procedures described in this chapter have been agreed at international level<sup>4</sup> to facilitate the Early Access to Weekend/Conditional Routes on Busy Fridays during the summer season and are reviewed whenever appropriate in the light of experience gained.
- 3.3.4.1.2 The Early Access to Weekend (EAW) routes process is based on an overall agreement between participating States for granting access to Busy Fridays, from the first Friday in May to last the Friday in October. Participating States are encouraged to increase the number of Busy Fridays whenever practicable, also outside the specified period.
- 3.3.4.1.3 The main purpose of the international agreement for EAW routes on agreed Busy Fridays is to grant airspace users access to selected airspace volumes and corresponding CDR1s (also on a flight planning level) as of 10.00 UTC on relevant Fridays.
- 3.3.4.1.4 Even though the following agreed procedures are not applicable to all ECAC States, the agreement reached between participating States should encourage the downstream States to seek continuity in the early usage of weekend routes in their airspace.

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<sup>4</sup> As agreed at the Airspace and Navigation Team (ANT/42), the Airspace Management Sub-Group (ASMSG) of NETOPS (former ANT) is the international forum to harmonise the discussion and agreement on the Early Access to Weekend/Conditional routes on Busy Days during the summer season.

**3.3.4.2 Agreed Procedures - International Early Access to Weekend Routes Agreement**

3.3.4.2.1 Each ECAC State wishing to participate in the international agreement set-up to facilitate the EAW process across Europe notifies its decision to NM by a request at existing working arrangements in place. The decision may be supported by a written request and, if deemed necessary by the state, an appropriate AIS publication (e.g. AIP Supplement). This notification will clarify the selected Busy Friday during the summer season and CDR1s, if not all, for which early access from 10.00 UTC is granted. The notification could also include additional busy days and related CDR1s, if not all, for which early access from 10.00 UTC is granted.

3.3.4.2.2 Consolidated information of Busy Fridays and selected CDR1s, if not all, will be provided on the NOP Portal (Strategic web page) at least one AIRAC cycle before summer season. Daily Information on airspace and/or CDR1 status is notified via AUP/UUP, and it will cover the extended availability agreed within the frame of the EAW arrangements.

**3.3.4.3 Agreed Procedures - Annual Notification of National Differences**

3.3.4.3.1 The AIP Supplement will be published independently by each EAW participating state and should reach the airspace users early enough to help them in preparation of the summer operations. However, in order to provide timely information on EAW, the publication will not be delayed later than one AIRAC cycle before the start of the summer season. After the publication of all EAW AIP Supplements, EUROCONTROL will consolidate the information on Busy Fridays and CDR1s and FRA AMA respectively. This information will be made available on NOP portal.

3.3.4.3.2 If EAW routes or airspace volumes are unavailable in one participating State for one or more of the Busy Friday for the next summer season, the necessary coordination process between the States concerned will be performed through the EAW web-based application on the EUROCONTROL website. Whenever required, a specific coordination arrangement can be put in place (e.g. cross-border CDR1s etc.).

**3.3.4.4 Agreed Procedures - Exceptional Deviations**

3.3.4.4.1 The HLAB of the participating States can determine exceptional circumstances in which the early access arrangements for Busy Fridays may be cancelled because of specific needs for civil or military activities.

3.3.4.4.2 Under these circumstances AUP/UUP shall reflect corresponding airspace and/or route (un)availability. In case a State has published specific AIS notifications (e.g. AIP Supplement) regarding EAW arrangements, a NOTAM informing about this cancellation of early access is to be dispatched 48 hours in advance<sup>5</sup>.

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<sup>5</sup> In the frame of rolling AUP process the information of this cancellation could be repeated in the national AUP on the preceding Thursday of cancelled Busy Friday.

### 3.3.5 Other Additional Busy Periods Arrangements

#### 3.3.5.1 General

3.3.5.1.1 The procedures described in this section aim at facilitating airspace management processes to address busy military or civil periods other than Busy Fridays.

#### 3.3.5.2 Busy Periods related to Large Military Exercises

3.3.5.2.1 The participating States should communicate to NATO NATMC, through the EAW web based application on the EUROCONTROL web site, the Busy Days in the summer period to assist in the planning of large military exercises, up to one and a half year in advance (e.g. during late 2010 for Summer 2012).

3.3.5.2.2 Taking due account of this advance notice, national ASM Level 1 military authorities will identify Busy Military Periods, including major national and international exercises which may affect civil traffic in the following summer and which need to be incorporated in the corresponding "Network Operations Plan".

DATES	EXERCISES	AREA INVOLVED
11-25 March 2008	STRONG RESOLVE	Norway & Poland
5-19 May 2008	ARDENT GROUND	Germany
6-17 May 2008	ELITE	S Germany
May 2008	DYNAMIC MIX	W Med/Spain
18-29 June 2008	CLEAN HUNTER	N Europe
3-14 September 2008	NATO AIR MEET	S Europe
October 2008	DESTINED GLORY	E Med/Greece

**Table 3: Fictitious example of busy military periods**

#### 3.3.5.3 ASM Arrangements for Other Busy Days

3.3.5.3.1 In addition, to increase the effectiveness of airspace use, each State participating in the international EAW process can identify Other Busy Days, for which activation of identified coordinated access to airspace configurations could also be agreed to solve anticipated capacity problems.

3.3.5.3.2 The States concerned should perform any necessary coordination through the EAW web based application on the EUROCONTROL web site or a specific coordination arrangement to agree to a number of Other Busy Days.

3.3.5.3.3 Once the agreement and coordination process regarding Other Busy Days has been completed at ASM Level 1 in early March of each year, the States concerned should provide their AMCs with clear coordination procedures with military authorities and neighbouring AMCs, if required.

3.3.5.3.4 On the day preceding Other Busy Days, the AMCs concerned independently consult their military authorities in accordance with local procedures and adjacent AMC(s), if required, to seek the final agreement for airspace allocation

the following day.

### **3.3.6 Cross Border / FIR/UIR Boundary Operations**

#### **3.3.6.1 General**

3.3.6.1.1 The intent of Cross Border / FIR/UIR Boundary Operations (CBO) is to establish a process which would encompass activities conducted by one or more States, within an area established across international borders or entirely within the airspace under the jurisdiction of one State.

3.3.6.1.2 The CBO Process would rationalise the requirements for national airspace reservation (TRA/TSA) and/or airspace restriction (D/R) by the allocation and shared use of areas established on both sides of a border (Cross-Border Areas, CBAs), as well as through a shared use of existing, relocated or newly developed TRAs/TSAs, including AMC manageable D and R areas, entirely established within airspace under the jurisdiction of one State but adjacent to a neighbouring State or States.

3.3.6.1.3 Provided the required coordination between States, Cross Border Operations could be achieved in different ways:

- a) Establishing a Cross Border Area, any cross border airspace structure or any suitable national RSA managed by a Lead AMC;
- b) Use national TSAs/TRAs (including AMC manageable D and R areas) both sides of the States' border, leaving the management to the national AMCs.

3.3.6.1.4 For those States willing to apply Cross-Border / FIR Boundary Operations, formal agreements are necessary in setting up the required cooperation in order to mitigate regulatory and procedural differences. These agreements should cover all relevant legal, operational and technical issues (e.g. sovereignty, defence, operations, environment and search and rescue) and specify one common set of criteria for separation between civil and military flights.

3.3.6.1.5 The framework agreement to be established between the States willing to apply CBO should take into account the following factors:

- a) airspace classification and organisation;
- b) responsibility and liability for the provision of ATS;
- c) Radar and radio coverage;
- d) SAR responsibility;
- e) ATS procedures and common language;
- f) SSR code allocation;
- g) type of flight (VFR or IFR);
- h) maximum number of participating aircraft;
- i) harmonised coordination procedures and flight plan data exchange;
- j) communications;

- k) Air Defence notification procedures (including quick reaction alerts and Alpha Scramble);
- l) common AMC procedures;
- m) planning/scheduling procedures, relationship with AMC(s) concerned;
- n) activation/deactivation procedures, relationship with ACC(s) concerned;
- o) priority rules;
- p) ATS occurrences reporting procedures;
- q) appropriate military ATCOs training;
- r) environmental issues.

3.3.6.1.6 After having established a CBA or having agreed to a shared use of TRA/TSA or manageable D or R areas, according to the guidelines and criteria mentioned above, the States involved should agree on and define clearly the following usage criteria:

- a) periods of activity taking into consideration the national holidays of the States concerned;
- b) ATS providers allowed to provide ATS associated with the control responsibility and ATC sectorisation;
- c) other units (e.g. Air Defence units) allowed to handle traffic in the shared CBA/TRA/TSA or D or R areas;
- d) airspace users allowed to use the shared CBA/TRA/TSA or D or R areas and the maximum number of participating aircraft;
- e) use of a common language;
- f) control procedures, including type of flight (VFR, IFR), SSR code allocation and ATC and/or Air Defence procedures related to shared CBA/TRA/TSA and D or R areas, for:
  - flights in evolution;
  - flights transiting; and
  - flights entering/exiting;
- g) procedures to be followed by flights operating autonomously within the shared CBA/TRA/TSA or D or R areas (e.g. UAS);
- h) separation criteria between the traffic in the shared CBA/TRA/TSA or D or R areas, and the traffic crossing it; or, between the traffic inside the areas and the traffic circumnavigating them;
- i) mandatory ATS means (i.e. primary radar, secondary radar, frequency coverage etc.);
- j) mandatory coordination means (i.e. direct controller-controller communication, exchange of radar and flight plan data, etc.);
- k) contingency procedures in the event of disruption of ATS; and
- l) ASM Level 2/3 to ASM Level 1 ATS occurrence reporting procedure.

### 3.3.6.2 Cross Border Areas (CBAs)

3.3.6.2.1 When the possibility exists to rationalise the requirements for national

TRAs/TSAs as well as D and R areas on both sides of a border, the neighbouring States concerned should endeavour to optimise the airspace and route structures in the area around the border by establishing a "Cross-Border Area" (CBA). This can be achieved by establishing such CBAs in the form of either TRAs/TSAs, or AMC-manageable D and R areas, with, where applicable, associated CDR1s so as to benefit both GAT and OAT operations without any boundary constraints.

- 3.3.6.2.2 It is expected that the CBA would be utilised by users from more than one State. To resolve the problem of the allocation of this airspace between potential users, the AMCs in charge of such allocation should have an unambiguous set of priority rules defined at ASM Level 1 by agreement between the respective national administrations and as set out in the agreement.
- 3.3.6.2.3 The framework agreement to be established between the States concerned, should, apart from the general factors listed in 3.3.6.1.4, also need to take into account the following specific factors addressing CBA issues:
- a) ATS delegation;
  - b) airspace classification;
  - c) ATC sectorisation;
  - d) separation criteria between civil and military flights; and
  - e) possibility of subdivision of CBAs.
- 3.3.6.2.4 After having established a CBA according to the guidelines and criteria mentioned above, the States involved should agree on and define clearly the CBA usage criteria and consider a common airspace classification, if applicable, in accordance with ICAO provisions.
- 3.3.6.2.5 A common AMC process including the planning of reservations, the airspace request and allocation and the activation/deactivation procedures, should be established between the AMCs concerned according to an agreed priority rule and an associated timetable. In order to harmonise the AUP/UUP publication and simplify the relationship with the NM, the Lead AMC Concept should be applied.

### **3.3.6.3 TRA/TSA and D or R Areas Sharing**

- 3.3.6.3.1 When the possibility exists to rationalise the use of national TRAs/TSAs, including AMC manageable D and R areas, by sharing them between users from more than one State, the States concerned should endeavour to establish the necessary agreements allowing such airspace sharing with the aim to make the best use of the available airspace.
- 3.3.6.3.2 The national AMC responsible for such area(s) should be designated. Allocation of those TRAs/TSAs, or AMC-manageable D and R areas that are shared between multinational users should be supported by a set of unambiguous priority rules laid down in ASM Level 1 agreement.
- 3.3.6.3.3 Common procedures for Cross-Border / FIR/UIR Boundary Operations to share CBAs, TRAs/TSAs and D or R areas between two or more adjacent States should be developed offering the opportunities to States willing to merge their national collaborative airspace planning process in order to apply common airspace

management rules (e.g. Functional Airspace Block).

3.3.6.3.4 The framework agreement between the States concerned should, apart from the general factors listed under 3.3.6.1.4), consider, as a minimum, the following specific factors:

- a) designation of a Lead AMC, if so required;
- b) OAT transit procedures;
- c) diplomatic clearances procedure;
- d) responsibility and liability for ATS provision;
- e) separation criteria between civil and military flights;
- f) opening/closure information dissemination (e.g. shared airspace data repository);
- g) awareness of airspace classification (if applicable).

#### **3.3.6.4 Cross-border CDR1s**

3.3.6.4.1 In order to facilitate aircraft crossing national borders, states will establish Cross-Border CDR1s according to the cooperative planning process taking place within the specialised EUROCONTROL/NM Route Network Development Sub-Group (RNDSG).

3.3.6.4.2 This coordination process between the neighbouring States will allow harmonising to the greatest possible extent the categorisation, flight levels and intended availability of such CDR1s.

3.3.6.4.3 As the CDR1 will extend through the area of responsibility of more than one AMC, a common AMC process should be established allowing AMCs concerned to delegate their responsibility for the coordination of the harmonised availability of an individual CDR1 on a route by route basis to a Lead AMC.

#### **3.3.7 ATS Route Network and other Airspace Structures Development**

3.3.7.1 ATS route network and other airspace structures development should be considered as a set of enablers for the successful definition and application of airspace configurations.

3.3.7.2 The planning and establishment of Free Route Airspace, permanent ATS routes and CDR1s, including OAT Transit Routes System, as well as of military reserved or segregated airspace (TRA/TSA/CBA) and NPZs is conducted nationally and internationally within the framework of a European coordinated and cooperative process.

3.3.7.3 The optimisation of the existing and future ATS route and other airspace structures network planning, including Free Route Airspace is initially made through the national ASM Level 1 coordination process.

3.3.7.4 This optimisation should be done in compliance with the cooperative planning process taking place within the specialised NETOPS Team sub-groups.

- 3.3.7.5 The annual national airspace review including the use of Free Route Airspace, CDR1s and CDR1/routeing scenarios and of military training areas (TRA/TSA/CBA) as well as NPZs has to take place after each summer season so as to take into account shortcomings identified in the course of the continuous management of traffic flows. The proposals made for the resolution of these shortcomings must be coordinated through the NETOPS Team structure (see Figure 6 and Annex 2). Particular attention should be paid to the consistency with the ATFCM process.

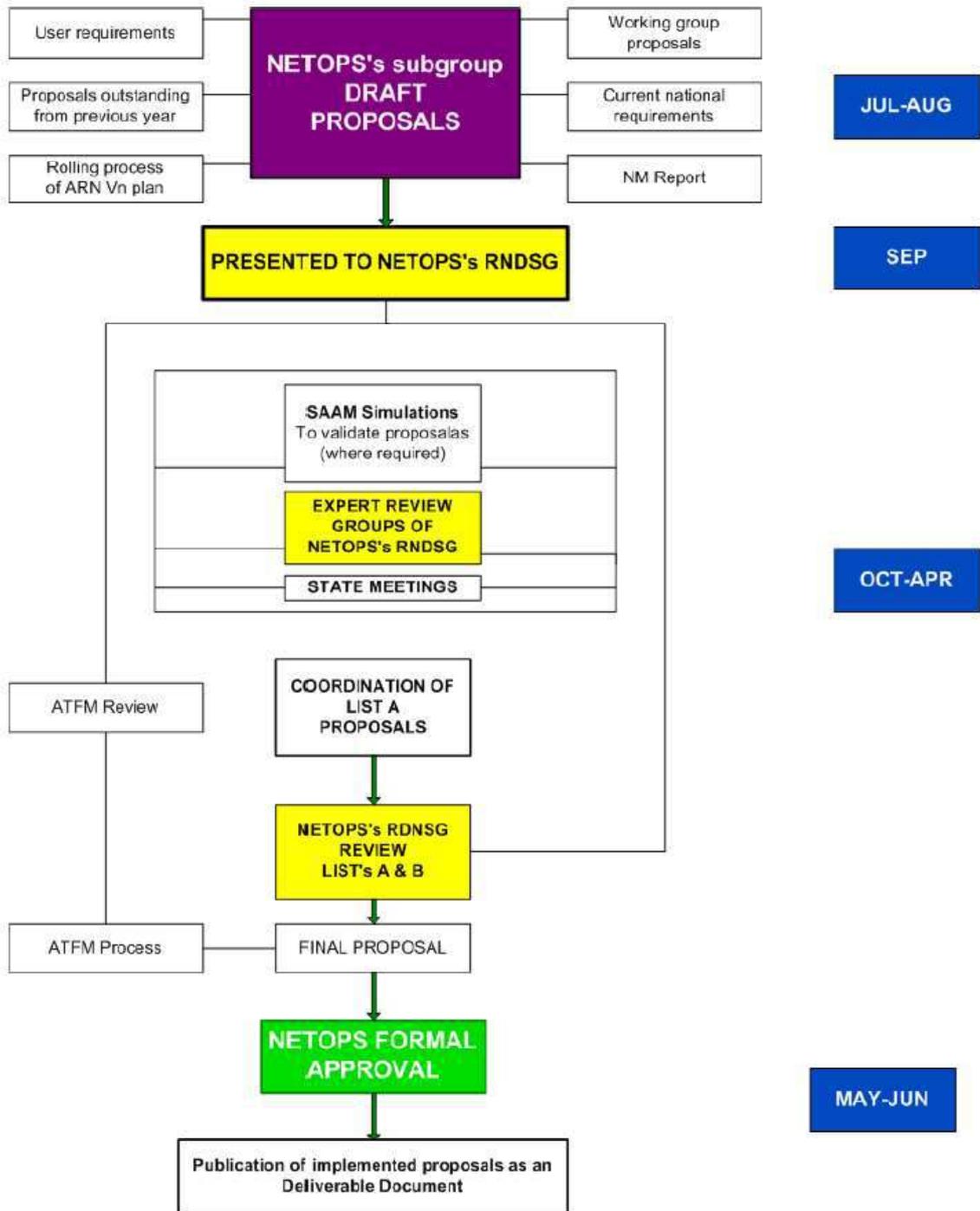


Figure 6: Annual rolling process for short-term improvements to the ATS route network

### **3.4 NATIONAL AND INTERNATIONAL PROCESSES AT ASM LEVEL 1 FOR THE AIRSPACE ALLOCATION AT ASM LEVEL 2**

#### **3.4.1 The CDR1 Concept and the Temporary Airspace Allocation (TAA) Process**

3.4.1.1 The pre-tactical management of airspace by AMCs at ASM Level 2 is performed by making CDR1s unavailable and/or allocating reserved/restricted areas, taking into consideration relevant predefined airspace scenarios, if any, in close coordination with FMPs and NM in order to carry out the collaborative ASM/ATFCM process. Ideally this coordination should be achieved through the integrated AMC/FMP function.

3.4.1.2 With the AUP/UUP publication, AMCs can declare CDR1s available or unavailable for flight planning, both on a daily basis and in accordance with the priority rules and negotiation process established at ASM Level 1.

3.4.1.3 Due to operational or weather considerations, after adequate coordination with FMPs and NM and in accordance with ASM Level 1 guidelines, an AMC can amend the published D-1 AUP decision concerning the availability of a CDR1 and/or the allocation of reserved/restricted areas by the publication of UUPs. The change could also be a new ad-hoc request for airspace allocation of AMC-Manageable Areas. This requires consideration of various issues, including:

- a) the control of access into the airspace in which the AMC-Manageable Areas is situated;
- b) any adverse impact on the ATFCM measures in force;
- c) any significant effect on GAT/OAT which had planned to fly or operate through the airspace on the basis of related information in the EAUP/EUUP;
- d) the possible impact on ATS airspace classification;
- e) any adverse impact on implemented pre-defined airspace scenarios.

#### **3.4.2 Free Route Airspace and the Temporary Airspace Allocation (TAA) Process**

3.4.2.1 The pre-tactical management of Free Route Airspace operational requirements at ASM Level 2 is performed through the allocation of reserved/restricted areas, taking into consideration relevant pre-defined airspace scenarios, determination of entry/exit point pairings and any predetermined routeings in close coordination with FMPs and NM in order to carry out the collaborative ASM/ATFCM process. Ideally, this coordination should be achieved through the integrated AMC/FMP function.

3.4.2.2 Due to operational or weather considerations, after adequate coordination with FMPs and NM and in accordance with ASM Level 1 guidelines, an AMC can amend the published D-1 AUP decision concerning the status of reserved/restricted areas by the publication of UUPs. The change could also be a new ad-hoc request for AMC-Manageable Areas allocation. This requires consideration of various issues, including:

- a) the control of access into the airspace in which the TRA/TSA is situated;
- b) any adverse impact on the ATFCM measures in force;

- c) any significant effect on GAT/OAT which had planned to fly or operate through the airspace on the basis of related information in the EAUP/EUUP;
- d) the possible impact on ATS airspace classification;
- e) any adverse impact on identified pre-defined airspace scenarios.

### **3.4.3 Establishment at ASM Level 1 of Priority Rules and Negotiation Process for the Pre-tactical Allocation of Airspace by AMC**

- 3.4.3.1 In order to avoid a lengthy negotiation process of civil/military and military/military conflicting requests ASM Level 1 is to establish priority rules.
- 3.4.3.2 ASM Level 1 should establish clear priority rules when CDR1s request conflicts with the associated TRAs/TSAs.
- 3.4.3.3 Priority rules should be established with the aim to promote predictability and stability in airspace planning and allocation. Consequently, activities planned well in advance with prior coordination should normally have priority over any short-term requests.

## **3.5 NATIONAL AND INTERNATIONAL PROCESSES AT ASM LEVEL 1 FOR THE AIRSPACE USE AT ASM LEVEL 3**

- 3.5.1.1 Due to operational or weather considerations, civil and/or military ATS units and/or controlling military units can, after adequate coordination and in accordance with ASM Level 1 guidelines, amend at ASM Level 3 the published AUP/UUPs decisions concerning the availability of a CDR1 or the allocation of a TRA/TSA. This would equally apply to the airspace availability in respect of Free Route Airspace. The change could also be a new ad hoc request for airspace allocation. This requires consideration of various issues, including:
  - a) the control of access into the airspace in which the TRA/TSA is situated;
  - b) any adverse impact on the ATFCM measures in force;
  - c) any significant effect on GAT/OAT which had planned to fly or operate through the airspace on the basis of related information in the AUP/UUPs;
  - d) the possible impact on ATS airspace classification;
  - e) any adverse impact on identified pre-defined airspace scenarios
- 3.5.1.2 The simultaneous use of a CDR1 and the associated TRA can occur when the nature of activity within the TRA and the existence of efficient ASM Level 3 civil/military coordination facilities permit the safe use of CDR1s through the active TRA.

## 3.6 ASM SOLUTIONS

### 3.6.1 Objectives

- 3.6.1.1 The main objectives of the ASM Solutions are to deliver a better flight efficiency. In this respect, the current ASM processes and procedures related to a particular TRA/TSA or a group of them need to be reconsidered, in both their design and associated airspace planning and allocation processes and procedures. The enhanced ASM processes will consider various levels of flexibility, either in time or in spatial location (vertical or horizontal), that are available by the planned civil or military flight operations.
- 3.6.1.2 The final objective of the ASM Solutions development is to provide concrete and consistent solutions for each identified hot-spot, i.e. an interactive civil-military solution.
- 3.6.1.3 In order to have the process for ASM solutions running a number of enablers need to be put in place, namely:
- a) Concept of utilisation
  - b) Supporting tools
  - c) Appropriate coordination procedures between network manager, aircraft operators and military

### 3.6.2 Scope

- 3.6.2.1 The task of identification and development of ASM Solutions is focused at improving the ASM/ATFCM/ATS processes and procedures for local (Hot-Spots) and sub-regional level (interactive sub-regional scenarios) in the entire ECAC area through interactive civil-military solutions.
- 3.6.2.2 The ASM solutions are focused on improvements of flight efficiency of the current route network, promoting a better utilisation of existing CDR1s and/or, in an FRA environment, promoting a more efficient utilisation of areas volumes.

### 3.6.3 Process Description

- 3.6.3.1 The ASM solution process is aiming at delivering flight efficiency solutions considering all existing CDR1s/areas in order to identify the shortest route (in FRA environment between way points) used by at least one AO for FPL purposes.
- 3.6.3.2 The utilization of the shortest filed FPL as “best practice” aims to define concrete options not limited by other factors (e.g. RAD restriction) that could hamper the utilization of an “ideal” shortest scenario.
- 3.6.3.3 ASM solutions are a collaborative process. It is based on the partnership between ANSPs, AOs and military collaborating to make the best decision acceptable to all parties.

- 3.6.3.4 The ASM solutions process comprises three main phases: identification of network problems, generation of re-routing options and delivery of a pre-defined airspace scenario describing the optimal solution.
- 3.6.3.5 Apart from the identification of network problems, the other two phases are characterized by the following actions:
- a) identification of the shortest route that contains CDR1s segments and/or DCTs passing through areas for each city pair,
  - b) assess the ASM issues like CDR1s and/or DCTs synchronised availability,
  - c) develop pre-defined airspace scenarios applicable for specific days.
- 3.6.3.6 The shortest route involving several CDR1 segments and/or DCTs passing through areas of the corresponding city pair is selected and all the flights on this city pair are assigned to take this shortest route.
- 3.6.3.7 Next step in the preparation of ASM solutions deployment, is drafting specific procedures concerning coordination between participating actors. It is about the description of roles and tasks of those involved in the decision making process of applying ASM solutions for network management.

### **3.6.4 Methodology**

#### *3.6.4.1 Data*

- 3.6.4.1.1 The assessment is carried out considering data (traffic demand, ATFM measures, sector configurations, pre-defined airspace scenarios, CDR1s/areas availability) for a reference period, normally not affected by specific events.
- 3.6.4.1.2 Information on CDR1s/areas availability for the selected reference period is derived from relevant EAUP/EUUP.

#### *3.6.4.2 Selection criteria*

- 3.6.4.2.1 For the selection of hot spot or city pairs to improve, a number of criteria should be used such as:
- a) The existence of CDR1s segments or crossing areas in the FPL;
  - b) Significant route extension compared with the "best option", e.g. more than 20 NM;
  - c) Flight extension mostly for en-route section (avoid extensive arrival/departure situations);

#### *3.6.4.3 Assessment methodology*

- 3.6.4.3.1 In order to identify feasible situations for the application of ASM solutions, the following methodology is recommended:
- a) Search for the flights with the shortest planned route for each city pair using the selected traffic sample for the reference period;
  - b) Check which of these shortest flights have at least one CDR1 or crossing area in their planned route;

- c) For each city pair assess the CDR1/area availability requirements if all the flights on that city pair would plan the shortest route;

### **3.6.5 Milestones**

#### *3.6.5.1 Identification of potential ASM Solutions*

- 3.6.5.1.1 Following the above mentioned methodology, traffic flows should be selected as potential candidate for the application of ASM solutions. For each of them a better utilisation of CDR1s/areas, with potential improvements in flight efficiency (e.g. time and distance savings, taking into account RAD restrictions, pre-defined airspace scenarios and sectors load), should be spotted for a number of users, in comparison with the “best practise” identified.

#### *3.6.5.2 Internal coordination with NM*

- 3.6.5.2.1 The selected solutions should be coordinated with Network Operations Unit in order to verify the possible existence of additional issues deriving from the current modus operandi, and to confirm their feasibility.

#### *3.6.5.3 Coordination with States/ANSPs*

- 3.6.5.3.1 In those cases NM is proposing ASM Solutions, they should be coordinated with States/ANSPs existing working arrangements (ASMSG/RNDSEG) and/or bilaterally in order to achieve their commitment for further bilateral coordinations with those involved. The conclusion of the coordination with States/ANSPs involved should consolidate the list of ASM solutions to be implemented and the finalisation of the procedures to apply.

#### *3.6.5.4 Coordination with AOs*

- 3.6.5.4.1 With the selection of the agreed ASM solutions, interested AOs will be approached to present them the identified benefits for each ASM solution and the procedures planned to be implemented for the summer. This coordination will be used also to better understand their modus operandi for FPL process and additional issues related to their operations that might limit the utilisation of ASM solutions.

#### *3.6.5.5 Time-related*

- 3.6.5.5.1 The finalisation of the coordination with all stakeholders involved should define the target date for the implementation of the ASM solutions. In general terms, it should be announced by their publication on the NOP Portal<sup>6</sup>. In case of agreement to modify the airspace structures, prior AIS notification should be considered according to Annex 15 requirements.

#### *3.6.5.6 Live trial and Monitoring*

- 3.6.5.6.1 Normally the implementation of identified the ASM solutions should require a validation through live trials. In this case monitoring mechanism should be foreseen as well as a final report in order to identify ASM solutions eligible for a permanent implementation as well as agreement for the expansion of ASM

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<sup>6</sup> AIM could be used to advise AOs about the publication of ASM Solutions on the NOP Portal.

solution application to other traffic flows, with possible utilisation of other selection criteria. In order to run any live trial a preliminary safety assessment is required and the final report should describe the outcomes safety related.

### **3.7 NOTIFICATION PROCEDURE AND PLANNING TIMETABLE FOR A LARGE-SCALE ACTIVITY AND/OR MILITARY EXERCISE/ACTIVITY**

#### **3.7.1 Objective**

3.7.1.1 The objective of the procedure is to standardise and facilitate the notification and planning of large-scale activities and/or military exercise/activity scheduled within a single or at least two FIRs/UIRs and/or ACCs/UACs, which contain an ASM component.

3.7.1.2 The procedure aids the event planner/host to perform the necessary tasks for the notification and planning of the large-scale activity, including the necessary coordination with concerned Operational Stakeholders to be involved at each stage.

#### **3.7.2 General Procedure Description**

3.7.2.1 The procedure is in accordance with the concept of Flexible Use of Airspace (FUA) described in Section 2 and is divided into three phases:

- a) Phase 1 - Planning (24 Months up to D-6);
- b) Phase 2 - Execution (D-6 to D-OPS);
- c) Phase 3 - Post activity (after termination of activity).

3.7.2.2 Each of the phases has a set of actions defined, including responsible Operational Stakeholders and timeframe within which those shall be accomplished.

3.7.2.3 The concerned Operational Stakeholders in this process are national authorities, air navigation service providers, national military, EUROCONTROL/NM, international organisations, airspace users. The list is not exhaustive and concerned Operational Stakeholders can be invited, if necessary.

3.7.2.4 The full procedure is described in Annex 12.



## **4 Section 4 - PRE-TACTICAL AIRSPACE MANAGEMENT (ASM LEVEL 2)**

### **4.1 GENERAL**

**4.1.1** Pre-Tactical ASM at ASM Level 2 consists of the day-to-day management and temporary allocation of airspace through national or sub-regional AMCs.

**4.1.2** The allocation of airspace is the prerogative of the State for the airspace under its sovereignty and/or the airspace under its jurisdiction. A Contracting State accepting the responsibility of providing ATS over the high seas or in airspace of undetermined sovereignty, may apply the ICAO Standards and Recommended Practises (SARPs) in a manner consistent with that adopted for the airspace under its jurisdiction.

**4.1.3** States establish and authorise joint civil and military AMCs to manage their airspace on a daily basis. National guidelines on ASM take into account their various national and international arrangements. States authorise AAs and FMPs/ACCs to make requests for airspace allocations to the AMC, to participate in the negotiation and coordination process initiated by the AMC, and to utilise available CDR1s, TRAs/TSAs, CBAs and other allocated airspaces as appropriate.

**4.1.4** Whenever possible the AMC and FMP functions should be integrated.

**4.1.5** The HLAPB determines the degree of discretion and authority of the AMC. AMCs are vested with the appropriate authority so as to minimise the need for referrals to higher authority. Sub-regional AMCs, established by two or more States (e.g., FAB), have the responsibility for pre-tactical airspace management over international border(s) and/or FIR/UIR boundary (boundaries) in the airspace of the States involved.

### **4.2 AIRSPACE REQUESTS - APPROVED AGENCY (AA)**

**4.2.1** A unit that represents an entity which wish to utilise TRAs/TSAs, CBAs, or R and D areas that are suitable for management/allocation by the AMC, are identified as an Approved Agency (AA) and is authorised by the national authority concerned. An AA is permitted to negotiate for airspace to be allocated by the AMC. When an AA is submitting airspace requests to the AMC, the safety should be paramount.

**4.2.2** An AA is required to:

- a) plan submission of airspace use activities in advance so as to be able to notify their needs for airspace to the AMCs on the day before the activity;
- b) submit to the AMC, on the day before the proposed activity (D -1), requests for airspace utilisation and allocation;
- c) ensure, on the day of the activity, that the airspace usage is in accordance with the AMC's airspace allocation;

- d) cancel any airspace allocation which is no longer required. Information is forwarded to the AMC for the promulgation of an UUP, and to the relevant ACC in accordance with national procedures;
- e) change previously promulgated airspace allocation by coordinating with AMC the promulgation of an UUP;
- f) submit a new request for airspace allocation to the AMC for the promulgation of an UUP.

**4.2.3**

The requests for airspace use could be presented as a block of airspace required during a specified period of time with the possibility of moving the request in terms of time and flight levels. An example is presented at Figure 7.

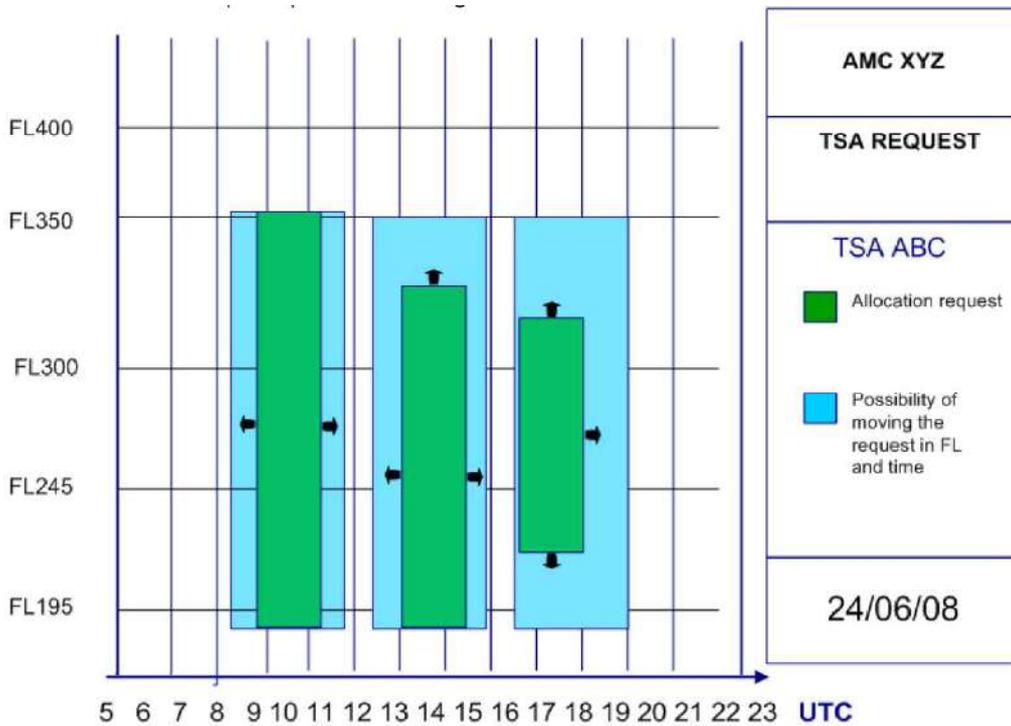


Figure 7: Example of TRA/TSA Request

**4.2.4** In case of a modular design of the airspace, the request should contain only the appropriate number of modules required for the activities concerned.

**4.2.5** The requests of temporary reserved areas should be performed in accordance with the definition (horizontally, vertically and timely) of the areas as published in the national AIPs. Any temporary extension (e.g. vertically and/or in time) should be properly notified (e.g. via NOTAM) and managed accordingly by systems.

**4.2.6** The requests should cover a H24 period.

### **4.3 AIRSPACE AVAILABILITY REQUESTS - ACCs/FMPs**

**4.3.1** Requests for airspace availability are normally based on capacity needs identified by the FMPs/ACCs and in coordination with NM in the pre-tactical ATFCM phase.

**4.3.2** The FMPs/ACCs concerned, in coordination with NM, should:

- a) assess the traffic forecast for the day of operations;
- b) identify areas of insufficient ATC capacity;
- c) agree on the need of airspace availability in terms of CDR1s to be made available and/or airspace volume associated to areas to be made available for ATC purposes;
- d) agree on the activation/deactivation of NPZs, as required;
- e) agree on the most appropriate sector configuration;
- f) agree on the need for ATFCM measures.
- g) agree on the activation/deactivation of dynamic RADs.

**4.3.3** As a result of the pre-tactical ATFCM coordination process and the consideration of all relevant ATC factors such as sector capacity, equipment status, operational constraints, activation of NPZs and staff availability, the FMPs/ACCs submit a request to the AMCs concerned for the availability of CDR1s and/or defined airspace volumes associated to areas (e.g. a block of levels and/or selected modules of an area), or activation/deactivation of dynamic RADs. Based on the level 1 agreement, FMPs can ask the activation of NPZs or pre-defined scenarios better responding to the traffic demands. Airspace availability requests are presented together with traffic forecasts (e.g. Figure 8) showing the expected capacity shortfall.

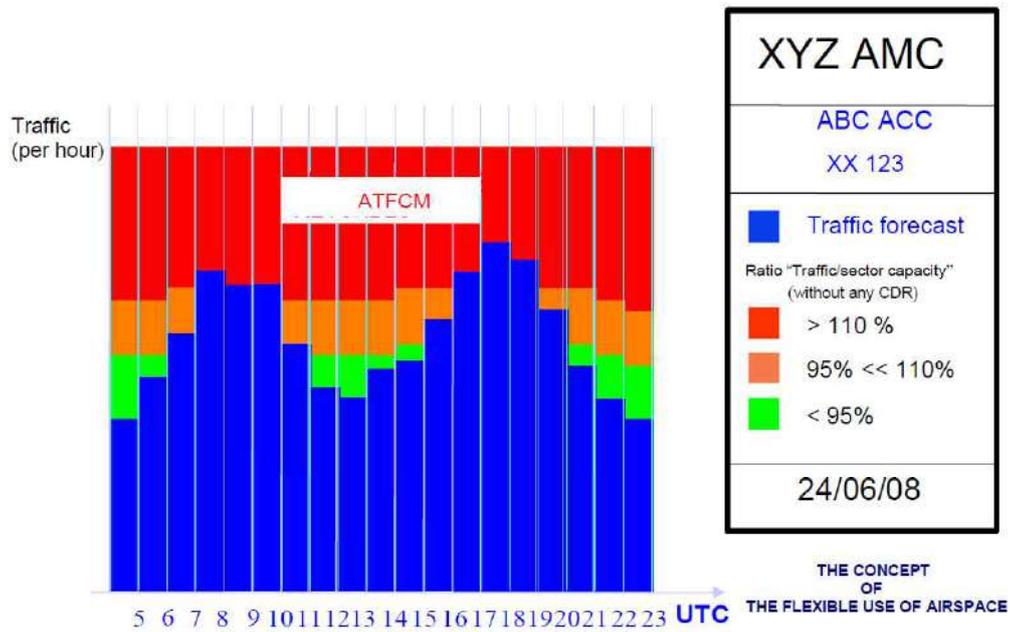


Figure 8: Example of GAT Traffic Forecast

- 4.3.4 To improve the coordination efficiency, AMC and FMP functions should be integrated whenever possible.
- 4.3.5 If the traffic demand does not require the availability of CDR1s, FMPs/ACCs cancel the CDR1s request and advise the AMC.

## **4.4 RESTRICTED/DANGER AREAS - NOTIFICATION OF CHANGED ACTIVITY**

**4.4.1** States may require designated airspace managers or users of some R and D areas subject to frequent modifications in terms of time activation and FLs, to notify to the relevant AMC on their planned activities for the following day. This notification permits the AMC, as a focal point, to be aware of all airspace utilisation and permits the publication by the AMC of any change of these R and D areas activity in the AUPs/UUPs. These changed periods shall be properly notified via AIS (e.g. NOTAM). Due to their frequent modifications, these areas are defined as AMA in the CACD in order to allow an easier management. As consequence, they are published in list "CHARLIE".

**4.4.2** States in coordination with NM, can identify those Non AMC manageable areas (P, D and R) they prefer to be regularly published via AUPs/UUPs. These areas, subject to no/limited modifications in terms of time and FLs and time should be classified as NAM in CACD and published in the AUP/UUP list "DELTA". NM Systems retrieves automatically NAM information for the EAUP/EUUP publication according to their classification in CACD. Any modification shall be notified via AIS (e.g. NOTAM) and managed according to the procedures described in AMC-CADF Operational Manual (chapter 4.1.3).

## **4.5 AIRSPACE MANAGEMENT CELLS (AMCs) - AIRSPACE ALLOCATION**

### **4.5.1 General**

4.5.1.1 AMCs operate in accordance with the airspace allocation priorities, negotiation rules and protocols established by the HLAPB. National or sub-regional AMCs act as ASM Level 2 national and international ASM focal points, improve civil-military and international coordination and manage the airspace to ensure its flexible use.

4.5.1.2 AMCs conduct Pre-Tactical ASM Level 2 airspace allocation and management operations in a decisive, timely and efficient manner and resolve conflicting airspace requests and ASM Level 2 problems (see Figure 9). AMCs in the ECAC States should have their minimum levels of authority harmonised, which will allow them to perform effective ASM Level 2 functions. Nevertheless, such harmonisation does not prevent States from delegating greater authority to their AMCs and permitting them to perform additional functions.

4.5.1.3 Major events planned well in advance, such as large scale military exercises, which require additional segregated airspace, are subject to ASM Level 1 coordination; subsequently, these activities will be notified by AIS publication. However, depending on the State's ASM organisation, additional coordination may take place at AMC level in order to improve the efficiency of the airspace utilisation.

- 4.5.1.4 Any airspace plan information available from D-6 to D-2 is published via relevant DRAFT AUPs in order to improve awareness as well as to trigger coordination with interested stakeholders, if necessary. In specific, the existence of pre-defined airspace scenarios could highlight conflicting requests at an earlier stage, facilitating the coordination among stakeholders. After the AMC has completed the allocation process through the promulgation of the AUP at D-1, modification of the airspace allocation might be necessary. Modifications of the airspace allocation are affected by the AMC through an Updated AUP (UUP) and consist of any cancellations, changes or new requests.

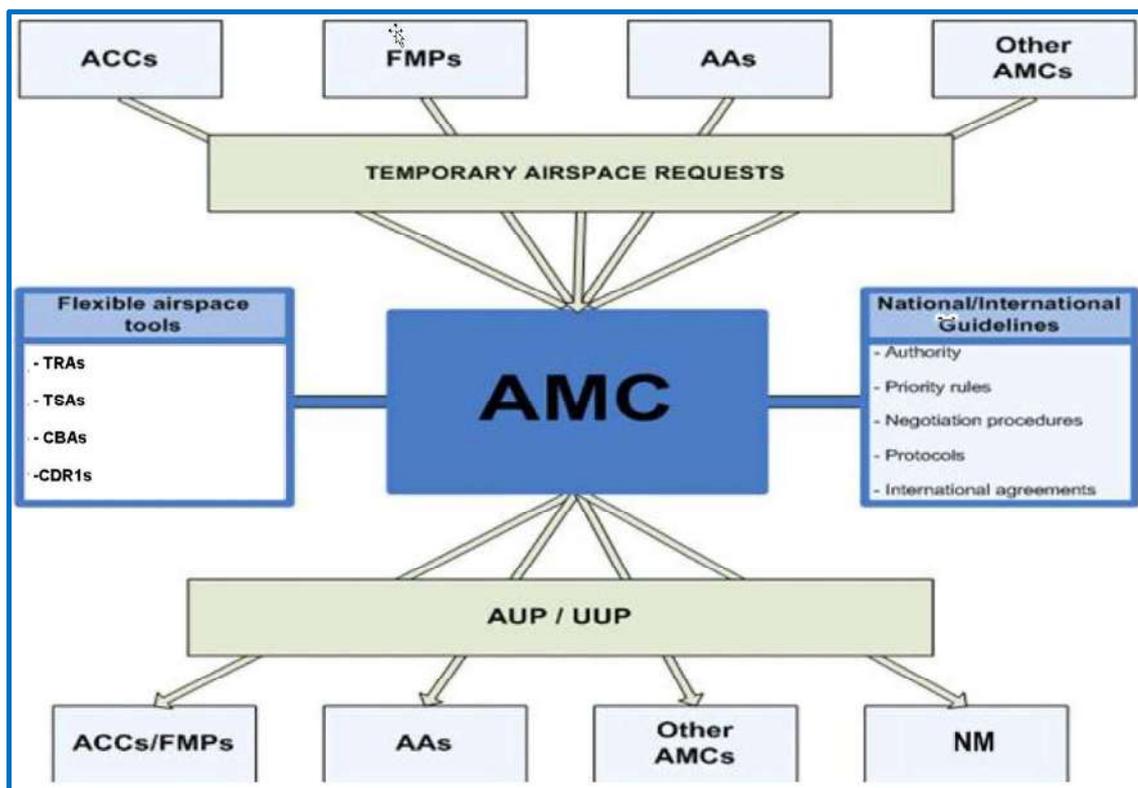


Figure 9: Airspace Management Cell Operations

## 4.5.2 Responsibilities

- 4.5.2.1 AMCs are responsible for the conduct of day-to-day ASM Level 2 airspace allocation and management as specified in the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (L2-AAOP-01-01).

In particular, the airspace management cells:

- a) Shall act as the national and, where appropriate, as international day-to-day focal points for ASM Level 2 coordination;
- b) Shall collect and analyse (AMAs) all Airspace Requests which may require temporary airspace reservation/segregation, including airspace allocation decisions taken at ASM Level 1 and/or by AAs in respect of major military exercises, existing pre-defined airspace scenarios, air shows, modification of NAMs subject to notification via AUP/UUP etc.;

- c) Shall analyse the CDR1s and/or airspace volume availability requests together with the traffic demand, anticipated ATC capacity problems and expected delay information received from the FMP;
- d) Shall resolve conflicting requests for reserved/restricted areas and CDR1s/airspace volume availability utilising all relevant information. In the execution of this task, it should consider, in coordination with FMPs and NM, the availability/requests of pre-defined airspace scenarios;
- e) Shall resolve conflicts between incompatible or conflicting airspace requests by the application of approved priorities, re-negotiation, rescheduling or segregation;
- f) Shall coordinate with adjacent AMCs the harmonised availability of "cross-border" CDR1s;
- g) Shall respond to any additional request for assistance by NM, the ACC/FMPs and other Approved Agencies or matters arising from major ATS routes inconsistencies or unexpected events;
- h) Shall coordinate with relevant AAs, FMPs and NM, if applicable, which FBZ, NPZ, FUA restrictions, FUA/RAD restrictions, AUP/RAD restrictions and/or FUA restrictions groups/ Airspace Scenario Restriction Group associated to the requested airspace structures is necessary;
- i) Shall decide on the allocation of national reserved/restricted areas and CBAs, FBZs, NPZs and associated FUA restrictions, FUA/RAD restrictions and/or FUA restrictions groups/ Airspace Scenario Restriction Group after completion of the collation, coordination, analysis, negotiation and resolution process. The minimum time period suitable for flight planning between two consecutive allocations of the same national reserved/restricted areas, CBAs, FBZs, NPZs with associated FUA restrictions, FUA/RAD restrictions and/or FUA restrictions groups/ Airspace Scenario Restriction Group shall be 0.5H.
- j) Shall ensure CDR1s availability in accordance with established procedures and for a minimum time of one hour (1H);
- k) Shall decide in accordance with criteria established at ASM Level 1 on the provisional unavailability of CDR1s to be handled in real time at ASM Level 3 or via AUP/UUP notification of unavailability and/or with the notification of activity in the associated RSAs FUA restrictions and FUA/RAD restrictions;
- l) Should promulgate available airspace plan information by publishing the relevant DRAFT AUP from D-6 to D-2. It covers the period between 06.00 UTC of the reference day to 06.00 UTC of the day after (D 06.00 UTC to D+1 06.00 UTC). This information is published on the NOP Portal, according to the day of publication;
- m) Shall promulgate the airspace allocation plan containing the activation of AMA/NAM, FBZs, NPZs with associated restrictions and/or unavailability of CDR1s by transmitting the D-1 AUP to adjacent AMCs and to AAs, including ACC/FMPs and to the NM. The AUP is published in a common format, as soon as possible, and by 14.00 UTC Summer or 15.00 UTC Winter, at the latest, to cover the period between 06.00 UTC the next day to 06.00 UTC the day after (D 06.00 UTC to D+1 06.00 UTC);

- n) Shall collect and analyse as required more up-to-date information on the day of operation from AAs concerning the cancellation/modification of reserved/restricted areas and/or associated FUA restrictions, FUA/RAD restrictions, FUA restrictions groups/ Airspace Scenario Restriction Group and/or CDR1s unavailability;
  - o) Shall collect updated information on NPZs activation/modification as well as modification of NAM information subject to the AUP/UUP process;
  - p) Shall promulgate, if applicable, UUPs containing additional bookings, deletions of reserved/restricted areas, selected associated FBZ and/or associated FUA restrictions, FUA/RAD restrictions, AUP/RAD restrictions and/or FUA restrictions groups/ Airspace Scenario Restriction Group, and/or CDR1s availability/unavailability, as well as modification of NPZs and/or NAMs, during the period of validity of the current AUP. The procedures described in 4.8 define the lead-time required between the release of the UUP and the actual start of any airspace structures and/or restrictions changes provided by the UUP.
  - q) Shall participate in a post analysis of airspace allocation;
  - r) Shall conduct, where authorised, some Level 3 co-ordination tasks.
- 4.5.2.2 When integrated, the responsibilities of the AMCs (listed above) and those of FMPs are combined in order to achieve a consistent and more effective collaborative ASM/ATFCM decision making process resulting in the coherent local network assessment and subsequent proposals (AUP, UUP, sector configuration, request for ATFCM regulation etc.)
- 4.5.2.3 According to criteria established at ASM Level 1, when appropriate the publication of CDR1s availability/unavailability known or decided at pre-tactical level, is to be promulgated for information to national AAs and ACCs as well as AOs concerned for FPL process through national AUPs/UUPs in the list "ALPHA" of routes unavailable for flight planning.
- 4.5.2.4 In case of the unavailability information is only for AAs and ATS units and are handled at ASM Level 3 which then does not require flight planning actions by AOs the information described in AUP/UUP will be distributed to them not via CIAM but other local means of notification.
- 4.5.2.5 CDR1s availability/unavailability are daily notified in national AUP/UUPs and published in the EAUP/EUUP via NOP Portal and eAMI through B2B service. The publication of RSA/FUA restriction is affecting the availability/unavailability of the CDR1s concerned. In case of explicit publication of CDR1s unavailability, it is inserted in the AUP/UUP list "ALPHA" of unavailable CDR1s and unavailable ATS Routes. It remains a State responsibility to decide whether an AIS notification (e.g. NOTAM) is required in addition. In this case, State is responsible to ensure consistent information.
- 4.5.2.6 AMCs should be provided with adequate system support to be able to perform the assessment of airspace allocation requests received in order to facilitate their decisions on final airspace allocation.
- 4.5.2.7 The AMC should be provided with communications equipment required to facilitate communication/coordination with all appropriate partners (AAs, FMPs,

NM and other AMCs).

- 4.5.2.8 In addition, the communication with NM is performed (e.g. via CIAM), which enables the AMC to promulgate AUP/UUPs and allows NM to publish EAUP/EUUP on the NOP portal and post on eAMI server.

### 4.5.3 Lead AMC Concept

- 4.5.3.1 The lead AMC concept should be applied whenever required for operational reasons to establish CBAs (including the associated FBZs) within the scope of CBO or any interdependency between neighbouring States including CDR1/ATS routes affected by the activation of areas. The establishment of cross border NPZs may require the identification of the Lead AMC.
- 4.5.3.2 The lead AMC concept is based on the delegation of AMCs' responsibilities for the coordination of CBA(s) allocation and/or harmonised availability/unavailability of CDR1s/ATS on a route-by-route basis and/or NPZs established across national boundaries in the frame of regional FRA operations. It should result in harmonising the AUP/UUPs promulgation process and having a single point of contact for the coordination with NM.
- 4.5.3.3 In case of CBAs, the lead AMC concept should be established according to agreed priority rules and an associated timetable.
- 4.5.3.4 An AMC Coordination LoA template is available as a set of guidelines for the development of the ECAC States AMC agreements. The contents of all international AMC LoAs are the responsibilities of the States involved.

## 4.6 EXTENDED HOLIDAY PERIOD AND SPECIAL EVENTS

- 4.6.1 When military operations are foreseen to be significantly reduced e.g. during a long holiday period, States should publish relevant airspace & route availability information via AUP/UUP.
- 4.6.2 In addition to that, or in case AUP/UUP is not used, states, at their discretion, may publish relevant information in their AIP or through appropriate AIS publications (e.g. NOTAM – Figure 10). In case of NOTAM, a pre-notification period of 7 days is required.

```

Filing time: 01/12/08 10:51
Origin time: 011045
Destination:
AFTN Originator:
Message text:
(A____/01 NOTAMN
Q)
A)???? B) 0112211500 C) 0201020600
E) THE CDR1 ROUTES LISTED HEREAFTER WILL BE PERMANENTLY AVAILABLE FOR FLIGHT PLANNING
DURING THE ABOVE MENTIONED PERIOD.)
UG109                KOK/DIK/KHR                195/460
UJ158                BAM/LNO                    250/460

```

Figure 10: Example of NOTAM

- 4.6.3 In case of cross border interdependency between the neighbouring States, the affected routes and times will be coordinated through the Lead AMC or other appropriate bilateral arrangements.

**4.6.4** In those cases when special events require an extended unavailability of CDR1s, AIS notification should be used to properly notify, according to ICAO provision, the establishment of temporary reserved/restricted areas with associated FUA restrictions, FUA/RAD restrictions, FUA restrictions groups and Airspace Scenario Restriction Group corresponding routes unavailability as appropriate. The daily notification, whether AMA, NAM or CDR1s unavailability, will be ensured via EAUP. The AIS notification, e.g. NOTAM, should contain description of the area/FBZ, including ID codes, information of established FUA restrictions, FUA/RAD restrictions, AUP/RAD restrictions, FUA restrictions groups and Airspace Scenario Restriction Group routes affected as appropriate, as well as the reference to EAUP for the daily notification of areas activation, with/without associated FUA restrictions, FUA/RAD restrictions, FUA restrictions groups, Airspace Scenario Restriction Group and unavailable routes as appropriate.

## **4.7 INTERNATIONAL FUNCTIONS**

### **4.7.1 Network Manager (NM)**

4.7.1.1 The effective implementation of the FUA Concept requires that AMC airspace allocations are promulgated in an efficient, timely and accurate manner. The ECAC States have recognised the need for a central ASM Level 2 airspace management function, performed by NM, as described in the Commission Implementing Regulation (EU) 2019/123.

4.7.1.2 In order to achieve compliance with the requirements described in the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (L1-APPC-01-02, L1-APPC-03 and L1-APPC-03-01), a written agreement or arrangement should be signed between NM and AMCs. Annex 11 provides a standard LoA to be used for this purpose.

4.7.1.3 The proposed LoA also contains a description of contingency procedures to be applied between NM and each AMC in order to ensure the publication of all AUPs required by the CIAM system in order to publish the EAUP on the NOP portal. As UUPs are not compulsory, no specific contingency procedures are foreseen unless required by States; in this case the LoA should provide a description of these specific procedures.

4.7.1.4 The NM collects and analyses draft D-1 AUPs/UUPs in order to perform network assessment. The information available through DRAFT AUPs published from D-6 to D-2 could also be used to perform network assessment if relevant. The network assessment evaluates the impacts on any relevant pre-defined airspace scenarios<sup>7</sup>. Whenever required, NM coordinates with relevant AMCs and/or FMPs to make proposals taking account of the network assessment. Based on the identification of specific hotspots and run simulations, NM could also propose the implementation of pre-defined airspace scenarios to relevant AMCs before the preparation of draft AUPs.

4.7.1.5 Based on the final decision by AMCs, NM collects, consolidates the D-1 AUP and UUPs, and publishes European AUP/UUP on NOP portal and Airspace

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<sup>7</sup> Technical solutions for the pre-defined airspace scenario management are not yet available.

Management Message (eAMI) for those using B2B service. The publication of information related to the reserved/restricted area and/or associated FUA restrictions, FUA/RAD restrictions, AUP/RAD restrictions, FUA restrictions groups and Airspace Scenario Restriction Group plans will be subject to the signature of the LoA described in 4.7.1.2), otherwise will be available with restricted access only to those authorised. In particular, the NM does the following:

- a) collects, collates and analyses the D-1 AUPs and UUPs;
- b) detects any remaining lack of continuity in "Cross-Border" CDR1s availability and reflects in the publications (NOP portal and eAMI) only those CDR1s that are commonly accessible on both sides of the FIR/UIR boundary;
- c) after coordination with AMCs has been concluded, compiles EAUP/EUUPs and eAMI with information on availability/unavailability for flight planning of CDR1s (or portions thereof), permanent ATS routes or SIDs/STARs<sup>8</sup> as well as AMA/NAM and associated restrictions activations relevant for flight planning;
- d) publishes by 16.00 UTC (15.00 UTC Summer) the EAUP on the NOP portal and eAMI to inform those using B2B service;
- e) publishes EUUP whenever required, according to the procedures described in 4.8.3 and 4.8.5;
- f) ensures that information on airspace status is taken into account within NM operations.

4.7.1.6 The NM is authorised by the ECAC States to promulgate the decisions/information concerning national airspace.

4.7.1.7 The national/sub-regional AMCs are responsible for the airspace allocation. The NM may coordinate with specific AMCs/FMPs to resolve ATC capacity problems.

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<sup>8</sup> Subject to technical development, not yet implemented.

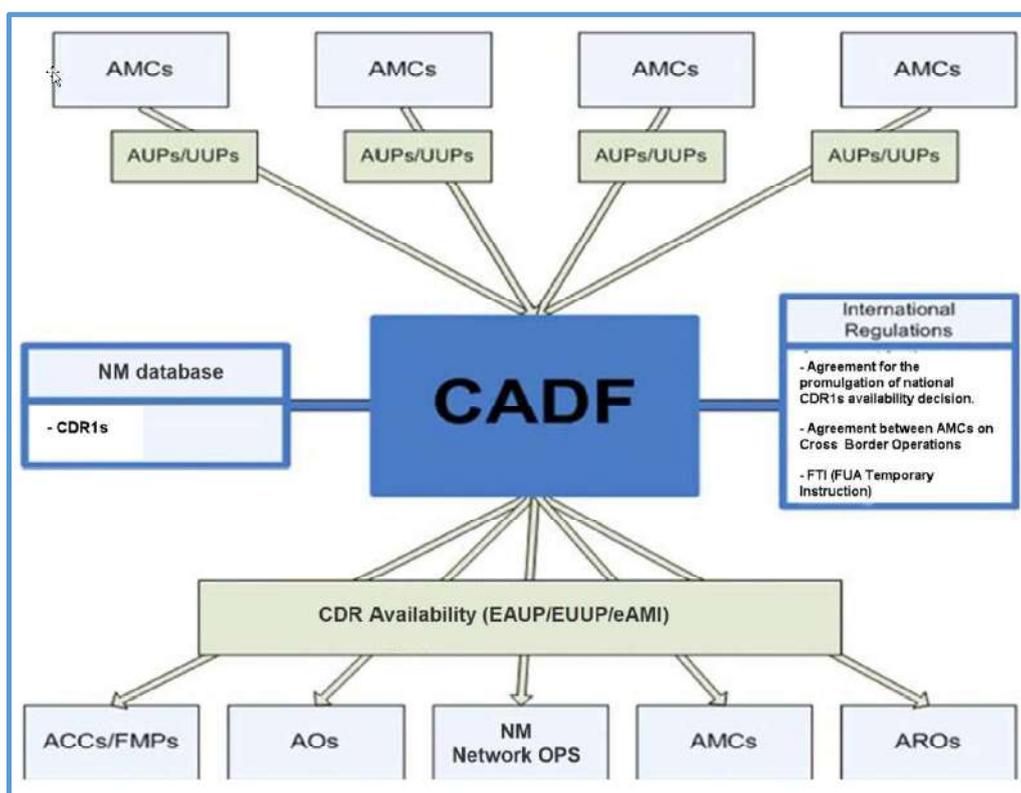


Figure 11: Central Airspace Data Function Operations

## 4.7.2 Aircraft Operators (AOs) FUA Responsibilities

### 4.7.2.1 General

4.7.2.1.1 In order to take advantage of available CDR1s or available airspace in FRA environment, AOs are required to submit their flight plans taking into account the latest available information. Flight plans should include route changes and the use of CDR1s pertaining to a particular flight. For Free Route Airspace the flight plan should include the flight trajectory. They should be duly notified to the appropriate agencies through the “Integrated Initial Flight Plan Processing System” (IFPS) and made available to the pilot-in-command.

### 4.7.2.2 CDR1s

4.7.2.2.1 CDR1s are plannable as permanent ATS routes during the times published in AIPs unless they have been made unavailable in EAUP/EUUP. In the event of a short notice unavailability of a CDR1, aircraft will be tactically handled by ATC. Aircraft operators should consider the implications of such a possible re-routing and/or use of the alternate ATS routes published for each CDR1 in the “Remarks” column of the AIP.

4.7.2.2.2 Any CDR1 availability/unavailability for flight planning is notified in the AUP/UUP and distributed to the operators by EAUP/EUUP, via NOP portal and eAMI through B2B service with the publication of RSA/FUA restriction affecting its availability and/or explicit CDR1 unavailability, as more appropriate. In such case any flight plan which uses the CDR1 portion during the affected period is to be cancelled or

changed in accordance with the procedures laid down in the IFPS User's Manual. It remains a State responsibility to decide whether an AIS notification (e.g. NOTAM) is required in addition. In this case, State is responsible to ensure consistent information. In case of airspace release, the most suitable UUP should be used to notify the cancellation of any RSA/FUA restrictions from list "BRAVO/CHARLIE" and/or CDR1 unavailability from list "ALPHA", as more appropriate. The information will be published with the first feasible EUUP. If any NOTAM has been published, it is a State responsibility to issue a new NOTAM to align the information with the EUUP.

- 4.7.2.2.3 The flight planning systems of aircraft operators or flight planning agencies should be able to process eAMI in AIXM format so as to automatically process the CDR1s availability information (B2B service).
- 4.7.2.2.4 In addition, and in order to assist AOs in assessing the routeing options, an "Aircraft Operator What-if Reroute" function (AOWIR) has been established by the NM (see para. 4.7.5).
- 4.7.2.2.5 In case of an ATFCM slot that prevents the CDR1s usage, the flight plan is to be changed to use an available ATS route. The revised FPL may result in a revised ATFCM slot.

#### **4.7.2.3 Early Access to Weekend Routes**

- 4.7.2.3.1 In order to take advantage of extra availability of Weekend Routes, AOs should refer to the ENR part of national AIPs, AIP Supplements where they are published by the States and to the EAUP for details.
- 4.7.2.3.2 The Early Access to Weekend (EAW) routes are defined as CDR1s available for FPL purposes from 10.00 UTC on the agreed Busy Fridays (see Section 3 Figure 3). In the exceptional event of a cancellation of the EAW arrangement of all, or part of the weekend CDR1s, AOs are notified via EAUP/EUUP. Additionally, by NOTAM two days in advance as appropriate (see 3.3.4.4.2)<sup>9</sup>.
- 4.7.2.3.3 Identified routes, defined as CDR1 for other Busy Days than Busy Fridays are plannable in accordance with EAUP information. The submission of the individual flight plan is to be made in accordance with the procedures defined in para 4.7.2.2.
- 4.7.2.3.4 For FRA regions the FPL process will consider the ASM Manageable Areas (AMA) which are concerned by Early Access arrangements. For other AMA not covered by these arrangements the planned routes will take into account the avoidance procedures in place.

#### **4.7.2.4 Flight Planning Procedures Around Active Reserved/Restricted Airspace**

- 4.7.2.4.1 The purpose of the following procedures is to enable a harmonised approach for IFR/GAT flight planning around reserved/restricted airspace. These procedures will establish a more transparent process for the Flight plan acceptance by IFPS, both in fixed route and free route environments.

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<sup>9</sup> In the frame of rolling AUP process the information of this cancellation could be repeated in the national AUP on the preceding Thursday of cancelled Busy Friday.

- 4.7.2.4.2 The FPL Buffer Zone (FBZ) is the associated airspace which may be applied to a reserved/restricted area defining the lateral and vertical limits for the purpose of submitting a valid IFR FPL when such areas are active or planned to be active. Flight plans can be filed up to the boundary of the selected FBZ. The route described in Item 15, is to consider the nominal track between two points according to the great circle shortest route<sup>10</sup>.
- 4.7.2.4.3 For the submission of a valid flight plan (for an aircraft not engaged in an activity contained in the reserved/restricted airspace), the selected FBZ represents the totality of airspace to be avoided for flight planning purposes in accordance with the FUA activated restriction.
- 4.7.2.4.4 The State AIP, in addition to the publication of the reserved/restricted area, includes the associated "FBZ" when applicable. Multiple FBZs (e.g. different shape and/or location) can be published for the same restricted/reserved area.
- 4.7.2.4.5 The activation of a selected FBZ is performed together with the associated restricted/reserved area. The time for the activation of the selected FBZ could differ from the activation time of the associated reserved/restricted area.
- 4.7.2.4.6 The size of each FBZ to be defined should be determined in accordance with appropriate national arrangements, depending on the type of activities executed within the corresponding reserved/restricted airspace, taking into consideration, inter alia, the following aspects:
- a) the applicable PBN;
  - b) whether a separation service is provided by the ATS provider in that reserved/restricted airspace or not;
  - c) the classification of the adjacent airspace;
  - d) the type of ATS expected;
- 4.7.2.4.7 When establishing a CBA, a single methodology for the definition of each FBZ should be applied to avoid an increase in the complexity of operations.
- 4.7.2.4.8 Data management requirements should be considered in an early stage of the design phase to facilitate publication.
- 4.7.2.4.9 In case of modularity of the reserved/restricted areas, appropriate FBZ(s) should be considered for each module.
- 4.7.2.4.10 The FBZ vertical limits should be published in accordance with ERNIP Part 1, Chapter 9 - Publication of vertical limits.
- 4.7.2.4.11 Existing restricted/reserved areas should not be extended or decreased as a consequence of applying the procedures above.
- 4.7.2.4.12 The FBZ publication is addressed in in ERNIP Part 1, Chapter 9.

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<sup>10</sup> This is the criteria used by IFPS, specifically in case of DCT or free route operations.

#### 4.7.2.5 Free Route Airspace

- 4.7.2.5.1 In areas where coordination procedures (including civil/military coordination procedures) and airspace crossing conditions permit, aircraft operators are allowed to flight plan routings through reserved/restricted areas.
- 4.7.2.5.2 In some cases, tactical re-routing will be given if airspace is not available for crossing. The expected maximum additional length of a tactical re-routing shall be promulgated through national AIS publications.<sup>11</sup>
- 4.7.2.5.3 Whenever FPLs are not accepted through reserved/restricted areas, or accepted under specific conditions (exemptions), an associated FUA restrictions, FUA/RAD restrictions, FUA restrictions groups, Airspace Scenario Restriction Group and/or a selected FBZ will be activated. In these cases, the originators of a FPLs will file accordingly.
- 4.7.2.5.4 Within the Free Route Airspace, area there will be no limitations on the use of DCT, other than those recommended by ICAO. However, the compliance with the RAD restrictions and Letters of Agreement shall be ensured.
- 4.7.2.5.5 Within the Free Route Airspace, NPZs will be implemented, if necessary, to improve the management of FPLs. They are classified as AMA or NAM according to the flexibility offered. Both will be managed via AUP/UUP. Being defined exclusively for the management of FPLs, the relevant FMPs will be responsible to coordinate with AMCs for their notification via AUP/UUP according to the procedures described in chapter 4.8.

#### 4.7.3 NM Environment Data Base

- 4.7.3.1 The Environment Database (ENV, currently CACD) is a specific part of the NM Data Base containing all environment data concerning airspace organisation and structure, ACC operational organisation and ATC centre/sector capacities. The CACD is used by the NM IFPS and NM Tactical System (TACT) for the calculation of flight profiles taking account of all airspace constraints.
- 4.7.3.2 The CACD contains the description of all ATS routes including CDR1s and all AMA/NAM, FBZs, including NPZs, from national civil and military AIPs. The CACD is regularly updated on an AIRAC cycle basis with AIP related data and EUUP as well as with temporary airspace structures according to AIS publications.
- 4.7.3.3 The CACD contains all restrictions associated to RSAs. All FUA restrictions and FUA/RAD restrictions are activated according to the AUP/UUP process, while for other types of restrictions, States will define whether to be processed via AUP/UUP, individually or as part of a FUA restrictions group, or not. For the latter, the activation will be triggered by the dependent applicability instruction and are not subject to any notification but just activated in the system according to the referent RSA status.
- 4.7.3.4 The CACD contains the AUP/RAD restrictions as well, selected by the national

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<sup>11</sup> See ERNIP Part 1, Chapter 9, Promulgation of route extension: "In case there is no availability to cross the segregated area, it is expected that the average flight extension to be considered by aircraft operators is approximately 5NM; in exceptional occasions 15NM. However, in most of the cases radar vectors shall be provided by ATC.

RAD coordinators to be processed via AUP/UUP.

- 4.7.3.5 The CACD provides the CADF and the AMCs with CACD data for the elaboration of the national AUP/UUPs (see Figure 11).

#### **4.7.4 Integrated Initial Flight Plan Processing System (IFPS)**

- 4.7.4.1 The IFPS is designed to rationalise the reception, processing and dissemination of GAT IFR flight plan data in the IFPS Zone. The IFPS Zone is the area covered by the ATS facilities of the IFPS Contracting States. The IFPS provides two units (IFPUs) addresses throughout the IFPS Contracting States Zone for all GAT IFR flight plan messages (FPL) concerning flights, which are partly or completely within the IFPS Zone.

- 4.7.4.2 The IFPS is a part of NM and consists of two IFPUs, which are functionally identical and interconnected by a wide area network (WAN) for data exchange. The IFPS is directly connected to the NM systems, ATS units and AOs.

- 4.7.4.3 The IFPS checks the flight plans, which it receives and corrects them in accordance with the ENV. The correction of flight plans takes place automatically but may also require manual input. During the process of checking and correction, the IFPS extracts the data from the message, including the route description, and calculates a four-dimensional profile for the flight.

- 4.7.4.4 This checking and correction process of flight plans requires that CACD data are amended with all CDR1s and information of areas or restrictions affecting FPLs that have been notified through the EAUP/EUUP.

- 4.7.4.5 After the completion of checking, correction and extraction process, the IFPS disseminates the accepted flight plans to the appropriate ATS units and the NM systems for the GAT IFR parts of the flight. By using the calculated flight profile IFPS automatically determines the required addresses for the messages within the IFPS Zone.

- 4.7.4.6 For flights which include a portion outside the IFPS Zone or which are not GAT IFR, the IFPS does not perform the addressing or dissemination for that section. In this case, the message originator is required to use the IFPS re-addressing function which provides a mechanism to ensure consistency between the flight plan distribution inside the IFPS Zone and the FPL distributed outside the IFPS Zone. Alternatively, AOs can address the corresponding parts of the flight plan message directly to the ATS units involved.

- 4.7.4.7 In case of non-availability of particular CDR1s or area volumes for a flight or specific restrictions, IFPS will invalidate the flight plan. The IFPU operator may modify the flight plan in accordance with the agreements between the NM and AOs.

#### **4.7.5 Aircraft Operator "What-If" Re-Route (AOWIR) Function**

- 4.7.5.1 This NM function allows an AO to request a modification of an FPL routeing within the NM system via CHMI and NOP.

- 4.7.5.2 The user initially makes a series of consultations in order to assess different re-routeing options proposed by the AOWIR.

- 4.7.5.3 On identifying a better routing possibility than that initially planned in the original FPL, the user must choose the FPL re-filing option between:
- a) Case 1: allowing the NM/IFPS to directly update the original FPL and associated IFPS messages as if a change message (CHG) had been submitted by the user or,
  - b) Case 2: allowing the NM/IFPS to proceed as if an FPL cancellation message (CNL) had been submitted and a new slot booked by the user.

In this latter case the user must then re-file the FPL via AFTN/SITA whereas in case 1 no further flight planning actions are required by the user (see also NM User's Manual).

#### **4.7.6 Airspace Data Repository (ADR)**

- 4.7.6.1 In order to enhance processes at strategic, pre-tactical and tactical level, a rapid access to accurate information (e.g. portal web access) requires a new approach to avoid data inconsistency and to overcome the limitations of dissemination of updated information through messages.
- 4.7.6.2 These objectives are met through a common pool for the exchange and dissemination of up to-date and accurate data between airspace users and ATM providers. Depending on the need, data can be retrieved on request or delivered automatically to stakeholders.
- 4.7.6.3 By having access to common airspace and flight plan data pooling systems, all users involved in ATM benefit from a standard source of consolidated, consistent and up-to-date information and have the possibility to process automatically consistent digital information.
- 4.7.6.4 Such an airspace data pooling system is the Airspace Data Repository (ADR) (see Figure 12). Any query to the common airspace data repository defines the time parameter of its scope allowing any user to retrieve information related to a present, past or future status.
- 4.7.6.5 All interested parties have regulated access to stored airspace data granted up to specified levels of information. Such collaborative distributed environment and security mechanisms ensure that sensitive information can be stored, but with a restricted access managed by the information owner.

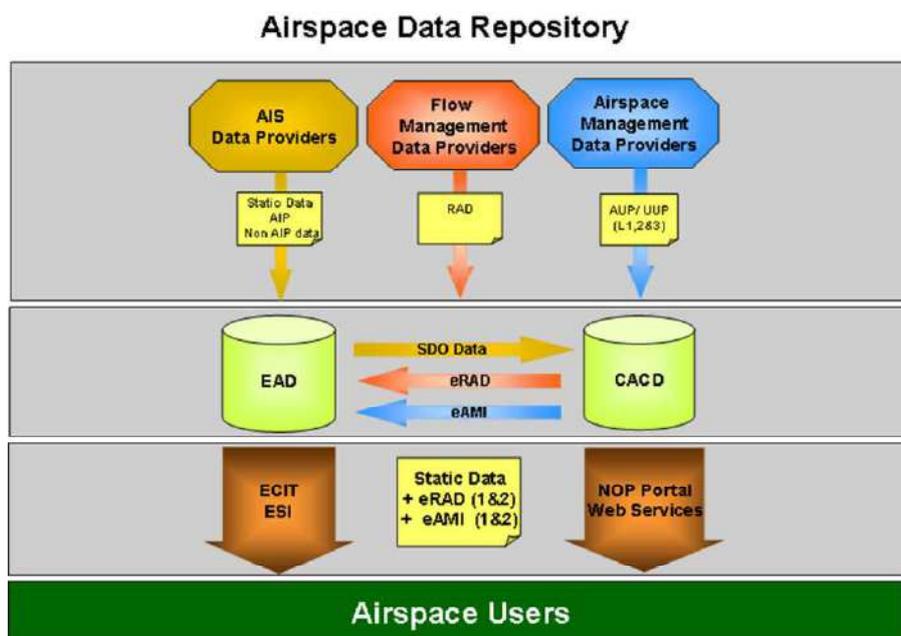


Figure 12: Airspace Data Repository

#### 4.7.7 Predefined Airspace scenario Data Repository

- 4.7.7.1 An initial Scenarios Repository has been implemented in the NM System for new scenarios created as from May 2017. The scenarios information is stored and used consistently across the different NM tools. Every AIRAC cycle, the FMPs will be provided, with a list of invalid Reference Scenarios to be reviewed, deleted or updated (propose replacement scenarios if needed) via the NOP Portal. Based on this validated feedback information NM will create new scenarios and update existing reference scenarios for future.
- 4.7.7.2 The publication process is partly automated, consistent with the Dynamic Network Plan (DNP) process. Standardised Maps show automatically the Reference Location of the Scenario, the initial flows and the rerouted flows (including suggested alternative routes) together with all relevant points.
- 4.7.7.3 Pre-defined airspace scenarios should be considered complementary to the ATFCM scenarios, providing a full set of information to perform an effective network assessment. A common data repository is therefore necessary<sup>12</sup>. A process for the identification, definition, storing and maintenance of the pre-defined airspace scenarios should be established with the involvement of AMCs, similarly to the process in place for ATFCM scenarios.

#### 4.7.8 ASM Support Tools

- 4.7.8.1 This chapter specifies the system support to ASM/ATFCM process as required by the "EUROCONTROL Specification for the application of the Flexible Use of Airspace" Edition 1.1, GEN-TECH-01 up to GEN-TECH-10<sup>13</sup>.

<sup>12</sup> Technical solutions are not yet available.

<sup>13</sup> Reference: EUROCONTROL-SPEC-0112

- 4.7.8.2 The entire process is assuming that capability through system support exists in order to ensure an automatic management of the data flow among users.
- 4.7.8.3 Supporting tools will ease the transfer of data, assist planning, automate the booking of airspace and make possible the assessment of the likely impact of decisions. Adequate system support will ensure the accuracy of the data that are used by the partners in ASM. Data consistency will guarantee that all ATM users are using the same information.
- 4.7.8.4 ASM supporting tools will support the activation, deactivation, short-term cancellation or amendments to reservations and reallocation of the airspace structures.
- 4.7.8.5 The ASM supporting tools will provide the real time airspace status on an airspace status display. They may be capable of interfacing with the ATC systems providing them with real time airspace status data.

## **4.8 ASM LEVEL 2 TIMETABLE (see Annex 3)**

**4.8.1** The application of the procedures described below will continue to allow the tactical management of CDR1s and TRAs/TsAs according to the current *modus operandi*.

**4.8.2** Outside the AUP/UUP process, the changes will continue to be treated at a tactical level and will be processed at the ATC level, informing the users tactically. Notification to neighbouring ATC units and NM will be provided tactically (e.g. by phone, fax or UUP-like message). The detailed procedure is described in paragraph 4.8.6.

### **4.8.2.1 D-6 to D-2 before Operations**

4.8.2.1.1 From D-6 to D-2 AMCs collect any information about airspace plans related to the reference day of Operations and publish it via DRAFT AUPs. This information could trigger coordination with relevant FMPs, adjacent AMCs and NM in order to properly assess any impact of the available information on the expected traffic forecast for the reference day, identify and highlight capacity shortfalls, and eventually agree on the adaptation of the airspace plans and/or traffic flow adjustment requirements that will be requested on the reference day of operations.

4.8.2.1.2 The required DRAFT AUPs are published on the NOP Portal. Considering this promulgation not mandatory, it is not foreseen to publish the EAUP for the reference day.

### **4.8.2.2 The Day before Operations (D-1)**

#### **4.8.2.2.1 Before 11.00 UTC (10.00 UTC Summer) on the Day before Operations:**

- a) the FMP, with its related ACC, should compare the NM operational requirements for traffic flow adjustment with relevant ACC factors such as sector handling capability, equipment constraints, staff availability and operational factors, and determine the corresponding NPZs, possible AUP/RAD restrictions, CDR1s and/or specific airspace configuration requirements;
- b) the ACC/FMP should notify the NPZs, AUP/RAD restrictions, CDR1s availability/unavailability and/or specific airspace volume/configuration requests to the AMC, with details of traffic forecasts, capacity shortfalls and delay predictions;
- c) the national AAs should collect all airspace user requirements for TRAs/TsAs, AMC-manageable R and D Areas and CBAs, for the 24-hour period of the next day of operations, and submit them as the civil/military Airspace Requests to the AMC;
- d) the managers of designated R and D areas should advise the AMC of the details of any changed period of these areas utilisation;
- e) NM should identify pre-defined airspace scenarios suitable for a more effective traffic flows management and advise the relevant AMCs on the proposed activation of selected pre-defined airspace scenarios.

**4.8.2.2.2 Before 15.00 UTC (14.00 UTC Summer) on the Day Before Operations:**

- a) the AMC should collect, collate and analyse all airspace requests, including the proposed activation of pre-defined airspace scenarios, resolve conflicts through negotiation and coordination, respond to any additional requests to resolve route inconsistencies, and decide on availability/unavailability of CDR1s, temporary reserved areas in accordance with the priority rules established at ASM Level 1;
- b) the AMC should obtain details of CDR1s managed at ASM Level 2 and decide on the periods of temporary unavailability of CDR1s;
- c) the AMC, in coordination with relevant FMPs, AAs and NM, identifies the FBZs and/or FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group to be activated in association with the selected reserved areas allocated and/or restricted areas notified activation or changed period of activation;
- d) AMC should be notified by the relevant FMPs of the AUP/RAD restrictions to be included, unless local FMPs are authorised to insert directly in the DRAFT AUP.
- d) the AMC should compose a Draft AUP after conducting, if required, coordination with other AMCs and relevant FMPs for AUP/RAD restrictions. Where authorised, FMPs can compose the DRAFT AUP for the information related to the AUP/RAD restrictions. The AUP should be ready in DRAFT status by 13.00 UTC (12.00 UTC Summer) at the latest;
- e) between 13.00 and 14.00 UTC (12.00 - 13.00 UTC Summer) NM should evaluate the impact on the network of the "draft" airspace allocation and restrictions information in close coordination with FMPs and AMCs concerned, verify the impact on initial pre-defined airspace scenarios and forward proposals to relevant AMCs and FMPs. A scenario may contain recommendations on change in CDR1s/TRA/TSA's availability details (e.g. flight level band, availability time), sector reconfiguration etc.  
  
Where relevant, the pre-defined airspace scenarios should also contain information for all States concerned, with an indication of changes that should be agreed by those States to make the scenario work.  
  
*Note: NM may identify more than one pre-defined airspace scenario.*
- f) between 14.00 and 15.00 UTC (13.00 and 14.00 UTC Summer) the AMC should consider the advice/alternatives proposed by NM and coordinate proposed changes with the Airspace Users that requested airspace reservations, if required. The AMC, in coordination with relevant FMP or directly the authorised FMPs should consider the advice/alternatives proposed by NM on the draft AUP/RAD restrictions;  
  
The final decision to activate a pre-defined airspace scenarios/areas allocation decision remains the responsibility of the AMC as well as the responsible FMPs for the AUP/RAD restrictions;
- g) by 15.00 UTC (14.00 UTC Summer) the AMC shall promote the AUP in READY Status for the 24-hour period from 06.00 UTC on the day of operations to 06.00 UTC the next day (06.00 UTC D to 06.00 UTC D+1);
- h) The AMC may send the AUP to AAs, FMPs, ACCs and, if bilaterally agreed, to adjacent AMCs via other means of notification (e.g. AFTN).

**4.8.2.3 Before 16.00 UTC (15.00 UTC Summer) on the Day Before Operations:**

- a) NM consolidates the READY AUPs information in a European AUP (EAUP) that is published on the NOP portal and post on eAMI server. Dissemination of information via eAMI should allow stakeholders using B2B service to upload EAUP information in their systems.
- b) NM MILO/CADF should ensure that information on CDR1s availability/unavailability, areas allocation with associated restrictions and AUP/RAD restrictions is made known to the NM Operational Units;
- c) the FMPs/ACCs should notify NM of any resulting capacity changes that could affect ATFM measures.

**4.8.2.4 After 16.00 UTC (15.00 UTC Summer) on the Day Before Operations:**

4.8.2.4.1 AOs file or re-file their FPLs according to the airspace, restrictions and ATFCM situation.

**4.8.2.5 Release of Areas, Cancellation/Relaxation<sup>14</sup> of FUA restrictions/ FUA/RAD restrictions/AUP/RAD restrictions/FUA restrictions groups/ Airspace Scenario Restriction Group, NPZs and/or New Availability of CDR1s**

4.8.2.5.1 The following procedures will be applied to provide information to the airspace users about changes of the airspace plan in relation of release of NPZs, areas and/or associated FUA restrictions/ FUA/RAD restrictions/ AUP/RAD restrictions, FUA restrictions groups/ Airspace Scenario Restriction Group previously planned as well as increased availability of CDR1s.

**4.8.2.6 As Required on The Day Before Operations:**

4.8.2.6.1 *Alteration of AUP via UUP publication on D-1*

4.8.2.6.1.1 The Airspace Users that have requested airspace allocations should advise the AMC about any change in their planning. This will enable the associated CDR1 and/or airspace volumes to be available for additional period(s) than planned in the earlier AUP. If required, the AMC should inform the FMP and NM about the new airspace opportunities using an UUP.

- a) as from the EAUP publication (16.00 UTC /15.00 UTC Summer):
  - the Airspace Users which requested airspace allocations should advise the AA/AMC about the changes in their planning of area usage for the next day, if any (e.g. activity completed earlier than planned, cancelled or reduced in time or volume, change of activity which does not require a FUA restriction/ FUA/RAD restriction/ FUA restrictions group or requires a less restrictive FUA restriction(s)/ FUA/RAD restriction/ FUA restrictions group(s) etc.);
  - FMP should inform AMCs for any NPZ activation no more required.
  - FMP should inform AMCs on the additional relaxation of AUP/RAD restrictions;

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<sup>14</sup> "Relaxation" means an increase of the availability (in time and/or in space) of the CDR1s/airspace which are part of the restriction.

- If authorised to manage directly the changes of AUP/RAD, FMP should request AMC to prepare the UUP in draft.
- b) with regards to the areas, upon reception of a such information, the AA/AMC should check if the airspace is needed by another user. In case of new requests, the AA/AMC verifies whether FUA restrictions/ FUA/RAD restriction/ FUA restrictions groups/ Airspace Scenario Restriction Group are required;
  - c) if there is no requirement for use of that volume of airspace from other users, or the new activity does not require any FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group or allows a relaxation of the previously published FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group, AMCs should inform national FMPs and NM regarding the intention to cancel/decrease airspace segregations/selected FBZs (in time and/or space) and/or the associated FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group;
  - d) AMCs notify the changes of NPZ/areas cancellation/reduction, relaxation of FUA restriction/ FUA/RAD restrictions/ AUP/RAD restrictions / FUA restrictions groups/ Airspace Scenario Restriction Group and or new CDR1s availability via the utilisation of the first convenient UUP from 17.00 UTC (16.00 UTC Summer) every hour up to 20.00 UTC (19.00 UTC Summer);
  - e) the UUPs provide information on the changes starting from 06.00 UTC D to 06.00 UTC D+1. Any UUP promoted by the AMC in READY Status contains full information all AUP/UUP elements, superseding the content of the previous publication.

#### 4.8.2.6.2 *Draft UUP*

4.8.2.6.3 In some cases the re-routeing of traffic on new available CDR1s and/or available areas (e.g. TRA) due to the cancellation/decrease of airspace segregations/selected FBZs (in time and/or space) and/or associated FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group, or relaxation of the AUP/RAD restrictions could produce downstream effects. This could be particularly relevant when the availability of CDR1s is associated to the application of RAD restrictions. Experience of actors involved (AMCs, FMPs and NM) and/or strategic analysis will identify such situations that require the usage of draft UUP.

4.8.2.6.4 Because lead-time for the new availability of CDR1s and/or areas (e.g. TRA) is not required, in case of draft UUP AMC should consider the time required for the coordination and identify which UUP is most suitable, asking NM staff to allow them for the preparation of the selected UUP. AMC will request NM staff to allow the preparation of UUP also in case of modification limited to the AUP/RAD restrictions, managed by AMC on the indication of FMPs or managed directly by FMP.

4.8.2.6.5 On the basis of Draft UUP received from AMC(s), FMPs, if not advised before, and NM should identify the flights impacted and assess the additional CDR1s openings or available airspace (e.g. TRA) opportunities from the Local/Network perspective and communicate them (if any) to AMCs for their consideration.

- 4.8.2.6.6 Such advice may contain recommendations on changes in CDR1s/areas availability details (e.g. flight level band, availability time, FUA restrictions/ FUA/RAD restrictions/ AUP/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group), sector re-configuration, etc. Where relevant, the advice should also contain information for all States concerned with the pre-defined airspace scenario, with an indication of changes that should be agreed by those States to make the pre-defined airspace scenario viable.
- 4.8.2.6.7 AMCs should receive the pre-defined airspace Scenario proposed by NM and FMPs and take into consideration their proposals.
- 4.8.2.6.8 AMCs should take the final airspace allocation decision and related restrictions, while FMP will take the final decision on the AUP/RAD restrictions. AMC will consolidate the decisions promoting the suitable UUP in READY Status.
- 4.8.2.6.9 NM consolidate the UUPs received publishing the EUUP that will update NM Environment (CACD) database in order to ensure FPL consistency.
- 4.8.2.6.10 The new CDR1s/areas/NPZs availability and/or cancellation/relaxation of FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group / AUP/RAD restrictions information should be disseminated by NM through:
- a) The NOP portal; and
  - b) eAMI.
- 4.8.2.6.11 Dissemination of information via eAMI should be achieved through the posting the new airspace allocation onto FTP server in the same way as it is being done by NM for e-RAD promulgation. Such a process would allow AO stakeholders using B2B service to upload the updates into their systems.
- 4.8.2.6.12 If FPLs are available, re-routing/new trajectory proposal messages should be submitted by NM (i.e. by AOLO) to potentially interested AOs, concentrating on the most beneficial CDR1s/airspace volumes available.
- 4.8.2.6.13 Interested AOs should re-file FPLs accordingly.

#### **4.8.2.7 The Day of Operations**

- a) Airspace users should utilise the areas in accordance with the AUP and UUPs allocation as promulgated on D-1;
- b) ACCs should utilise the CDR1s or the airspace of non-allocated areas in accordance with the AUP and UUPs activation as promulgated on D-1 as well as with tactical modus operandi;
- c) AOs should flight plan the CDR1s and/or waypoints (e.g. FRA) in accordance with AIPs publications and EAUP and EUUPs activations as promulgated on D-1;
- d) AOs should flight plan according to the opportunities offered by the relaxation of the AUP/RAD restrictions published via EAUP/EUUP.

#### 4.8.2.7.1 **As Required on the Day of Operations:**

##### 4.8.2.7.1.1 *On the Day of Operation (D):*

- the Airspace Users, which previously requested airspace, advise the AA/AMC about any change in their planning (e.g. activity completed earlier than planned, cancelled or reduced in time or volume, change of activity which does not require an FBZ and/or FUA restriction/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group or requires a less restrictive FUA restriction/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group etc.) or additional relaxation of the AUP/RAD restrictions. This will enable the associated CDR1s and/or airspace volumes to be available for additional period(s) than that planned in the AUP or D-1 UUPs;
- FMP should inform AMCs for any NPZ activation no more required;
- FMP should inform AMCs on the additional relaxation of the AUP/RAD restrictions;
- If authorised to manage directly the changes of AUP/RAD restrictions, FMP should ask AMC to prepare the UUP in draft.

- a) with regards to areas, upon reception of such information the AA/AMC should check if airspace is needed by another user(s). In case of new requests, AA/AMC verifies whether FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group are required;
- b) The AMC will inform FMP and NM about the new airspace opportunities;
- c) AMCs notify the changes of NPZ/areas cancellation/reduction, relaxation of FUA restrictions/ FUA/RAD restrictions/ AUP/RAD restrictions FUA restrictions groups/ Airspace Scenario Restriction Group and or new CDR1s availability using the first convenient (no lead-time is required) UUP from 07.00 UTC (06.00 UTC Summer) every 30 minutes up to 20.00 UTC (19.00 UTC Summer). AMC will ask NM staff to allow the preparation of UUP also in case of modification limited to the AUP/RAD restrictions managed by AMC on indication of FMPs or managed directly by FMP. Each UUP promoted READY by the AMC and promulgated by NM staff with the EUUP supersedes the previous one(s).

4.8.2.7.2 In those situations where Network and Local Network Assessment is deemed necessary (e.g. affecting pre-defined airspace scenarios), AMC should inform national FMPs and NM regarding the intention to lift/decrease airspace segregations (in time and/or space), and/or cancellation/relaxation of FBZ and/or FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group and the opportunity of additional CDR1s/airspace volumes availability via Draft UUP. In case of additional relaxation of the AUP/RAD restrictions, the relevant FMP will coordinate with NM directly or via AMC if appropriate.

4.8.2.7.3 In case of draft UUP, AMC should consider the time required for coordination and identify which UUP will be suitable to eventually publish the information.

- a) the NM and the FMPs should identify possible benefits from the opportunity (e.g. off-loading sector, sector reconfiguration etc.). On the basis of the Draft UUP received from AMC(s), NM should identify the flights

impacted and assess the additional CDR1s opening or available airspace opportunities or additional relaxation of the AUP/RAD restrictions from the network perspective and provide advice (if any) to the AMCs and FMPs for their consideration;

- b) such advice may contain recommendations on change in CDR1s/areas availability details (e.g. flight level band, availability time, FBZ and/or FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group), AUP/RAD relaxations, sector re-configuration, etc. Where relevant, it should also contain information for all States concerned with the pre-defined airspace scenario, with an indication of changes that should be agreed by those States to make the pre-defined airspace scenario viable.

4.8.2.7.4 AMCs should receive the pre-defined airspace scenario proposed by NM and FMPs and take into consideration their proposals.

4.8.2.7.5 AMCs should take their final airspace allocation decision and related restrictions, while FMP will take the final decision on the AUP/RAD restrictions. AMC will consolidate the decisions promoting the suitable UUP in READY Status

4.8.2.7.6 NM consolidate the UUPs received publishing the EUUP that will update the NM CACD database in order to ensure FPL consistency.

4.8.2.7.7 The new CDR1s/areas/NPZs availability and/or cancellation/relaxation of FBZ and/or FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group, AUP/RAD restrictions information is disseminated by NM through:

- a) NOP portal; and  
b) eAMI.

Dissemination of information via eAMI should be achieved through the posting of the new airspace allocating onto FTP server in the same way as is being done by NM for e-RAD promulgation. Such a process would allow AO stakeholders using B2B service to upload the updates.

4.8.2.7.8 If FPLs are available, re-routing/new trajectory proposal messages should be submitted by NM (i.e. by AOLO) to potentially interested AOs, concentrating on the most beneficial CDR1s/airspace volumes available.

- Should the flight be in the Planning Phase, interested AOs should re-file FPLs accordingly.
- Should the flight be in the Execution Phase, it may continue as planned. Any required rerouting will be provided by ATC to the pilot.

*Note 1: Flight in the planning phase means a flight in any stage of preparation 1 hour or more before EOBT.*

*Note 2: Flight in execution phase means a flight from 1 hour before EOBT onwards (including the airborne stage).*

### 4.8.3 Restricted Airspaces (RSA)<sup>15</sup> Management in AUP/UUP

#### 4.8.3.1 General

- 4.8.3.1.1 Restricted Airspaces (RSAs) is the generic term used in NM systems to represent a part of the Airspace where General Air Traffic (GAT) can be restricted. In practice, it corresponds in most cases with reserved/restricted areas where military operations or other operations that require segregations may take place. It includes as well NPZs whenever defined to delineate a volume where FPLs are not accepted for a better traffic management.
- 4.8.3.1.2 Each Restricted Airspace is managed by one and only one AMC (Airspace Management Cell) - in case of a Cross Border Area (CBA) or cross border NPZ by the lead AMC – which is responsible for the coordination and final publication of the restrictions of the Airspace.
- 4.8.3.1.3 CACD data only includes Restricted Airspaces (RSAs) after coordination with the concerned AMC through the National Environment Coordinator (NEC). This coordination is needed to decide precisely which of the Restricted Airspaces published in AIPs are required in CACD and to define specific parameters for which values are not published.
- 4.8.3.1.4 It should also be noted that once Restricted Airspaces (RSAs) are defined in CACD database, an AUP is required daily for the concerned AMC<sup>16</sup>.

#### 4.8.3.2 Activation

- 4.8.3.2.1 The RSA Activation includes a FL band (Lower/Upper FL), a start date and time, and the end date and time.
- 4.8.3.2.2 RSA allocations from Released AUPs/UUPs are automatically propagated to the corresponding RSA Activation tables.
- 4.8.3.2.3 *Remark 1. However, it should be noted that RSA activation alone in AUP/UUP does not ensure cross check and invalidation of the FPLs of the flights crossing the area volume of airspace when area is planned to be activated.*
- 4.8.3.2.4 Using CIAM CDR expansion function or a local ASM tool, AMC can identify and publish in AUP/UUP list of associated CDR1s and define scenarios of their availability/unavailability in case the RSA is activated. Such scenarios should be defined well in advance, coordinated and pre-validated with CADF NMD.
- 4.8.3.2.5 *Remark 2. However, it should be noted that only those FPLs that consist of unavailable CDR1s (or portion of) in field 15 will be rejected or invalidated. The FPLs that do not consists of the unavailable CDR1s (e.g. filing DCT trough active TSA/TRA) will not be captured by either two processes described above. For DCT*

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<sup>15</sup> RSA is the current terminology used in CACD to identify generally all different types of areas, manageable or not, that can be allocated via CIAM.

<sup>16</sup> It is possible to have an RSA in CACD not associated to AMC.

The RSA must then be non-FUA (flexible use 'N'). This is possible for RSA types of Danger Area, Restricted Area and Prohibited Area. However, these non-FUA RSAs cannot get the type "FBZ" or "NPZ". FBZ and NPZ are always FUA. If the non-FUA RSA is not linked to an AMC, then the Area does not appear in any AUP.

*described in RAD Appendix 4 this is valid as well, unless a dependent applicability with the RSA is pre-defined. In this case, the FPL filing the DCT will be rejected or invalidated. Even if the RSA will be partially allocated (level band), all the FLs of the DCT described in RAD Appendix 4 will be affected.*

- 4.8.3.2.6 In order to ensure that the volume of the RSA made active in AUP/UUP is effectively sterilised, AMC should coordinate with NM CADF the implementation of required FUA restrictions/<sup>17</sup> FUA restrictions groups/ Airspace Scenario Restriction Group, as described in 4.8.4.3.
- 4.8.3.2.7 As a result, the FPL crossing the volume of the airspace of an active RSA will be rejected or invalidated in accordance with FPL reprocessing process. For more details about IFPS reprocessing process please refer to IFPS User's Manual.
- 4.8.3.2.8 There is a possibility to identify several FUA restrictions with different kind of exemptions, belonging or not to different FUA restrictions groups related to the RSA activations. A standard FUA restriction with no exemption implies that the relevant volume of the RSA will be fully sterilised. For more details, please refer to the AMC/CADF Operations Manual.
- 4.8.3.2.9 For each RSA established to segregate activities hazardous for other traffic (e.g. military training activities), one or more FBZ could be defined and published in the AIPs according to the provisions described in ERNIP Part 1, Chapter 9. AMCs, in coordination with the relevant FMPs AAs and NM, if required, are responsible to decide which FBZ together with their associated FUA restrictions/ FUA/RAD restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group should be activated in accordance with the associated RSA allocation.

#### **4.8.3.3 FUA Restrictions, FUA/RAD Restrictions and AUP/RAD Restrictions**

- 4.8.3.3.1 There are different types of restrictions that may be coordinated with the NM. In relation to the RSA/FBZ reservations, specific type of restrictions (termed as FUA Restriction), FUA/RAD Restriction and can be coordinated.
- 4.8.3.3.2 FUA Restrictions are used to identify the restrictions published in RAD Appendix 7 and notified daily via AUP/UUP. These restrictions are implemented in CACD as well as the associated RSAs. By convention, the RAD Appendix 7 restrictions will have an identifier composed of the RSA Identifier (e.g. EBTRA01) + the letter 'R'. In case of more than one FUA restriction are associated with the same RSA/FBZ, different letters other than "R" can be used. These shall be properly reflected in the RAD Appendix 7. Detailed criteria to be used for the selection of the letters are described in ERNIP Part 1, Chapter 8.
- 4.8.3.3.3 FUA/RAD Restrictions are used to identify the restrictions published in RAD Appendix 4 and RAD Annex and notified daily via AUP/UUP. These restrictions are implemented in CACD as well as the associated RSAs. By convention, these RAD Appendix 4 and RAD Annex restrictions will have an identifier which comprises the ICAO nationality letters for location indicators assigned to the State of origin or 2 letter Regional / FAB naming convention prefix code, together with an up to 5 digit number (LF50001, DU52345, RE54999, DSYX50000). Detailed

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<sup>17</sup> FUA/RAD restrictions will be activated by the allocation of the RSAs having a time dependent applicability.

criteria to be used for the selection of the letters are described in ERNIP Part 1, Chapter 8.

- 4.8.3.3.4 In case of an FBZ is required, at least one associated FUA restriction shall be defined in CACD and activated whenever the FBZ is allocated. The associated restriction will have an identifier composed of the published FBZ identifier (e.g. EBTRA01 Z) + the letter 'R'. In case of more FUA restrictions are associated to the same FBZ, different letters other than 'R' can be used. These shall be properly reflected in the RAD Appendix 7. Detailed criteria to be used for the selection of the letters are described in ERNIP Part 1, Chapter 8.
- 4.8.3.3.5 The implementation of a FUA restriction, or FUA/RAD restriction, for an FBZ does not preclude the option to implement a FUA restriction for the associated RSA as well, if so, required by the relevant State.
- 4.8.3.3.6 For ad-hoc RSAs implemented for a temporary period (e.g. large scale exercises or special events), planned to be processed via AUP/UUP, a FUA Restriction and/or FUA/RAD restriction could be defined in the CACD system, if required. It will be established and published according to the procedures defined in ERNIP Part 4, Chapter 5, Section 5.2.2 – Annex for Special Event/s. The Restriction identifier will follow the procedures described in paragraph 4.8.3.3.2.
- 4.8.3.3.7 FUA Restrictions associated to an RSAs and/or an FBZs could be complex. For the implementation into the technical systems, a complex restriction requires the breakdown into basic restrictions utilising sub-codes for their identification. The RAD Appendix 7 should describe the complete FUA restriction using a single code, as defined in paragraphs 4.8.3.3.2 and 4.8.3.3.3. In the NM systems (e.g. CACD) a complex FUA restriction/ FUA/RAD restriction is inserted as a list of sub-codes of the basic restrictions which together defines the complex restriction. These sub-codes will contain the FUA restriction code (e.g. EBTRA01R) followed by a letter starting from A (e.g. EBTRA01RA, EBTRA01RB etc.). In these cases, the IDs of the areas/FBZs should be adapted to respect the maximum length of 10 characters including the letters for the associated restrictions.
- 4.8.3.3.8 The FUA restrictions and FUA/RAD restrictions, activated with the associated RSAs (permanent or ad-hoc) are allocated via AUP/UUP. The final publication of EAUP/EUUP will automatically generate the closure of the airspace in the CACD, therefore the interaction with the IFPS system for checking the FPLs is affected.
- 4.8.3.3.9 In case of complex FUA restrictions, all sub-codes will be manageable via ASM systems (e.g. CIAM). For the correct activation of a FUA restriction, all sub-codes shall be activated simultaneously. In no circumstances a sub-code part of a complex FUA restriction could be activated in isolation. The final EAUP/EUUP publication will contain only the sub-codes of the basic restrictions.
- 4.8.3.3.10 Besides pre-defined scenarios, the system used for the area allocations (e.g. CIAM), will offer the option to de-couple the restrictions from the RSAs<sup>18</sup>. In these cases the publication of the areas via AUP/UUP won't affect the FPLs.
- 4.8.3.3.11 AUP/RAD Restrictions are RAD restrictions published in RAD Annexes (States are responsible), not linked with any RSA/FBZ/NPZ structures and published in the

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<sup>18</sup> This function will not be available for FBZ, by default implemented to affect FPLs.

national AUP/UUP. The main goal of establishing AUP/RAD Restrictions is to allow a temporary relaxation of RAD measures whenever traffic situation will offer the opportunity, with concrete benefits in terms of flight efficiency. In principle, any RAD Restriction could be eligible for a dynamic management as AUP/RAD Restriction if able to improve flight efficiency (e.g. level capping, mandatory rerouting). AUP/RAD Restrictions are published in the RAD document and their identification coding is described in ERNIP Part 1 chapter 8.

- 4.8.3.3.12 The decision of which RAD restrictions are eligible for a dynamic management is an ANSP responsibility. When necessary, NM could support the States to analyse the possible impact of introducing dynamicity to selected RAD restrictions. This support could be more relevant in case of cross-border restrictions, where NM can facilitate coordination among interested ANSPs. AOs and CFSPs could play a beneficial role when establishing the RAD Restrictions to be dynamically managed by AUP/UUP process.
- 4.8.3.3.13 In terms of roles and responsibilities, the management of the dynamic RAD Restrictions is the FMP remit. However, using AUP/UUP process, AMC is involved as the responsible for the collection and publications of the AUP/UUP information. Therefore, a direct coordination between FMP and AMC is required. Whether the AMC - FMP coordination is supported by technology, or it is only a communication link, this is the States' decision. A possible way of working is for the FMP to directly have access to the draft AUP/UUP in order to add the AUP/RAD Restrictions information. AMCs will remain responsible for the consolidation of AUP/UUP, promoting in READY status

#### **4.8.3.4 FUA Restrictions Group**

- 4.8.3.4.1 There is the possibility to establish FUA restrictions groups (composed of FUA Restrictions published in RAD Appendix 7 and FUA/RAD Restrictions published in RAD Appendix 4 and Annex) associated to RSAs and managed via AUP/UUP. Both shall be defined in CACD system. The aim is to set a group of different restrictions associated to an RSA and managed them dynamically.
- 4.8.3.4.2 As opposed to the basic restrictions from a complex FUA restrictions which are always activated together, the restrictions composing a FUA Restrictions Group could be activated individually. Moreover, the restrictions associated to an RSA, which are managed via AUP/UUP, could be activated as part of a FUA restrictions group or as a single restriction. Any restriction could be grouped under different or multiple FUA Restriction Groups and it could be activated individually or as part of a FUA Restriction Group<sup>19</sup>. This flexibility aims to improve the dynamicity of the FUA restrictions and FUA/RAD restrictions according to the traffic situation as well as sectors configurations at the moment of the RSA activation.
- 4.8.3.4.3 The possibility to establish FUA Restrictions Groups and adopt flexible solutions remain a state decision and it is reflected in CACD system accordingly. The FUA restrictions from RAD Appendix 7. and the selected FUA/RAD restrictions belonging to the FUA Restrictions Groups are promulgated via AUP/UUP.

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<sup>19</sup> Restriction group function is currently not available for airspace scenarios. Similarly, for AUP/RAD restrictions there is no function allowing the definition of a restriction group for clustering different AUP/RAD restrictions or in combination with other kind of FUA restrictions. This NM System functionality is planned to be implemented later.

- 4.8.3.4.4 Whenever a FUA restriction group is allocated via AUP/UUP, the ID of the FUA restriction as well as the IDs of the single restrictions will be notified to NM. The final publication in EAUP/EUUP will report only the IDs of the single restrictions activated as a group.
- 4.8.3.4.5 Whenever a State decide to establish a restriction group, the group ID and the restrictions group description is published in the RAD Appendix 7, according to the provision described in ERNIP Part 1, Chapter 8.
- 4.8.3.4.6 For ad-hoc RSAs implemented for a temporary period (e.g. large scale exercises or special events), planned to be processed via AUP/UUP, a FUA Restriction group/Airspace Scenario Restriction Group could be defined in the CACD system, if required. It will be established and published according to the procedures defined in ERNIP Part 4, Chapter 5 – Annex for Special Event/s. The Restriction identifier will follow the procedures ERNIP Part 1, Chapter 8.

#### **4.8.3.5 Restrictions Group linked to an Airspace Scenario**

- 4.8.3.5.1 There is the possibility to establish restrictions groups linked to an Airspace Scenario. The Airspace Scenario Restriction Group is a category of Restriction Group (beside already existing FUA Restriction Group and FUA/RAD Restriction Group). The restrictions in the group shall have dependent applicability on at least one RSA of the Airspace Scenario. The use of the Airspace Scenario Restriction Group is optional and not mandatory. Users can still work in the old way and use the default restrictions that are linked to the individual RSAs.

#### **4.8.4 Unplanned Activation of reserved/restricted areas and/or Associated FUA Restrictions/FUA/RAD Restrictions /FUA Restrictions Groups/ Airspace Scenario Restriction Group<sup>20</sup>/ AUP/RAD restrictions**

##### **4.8.4.1 As Required on the Day Before Operations:**

- 4.8.4.1.1 The Airspace Users that need additional airspace reservations and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ Airspace Scenario Restriction Group/ FUA restrictions groups<sup>21</sup> should advise the AMC on the unplanned activation of airspace and/or new/more constraining FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group required (in addition to those published by AUP earlier). For this purpose, as from EAUP publication up to 17.00 UTC (16.00 UTC Summer), Airspace Users should send to the AMC their request on additional airspace activation needs and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group which were not envisaged by and published in the relevant AUP.
- 4.8.4.1.2 If required, the AMC may carry out coordination with neighbouring AMCs and identify potential available areas in order to find other solutions instead of making a CDR1 unavailable and/or restricting access to airspace volumes that were previously available.

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<sup>20</sup> The Restriction Groups functionality to include Airspace Scenarios is not yet implemented in NM Systems. It is planned to be implemented later.

<sup>21</sup> More "constraining" FUA restriction means a decrease of the availability (in time and/or in space) of the CDR1s which are part of the restriction.

- 4.8.4.1.3 Relevant FMPs should advise the AMC on the unplanned activation of NPZs and/or more constraining FUA restrictions associated to NPZs or the need to reduce FPL opportunities offered by the AUP/RAD restrictions previously published.
- 4.8.4.1.4 AMC should inform FMPs concerned, in case of RSA related to the segregation of activities hazardous for other traffic, and NM regarding the intentions to implement new or increase already published RSAs (in time and/or space) and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group or reduced FPL opportunities offered by the AUP/RAD restrictions previously coordinated with the relevant FMPs using a Draft UUP one hour before the concerned UUP (e.g. 17.00 UTC for the 18.00 UTC UUP slot). The draft UUP can be used by the relevant FMP if authorised to manage directly AUP/RAD restrictions. Any of the D-1 UUPs could be used for unplanned activation of areas and/or associated FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group AUP/RAD restrictions, from 17.00 UTC to 20.00 UTC winter time. Remark: "Concerned FMPs" are the FMPs of all ACCs that could be affected by CDR1/airspace volume unavailability or responsible for the identified AUP/RAD restrictions.
- 4.8.4.1.5 NM, FMPs concerned and the AMC should assess the impact of the request at local and network level (e.g. on-loading sector, sector re-configuration, pre-defined airspace scenarios etc.). During this step, NM should identify the flights and/or ATS sectors that would be impacted by the route/airspace unavailability or reduced FPL opportunities offered by the AUP/RAD restrictions previously published. NM should consider these elements in the assessment, look for opportunities (reducing the network impact) and coordinate with the AMC and FMPs concerned for optimisation of airspace allocation (e.g. changing the activation time, flight level band, CDR1s unavailability details, different FBZs and/or FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group etc.) or reconsider the reduced FPL opportunities offered by the AUP/RAD restrictions previously published (in terms of time). NM should send the result of this analysis and potential alternative scenarios (if any) to the AMCs and to the FMPs concerned for their consideration.
- 4.8.4.1.6 AMCs should receive the Scenario proposed by NM and conduct final coordination with Airspace Users, if required. FMP should evaluate the received proposals for the modification of reduced FPL opportunities offered by the AUP/RAD restrictions previously published.
- 4.8.4.1.7 AMCs should take the final airspace allocation decision, in cooperation with relevant FMPs for AUP/RAD restrictions, and, if required, compose UUP by 15 minutes before the concerned UUP slot (e.g. 17.45 UTC for the 18.00 UTC UUP slot) (Ready status) and release the resulting UUP information on the hour (e.g. by 18.00 UTC) at the latest through the most suitable EUUP. Relevant AAs, areas users, FMPs concerned and adjacent AMCs where required, should acknowledge receipt of the UUP.
- 4.8.4.1.8 After the EUUP publication, the new airspace structure (ad hoc activation of area, new/more constraining FBZs, NPZs, and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group and unavailable CDR1s) or the reduced FPL opportunities offered by the AUP/RAD

restrictions previously published will be implemented in the NM CACD database (only valid as from 06.00 UTC on the Day of operations) to ensure FPL consistency.

- 4.8.4.1.9 The CDR1s unavailability and/or new/more constraining areas/NPZs activations, FBZs and/or FUA restrictions and/or FUA/RAD restrictions and/or restrictions belonging to FUA restrictions groups and/or reduced FPL opportunities offered by the AUP/RAD restrictions previously published information relevant for flight planning should be disseminated by NM through:
- a) the NOP portal; and
  - b) eAMI.
- 4.8.4.1.10 Dissemination of information via eAMI is being done through the posting onto FTP server in the same way as is being done by NM for e-RAD promulgation. Such a process will allow AO stakeholders using B2B service to upload the updates. It remains a State responsibility to decide on the requirement for any AIS notifications (e.g. NOTAM) in addition to AUP/UUP as detailed in 4.7.2.2.2.
- 4.8.4.1.11 If FPLs are available, FLS messages should be sent by NM to AOs for the flights concerned. AOs concerned should re-file FPLs accordingly.

#### **4.8.4.2 As Required on the Day of Operations**

- 4.8.4.2.1 On the Day of Operation (D), the Airspace Users that need additional airspace reservations and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ should advise the AMC on the unplanned activation of airspace and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group required (in addition to those published by AUP/UUP at D-1).
- 4.8.4.2.2 Relevant FMPs should advise the AMC on the unplanned activation of NPZs and/or more constraining FUA restrictions associated to NPZs or the need to reduce FPL opportunities offered by the AUP/RAD restrictions previously published.
- 4.8.4.2.3 AMC, in coordination with relevant FMPs in case of AUP/RAD restrictions, should ask NM staff to allow the preparation of DRAFT UUP (FMP directly for AUP/RAD restrictions if authorised) in case of new RSA requests or to activate new or increase already published RSAs (in time and/or space) and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/, or reduced FPL opportunities offered by the AUP/RAD restrictions previously published, using the first convenient UUP from 07.00 UTC (06.00 UTC Summer) every 30 minutes up to 20.00 UTC (19.00 UTC Summer)<sup>22</sup>. For the choice of the convenient UUP, it should be considered the required lead-time of Three Hours (3H) before its validity. In case of the request does not respect the three hours (3H) lead time, NM should inform AMC that the request to produce the draft UUP is rejected, unless specific contingency situation requires an exception (e.g. correction of previous erroneous publication). Relevant AAs, TSA/TRA users, FMPs concerned and adjacent AMCs where

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<sup>22</sup> A technical solution is planned to trigger an alert for NM staff in case of ad-hoc requests.

required, should acknowledge receipt of Draft UUP.

- 4.8.4.2.4 Based on the Draft UUP, NM, FMPs concerned and the AMC should assess the impact of the request at local and network level (e.g. on-loading sector, sector re-configuration etc.). Specifically, NM will focus on the assessment of additional airspace requests affecting predefined airspace scenarios.
- 4.8.4.2.5 During this step, NM in coordination with FMPs concerned should identify the flights (also those in the “execution phase”, i.e. inside 1 Hour prior EOBT) and sectors that would be impacted by the routes unavailability, and/or restrictions in the airspace availability and look for opportunities reducing the network impact. For its analysis, NM will rely on pre-defined airspace scenarios (e.g. strategic restrictions) identified for each area subject to unplanned requests of activation.
- 4.8.4.2.6 With specific regards to the new/more constrained activation of RSAs required for the segregation of hazardous activities for other traffic, as a part of the local and network assessment on the day of operation:
- a) concerned FMPs in coordination with NM should identify the flights that will be in the execution phase by the time of the new/revised areas activation and/or CDR1s unavailability and/or reduced FPL opportunities offered by the AUP/RAD restrictions previously published;
  - b) FMPs/ATCs concerned should assess their ability to manage tactically the flights to be in the execution phase if any and in coordination with AMC, relevant FMPs responsible for AUP/RAD restrictions and NM look for optimisation of airspace allocation (e.g. changing the activation time, flight level band, CDR1 unavailability details, different FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group etc.) or changing the reduced FPL opportunities offered by the AUP/RAD restrictions previously published (in terms of time) in such way to ensure the number of flights in execution phase to be handled tactically (number of flights to be in the execution phase) is kept at an acceptable level for ATCO(s) concerned;
  - c) if, in spite of the of the airspace allocation, FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ reduced FPL opportunities offered by the AUP/RAD restrictions previously published, Airspace Scenario Restriction Group optimisation, or due to inability to optimise the airspace allocation, FBZs and/or FUA restrictions or FUA/RAD restrictions activation, or reduced FPL opportunities offered by the AUP/RAD restrictions previously published, the number of the flights in the execution phase (and/or added complexity) remains unacceptable for ATCO(s), FMPs concerned in coordination with NM should develop and introduce ATFCM measures ensuring ATCO(s) workload allows for those flights tactical management;
  - d) in case if, in spite all efforts, there is no possibility to put in place any, or combination of, effective ATFCM measures to optimise airspace allocation, FBZs and/or to optimise FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group activation,<sup>23</sup>

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<sup>23</sup> The point d) addresses the extreme case not suitable for AUP/RAD restrictions (I want to diminish the relaxation because I expect an overload in some sectors, so I need to take an action. The simple rejection is not an option.)

allowing feasible tactical management of the flights in execution phase by ATCO, such airspace request should not be accommodated.

- 4.8.4.2.7 The result of the network analysis and potential alternative pre-defined airspace scenarios (if any) should be made available by NM to the AMCs and FMPs concerned (i.e. of upstream and downstream ATS units to be involved in the potential re-routeing as a result of unplanned area activation and/or new/more constraining FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group) for their considerations.
- 4.8.4.2.8 AMCs should receive the pre-defined airspace Scenario proposed by NM and FMPs concerned and conduct final coordination with Airspace Users, if required.
- 4.8.4.2.9 AMCs, in agreement with the concerned FMPs should take its final decision and compose the UUP accordingly (Ready status).
- 4.8.4.2.10 Involvement of FMPs concerned and ATC in collaborative decision-making process regarding ad hoc airspace allocation and/or new/more constraining FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group AUP/RAD reduced FPL opportunities offered by the AUP/RAD restrictions previously published on the day of operation is crucial and/or essential to ensure safety.
- 4.8.4.2.11 With the EUUP publication, the new airspace structure (ad-hoc activation of areas/NPZs and unavailable CDR1s) and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group reduced FPL opportunities offered by the AUP/RAD restrictions previously published, it will be implemented in the NM CACD database for ensuring FPL consistency.
- 4.8.4.2.12 The CDR1s unavailability and/or new/more constraining areas/NPZs activations, FBZs and/or FUA restrictions and/or restrictions belonging to FUA restrictions groups/ Airspace Scenario Restriction Group, reduced FPL opportunities offered by the AUP/RAD restrictions previously published information relevant for flight planning should be disseminated by NM through:
- a) the NOP portal; and
  - b) eAMI.
- 4.8.4.2.13 Dissemination of information via eAMI should be done through the posting onto FTP server in the same way as is being done by NM for e-RAD promulgation. Such a process would allow AO stakeholders using B2B service to upload the updates.
- 4.8.4.2.14 It remains a State responsibility to decide whether an AIS notification (e.g. NOTAM) is required in addition to publish the new CDR1s unavailability.
- 4.8.4.2.15 If FPLs are available, FLS messages should be sent by NM to flights concerned:
- a) Should the flight be in the Planning Phase, interested AOs should re-file FPLs accordingly;
  - b) Should the flight be in the Execution Phase, it may continue as planned. Any required re-routeing will be provided by the ATCO to the pilot.

*Note 1: Flight in the planning phase means a flight in any stage of preparation 1 hour and more before EOBT.*

*Note 2: Flight in execution phase means a flight as from 1 hour before EOBT onwards (including the airborne stage).*

#### **4.8.4.3 Application**

4.8.4.3.1 States at ASM level 1 in coordination with local ATFCM function and all relevant ATC-units (i.e. those units confronted with the tactical re-route up/downstream) should decide on the strategic application of the Ad-Hoc Activation of areas/NPZs and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group on a case-by-case basis taking into account:

- a) complexity of the airspace,
- b) complexity of the traffic,
- c) availability of direct communication between ATC and the areas users in order to ensure safety in case of communication failure,
- d) other criteria as deemed appropriate.

4.8.4.3.2 This should result in a pre-defined list of CDR1s, areas, FBZs, NPZs and/or FUA restriction scenarios which are eligible (or not) for unplanned request of areas and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group including the necessary conditions.

4.8.4.3.3 The procedure application should be limited to controlled airspace only except airspace class E.

4.8.4.3.4 On the day of operation, FMPs/ACCs concerned when assessing their ability to manage tactically the flights to be in execution phase if the area, and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group, to be activated as requested should take into account:

- a) availability of appropriate ATCO Tools and HMI which detect FPL inconsistencies and produces a timely warning to the ATCO;
- b) the re-clearance via new route points might result in additional radio communication and/or new conflicts potentially increasing ATCO's workload;
- c) availability of direct communication between ATC and the areas users in order to ensure safety in case of communication failure and in other situations when an infringement is imminent,
- d) the planned activation of a level band within an area is not hampering possible vertical profiles of traffic that is transiting still available CDR1 above or below the activated level.

4.8.4.3.5 ATCO should be aware that an alternative clearance in accordance with the necessary reroute would be necessary. This might be a re-route, which is actually not within the concerned ATCO's Area of Responsibility. In this case, LoAs should be signed with adjacent ACC concerned in order to define appropriate co-

ordination procedures to apply for the rerouting of the traffic involved.

- 4.8.4.3.6 Involvement of the concerned FMPs/ATCs in ad hoc activation of areas, NPZs and/or new/more constraining FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group on the day of operation should be ensured in order to satisfy the procedure safety requirements and ensure the safety.
- 4.8.4.3.7 ASM Level 1 should make regular review of the procedure application, analyse its application results, where the procedure is applied especially often - look for improvement of ASM/ATFCM pre-tactical phase aiming at improving of the D-1 airspace use planning process accuracy.
- 4.8.4.3.8 ASM Level 1 may decide to complement the above described procedures with local ones that shall not undermine the general process. In case of cross-border situations any local complementary procedures (e.g. sending fax, email, etc.) should be coordinated among States involved.

#### **4.8.5 Use of Tactical Management**

- 4.8.5.1 ACCs should utilise the CDR1s or the airspace in FRA in accordance with the AUP/UUP as well as with tactical modus operandi.
- 4.8.5.2 When associated TRA/TSA activity has ceased or has been cancelled, ACCs/FMPs should utilise CDR1s or the available airspace on a tactical basis and may offer an aircraft a routeing or new trajectory through the inactive area on short-notice.
- 4.8.5.3 The AMC should decide in accordance with criteria established at ASM Level 1 on the provisional unavailability of CDR1s for flight planning to be handled in real time at ASM Level 3.

## 4.9 PRE-DEFINED AIRSPACE SCENARIOS

### 4.9.1 From D-6 to D-2

4.9.1.1 Any pre-defined airspace scenario, agreed in advance will be published on the NOP Portal. This information will be for awareness purposes while the AUP publication at D-1 will confirm the availability of the involved airspace structures for FPL purposes. Pre-defined airspace scenarios could also be combined with ATFCM scenarios. In these cases, proper publication will be ensured on the NOP Portal, in the ATFCM scenarios repository accordingly.

### 4.9.2 The Day before Operations

#### 4.9.2.1 Before 15.00 UTC (14.00 UTC Summer) On the Day Before Operations (14.00 UTC D-1):

- a) NM should analyse the expected traffic demand in order to verify from a network perspective, when pre-defined airspace scenarios are providing major benefits in terms of flight efficiency for a selected city pairs. NM should also verify whether any ATFCM scenarios planned to be implemented has associated pre-defined airspace scenarios to be considered.
- b) Based on the identified time windows offering more benefits with the application of predefined airspace scenarios including the time windows expected to apply ATFCM scenarios, NM will contact the relevant AMCs to coordinate the availability of CDRs1/areas required to support the pre-defined airspace scenarios identified. The requests should contain recommendations on change in CDR1s/areas availability details (e.g. flight levels band, availability time, etc.) in case when a draft AUP has been already issued. In specific, NM should assess the impact on pre-defined airspace scenarios including those associated to ATFCM scenarios, of areas requests received, proposing alternative solutions.
- c) Between 13.00 and 14.00 UTC Summer (14.00 and 15.00 Winter) the AMC should consider the advice proposed by NM and coordinate proposed changes with the Airspace Users that requested airspace reservations, if required<sup>24</sup>;
- d) By 14.00 UTC Summer (15.00 UTC Winter) the AMC should promulgate the AUP for the 24hour period from 06.00 on the day of operations to 06.00 UTC the next day (06.00 UTC D to 06.00 UTC D+1).
- e) Based on the AUPs content, the NM will check CDR1s/areas and associated FUA restrictions/FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group information and decide which pre-defined airspace scenarios could be implemented.

#### 4.9.2.2 Before 16.00 UTC (15.00 UTC Summer) On the Day Before Operations (D -1):

- a) NM should publish the European AUP (EAUP), according to the procedures in paragraph 4.8.2.3.

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<sup>24</sup> The final airspace allocation decision remains the responsibility of the AMC.

- b) NM should provide re-routing proposal to interested AOs through RRP messages.
- c) Whenever relevant, NM will implement and publish ATFCM scenarios on the NOP Portal, according to the availability of CDR1s/areas and associated FUA restrictions/FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group.

#### **4.9.2.3 After 16.00 UTC (15.00 UTC Summer) On the Day Before Operations (D -1):**

- a) AOs file or re-file their FPLs taking into account the availability of airspace structures linked to the published ASM solutions, as appropriate.

### **4.9.3 Airspace changes after AUP**

4.9.3.1 NM will apply the following procedures to process information about changes of the airspace plan in relation to the pre-defined airspace and/or ATFCM scenarios implemented, or to be identified if required. The procedures consider both, new availability and new requests of CDR1s/areas.

#### **4.9.3.1.1 As Required On The Day Before Operations:**

##### **4.9.3.1.1.1 New availability of CDR1s/areas**

- a) AMC should promulgate the new availability of CDR1s/areas and/or revised FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group with the first available UUP when required, if there are no other users' requests for use areas volume and/or cancellation/relaxation of FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups becomes possible.
- b) NM, based on the UUPs information, will evaluate whether the new availability can be used to implement new pre-defined airspace and/or ATFCM scenarios identified previously but not implemented.
- c) NM publishes the new availability of CDR1s/areas and/or revised FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group with the first available EUUP and should provide re-routing proposals to interested AOs through RRP messages.
- d) Whenever relevant, NM will implement and publish new ATFCM scenarios on the NOP Portal, according to the updated availability of CDR1s/areas and associated FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group.
- e) AOs file or re-file their FPLs taking into account the availability of airspace structures linked to the published ASM solutions.

4.9.3.1.2 New requests of areas and/or more restrictive FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group:

- a) For new airspace requests and/or more restrictive FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group, the procedures described in chapter 4.8 are applied. In these cases NM, based on the draft UUP received, performing

the assessment for network implications will also verify whether the new requests are implying the unavailability of CDR1s and/or area volumes considered for the implementation of ASM/ATFCM scenarios.

- b) In case of identification of CDR1s/areas used for ASM/ATFCM scenarios, NM will provide counterproposal to the AMC in order to ensure the availability of the CDR1s/areas involved.
- c) In case of new ATFCM scenarios identified after the EAUP publication, NM will verify any possible impact of allocated areas/FBZs, associated FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group and unavailability of CDR1s. If relevant for the implementation of the new ATFCM scenarios, NM can trigger a coordination with the relevant AMC.
- d) AMC should consider the advice of NM for the coordination with airspace users and for the final decision on the information to be promulgated with the first available EUUP.
- e) Whenever relevant, NM will implement and publish new ATFCM scenarios on the NOP Portal, according to the updated availability of CDR1s/areas and associated FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group.
- f) AOs file or re-file the FPL according to the new status of ASM solutions, as appropriate.

#### **4.9.4 The Day of Operations**

- 4.9.4.1 In the day of operations the same procedures described in 4.9.3.1 are applied.
- 4.9.4.2 Due to time constraint, any request asking for changes of the agreed plans should take into consideration such possible constraints. This is the case especially for unplanned unavailability of CDR1s/areas or more restrictive FBZs and/or FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group which have to be published using the first convenient UUP from 07.00 UTC (06.00 UTC Summer) every 30 minutes up to 20.00 UTC (19.00 UTC Summer). For the choice of the convenient UUP, it should be considered the required lead-time of Three Hours (3H) before its validity as well as their impact on relevant ATFCM scenarios that need to be coordinated.
- 4.9.4.3 The new availability of CDR1s/areas or cancellation/relaxation of FBZs and/or FUA restrictions, published with the most convenient UUP do not require complex coordination, therefore their utilisation to review or implement new pre-defined airspace and/or ATFCM scenarios should be possible without difficulties.

## **4.10 TEMPORARY AND CONTINGENCY PROCEDURES**

### **4.10.1 FUA Temporary Instruction (FTI)**

4.10.1.1 The "basic" procedures described above in paragraph 4.1 to 4.8 are permanent, common to and binding to all AMCs and the CADF. However, operational instances may arise which, for the benefit of the users, require the CADF and AMCs to:

- a) temporarily deviate from the "basic" procedures; or
- b) apply a new procedure which has been considered beneficial by the experts of AMCs and of the NM/CADF prior to being endorsed as a new "basic" procedure; or
- c) apply a new procedure which could be of temporary validity and/or of such operational impact which would not justify its transformation into a permanent procedure.

4.10.1.2 Procedures of the above nature are named FUA Temporary Instructions (FTI). FTIs shall be agreed/applied by the appropriate AMCs and the NM/CADF for all or part of the FUA area. A FTI will be published in a similar way to Temporary Instructions in the format presented at Figure 13.

### **4.10.2 Implementation Procedure**

4.10.2.1 The NM, as the unit responsible for the daily operations of the CADF, shall, with sufficient advance notice, coordinate and agree on the implementation of an FTI with the AMCs concerned and, when required, with the FMPs concerned and, if necessary, with the AOs.

4.10.2.2 When a decision has been taken among those concerned, the instruction shall be published by the NM as an FTI. The drafting of the instruction is the responsibility of the NM. The purpose, scope and parties affected by the instruction shall be clearly stated.

4.10.2.3 The NM should notify the responsible EUROCONTROL working arrangement (e.g. the Airspace Management Sub-Group) of the circumstances which require the implementation of an FTI. In any case, FTIs will be sent to all affected AMCs, FMPs and AOs, for application and to the EUROCONTROL NMD/ACD/OPL unit, for information.

4.10.2.4 FTIs are issued on the authority of the NM Head of Operations.

### **4.10.3 Subsequent Treatment**

4.10.3.1 When a FTI is proposed to be applied on a permanent basis, e.g. after a trial period, the NM should forward to the responsible EUROCONTROL working arrangement the procedure to be incorporated into the ASM Handbook.

4.10.3.2 Once published in the present ASM Handbook, the NM informs the involved parties on the change of the FTI status.

**4.10.4 Fields of Application**

4.10.4.1 The NM shall issue FTIs/AIMs in the following domains:

- a) NM/CADF - AMC working procedures;
- b) FUA/CACD matters (e. g. modification of data);
- c) use of the NM tools (e.g. CIAM);
- d) NM/CADF - AOs relationship;
- e) changes in AMCs or CADF addresses.

FUA OPERATIONS	FUA TEMPORARY INSTRUCTION	Doc ID : FTI / yy- <i>nnn</i>	
<b>Issued on:</b> dd/mm/yyyy <b>By :</b>	<b>Subject:</b>	<b>Validity:</b> From: dd/mm/yyyy To: dd/mm/yyyy	NOP Portal: Yes/No Briefing: Yes/No
<p><b>EXAMPLE FORMAT</b>  <i>(Insert text as appropriate)</i></p>			

**Figure 13: Example of FUA Temporary Instruction (FTI)**

## **4.11 ASM OVER THE HIGH SEAS AT ASM LEVEL 2**

### **4.11.1 General**

4.11.1.1 The basis of the agreement reached on the Concept of the Flexible Use of Airspace by the ECAC States is that it should not be in contradiction with the Chicago Convention and its Annexes or the UN Convention on the Law of the Sea.

### **4.11.2 Activation of Danger Areas over the High Seas**

4.11.2.1 In line with the fundamental principle of the Flexible Use of Airspace Concept, D areas over the high seas shall be notified (whether in an FRA environment or fixed route environment) as active in respect of the duration and extent of the scheduled activity. Thus, D areas over the high seas shall not be published as active when there is no activity notified to the State in whose FIR/UIR the D area is situated.

### **4.11.3 Activation of CDR1s over the High Seas**

4.11.3.1 The availability of a CDR1 over the high seas depends on the absence of activities potentially hazardous to the safety of air navigation either in established D areas or in airspace over the high seas which conflicts with the CDR1. As there are no national sovereign rights in airspace over the high seas, and there is a universal freedom of navigation for ships and aircraft in international waters and overlaying airspace, the State responsible for providing ATS in that airspace cannot leave or publish a CDR1 available once it has received a notification of a D area activity.

4.11.3.2 ICAO Annex 11 – Air Traffic Services and ICAO Doc 9554 on Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations, establish that promulgation of information regarding such activities over the high seas shall be affected in accordance with the provisions of ICAO Annex 15 – Aeronautical Information Services. Therefore, an AMC shall have all the information in time to decide on the availability/unavailability of a CDR1 over the high seas, based on the absence of any D area activation. Similarly, if a cancellation of D area activation has been issued, a CDR1 can be made available by the AMC. On the contrary, if a D area is activated where a CDR1 was available, ATS must, at ASM Level 3, take measures to re-route traffic which is intending to fly on this CDR1 or may have flight planned to do it.

4.11.3.3 For “danger areas” established over the high seas and used jointly across international FIR/UIR boundaries, the States concerned shall ensure that for Level 2, and Level 3 when appropriate, coordination procedures between their national AMCs and ATS have been established in written documents and reflected as necessary in their respective national AIP.

#### 4.11.4 Alternative Method to Improve the Mechanism for the International Co-ordination

4.11.4.1 The coordination requirements and procedures for activities potentially hazardous to civil aircraft over the high seas are laid down in ICAO Annex 11 (paragraphs 2.17 and 2.18) and in ICAO Doc. 9554 (paragraph 2.16.1 and section 3). The application of the FUA Concept does not alter these coordination requirements and responsibilities and does not change the legal status of the airspace over the high seas. The FUA Concept does, however, provide procedures, as depicted in Figure 10, which simplify lines of coordination and allow more efficient ways of disseminating information resulting from this coordination.

4.11.4.2 Many ECAC States have adopted the procedures marked in dashed lines (marked as 1) to simplify the coordination process and use the AMC as a focal point for day-to-day airspace management. This results in the improvement of the mechanism for international coordination and dissemination of information. Other ECAC States and non-ECAC States continue to use the dotted procedure (marked as 2). It is a State ASM Level 1 prerogative to choose one procedure. However, States which adopt the new procedure (marked as 1) must incorporate procedure (marked as 2) through suitable internal coordination (marked as 3) between national ATS and AMC units to permit the process to be completed expeditiously.

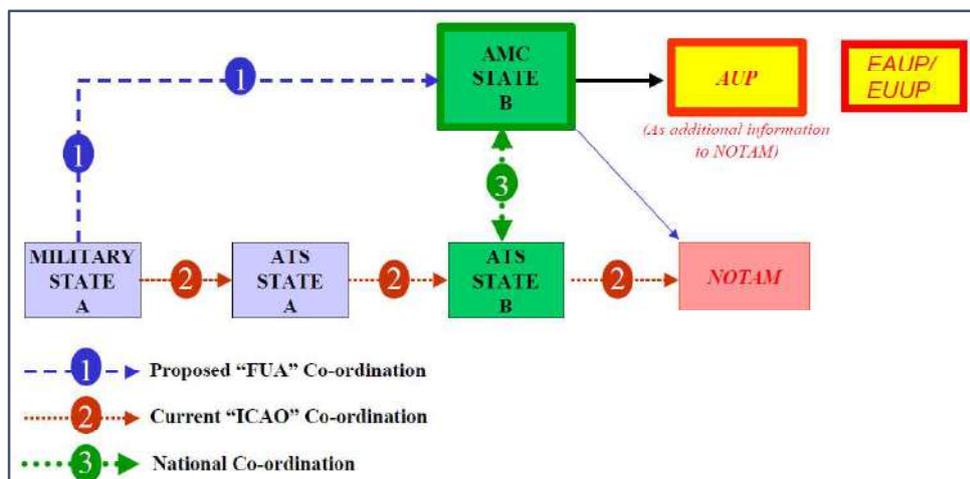


Figure 14: Alternative method to improve the mechanism for the international coordination of activities over the High Seas potentially hazardous to civil aircraft.

**4.11.5 AMC Related Tasks**

- 4.11.5.1 AMCs must be informed of any activation of D areas over the high seas. If this activation has been announced by a NOTAM, the AMC reproduces the NOTAM reference in the Additional Remarks field of the AUP/UUPs. This adds to the completeness of the AUP/UUPs for the whole of the FIR/UIR. AUP/UUPs publication of D area activation does not replace the need for a NOTAM in accordance with ICAO Annex 15. In this context, AMCs may be assigned the responsibility to publish the NOTAM.
- 4.11.5.2 CDR1s availability/unavailability over the high seas is included in the daily AUP/UUPs published by the responsible AMCs. AMCs must take into account the fact that there are no national sovereign rights in airspace over the high seas. This therefore may preclude the application of national allocation rules for those CDR1s.
- 4.11.5.3 When AMCs have notification of activities potentially hazardous to civil aircraft operations in airspace over the high seas, which conflict with available CDR1s, they can notify the corresponding activation of RSAs/ FUA restriction and/or the unavailability of those CDR1s for flight planning by using the appropriate part of the AUP/UUP. The information will be published via EAUP/EUUP accordingly.



## **5 Section 5 – Tactical Management Functions (ASM Level 3)**

### **5.1 GENERAL**

- 5.1.1** Tactical ASM Level 3 consists of the real-time activation, deactivation or real time reallocation of the airspace allocated at ASM Level 2 and the resolution of specific airspace problems and/or traffic situations between civil and military ATS units, controllers and/or controlling military units as appropriate.
- 5.1.2** The real time access to all necessary flight data, including controller's intentions, with or without system support, permits the optimised use of airspace and reduces the need to segregate airspace.
- 5.1.3** Adequate real time coordination facilities and procedures are required to fully exploit the FUA Concept at ASM Levels 1 and 2. Flexibility in the use of airspace is enhanced by real-time civil/military coordination capability. This flexibility depends on the potential offered by the joint use of airspace by civil and military traffic.

### **5.2 MODES OF REAL-TIME CIVIL/MILITARY CO-ORDINATION**

- 5.2.1** Direct communication between civil and military air traffic service units/military controlling units is essential to facilitate the safety resolution of specific traffic situations. It should be addressed in detail in written agreements, as referred in the EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (L3-ASPU-01).
- 5.2.2** Associated coordination actions, which include the prompt exchange of information relevant to the safe and expeditious conduct of both civil and military flights, can take place either in an active or a passive mode with or without action by the controller.
- 5.2.3** The "Active mode" of civil/military coordination is the communication in real time between civil and military units, which results from a controller(s) action. This active mode includes both "Verbal" coordination and "Silent" coordination, the communication process by manual input only.
- 5.2.4** The "Passive mode" of coordination is the communication of information in real time without any action by the controller. This is usually in the form of previously agreed automatic exchange of flight data between controllers to facilitate OAT/GAT separation without the need for an extra coordination.
- 5.2.5** The "Active mode" of coordination relates to the coordination of traffic situations whereas the Passive Mode of coordination relates mainly to the transmission of data and should be used to establish a course of action only where permitted by agreed procedures.
- 5.2.6** Silent coordination will mainly be used for crossing of airspace and/or route structures when prior coordination is required. The use of silent coordination may reduce the controller workload particularly in areas of very high density traffic.

**5.2.7** Verbal coordination will be required to resolve certain coordination problems besides being available as the fall-back facility. In particular, the verbal coordination functions will be used whenever the silent system-supported dialogue cannot be positively and quickly concluded without a direct verbal dialogue.

## **5.3 COORDINATION PROCEDURES FOR ATS ROUTES AND AIRSPACE CROSSING**

### **5.3.1 Coordination Procedures for Controlled Airspace or ATS Routes Crossings by OAT**

#### **5.3.1.1 General**

5.3.1.1.1 In order to permit OAT/GAT separation during the crossing by OAT of an ATS route or controlled airspace (including FRA), different procedures can be used according to the amount and accuracy of the flight data available.

5.3.1.1.2 Access, via electronic display, to the flight data of the overall OAT and GAT traffic situation involved, allows the controller responsible for OAT and/or GAT separation to determine a plan for either the application of ICAO horizontal or vertical separation minima, or the necessity for an active mode of coordination (verbal coordination or system-supported silent coordination).

#### **5.3.1.2 General procedures - Sufficient flight data allowing ICAO standard separations without additional coordination**

5.3.1.2.1 The display of all relevant OAT and GAT flight data, including controller's intentions required in national LoAs, allows the responsible controller to fulfil his/her responsibility for OAT/GAT separation during a route crossing without the need for additional coordination.

5.3.1.2.2 Controller's intentions are updated through the exchange of flight data, as laid down in LoAs, either simultaneously with or before, the corresponding ATC clearance is issued.

#### **5.3.1.3 OAT Crossing of Controlled Airspace - Display of Information**

5.3.1.3.1 When bilaterally agreed, the controller responsible for GAT should be provided with the plan of action of the controller responsible for OAT intending to cross a specific portion of controlled airspace under his/her responsibility. Accordingly, a notification of intention is sent by controller responsible for OAT to the controller responsible for GAT.

5.3.1.3.2 The display to the GAT controller of all relevant OAT flight data allows the controller to be aware of the foreseen crossing conditions and to initiate coordination, if required. Division of the responsibility or the provision of separation between OAT and GAT is subject to detailed description in relevant LoAs.

#### **5.3.1.4 Silent Co-ordination for Crossing**

5.3.1.4.1 When the crossing requires prior coordination, the OAT controller sends, by

means of a silent coordination message, a request for the crossing of controlled airspace (ATS route, CDR1, and CTA). This request is responded to by the GAT controller by means of a silent coordination message.

5.3.1.4.2 The answer contains either an acceptance of crossing parameters or, if not acceptable, an alternative proposal, including revised crossing data (heading, FL etc.). Verbal coordination is used if the alternative proposal is not acceptable.

5.3.1.4.3 When this coordination procedure is applied it binds each controller to an agreement and requires the controllers to conform to the agreed actions throughout the crossing. Division of the responsibility for separation under the circumstances of such an agreement is subject to national regulations and respective LoA.

#### **5.3.1.5 Use of Pre-notified Crossing Corridors by OAT**

5.3.1.5.1 In some specific cases determined in LoAs, it is better to pre-plan specific corridors for OAT when military traffic demand requires a block of flight levels. The use of these pre-planned crossing corridors is agreed/notified to the responsible controller by means of a procedure similar to one of those described above in para. 5.2.2 and/or 5.2.3.

5.3.1.5.2 Application of the pre-planned crossing corridors procedure binds each controller to the corresponding LoA and requires the controllers to conform to the agreed actions throughout the crossing. Division of the responsibility for separation under the circumstances of such an agreement is subject to national regulations and respective LoA.

#### **5.3.1.6 Transfer of Control Responsibility**

5.3.1.6.1 In case that the above procedures cannot be applied, a responsibility for transfer of control should be described in detail in respective LoA.

### **5.3.2 Coordination Procedures for Airspace Crossings or Off-Route Flying by GAT**

#### **5.3.2.1 Crossing Clearance through an Active TRA**

5.3.2.1.1 When an off route/direct route for GAT is requested through an active TRA temporarily reserved for military activities, prior coordination is required. The request/answer procedure described in para 5.2.5 can be used to automate this coordination process.

5.3.2.1.2 This coordination procedure binds each controller to an agreement and requires the responsible controllers to conform to the agreed actions throughout the crossing. Division of the responsibility for separation under the circumstances of such an agreement is subject to national regulations and respective LoA.

#### **5.3.2.2 Prior/Reduced Coordination Airspace (PCA/RCA) Procedures**

5.3.2.2.1 Under the "Prior Coordination Airspace" (PCA) procedure, individual GAT is permitted to fly outside an authorised published ATS route segment or allowed DCT between two waypoints, within a predefined portion of airspace only after prior co-ordination has been accomplished between responsible controllers.

5.3.2.2.2 Under the “Reduced Coordination Airspace” (RCA) procedure, GAT is permitted to fly outside an authorised published ATS route segment or allowed DCT between two waypoints, within a predefined portion of airspace without prior coordination required. However, coordination by the responsible controller is required when OAT is to cross RCA.

5.3.2.2.3 The display of all relevant GAT flight data, including controller’s intentions, allows the OAT controller to be aware of the GAT crossing conditions of the RCA and to initiate co-ordination, if required.

5.3.2.2.4 Division of the responsibility for separation under the circumstances of such an agreement is subject to national regulations and respective LoA.

### **5.3.2.3 Transfer of Control Responsibility**

5.3.2.3.1 In case that the above procedures cannot be applied, a transfer of control responsibility should be described in detail in respective LoA.

## **5.4 SYSTEM SUPPORT FUNCTIONS**

### **5.4.1 General**

5.4.1.1.1 At the tactical level the main requirement is to provide system support to create a traffic environment in which the FUA Concept can be applied efficiently, i.e. an environment in which the need to segregate traffic is reduced to a strict minimum. This can be achieved by:

- a) the provision of airspace use data;
- b) the exchange of flight data between civil and military units;
- c) the provision of system support for airspace crossing.

### **5.4.2 Airspace Use Data Function**

5.4.2.1 The Airspace Use Data Information Function should provide, in real time, all the parties concerned with up-to-date information on the current use of airspace, in addition to AUP/UUPs information on allocated and scheduled use of airspace, so as to make efficient use of all available airspace.

5.4.2.2 The supporting systems should assure common, secure and consolidated information exchange of the current airspace status.

5.4.2.3 As a major flight safety concern, data integrity shall be guaranteed. The component, ensuring level 3 airspace management, should support activation, deactivation, short-term cancellation or amendments to reservations and reallocation of the airspace structures.

5.4.2.4 The supporting systems should provide the real time airspace status on an airspace status display and should be capable of interfacing with the ATC systems.

- 5.4.2.5 Initially, real time information on the current use of airspace should be provided manually in each ATS unit on their own and for their individual system.

### **5.4.3 Basic Flight Plan Information - Identification Function**

- 5.4.3.1 The Basic Flight Plan Data Information Function concerns the automatic exchange between civil and military control units of all necessary flight plan data. This function will permit the creation of associated tracks/labels in both civil and military units for the display and identification of the overall OAT and GAT traffic situation involved in a civil/military coordination process. As a minimum, to permit the correlation of radar data with flight plan data, the aircraft identification/call sign, the SSR Mode and Code for each flight concerned in the coordination process shall be passed from civil to military units, and when required from military to civil units.

- 5.4.3.2 The common BFD message has been developed to permit the harmonised system-supported exchange of all necessary basic flight plan data between civil and military units.

### **5.4.4 Current Flight Plan Information Function - Separation Function**

- 5.4.4.1 The current Flight Plan Data Information Function allows the automatic and dynamic update of the flight plan brought about by any subsequent ATC clearances.

- 5.4.4.2 The controller's intentions data information function aims to automatically update the current flight plan with the next change subject to further clearance.

- 5.4.4.3 The passing or receiving of information on controller's intentions does not, by itself, constitute coordination for action. It should only enable the controllers to determine the necessity for an active mode of coordination.

- 5.4.4.4 The exchanged data may include data such as assigned heading, direct clearance, rate of climb/descent, assigned speed, controller/sector identification and any other executive data, including controller's intentions, as specified in a bilateral agreement between the units involved.

- 5.4.4.5 Controller's intentions are updated flight data, which shall be exchanged, as laid down in LoAs, either before or simultaneously with the corresponding ATC clearance is issued.

- 5.4.4.6 The common CFD message has been developed to permit the harmonised distribution of updated flight data information.

#### **5.4.5 Silent Co-ordination Functionality - Airspace Crossing Function**

5.4.5.1 The Silent Coordination Functions, based on a system-supported dialogue, allow controllers to exchange coordination messages using electronic displays. These functions will speed-up and facilitate coordination procedures and methods, which at present are conducted mainly by speech. The main applications of this system-supported dialogue concern:

- a) crossing of ATS permanent/CDR1s routes by OAT;
- b) crossing of controlled airspace by OAT;
- c) crossing of airspace reservation by GAT;
- d) use of additional CDR1s/ direct routeing/off-route by GAT.

5.4.5.2 The system-supported dialogues required above for airspace and route crossings can be divided into the Airspace Crossing Intention Notification Functionality and the Airspace Crossing Dialogue Function.

#### **5.4.6 Airspace Crossing Intention Notification Functionality**

5.4.6.1 The "Airspace Crossing Intention Notification Function" should be used to advise a civil ATS unit of the plan of action of a military controller intending to cross a specific portion of controlled airspace with (a) military flight(s) or vice versa.

5.4.6.2 This notification of intention should not be seen as a request for crossing clearance or a cleared flight path; only the plan of action is forwarded, if required by bilateral agreement, for the information of the civil controller, the military controller or air defence unit.

5.4.6.3 The common message has been developed to permit the harmonised system-supported distribution of Airspace Crossing Intention Notification Information.

#### **5.4.7 Airspace Crossing Dialogue Function**

5.4.7.1 The "Airspace Crossing Dialogue Function" is a further development of the Airspace Crossing Intention Notification Function. It should be used when, by bilateral agreement, a prior OAT/GAT coordination is required for airspace or route crossing.

5.4.7.2 The Airspace Crossing Request Message (XRQ)/ Airspace Crossing Acceptance Message (ACP) - Airspace Crossing Counter-Proposal Message (XAP)-Airspace Crossing Reject Message (RJC) messages have been developed to permit the harmonised system-supported distribution of Airspace Crossing information.

## 5.5 COMMON OR SHARED USE OF AIRSPACE

### 5.5.1 Common Use of Airspace

- 5.5.1.1 An AMC can decide at ASM Level 2, in accordance with criteria defined at ASM Level 1, not to allocate specifically airspace as either CDR1 or TRA/TSA, or AMC-Manageable D and R areas. In such a case, the safe use of airspace in real time is subject to ASM Level 3 negotiation between the responsible ATS units and/or controlling military units concerned.
- 5.5.1.2 The corresponding ASM Level 3 negotiation rules agreed at ASM Level 1 should be reflected in LoAs established between the responsible ATS units and/or controlling military units concerned. These rules clearly define under which circumstances (nature of activity, civil/military coordination capability) airspace can be jointly used.
- 5.5.1.3 When the RCA procedure is in force, the LoAs should define the criteria required for the application of the PCA procedure with specific notice periods.

### 5.5.2 Shared Use of Airspace

- 5.5.2.1 It is possible to grant access to airspace, under suitable arrangements, between specific users and the ATS provider managing that airspace. In this scenario a specific airspace user may be given access to a specific volume of airspace under specific conditions where, under normal circumstances, this may not have been possible.
- 5.5.2.2 With the PCA procedure, it is possible to temporarily book airspace, for the use of specific users, which is located outside the major GAT traffic flows. A PCA is a given block of controlled airspace within which military or other specific activities can take place on an ad hoc basis with individual GAT transit allowed under rules specified in LoAs between units concerned.
- 5.5.2.3 A PCA will mainly be used to temporarily separate GAT operating in controlled airspace in a known traffic environment from high-speed military operations such as air combat training and formation flying. When military activities within a PCA cease or decrease, the RCA procedure will be initiated.
- 5.5.2.4 Another possibility consists in the temporary allocation of a published area (including Terminal Area) or a subdivision of it (e.g. a TMA Sector) usually under the responsibility of a defined ATS provider (e.g. civil ATS provider) to another ATS provider (e.g. military ATS provider). This area can be used autonomously to allow the conduct of a specific activity or can be merged with an active area in order to increase the volume of traffic controlled by the ATS provider concerned.
- 5.5.2.5 These arrangements shall be described in a LoA between the concerned parties.

## 5.6 ADDITIONAL ASM PROCEDURES

### 5.6.1 General

5.6.1.1 The procedures described above in para 5.2. to 5.5 are commonly used within the upper and lower controlled Airspace. However, due to somewhat different composition and nature of the lower airspace and the associated flying activities generated by General Aviation (e.g. recreational flying, air Sports etc.) and by the aerial work (e.g. environmental surveillance, firefighting, aerial photography etc.), additional ASM procedures have been implemented by States in order to meet the needs of all airspace users and to ensure that unnecessary restrictions are not imposed. These proposed "Best Practices" aim at assisting States to plan for or to enhance the implementation of the FUA within their lower airspace.

### 5.6.2 Controlled Airspace

#### 5.6.2.1 Change of Airspace Classification

5.6.2.1.1 In order to increase the flexibility of use of the lower controlled airspace to all airspace users, the classification of the airspace could be adapted according to the type of activity. This could be translated into a change in airspace classification, i.e. downgrading, to allow usage by a wider customer group.

5.6.2.1.2 Such a flexible change of airspace classification shall be published in the AIP in order to inform the wider audience. The publication shall contain a clear definition of geographical coordinates in latitude and longitude, the vertical dimension (lowest and highest level), the airspace classification associated with the related hours of activity (e.g. SR/SS, during the weekend etc.) and the contact details (telephone number/ RT frequency).

#### 5.6.2.2 Activate Method

5.6.2.2.1 This method consists of predefined areas being promulgated as add-on areas to a published specific airspace or area, available on a dynamic basis.

5.6.2.2.2 The activate method may be appropriate for short notice demands, for protection of air traffic operating under specific conditions, or for activities which are known well in advance.

5.6.2.2.3 It is suggested that this method is not used within airspace classified as E to G as the main difficulty is the need of achieving a sufficient notification period, for all potential users, prior to "activating" a volume of airspace. However, a possible solution could be to publish the airspace in the AIP, including volume and time, and to accord it an A to D classification within timescales of predefined "activation".

#### 5.6.2.3 Terminal Areas (CTA, TMA, CTR)

##### 5.6.2.3.1 General

5.6.2.3.1.1 It is suggested that Terminal Areas, and their surrounding airspace, are of a classification that would not hinder flexibility, and are managed by defined entities between which coordination can be achieved.

5.6.2.3.1.2 It is possible to arrange the airspace structure to be fixed and/or cyclic. This would involve a portion of airspace being allocated, on a need basis, according to a long established timetable.

#### 5.6.2.3.2 Deactivate Method

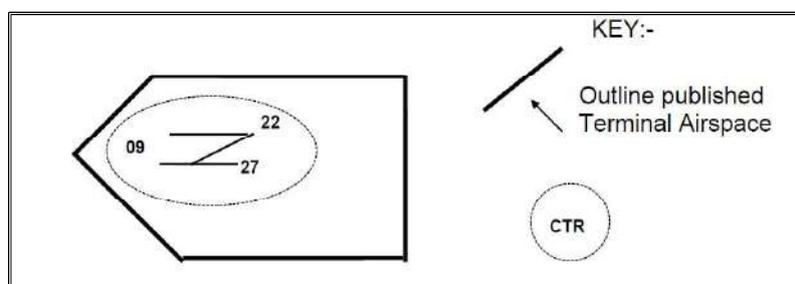
5.6.2.3.2.1 This applies to airspace, which is notified for permanent use, or only during specified published times, by the ATM system but which is available to other airspace users under certain conditions.

5.6.2.3.2.2 AIPs must be annotated to show that this airspace may be available for use by other groups and any restrictions which apply to their use.

5.6.2.3.2.3 A change of the airspace classification may be required, i.e. downgrading from an A – D classification to an E - G classification, to allow usage by a wider customer group.

5.6.2.3.2.4 An example of this concept would be Terminal Airspace which would require use of a volume of airspace only for a certain runway direction or during periods of complex traffic loading.

5.6.2.3.2.5 Fig. 15 shows, in a simplistic form, a historic portion of Terminal Airspace containing an airport with the predominant use of RWY 27. Increasing traffic levels and size of aircraft result in severe difficulties when either RWY 22 or RWY 09 is used. A need for additional airspace to cater for those runways has been identified. The impact of creating additional controlled airspace has to be kept to a minimum.



**Figure 15: Terminal Airspace**

5.6.2.3.2.6 Fig. 16 shows the same portion (as fig. 18) of Terminal Airspace with “deactivated” airspace. In this scenario the whole outline area (solid, bold and normal) would be promulgated as Terminal Airspace. The areas X, Y and Z (solid, normal, and dashed) would be annotated as those areas used only at certain times or under certain conditions, in this case Z when RWY 22 is in use and X and/or Y when RWY 09 is in use.

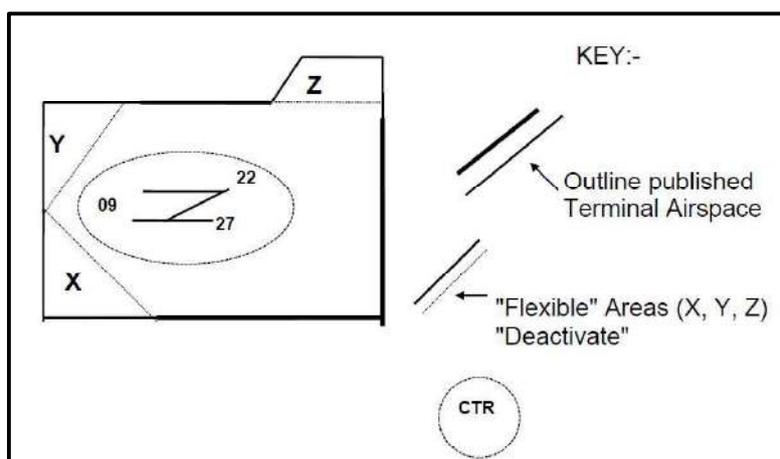


Figure 16: Flexible Terminal Airspace

- 5.6.2.3.2.7 Fig. 17 shows a cross-section slice through Fig. 19. Although the areas X and Y are additional to the original Terminal Airspace (fig. 19), as they are situated at the extremities, they are only a relatively small amount of airspace, in both the vertical and horizontal plane. There is therefore a minimum amount of disruption to other users.

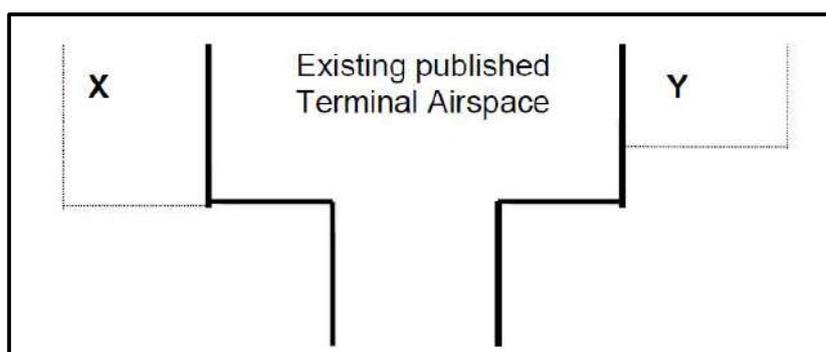


Figure 17: TMA cross section

### 5.6.3 Outside of Controlled Airspace

- 5.6.3.1 The main difficulty related to the application of FUA outside of controlled airspace is the way of informing in real time the users and/or the ATS providers about the current airspace structure and associated status.
- 5.6.3.2 Some Member States ensure that certain volumes of controlled airspace change the airspace classification to the classification of the surrounding airspace outside the hours of operation of the controlled airspace in order to make that airspace available to other users. Whilst the emphasis on this flexible use of airspace has traditionally focussed on the civil/military use of the airspace, there is also a need to address the civil/civil use of the airspace in order to maximise its availability to all users.
- 5.6.3.3 In order to ensure the maximum availability of airspace for all users, outside the notified hours of operation of a specific airspace (e.g. CTR, TMA, etc.) the airspace classification of that volume of airspace should revert to the background classification.

- 5.6.3.4 The hours of operation of such airspace may be notified for predetermined dates/times in the national AIP; for other less determinate applications, by NOTAM.
- 5.6.3.5 Notifications of these applications and deactivation will generally be broadcast on the appropriate frequency, and/or announced by the flight information service (FIS).
- 5.6.3.6 In addition, some types of Special Requirements are currently used by various States in order to increase the knowledge of the ATS providers and other airspace users of the status and traffic situation inside the airspace concerned. The authority for these requirements comes from ASM Level 1 and provides ASM Levels 2 and 3 with additional influence:
- a) requirement for the carriage and use of radio within a classification that does not normally require it;
  - b) requirement to ascertain current status of the airspace, in real time, prior to penetration. If having no knowledge the pilot must assume that penetration is not authorised;
  - c) requirement for the carriage and use of transponder;
  - d) changes to weather minima;
  - e) requirement to submit a FPL.

#### **5.6.4 Promulgation and Notification**

- 5.6.4.1 The general methods of promulgation and notification remain as for the Concept. Consideration is required as to the possibility of widening the circulation of the AUP and the list of AAs, in order that the information reaches the required wider audience.
- 5.6.4.2 The AIP should contain sufficient information to assist the pilot in making the appropriate arrangements for flight safety. The items shall include:
- a) the volume name/code identifier;
  - b) WGS coordinates;
  - c) dimensions (lateral and vertical);
  - d) times/days of operation;
  - e) contact details (telephone number /RT frequency).
- 5.6.4.3 Different categories of airspace users may require differing notification processes and promulgation requirements, according to the classification/type of the subject airspace. All entities involved in the management and use of this airspace shall be included in the distribution lists of AUPs or a similar method (e.g. NOTAM) sufficient to achieve the required promulgation.
- 5.6.4.4 It remains a State decision to implement the most effective method of promulgation and notification based on its particular requirements.



## 6 Section 6 – Publication of ASM information

### 6.1 AIP/NOTAM FOR ASM LEVEL 1 DECISION

An important national task at ASM Level 1 is to publish in national AIPs the status of airspace structures and ATS routes under its jurisdiction. Another task consists of the coordination of major events planned well in advance, such as large scale military exercises or air shows, which may require additional segregated airspace. These particular activities need to be published by AIS publication such as NOTAM.

In order to permit airspace users to become aware of the new flexible structures implemented in the ECAC States, the harmonisation and consistency of the publication of this information in AIPs is required.

#### 6.1.1 Publication of vertical limits and time/conditions

6.1.1.1 For the publication of vertical limits and time/constraints of CDR1s, as well as areas, refer to ERNIP Part 1, Chapter 9.

#### 6.1.2 Reserved/Restricted Areas Publication

6.1.2.1 The general guidelines hereafter provided are fully aligned with ICAO publications, mainly Annex 2, Annex 11, Annex 15, Doc 10066 PANS-AIM, Doc. 8126 and ERNIP Part 1.

#### 6.1.3 Harmonised CBA identification

6.1.3.1 For data provision and designation of P, R and D areas refer to ERNIP Part 1, Chapter 9.

#### 6.1.4 Harmonised ASM scenario identification

6.1.4.1 In order to ensure a harmonised identification of ASM scenarios across Europe, the following principles have been approved.

#### 6.1.5 National ASM scenario identification:

- a) A group of two letters, representing the ICAO Country Code of the State; followed by
- b) The geographical area description / location (up to 6 digits); followed by
- c) "SCN" and max 2 digits (1 to 99) for the scenario numbering – SCN##; potentially followed by
- d) "RG" and 1 digit (1 to 9) for the associated Restriction Group – RG#, if any.

The following are fictitious examples:

E.g. 1:

L	I	S	A	R	D	S	C	N	1	2	R	G	1		
---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--

E.g. 2:

L	S	W	E	S	T	S	C	N	3	R	G	1		
---	---	---	---	---	---	---	---	---	---	---	---	---	--	--

#### 6.1.6 Cross-Border ASM scenario identification:

- ICAO Country Codes of the involved States (up to 4 States); followed by
- "SCN" and max 2 digits (1 to 99) for the scenario numbering – SCN##; potentially followed by
- "RG" and 1 digit (1 to 9) for the associated Restriction Group – RG#, if any.

The following is fictitious example:

E.g.:

L	I	L	F	L	S	L	O	S	C	N	1	R	G	1	
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--

#### 6.1.7 Harmonized AIP ENR 5.1 Publication

- 6.1.7.1 For data provision and designation of P, R and D areas refer to ERNIP Part 1, Chapter 9.

#### 6.1.8 Harmonized AIP ENR 5.2 Publication

- 6.1.8.1 For data provision and identification of TSA, TRA, CBA and associated with them FBZ refer to ERNIP Part 1, Chapter 9.

- 6.1.8.2 There is an NM Systems limitation for all the area and FBZ IDs naming convention of a maximum 9 characters. Therefore, all the areas and their associated FBZ(s) shall not exceed the 9 characters limitation for their naming convention in the NM CACD database and, at the same time, following the rules described in the above paragraph. When the area/FBZ ID in the national AIP exceeds the 9-character limitation, there is the State responsibility to reduce the length of the area/FBZ ID down to 9 characters, according to the above rules, in order to be properly uploaded in the NM CACD database<sup>25</sup>. Therefore, all the actors involved (ANSPs, FMPs, AMCs, AOs, CFSPs) have to acknowledge the discrepancy between the AIP publication and the NM airspace database in order to avoid any confusion.

- 6.1.8.3 Any FBZ, or FBZs, shall always match the area's ID in order for the NM Systems and the airspace users to understand the link between the parent area and the FBZ(s). There is no FBZ defined without a parent area. The same logic applies to the FUA restriction ID attached to an area or FBZ and published in the RAD

<sup>25</sup> However, the exception to this rule is when the attached FUA restriction (either for an area or for an FBZ) is "complex" and it needs to be split in multiple "simple" restrictions in order to be correctly processed by the NM systems and CFSPs. In this case, each simple restriction needs a two-character instead of one digit (e.g. "RA", "RB" etc. instead of "R"). Therefore, the area/FBZ ID shall not exceed 8 characters.

Appendix 7. The link between the area, FBZ and FUA restriction is paramount for the NM systems flight planning process and for the airspace users.

### **6.1.9 Flight Plan Buffer Zone (FBZ) Publication**

6.1.9.1 For data provision and identification of FBZs refer to ERNIP Part 1, Chapter 9.

6.1.9.2 Both the reserved/restricted area and the associated FBZ(s) will be uploaded in the CACD.

6.1.9.3 The allocated reserved/restricted area, the selected FBZ(s) and the associated FUA restrictions/ FUA/RAD Restrictions and restrictions belonging to FUA restrictions groups/ Airspace Scenario Restriction Group are notified to airspace users via EAUP/EUUP. The time and vertical dimensions of the selected FBZs could be different from those of the associated reserved/restricted area.

6.1.9.4 AUP/UUP should be considered the primary means of notification of planned activation for reserved/restricted area. For non AMC manageable areas, States should consider their requirements for notification to airspace users also via AIS publications (e.g. NOTAM). In all cases, when FBZ is applicable, both reserved/restricted airspace and the associated selected FBZ(s) should be notified, with identification, geographical coordinates and time period of activation.

6.1.9.5 When ad-hoc areas are established and the application of the horizontal/vertical FBZ is required, adequate publication (e.g. NOTAM or AIP Supplement) should be provided. If the daily notification of the ad-hoc areas activation is expected via AUP/UUP, same procedures of 6.1.9.4 should be applied. The inclusion of the FBZ within the limits of the defined ad-hoc areas may be considered in order to simplify the publication. In case of partial vertical activation (level bands) of the reserved/restricted areas, the vertical FBZ should be considered within the vertical limits of the level bands required. Whereas one or more FBZs with different dimensions compared to the area are required, adequate publication is expected (e.g. NOTAM or AIP supplement). For the daily notification via AUP/UUP, same procedures of 6.1.9.4 should be applied.

6.1.9.6 In case of modular areas, the combination of modules allocated should be notified via AUP/UUP, including the activation of FBZs, if required. IFPS will validate the FPLs against each module, including the associated FBZ, in order to detect whether the trajectory is passing through one or more of the modules, including the associated FBZs. In case of the trajectory is passing through a module and the overlapping FBZ of the adjacent module, IFPS will consider the interaction with both of them.

### **6.1.10 Identification and publication of Non-standard Planning Zone (NPZ)**

6.1.10.1 For data provision and identification of NPZ refer to ERNIP Part 1, Chapter 9.

### **6.1.11 Publication of FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/Airspace Scenario restriction groups**

6.1.11.1 According to common agreements, FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/Airspace Scenario restriction groups should be published in the RAD document, according to the guidelines described in ERNIP Part 1,

Chapter 8. Nevertheless, States could decide to publish the FUA restriction/ FUA/RAD Restrictions/ FUA restrictions groups associated to a specific area also in national AIPs. In these cases, the FUA restrictions should be described in the remark column, with the general advice **“The activation of the FUA restriction, FUA/RAD restriction and restrictions belonging to a FUA restriction group is notified via EAUP/EUUP or NOTAM as appropriate”**. Information related to FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions groups established for temporary areas is published by AIP Supplement, AIC, or NOTAM and Annex for special events on the RAD homepage available via B2B and published via the NOP.

#### 6.1.12 Means of Notification

AUP/UUP should be considered the main source, for FPL purposes, to notify airspace users about the status of airspace structures managed via AUP/UUP as described in Annex 5 and 6<sup>26</sup>. The AUPs/UUPs update automatically the NM CACD database, therefore its information is used by IFPS for FPL validation purposes. AUPs/UUPs are not planned to replace, unless a State decision, AIS notifications (e.g. AIP supplements, NOTAMs) that remains a national responsibility. Nevertheless, focusing on the FPL process, States should provide coherent information to the airspace users whenever both notification means are used. In this respect, airspace users should consider AUP/UUP information as the reference source for filing FPLs. States should ensure that AIS notification constantly reflects the AUP/UUP information. In case of the information is published before via AIS notification, the most appropriate AUP/UUP should be used accordingly in order to ensure consistency in the NM CACD database for FPL purposes. With specific regards to the notification of reserved/restricted areas activation, AUPs/UUPs provide information on associated restrictions (FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups)/Airspace Scenario restriction groups) relevant for FPL purposes.

#### 6.1.13 Airspace classification

- 6.1.13.1 The airspace volume of a published reserved/restricted area acquires the same classification of the surrounding airspace whenever the area is not active. When the area is active, according to the type of operations allowed no airspace classification or a specific one defined by the State<sup>27</sup> is applied. In case of tactical crossing by non-participating aircraft, the type of Air Traffic Service provided according to the reference airspace classification is ensured. Local agreements should define the responsible units for the provision of expected ATS.

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<sup>26</sup> Full management of information subject to the implementation of system support required.

<sup>27</sup> It could be the same classification of the surrounding airspace or another ICAO classification, according to the specific requirements of the operations allowed within the area.

## **6.2 SPECIFIC ASM MESSAGES FOR ASM LEVEL 2 DECISIONS**

### **6.2.1 Airspace Use Plan (AUP)**

- 6.2.1.1 The effective application of the FUA Concept requires that ASM Level 2 airspace allocation decisions are promulgated daily in an efficient, timely and accurate manner by each AMC by means of a national Airspace Use Plan message (AUP).
- 6.2.1.2 The AUP is transmitted in a common harmonized format to NM's dedicated interface for ASM and is published as soon as possible and not later than by or 15.00 UTC (14.00 UTC Summer) to cover the 24-hour time period between 06.00 UTC the reference day to 06.00 UTC the day after. Several AUPs can be sent in one sequence on the last day before the closure of the AMC to cover each day of a weekend or "Holidays" period, but with a maximum of seven consecutive days. The AUP is transmitted to AAs, ACCs/FMPs and to the CADF. From D-6 to D-2 DRAFT AUPs are promulgated whenever airspace plan information is available.
- 6.2.1.3 In order to automate the AUP process within AMCs and AAs, to allow the automatic storage and display of AUPs in ACCs/FMPs, AUPs should be prepared and distributed to the CADF/AME by means of the common CIAM software set up in NM terminals or submitted by other ASM tools via B2B.

### **6.2.2 Updated Airspace Use Plan (UUP)**

- 6.2.2.1 After the AMC has completed the allocation process, modification of the airspace allocation might be necessary in order to take advantage of the cancellation of any previously reserved airspace structure. Changes to the airspace allocation will be affected by the AMC through UUPs.
- 6.2.2.2 UUPs will replace the current AUP and previous UUPs according to the validity time described in the procedure. It reflects the new plan with the aim of improving the awareness of updated airspace status. All changes will be visible, according to the criteria described in Annex 6.
- 6.2.2.3 The UUPs information will be used by NM/CADF to produce eAMI messages as well as being available on the NOP portal. According to the CDR1s and/or areas change status, Re-Routeing Proposals (RRPs) messages will be provided to interested users.
- 6.2.2.4 The Re-Routing proposed will contain new available CDR1s segments and/or Point-DCT-Point information based on areas volumes released (more relevant in FRA environment).
- 6.2.2.5 The UUP is published in the same common format as the AUP. The UUPs will be published according to the current procedures described in paragraphs 4.8.3 and 4.8.4.
- 6.2.2.6 The UUP is transmitted to the relevant AAs, ACCs/FMPs, and the NM/CADF. Through the CIAM application the published UUPs will be visible to the other AMCs. However, UUPs is not published when there are no alterations to the current AUP.

- 6.2.2.7 In order to automate the UUP process within AMCs and AAs to allow for the automatic storage and display of UUPs, UUPs should be prepared by means of the CIAM software set up in NM terminals or submitted via B2B.

### **6.2.3 Electronic Airspace Management Information (eAMI)**

- 6.2.3.1 eAMI or electronic Airspace Management Information is an electronic message containing all airspace allocations (ASM Level 1 and ASM Level 2) and the derived availability/unavailability of CDR1s and ATS routes for flight planning.
- 6.2.3.2 Through eAMI, authorised users can query and compare CDR1/Route Availability and Airspace Allocations. This should be normally available via NM web services in accordance with a service agreement signed between user and NM.
- 6.2.3.3 Through consolidated and validated electronic eAMI messages users can therefore make full use of the benefits offered by automated data processing.
- 6.2.3.4 The eAMI message is processed automatically to airspace users via B2B service. In case of interruption of the B2B service, the eAMI message in its format or other feasible format is normally made available for airspace users through other means of notification (e.g. NOP Portal or email).

## 7 Section 7 – Performance Requirements

### 7.1 General

#### 7.1.1 Introduction

7.1.1.1 An important task at ASM Levels is the continuous monitoring of the efficiency of the application of the FUA Concept. This Section contains information regarding FUA Indicators developed and used for the assessment of the efficiency of the national application of the FUA Concept.

7.1.1.2 EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) recommends that national HLAPB should apply the following key performance areas/indicators, where applicable (see chapter 8, page 47, PERF-REQU-03):

- a) airspace efficiency (FUA application, adherence to optimum airspace dimensions, utilisation of airspace, efficient booking system);
- b) mission effectiveness (economic impact of transit, impact of airspace location on training);
- c) flexibility (training in non-segregated areas, release of airspace, accommodation of short notice civil and military needs).

7.1.1.3 In order to ensure above mentioned the HLAPB should:

- a) establish joint civil/military processes for the periodic (at least yearly) assessment of airspace efficiency and effectiveness of procedures at all three ASM Levels;
- b) ensure the definition and application of FUA Key Performance Areas (KPA) and Indicators (KPI) to monitor ATM performance against civil and military airspace users' needs at national and network level;
- c) assess FUA effectiveness in terms of the impact on civil and military airspace users, ATM service provision and civil/military co-ordination;
- d) ensure the use of KPAs of safety, capacity, cost-effectiveness and environment to measure the efficient and flexible use of airspace procedures and operations.

7.1.1.4 Apart from those FUA Indicators (described under para 7.1.2) EUROCONTROL, in cooperation with stakeholders, developed and implemented PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Indicators) performance management system. PRISMIL, with its performance indicators, complements civil-military ATM performance-based partnership both at national and pan-European level. More on the civil-military ATM performance is to be found on dedicated section of the EUROCONTROL web site.

## 7.1.2 FUA indicators

- 7.1.2.1 The development of FUA Indicators for the assessment of the efficiency of the application of the FUA Concept in the ECAC States started with the work in the Ad Hoc Group on FUA Indicators (AHGOFI) and continued in the FUA Drafting Group. The methods and algorithms described hereafter are based on what was developed by the AHGOFI and FUA Drafting Group and agreed by the Airspace and Navigation Team (until 2011) and the Network Operations Team in regard to FUA Indicators development.
- 7.1.2.2 The FUA Indicators are developed in the broader context of the monitoring of the ATM performances against civil and military airspace user needs and for the assessment of the FUA effectiveness in terms of impact on civil and military airspace users, ATM services provision and civil/military co-ordination.
- 7.1.2.3 Two categories of indicators were developed - the FUA Use Rates (FUR) Indicators and the Flight Economy Indicators (FEI).
- 7.1.2.4 The FUA Use Rates Indicators are meant to provide information about the rate of availability of the FUA airspace structures and about the interest of the users in those structures.
- 7.1.2.5 The Flight Economy Indicators provide information about the possible economy gained or lost - in terms of distance, flying time or fuel consumption - to be expected by the users while using FUA airspace structures.

## 7.1.3 Definitions

- Interested flight: A flight becomes 'interested' in a certain airspace volume if that the trajectory through that airspace is the shortest possible available.
- Recorded flight: Flight Plan Data for a specific flight as recorded Archive System of the NM (ARC).
- Alternate route: The route/airspace on which/through a flight will re-route as a consequence of a certain route-segment/airspace becoming unavailable.
- Busy Friday: Friday between 1st of May and 31st of October on which, upon international agreement, early access from 1000 UTC (1100 UTC Winter) to CDR1s (weekend routes) is possible.

## 7.1.4 Acronyms

<i>AFE</i>	Actual Flight Economy
<i>AHGOFI</i>	Ad Hoc Group on FUA Indicators
<i>ALTN</i>	Alternate route or alternate trajectory to a route or trajectory through an airspace volume. Any route or trajectory different than the shortest route or trajectory from ADEP to ADES which crosses an airspace volume is considered alternate. For the ADEP or ADES outside ECAC airspace, the ECAC entry or exit points are considered
<i>ARFL</i>	Total Number of Aircraft having filed an FPL on a CDR1 or through a reserved/restricted airspace during a given time period

<i>ANRF</i>	Total Number of Aircraft having filed an FPL on the ALTN of a CDR1 or a reserved/restricted airspace during a given time period ARC Archive System of the NM
<i>AU</i>	Total Number of Aircraft having actually used a CDR1 or flown through a reserved/restricted airspace during a given time period
<i>BDI</i>	Better Traffic Distribution Indicators
<i>FEI</i>	Flight Economy Indicators
<i>FEL</i>	Flight Economy Lost
<i>FEO</i>	Flight Economy Offered
<i>FER</i>	Flight Economy Realised
<i>FUA</i>	DG Flexible Use of Airspace Drafting Group
<i>FUR</i>	FUA Use Rates
<i>ICI</i>	Increase in ATM System/Sector Capacity Indicators
<i>OD</i>	Total Opening Hours of a CDR1 or a reserved/restricted airspace between 0400 UTC and 2200 UTC
<i>ON</i>	Total Opening Hours of a CDR1 or a reserved/restricted airspace between 2200 UTC and 0400 UTC
<i>OPS LOG</i>	NM recording of the daily live operations on their static databases
<i>PFE</i>	Potential Flight Economy
<i>PFER</i>	Potential Flight Economy Rate
<i>PU</i>	Average Number of Potential Users of an available CDR1 or a reserved/restricted airspace during a given time period
<i>RAI</i>	Rate of Aircraft Interested in a CDR1 or a reserved/restricted airspace
<i>RAU</i>	Rate of Actual Use of CDR1 or reserved/restricted airspace
<i>RDI</i>	Reduction in Delays Indicators
<i>RoAA</i>	Rate of Airspace Availability (used for FRA operations)
<i>RoCA</i>	Rate of CDR1 Availability
<i>SR1</i>	Length (in NM) of a route containing a CDR1. In the case of FRA environment, it represents the length in NM of the direct route defined by the entry point to the exit point of a free route airspace, which crosses through a reserved/ restricted airspace.
<i>SR6</i>	Length (in NM) of an ALTN route. In the case of FRA environment, it represents the length in NM of a route which avoids a reserved/ restricted airspace.
<i>TA</i>	Total Number of Aircraft having filed an FPL on a CDR1 or its ALTN during a given time period. In the case of FRA environment, it represents the Total Number of Aircraft having filled and FPL through or around a reserved/ restricted airspace.
<i>TPFE</i>	Total Potential Flight Economy
<i>TWAI</i>	Time Window of Availability Indicator

## 7.2 FUA Use Rates (FUR)

### 7.2.1 Rate of CDR1 Availability (RoCA)

#### 7.2.1.1 Definition:

7.2.1.1.1 RoCA represents the average CDR1 availability according to the EAUP/EUUP related to a given time period.

7.2.1.1.2 RoCA represents (in %) the ratio of the total CDR1 segment opening to the total time of days (D) during a given time period.

7.2.1.1.3 RoCA is balanced according to the fact that:

- a) 96% of GAT is operating between 04.00 and 22.00 UTC (18 hours in total)
- b) CDR1s are very often available between 22.00 and 04.00 UTC (6 hours in total) but, on average, only 4% of the traffic is operating during this period.

#### 7.2.1.2 Usage:

7.2.1.2.1 RoCA computed individually:

- a) assessment of a particular CDR1 in order to determine the potential for re-categorisation; or
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).

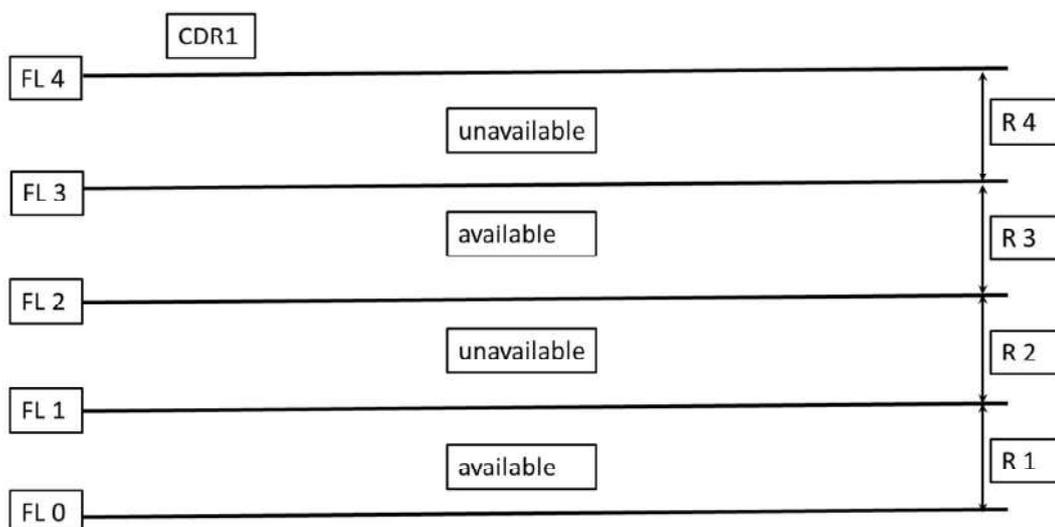
7.2.1.2.2 RoCA computed as an average:

- a) assessment of the effectiveness of a certain AMC – for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general – for an analysis made at the level of ECAC.

#### 7.2.1.3 Formula:

$$\text{RoCA} = (\text{OD} \times 0.96) / (\text{TDdef} \times \text{D}) + (\text{ON} \times 0.04) / (\text{TNdef} \times \text{D})$$

7.2.1.3.1 The following method to compute the OD and ON is proposed:



7.2.1.3.2 In the figure above, FL0 means the lowest FL available for a given CDR1 segment and FL4 represents the highest FL available for the same CDR1. A CDR1 could be made available on certain flight level bands, but always inside the AIP definition.

7.2.1.3.3 The following formula is proposed for determining the OD and ON for such a CDR1 segment:

$$OD = \sum_j (OD_{CDR1j} \times R_j)$$

Where

$$R_j = (\max FL_j - \min FL_j) / (\max FL_{route} - \min FL_{route})^{28}$$

**OD** (*opening hours during the day*) is the sum of all the ODs for each level band balanced with the report between the vertical dimension of the level band and the vertical dimension of the entire route.

**D** represents the number of days.

**TDdef** (*time during the day from the definition*) represents the CDR1 availability time in number of hours during the day (from 04:00 to 22:00 UTC) from the CDR1's definition from the national AIP.

**TNdef** (*time during the night from the definition*) represents the CDR1 availability time in number of hours during the night (from 22:00 to 04:00 UTC) from the CDR1's definition from the national AIP.

Note: For the CDR1s which are defined across an entire day (H24) the value of the TDdef is 18 and the value of TNdef is 6.

<sup>28</sup> Expressed in number of FLs. "min/max FLroute" stands for the vertical CDR1 limits in accordance with CDR1's definition from the national AIP.

**J** represents elementary CDR1's route segments referred to the national AIP CDR1's definition.

The coefficients of 0.96 and 0.04 are related to the average traffic density during a day and they were re-validated during recent years. The "weight" of an airspace made available during the day is more significant than during the night.

And

**OD<sub>CDR1j</sub>** are obtained by collecting the availability information (published in the AIP and in the EAUP/EUUP).

A similar formula is used to obtain the ON (*opening hours during the night*):

$$\mathbf{ON} = \sum_j (\mathbf{ON}_{\mathbf{CDR1j}} \times \mathbf{R}_j)$$

- 7.2.1.3.4 The RoCA values are used only to monitor the airspace availability in time and provided analysis, to find operational explanations when the variation is significant. There are no good or bad values for RoCA, as all the actors (civil, military etc.) have to make use as efficient as possible of the airspace made available. Same considerations apply for the RoAA, see chapter 7.2.2.

## 7.2.2 Rate of Airspace Availability (RoAA)

### 7.2.2.1 Definition:

- 7.2.2.1.1 RoAA represents the average reserved/restricted airspace availability according to the EAUP/EUUP related to a given time period. In a Free Route Airspace environment, "reserved/restricted airspace reservation" refers to airspace of defined horizontal and vertical dimensions allocated for exclusive use of specific users, e.g. TSA, TRA. These are specific designated airspace where both civil and military activities could take place. Depending on the status of the airspace reservations (active or inactive) and the type of reservation (segregated or restricted) the non-participating airspace users are permitted or not to flight plan routings through these airspace reservations.

- 7.2.2.1.2 RoAA represents (in %) the ratio of the total reserved/restricted airspace opening time, whatever type it may be, to the total time of days (D) during a given time period.

- 7.2.2.1.3 RoAA is balanced according to the fact that:

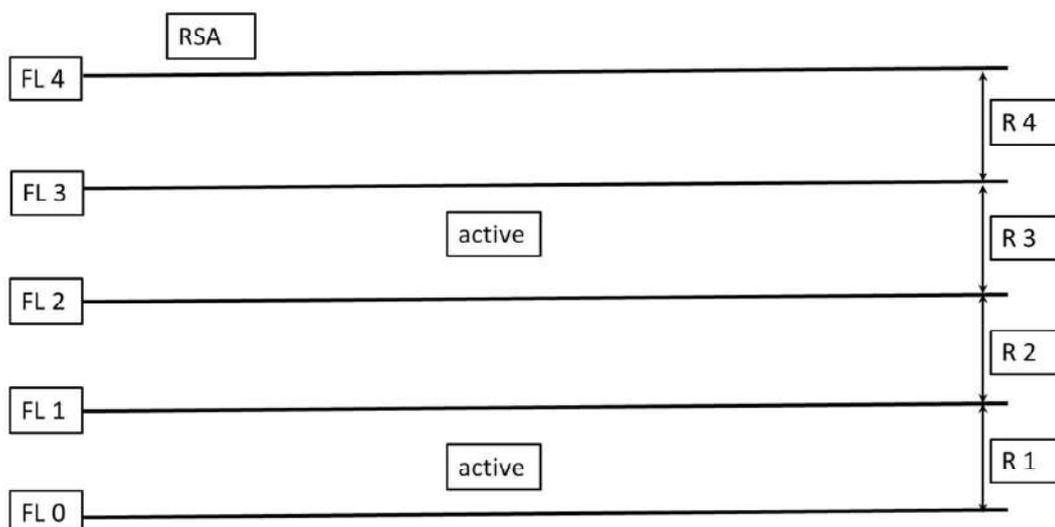
- a) 96% of GAT is operating between 0400 and 2200 UTC (18 hours in total)
- b) Reserved/restricted airspace is very often available between 2200 and 0400 UTC (6 hours in total) but, on average, only 4% of the traffic is operating during this period.

- 7.2.2.1.4 RoAA will take into consideration the activation of FBZ(s) whenever applicable.

### 7.2.2.2 Formula

$$\mathbf{RoAA} = (\mathbf{OD} \times \mathbf{0.96}) / (\mathbf{TD}_{\mathbf{def}} \times \mathbf{D}) + (\mathbf{ON} \times \mathbf{0.04}) / (\mathbf{TN}_{\mathbf{def}} \times \mathbf{D})$$

- 7.2.2.2.1 A reserved/restricted airspace could be allowed for civil use on its entire vertical dimension or on level bands (the rest being restricted for civil use).



7.2.2.2.2 In the figure above, FL0 means the lowest FL available for a given reserved/restricted airspace and FL4 represents the highest FL available for the same airspace, as they are defined in the national AIP. As it could be noted, the airspace may have a different status on each layer of flight levels: FL0 to FL1 active (restricted for civil use), FL1 to FL2 inactive (permitted for civil use), FL2 to FL3 active (restricted for civil use) and FL3 to FL4 inactive (permitted for civil use).

7.2.2.2.3 The following formula is proposed for determining the OD and ON for a reserved/restricted airspace which is managed using level bands:

$$OD = \sum_j (OD_j \times R_j)$$

Where

$$R_j = (\max FL_j - \min FL_j) / (\max FL_{area} - \min FL_{area})^{29}$$

**OD** (*opening hours during the day*) is the sum of all the ODs for each level band balanced with the report between the vertical dimension of the level band and the vertical dimension of the entire airspace as defined in the national AIP.

**D** represents the number of days.

**TDdef** (*time during the day from the definition*) represents the RSA availability time in number of hours during the day (from 04:00 to 22:00 UTC) from the RSA's definition from the national AIP.

**TNdef** (*time during the night from the definition*) represents the RSA availability time in number of hours during the night (from 22:00 to 04:00 UTC) from the RSA's definition from the national AIP.

Note: For the RSAs which are defined across an entire day (24H) the value of the TDdef is 18 and the value of TNdef is 6.

**J** represents the elementary airspace level bands in accordance with airspace definition from the national AIP.

<sup>29</sup> Expressed in number of FLs. "min/maxFL area" represents the vertical area limits in accordance with the national AIP area definition.

And

$OD_j$  are obtained by collecting the availability information (published in the AIP and in the EAUP/EUUP).

A similar formula is used to obtain the ON (*opening hours during the night*):

$$ON = \sum_j (ON_j \times R_j)$$

## 7.2.3 Effective Use of Reserved or Segregated Airspace (ERSA)

### 7.2.3.1 Definition:

7.2.3.1.1 ERSA represents the ratio (in %) between the final allocated time for reservation or segregation from general air traffic, and the initial allocated time used for the activity requiring such segregation or reservation. The indicator is calculated for all airspace allocations notified to the Network Manager.

7.2.3.1.2 The requested allocated time is recorded from the area allocation in the EAUP. The final allocated time is recorded from all the subsequent EUUPs addressing the concerned area.

$$ERSA = \frac{\sum_j \text{EUUPs allocation}}{\text{EAUP allocation}}$$

Where  $\sum_j \text{EUUPs allocation}$  represents the final allocation after all EUUPs for the concerned area.

7.2.3.1.3 ERSA is calculated for each area every day based on the EAUP and EUUPs allocation time. Averaged values for a country or group of countries, during a certain period (week, month, AIRAC, year) could be calculated.

7.2.3.1.4 ERSA values are used in conjunction with other performance indicators to monitor a reserved/segregated airspace utilisation in time and provide analysis to find operational explanations and potential measures when the variation is significant.

## 7.2.4 Rate of Aircraft Interested (RAI)

### 7.2.4.1 Definition:

7.2.4.1.1 RAI represents the average number of aircraft interested in filing flight plans to take advantage of an available CDR1 or an unallocated reserved/restricted airspace (in the case of FRA environment)

7.2.4.1.2 RAI represents (in %) the ratio of the number of flights planned on an available CDR1 or through an unallocated reserved/restricted airspace to the number of potential users of this CDR1 or airspace.

### 7.2.4.2 Usage:

7.2.4.2.1 RAI computed individually:

- a) assessment of a particular CDR1;
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).

- c) assessment of network impact for a particular reserved/restricted airspace.

#### 7.2.4.2.2 RAI computed as an average:

- a) assessment of the effectiveness of a certain AMC – for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general – for an analysis made at regional or ECAC level.
- c) assessment of the effectiveness of the flight planning process for an analysis made at national, regional or ECAC level.

#### 7.2.4.3 Formula

7.2.4.3.1 The total number of aircraft having filed an FPL on a CDR1 or crossing through an unallocated reserved/restricted airspace (ARFL) divided by the number of Potential Users (PU) of the CDR1 or reserved/restricted airspace. There are two ways to calculate the number of Potential Users:

- a) Average – where it is assumed that the CDR1/airspace availability and the traffic on alternate route/airspace are equally (linearly) spread during a day; This is a legacy method defined when the post-analysis data was not as comprehensive as today.
- b) Precise – where only the traffic on alternate route (or airspace) during the route (or airspace) availability is considered as potential users. A traffic using an alternate to a CDR1 during the unavailability period of the CDR1 is not considered potential user.

$$\text{RAI} = \text{ARFL} / \text{PU}$$

where:

$$\text{PU}_{\text{precise}} = \text{ARFL} + \text{ANRF (only the flights on an alternate flight plan trajectory during the CDR1 or airspace availability)}$$

$$\text{PU}_{\text{average}} = \text{ARFL} + (\text{ANRF} \times \text{RoCA}) \text{ or}$$

$$\text{PU}_{\text{average}} = \text{ARFL} + (\text{ANRF} \times \text{RoAA}) \text{ in case of FRA environment}$$

7.2.4.3.2 The higher RAI value, the more efficient the flight planning process is, meaning that the airspace opportunities from the flight planning point of view are better used. A value of 100% means that all the flights which could have flight planned on a CDR1 (or through an airspace) for their shortest route from ADEP to ADES have indeed flight planned using the available opportunity. Therefore, monitoring and increasing the RAI indicator makes the airspace usage more efficient.

7.2.4.3.3 From the NM post-analysis ASM tools point of view, the PU precise method is more desirable, as it offers a more accurate picture of the RAI indicator. However, for monitoring purposes and for trends analysis the PU average method requires less accurate post analysis data and it might take fewer resources to compute.

## 7.2.5 Rate of Actual Use of CDR1 or reserved/restricted airspace (RAU)

### 7.2.5.1 Definition:

7.2.5.1.1 RAU represents the average number of aircraft having actually used an available CDR1 or having actually flown through an unallocated reserved/restricted airspace during a given time period.

7.2.5.1.2 RAU represents (in %) the ratio of the number of flights (AU) having actually used an available CDR1 or having actually flown through an airspace to the number of Potential Users (PU - see paragraph 7.2.2.3 for the calculation methods) of this CDR1 or airspace.

### 7.2.5.2 Usage:

7.2.5.2.1 RAU computed individually:

- a) assessment of a particular CDR1;
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles);
- c) assessment of network impact for a particular reserved/restricted airspace.

7.2.5.2.2 RAU computed as an average:

- a) assessment of the effectiveness of a certain AMC – for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

7.2.5.2.3 This indicator has been developed with the aim of giving information as close as possible to the actual usage of the airspace.

### 7.2.5.3 Formula

$$\text{RAU} = \text{AU} / \text{PU}$$

Where

$$\text{PU}_{\text{precise}} = \text{ARFL} + \text{ANRF} \text{ (only the flights on an alternate flight plan trajectory during the CDR1 or airspace availability)}$$

$$\text{PU}_{\text{average}} = \text{ARFL} + (\text{ANRF} \times \text{RoCA}) \text{ or}$$

$$\text{PU}_{\text{average}} = \text{ARFL} + (\text{ANRF} \times \text{RoAA}) \text{ in case of FRA environment}$$

7.2.5.3.1 The higher RAU value, the more efficient the airspace usage is, meaning that the airspace opportunities are better used during the day of operations. A value of 100% means that all the flights which could have flight planned on a CDR1 (or through an airspace) for their shortest route from ADEP to ADES have indeed flew using the available opportunity. Therefore, monitoring and increasing the RAU indicator makes the airspace usage more efficient.

## 7.2.6 Time Window of Availability (TWA)

### 7.2.6.1 Definition:

7.2.6.1.1 This indicator gives, for a time period to be assessed each day, the number of occurrences of similar time-windows in the opening of a CDR1 segment or a reserved/restricted airspace in a certain FIR/UIR.

7.2.6.1.2 It could also be used to highlight - for one day only of operation investigated - windows of opening of less than a value determined as being the minimum required to enable flight planning.

### 7.2.6.2 Usage:

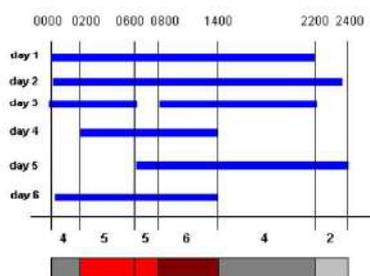
7.2.6.2.1 TWA computed for one day of operation: assessment of a particular CDR1 or a reserved/restricted airspace in order to determine the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles) based on the number of hours of opening and on the size of the windows of opening

7.2.6.2.2 TWA computed as a sum for more than one day of operations:

- a) assessment of the negotiation effectiveness of a certain AMC - for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general - for an analysis made at the level of ECAC.

### 7.2.6.3 Formula

For example, the horizontal segments in Table 1 below represent the time window of opening of a certain CDR1 for the same day (e.g. Monday) in each week assessed. The hours are the numbers on top of the Table 1 and the numbers at the bottom of Table 1 represents the sum of occurrences for the whole period assessed.



This indicator could be complemented with data on TRA/TSA activity period.

Figure 18: Time window availability in graphical format

### 7.2.6.4 Publication

7.2.6.4.1 The results can be presented in different formats as follows:

Route ID	From Point	To Point	From Level	To Level	Type	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
U A10	TBA	REBIA	200	550	2	0	0	0	0	0	0	0	5	5	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
U A20	OSQ	ARE	196	490	2	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	
U A31	CJN	ASTRO	250	450	2	0	0	0	0	0	0	0	0	0	0	0	0	10	20	20	4	4	4	4	4	4	4	20	
U A41	PJN	VAD EN	200	550	2	0	0	0	0	0	0	0	5	5	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
U B141	POI	TER MI	196	490	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	
U B65	FFM	BATTY	290	350	2	0	0	0	0	0	0	0	15	15	15	15	15	13	14	15	15	15	15	15	15	15	15	15	
U B25	FFM	BATTY	310	350	2	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	
UG 10	D O BAK	LBE	260	350	2	15	15	15	15	15	15	10	7	5	5	2	5	6	5	5	4	4	4	3	0	1	0	0	
UG 10	D O BAK	LBE	310	350	2	0	0	0	0	0	0	2	5	5	7	5	2	1	2	2	1	1	0	0	2	4	2	0	
UG 102	H AM	FLD	250	250	2	15	15	15	15	15	15	2	6	8	4	4	4	1	3	4	3	1	0	0	0	0	0	0	
UG 105	SPI	FFM	270	350	2	0	0	0	0	0	0	15	15	15	15	20	15	15	13	14	15	15	15	15	15	15	15	15	

Table 4: Time window availability for one AIRAC cycle

7.2.6.4.2 where the results are given for all the CDR1 segments assessed but summed up for the whole period analysed, or

Week Day	Route ID	From Point	To Point	From Level	To Level	Type	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Tue	U A31	CJN	ASTRO	250	450	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	
Tue	U B65	FFM	BATTY	290	350	2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tue	UG 10	D O BAK	LBE	260	350	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 102	H AM	FLD	250	250	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 105	SPI	FFM	270	350	2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tue	UG 106	DIK	KRN	270	350	2	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 106	DIK	KRN	290	350	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 106	KO K	DIK	210	230	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 106	KO K	DIK	270	450	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 15	TRT	VINER	250	250	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	U H 100	JDK	OLS	250	450	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	U H 300	JNR	OALTO	250	300	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	U H 300	JNR	OALTO	250	300	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	U J 155	BAM	LWO	250	450	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UL7	LO WAK	SFY	310	450	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 5: Time window availability 24h format

7.2.6.4.3 where the results are given for all the CDR1 segments assessed but for only one day of operations.

## 7.3 FLIGHT ECONOMY INDICATORS (FEI)

### 7.3.1 General

7.3.1.1 The flight economy indicators described hereafter are by default expressed in nautical miles (NM). The values obtained could be translated into fuel, time or emissions. This translation can be performed using different coefficients to be multiplied with the result in NM as follows:

- a) Savings in fuel = {indicator value in [NM]} x coef. F [metric tons of fuel/NM];
- b) Savings in time = {indicator value in [NM]} x coef. T x 60 [minutes/NM].

Coef. F: average consumption of fuel in metric tones/NM

Coef. T: average speed in kts

### 7.3.2 Potential Flight Economy (PFE)

#### 7.3.2.1 Definition:

7.3.2.1.1 PFE represents flight economy to be potentially realised using a particular CDR1 or a reserved/restricted airspace made available H24.

7.3.2.1.2 PFE represents (in NM), the economy realised by using a CDR1 instead of its alternate (ALTN). In the case of FRA operations, PFE represents (in NM) the economy realised by flying through a reserved/restricted airspace rather than avoiding it.

7.3.2.1.3 The PFE indicator would be used in all the following indicators, as it is the basis for the computation of the flight economy.

#### 7.3.2.2 Usage:

7.3.2.2.1 PFE computed individually:

- a) assessment of a particular CDR1 or effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles);
- b) the value could also be used to influence the airspace design in the area of that CDR1;
- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.2.2.2 PFE computed as an average:

- a) assessment of the effectiveness of a certain AMC by determining the average routing optimisation offered by the FUA structures - for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

#### 7.3.2.3 Formula:

$$\text{PFE} = \text{SR6} - \text{SR1 [NM]}$$

### 7.3.3 Total Potential Flight Economy (TPFE)

#### 7.3.3.1 Definition:

7.3.3.1.1 TPFE represents flight economy to be realised by all the aircraft potentially interested (TA) in using a CDR1 or a reserved/restricted airspace made available H24.

7.3.3.1.2 TPFE represents (in NM), the economy realised in using a CDR1 instead of its alternate route (ALTN). In the case of FRA operations, TPFE represents (in NM) the economy realised by flying through a reserved/restricted airspace rather than avoiding it.

#### 7.3.3.2 Usage:

7.3.3.2.1 TPFE computed individually:

- a) assessment of a particular CDR1;
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).
- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.3.2.2 TPFE computed as a total:

- a) assessment of the effectiveness of a certain AMC - for an analysis made at the national level; or

- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

7.3.3.2.3 The comparison between the value of this indicator and the FER and FEO indicators may give an indication of the current potential of a particular CDR1.

#### 7.3.3.3 Formula

$$\text{TPFE} = \text{TA} \times \text{PFE} \text{ [NM]}$$

### 7.3.4 Flight Economy Realised (FER)

#### 7.3.4.1 Definition

7.3.4.1.1 FER represents flight economy realised (in NM) by flights having filed FPLs (ARFL) in order to use an available CDR1 or a reserved/restricted airspace

#### 7.3.4.2 Usage

7.3.4.2.1 FER computed individually:

- a) assessment of a particular CDR1;
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).
- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.4.2.2 FER computed as a total:

- a) assessment of the effectiveness of a certain AMC – for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general – for an analysis made at regional or ECAC level.

#### 7.3.4.3 Formula:

$$\text{FER} = \text{ARFL} \times \text{PFE} \text{ [NM]}$$

### 7.3.5 Flight Economy Lost (FEL)

#### 7.3.5.1 Definition:

7.3.5.1.1 FEL represents flight economy potentially lost (in NM) by users NOT having filed an FPL to take advantage of a CDR1 made available or an available reserved/restricted airspace.

#### 7.3.5.2 Usage:

7.3.5.2.1 FEL computed individually:

- a) assessment of a particular CDR1
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).

- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.5.2.2 FEL computed as a total:

- a) assessment of the effectiveness of a certain AMC - for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

### 7.3.5.3 Formula:

$$\text{FEL} = (\text{ANRF} \times \text{RoCA}) \times \text{PFE [NM]},$$

where:

(ANRF x RoCA) represents the total number of flights that may use a CDR1 but the flight plan route is through the alternate of that CDR1.

For FRA environment:

$$\text{FEL} = (\text{ANRF} \times \text{RoAA}) \times \text{PFE [NM]},$$

where

(ANRF x RoAA) represents the total number of flights that may fly through a reserved/restricted airspace but the flight plan route is avoiding this airspace.

## 7.3.6 Flight Economy Offered (FEO)

### 7.3.6.1 Definition:

7.3.6.1.1 FEO represents flight economy (in NM) to be realised by Potential Users (PU) of a CDR1 or a reserved/restricted airspace made available.

7.3.6.1.2 FEO represents also Flight Economy Realised (FER) by flights (ARFL) having filed FPLs in order to use an available CDR1 or a reserved/restricted airspace and Flight Economy (FEL) that could have been saved by users (ANRF) NOT having filed an FPL on that available CDR1 or through that available airspace.

### 7.3.6.2 Usage:

7.3.6.2.1 FEO computed individually:

- a) assessment of a particular CDR1 or
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).
- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.6.2.2 FEO computed as a total:

- a) assessment of the effectiveness of a certain AMC - for an analysis made at the national level; or

- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

**7.3.6.3 Formula:**

$$\text{FEO} = \text{FER} + \text{FEL} \text{ [NM]}$$

**7.3.7 Actual Flight Economy (AFE)**

**7.3.7.1 Definition:**

7.3.7.1.1 AFE represents flight economy (in NM) realised by flights that have actually used an available CDR1 or have actually flown through an available reserved/restricted airspace.

**7.3.7.2 Usage:**

7.3.7.2.1 AFE computed individually:

- a) assessment of a particular CDR1 or
- b) the effectiveness of the negotiation process (at ASM Level 1 and ASM Level 2 for their respective roles).
- c) assessment of network impact for a particular reserved/restricted airspace in the case of FRA environment

7.3.7.2.2 AFE computed as a total:

- a) assessment of the effectiveness of a certain AMC - for an analysis made at the national level; or
- b) assessment of the effectiveness of FUA operations in general - for an analysis made at regional or ECAC level.

**7.3.7.3 Formula:**

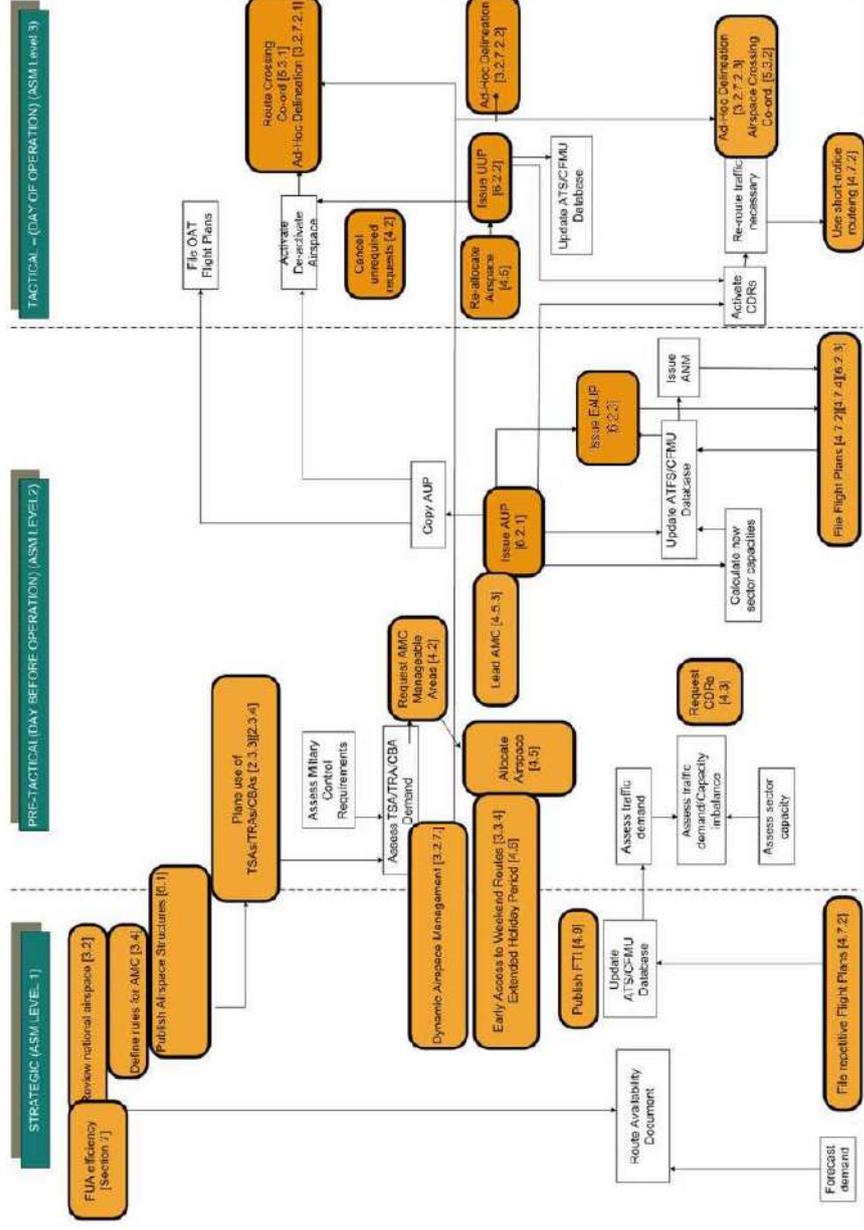
$$\text{AFE} = \text{AU} \times \text{PFE} \text{ [NM]}$$

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- Annex 1:** General Overview and Process of the FUA Concept - Handbook Cross-Reference Table
- Annex 2:** ATS Route Network Planning and Development Process
- Annex 3:** Common ATS/ASM/ATFCM Timetable
- Annex 4:** Airspace Charter
- Annex 5:** Description of the AUP Message
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- Annex 7:** Model State Level Framework Agreement on the Cross-Border / FIR/UIR Boundary Operations
- Annex 8:** Template Letter of Agreement on Coordination Procedures between Airspace Management Cells (AMCs) in regard to Allocation and Shared Use of Common Cross- Border Areas (CBAs)
- Annex 9:** Template Letter of Agreement on Coordination Procedures in regard to Cross-Border Operations in Shared AMC-Manageable Areas
- Annex 10:** Template Letter of Agreement between Airspace Management Cells (AMCs) and Network Manager (NM) on FUA Level 2 Coordination Procedures
- Annex 11:** ASM System Support – Baseline Operational Requirements
- Annex 12:** Notification procedure and planning timetable for a large-scale activity and/or military exercise/activity

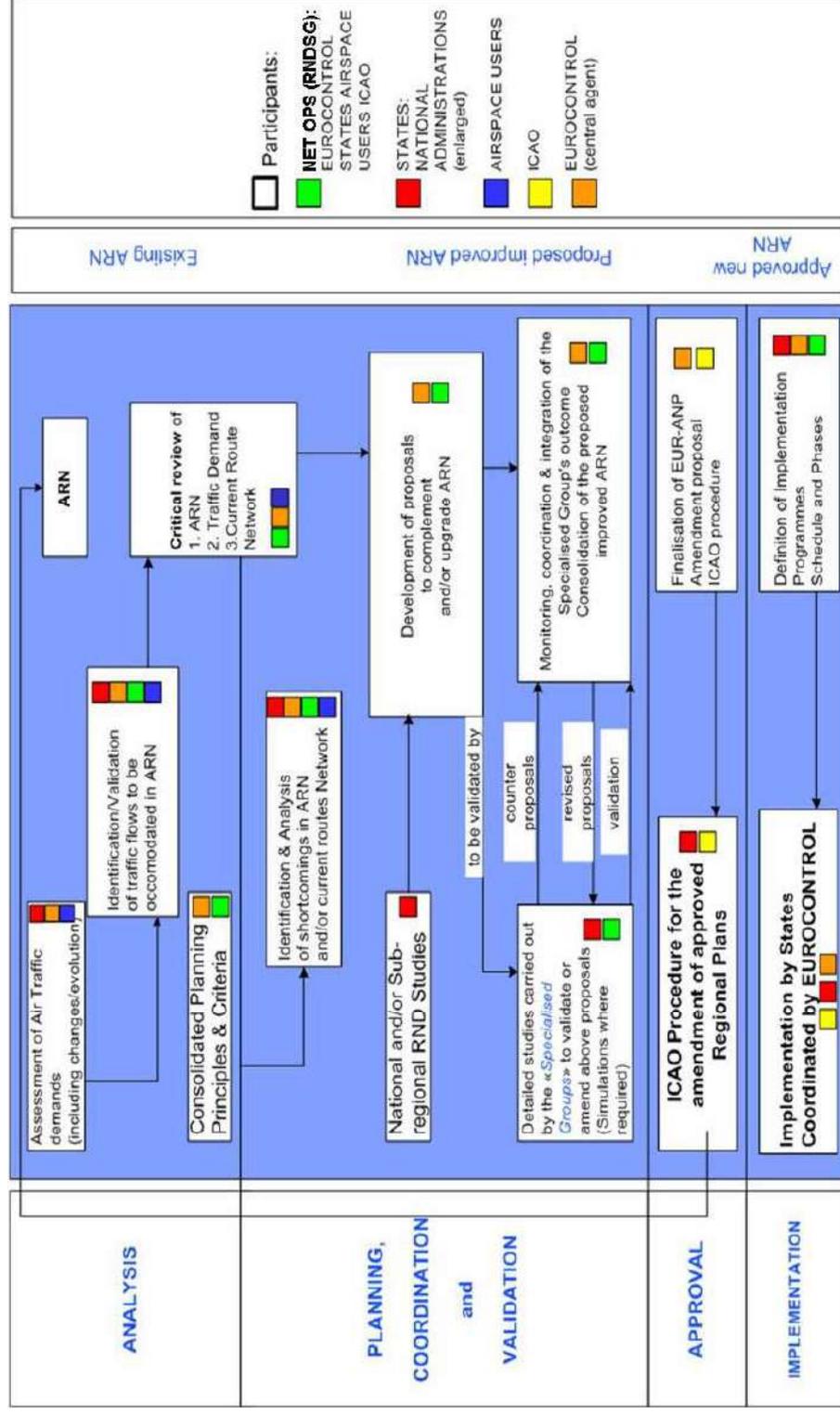


# Annex 1 – GENERAL OVERVIEW AND PROCESS OF THE FUA CONCEPT - HANDBOOK CROSS-REFERENCE TABLE



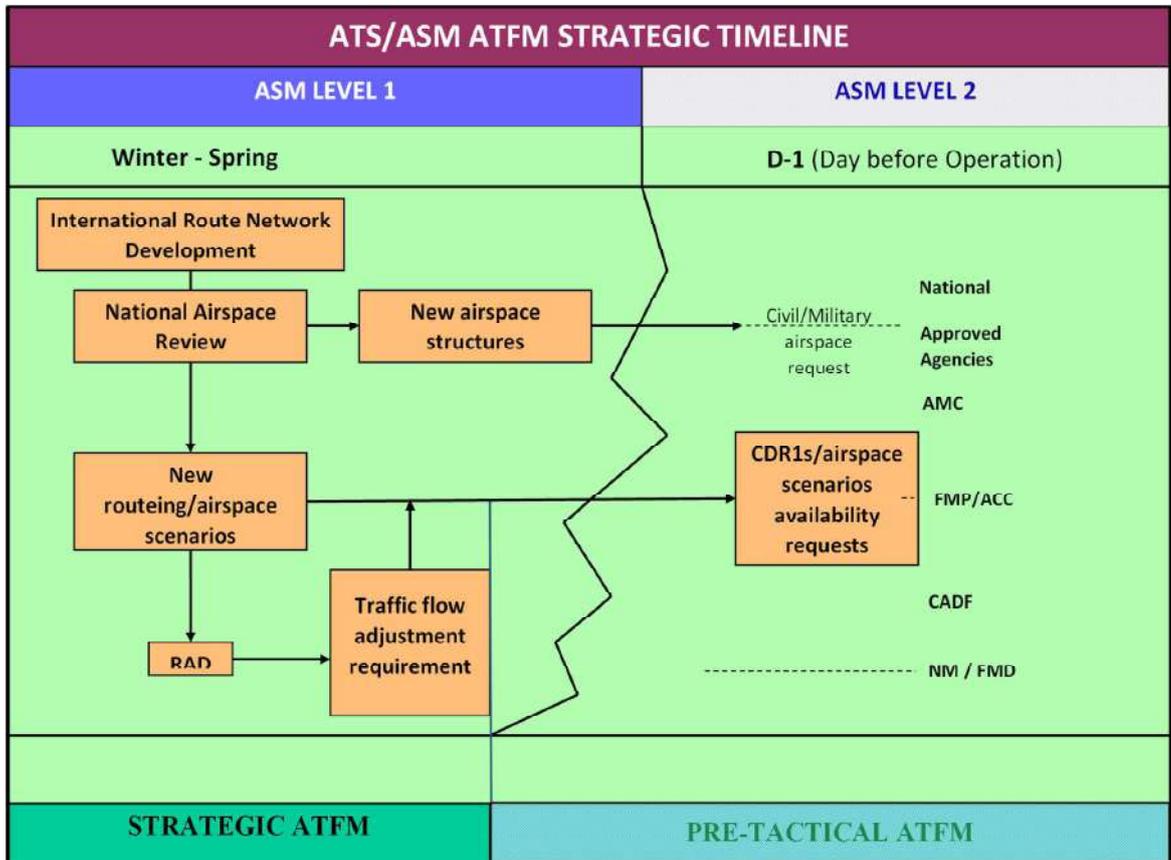


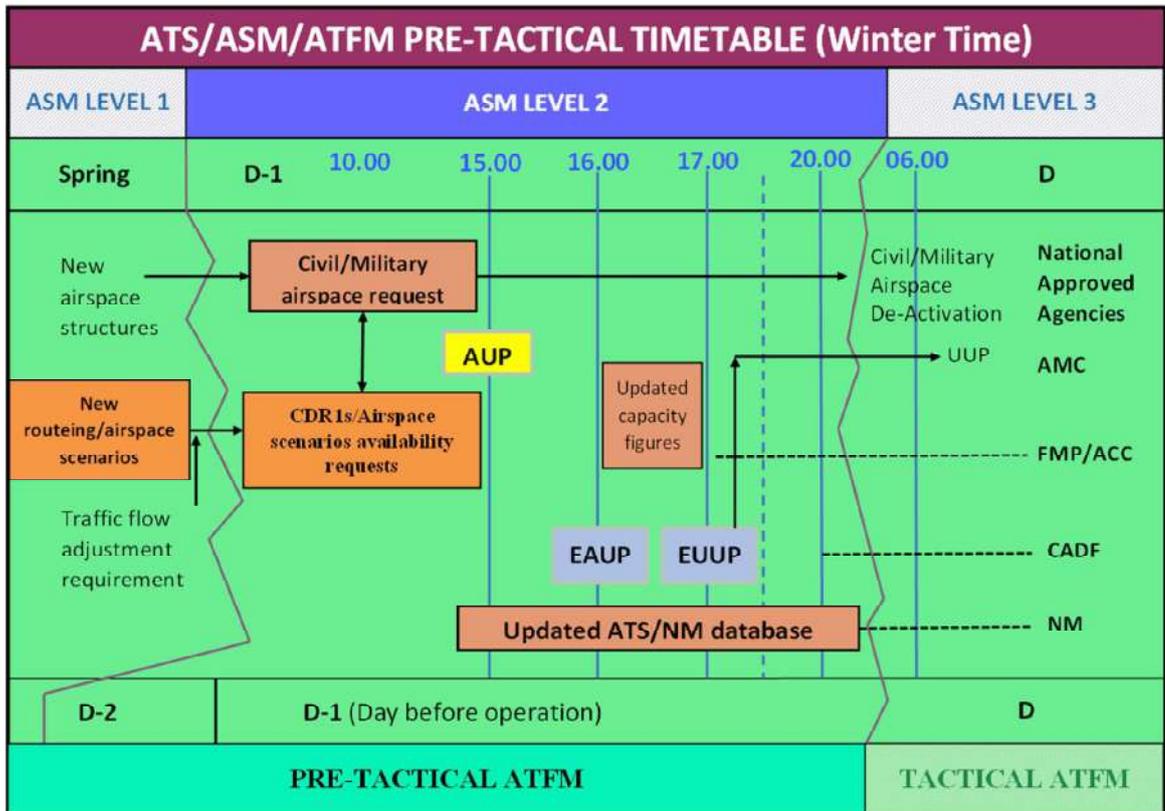
# Annex 2 – ATS route network planning/development process





# Annex 3 – COMMON ATS/ASM/ATFCM TIMETABLE





# **Annex 4 – Airspace Charter**

STATE REGULATORY AUTHORITY

<p><b>AIRSPACE CHARTER</b></p> <p>FOR THE FORMULATION OF</p> <p><b>THE NATIONAL AIRSPACE POLICY</b></p>
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Document Identification:

Effective:

## DOCUMENT APPROVAL

The following table identifies the management authorities who have approved the current issue of this Charter.

	Civil Representative	Military Representative
Authority		
Name and signature		
Date		

## DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of and amendments to the present Charted.

Edition Amendment	Date	Reason for change	Pages Affected

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## ABBREVIATIONS

*(List and define all abbreviations used in the Charter)*

<b>AA</b>	Approved Agency
<b>AIRAC</b>	Aeronautical Information, Regulation and Control
<b>AIS</b>	Aeronautical Information Service
<b>AMC</b>	Airspace Management Cell
<b>AO</b>	Aircraft Operator
<b>ASM</b>	Airspace Management
<b>ATC</b>	Air Traffic Control
<b>ATS</b>	Air Traffic Services
<b>CADF</b>	ECAC Centralised Airspace Data Function
<b>CBA</b>	Cross-Border Area
<b>CDR 1</b>	Conditional Route
<b>DAM</b>	Dynamic Airspace Management
<b>DOC</b>	Document
<b>ECAC</b>	European Civil Aviation Conference
<b>ERNIP</b>	European Route Network Improvement Plan
<b>FUA</b>	Flexible Use of Airspace
<b>HLAPB</b>	High Level Airspace Policy Body
<b>IA</b>	Impact Assessment
<b>ICAO</b>	International Civil Aviation Organisation
<b>LoA</b>	Letter of Agreement
<b>NASMAC</b>	National Airspace Management Advisory Committee
<b>NATO</b>	North Atlantic Treaty Organisation
<b>NM</b>	Network Manager
<b>PCA</b>	Prior Coordination Airspace
<b>RCA</b>	Reduced Coordination Airspace
<b>TRA</b>	Temporary Reserved Area
<b>TSA</b>	Temporary Segregated Area

# AIRSPACE CHARTER

## 1. PURPOSE

- 1.1 This Charter is designed to assist airspace users and ATS providers. It defines the authorities, responsibilities and principles by which the National/FAB High-Level Airspace Policy Body (HLAPB), as the airspace approval and regulatory authority, conducts the planning of airspace.
- 1.2 The Charter incorporates as Annexes the processes used to provide a high quality service to airspace users and ATS providers through the safe, accurate and timely planning, approval and promulgation of national airspace arrangements.

## 2. LEGAL FOUNDATION OF THE HLAPB

- 2.1 In order to perform the Member States' tasks pursuant to Article 4 (1) (2) of Regulation 2150/2005 and [national regulations], the [National Authority] establishes the HLAPB, responsible for strategic airspace management.
- 2.2 In respect of the responsibility defined in [FAB Agreement], Members States agreed to establish [FAB] HLAPB.

## 3. ROLE OF THE NATIONAL HIGH LEVEL POLICY BODY

- 3.1 The role of the national HLAPB is to ensure a safe and efficient use of the national/FAB airspace structure and ATS route network and to provide a continuum and transparency of operational handling at national borders based on harmonised agreements derived from collaborative airspace planning with neighbouring States.
- 3.2 This is to be achieved through the development, approval and enforcement of common national policies for an effective airspace allocation and review process, taking into account the needs of all stakeholders, including national security and defence needs, environmental issues as well as any particular neighbouring States requirements.

## 4. STRATEGIC OBJECTIVES

- 4.1 The Strategic Objectives for the National High-Level Airspace Policy Body are to:
  - a) maintain and actively seek to improve the safe and effective management of the airspace and its supporting infrastructure;
  - b) exercise fair and effective regulation of the airspace organisation and management;
  - c) build confidence and respect between airspace regulators and all other stakeholders through consultation and co-operation;
  - d) maintain and improve standards of service through effective planning and monitoring of the high-level body's key processes and activities;

- e) accommodate shared use of national airspace by all user groups;
- f) harmonise airspace management procedures with neighbouring States as appropriate;
- g) to define a monitoring compliance matrix at each level, taking into consideration performance objectives as a possible way of complying with FUA regulation requirements;
- h) to participate in cooperation with the relevant authorities for the definition of the performance management framework relevant to FUA.

## **5. RESPONSIBILITIES**

5.1 The permanent national HLAPB is required to perform the following functions:

- a) ensure that a commonly agreed airspace policy be formulated (e.g. a national/FAB airspace charter);
- b) ensure agreed priority rules and negotiation procedures for airspace allocation at ASM Level 2 and ASM Level 3 are clearly defined and implemented;
- c) ensure the ongoing (at least yearly) reassessment of national airspace with regard to effective application of FUA Concept;
- d) ensure the progressive establishment of new flexible airspace structures, where appropriate;
- e) establish framework agreements between civil and military authorities to facilitate the application of the FUA Concept;
- f) ensure the introduction of procedures for the allocation of these airspace structures on a day by day basis;
- g) ensure that appropriate national legislation is in place and amended as necessary;
- h) ensure that coordination processes between all levels of ASM are established;
- i) ensure that adequate real time civil/military coordination facilities and procedures shall be established;
- j) ensure that civil and military terms and definitions applicable to the principles governing the FUA Concept are harmonised;
- k) ensure that at any one time the total volume of airspace restrictions or reservations are kept to the minimum necessary while ensuring safety and satisfying national operational requirements;
- l) ensure that a commonly agreed airspace policy for certain portions of airspace of two or more States involved, is formulated;
- m) ensure the regular (at least yearly) reassessment of the joint airspace of two or more States where appropriate;

- n) formulate the national policy for airspace management the "Airspace Charter" (template as presented at Annex 4 should be used);
- o) reassess the national airspace structure and ATS route network periodically with the aim of planning, as far as possible, for flexible airspace structures and procedures in the upper and in the lower airspace (including Terminal Areas);
- p) validate activities requiring airspace segregation and assess the level of risk for other airspace users;
- q) conduct the safety assessment when planning for the establishment of CDR1s, TRAs, TSAs, CBAs, AMC-manageable D and R areas, if required;
- r) change or modify, if required and if practicable, D and R areas into temporary allocated airspace;
- s) take into account the FUA Concept when planning for airspace classifications;
- t) coordinate major events such as large scale military exercises planned well in advance of the day of operation, which require additional segregated airspace, and notify these activities by AIS publication;
- u) establish as appropriate a list of days covering extended holiday periods when military operations are likely to be reduced, allowing the temporary modification of the conditions of availability of some CDR1s and notify this status change by AIS publication (AIP Supplement);
- v) periodically review the procedures and efficiency of ASM Level 2 operations, the submission of airspace requests by the national Approved Agencies (AAs), and the negotiating procedures and priority rules for airspace allocation;
- w) periodically review the procedures and efficiency of ASM Level 3 operations, the prompt exchange and dynamic update of all necessary flight plan and radar data, and the use of adequate civil/military coordination facilities;
- x) provide a continuum and transparency of operational handling at national borders through collaborative airspace planning and harmonised airspace management procedures with neighbouring States.

## **6. PRINCIPLES**

### **6.1 General**

6.1.1 Principles sustaining the above Strategic Objectives and Functions of the HLAPB are mainly related to safety, consultation, cooperation, notification and environment issues.

### **6.2 Safety**

6.2.1 Safety is the paramount concern for the HLAPB in carrying out its responsibilities. Safety performance levels shall be maintained or enhanced, and the planning of airspace arrangements shall take account of obligations imposed by higher authorities and safety regulation requirements.

6.2.2 The National High-Level Airspace Policy Body will conform to international best practices and will ensure that the Airspace Change Processes, procedures and instructions are compatible with appropriate Military and Civil Aviation safety procedures.

6.2.3 When considering and refining a proposal for an airspace change, the National High-Level Airspace Policy Body will review, if required, the safety assessment of each case as supplied by the customer, to ensure that national and international plans evolve in an overall risk reducing manner.

### **6.3 Consultation**

6.3.1 Consultation with airspace users, service providers and other relevant bodies will be conducted with the aim of obtaining consensus, wherever possible, before making changes in the planning or design of airspace arrangements.

6.3.2 The HLAPB is charged with reconciling civil and military operational needs, without affording preferential treatment to either, and ensuring that airspace planning takes into account all user interests.

6.3.3 To ensure an effective interface at all levels, the HLAPB conducts consultation principally through the National Airspace Management Advisory Committee (NASMAC).

### **6.4 Cooperation**

6.4.1 Close cooperation will be maintained with national and international partners to ensure that national airspace planning and policies are consistent with national and international commitments and programmes.

6.4.2 The HLAPB takes into consideration the findings and relevant corrective measures of NSA compliance oversight bodies as regards the application of Regulation 2150/2005.

6.4.3 The HLAPB establish and maintains close coordination with national representatives in the context of the work of the Network Manager and [FAB] working arrangements as regards airspace design and management and, if necessary, establishes and directs the work of substructures to accomplish these tasks.

### **6.5 Notification**

6.5.1 The HLAPB is required to ensure that the promulgation of airspace policy, the implementation of new airspace structures and procedures is notified within an adequate timescale allowing sufficient time for all airspace users and ATS providers to comply with the new requirements.

### **6.6 Environment**

6.6.1 The environmental impact of airspace design and planning is to be taken into account at the earliest possible stage when revising airspace procedures and arrangements.

- 6.6.2 The HLAPB is also required to ensure, where appropriate, that any changes, which may have an adverse impact on the noise disturbance in the vicinity of an airport, are the subject of proper consultation with all concerned.

### **6.7 Performance Approach**

- 6.7.1 Within its competencies, the HLAPB supports the implementation of the SES performance scheme. The HLAPB decision should contribute to meeting the relevant national and [FAB] performance targets and complying with EU-wide performance targets.
- 6.7.2 The HLAPB consolidates civil-military performance needs and communicates them to the National Supervisory Authority and ANSP.
- 6.7.3 Performance monitoring and the assessment and review of FUA operational performance are carried out in close cooperation with the National Supervisory Authority.
- 6.7.4 Within its area of responsibilities, the HLAPB takes into account the NSA findings relevant to the performance scheme.

### **6.8 ASM Functions Continuation**

- 6.8.1 HLAPB must secure a continuation of ASM functions application for benefits off all stakeholders.
- 6.8.2 When an urgent action is required, in cases of national security and defence need as well as necessity for protection of safety operation of civil aviation, HLAPB can apply a fast-track decision making process.
- 6.8.3 If HLAPB is not in position to apply required processes, the head of CAA is authorized to make an appropriate temporary decision relevant to safety of operation of civil aviation.

## **7. WORKING ORGANISATION**

- 7.1 The National Airspace Management Advisory Committee (NASMAC) established by the HLAPB will be consulted for advice and views on any major matter concerned with airspace management (see Appendix C). [Depending on the size of the ATS organisation and the mandate of the HLAPB, the tasks dedicated to the Advisory Committee can be carried out inside the HLAPB, as a supplementary function.]
- 7.2 The main task of Advisory Committee is to assist HLAPB in the development of airspace policies, configurations and procedures in order that due attention is given to the diverse requirements of all airspace users and ATS providers, civil and military.
- 7.3 The Committee may be chaired by the Chairman of the HLAPB, with membership covering the whole spectrum of the State aviation community and remaining under constant review.
- 7.4 Most of the NASMAC business will be conducted by correspondence, but the Committee will meet in Plenary Session on request. A proposal, which may

originate within the HLAPB or be initiated by a member organisation, will be circulated for NASMAC member's comments. If the proposal does not originate within the HLAPB itself, then the HLAPB's views need also to be circulated.

- 7.5 If the matter is straightforward, a consensus will easily emerge from which the HLAPB will then frame associated changes to legislation and/or alter airspace boundaries or associated procedures.
- 7.6 If the matter is more complex, then a sub-committee or working group may be set up by the HLAPB in which all interested members may play a part in formulating a report. A Plenary Session of the NASMAC will then be required to discuss the report and offer advice to the HLAPB.
- 7.7 The NASMAC should be seen as a discussion board which operates on the principle that those who have a voice in the formulation of policies are more likely to abide by those policies. Such a principle therefore relies heavily on mutual trust and interest.

## **8. AIRSPACE POLICY FORMULATION AND REVIEW PROCESS**

- 8.1 This procedure defines the process which ensures that airspace policies are formulated and reviewed in accordance with the principles laid down in this Charter.
- 8.2 In the context of the Airspace Policy Formulation and Review Process, "Policy" refers to: "a standing decision rule which gives guidance on acceptable and unacceptable types of action."
- 8.3 The Airspace Policy Formulation and Review Process falls into six stages:
  1. identification of need;
  2. analysis of the potential impact;
  3. decision to proceed;
  4. consultation;
  5. approval; and
  6. publication.
- 8.4 The flowchart presented at Appendix D illustrates the activities, considerations and requirements of the Airspace Policy Formulation and Review Process.
- 8.5 Proper coordination and agreement with the appropriate civil and military aviation organisations is a critical element of the process and should be carried out before any external consultation takes place.
- 8.6 An Impact Assessment (IA) describing the overall impact of a Regulatory Measure or Policy Change and including a safety case, an environmental assessment, a legal assessment and a cost benefit analysis will be initiated and/or conducted, if required, by the HLAPB when formulating policy or initiating legislative change.

8.7 Policies are to be subject to periodic reviews. The criteria for review will be set out in the policy statement. The length of the review period shall take into account the scale of impact of the new or revised policy.

## 9. AIRSPACE CHANGE PROCESS

9.1 This procedure defines the process which ensures that proposed changes to airspace are initiated, considered, refined, approved and implemented in a safe and controlled manner, and in accordance with the policies and procedures laid down by the HLAPB.

9.2 In the context of the Airspace Change Process, "Clients" refers to: "those allowed requesting changes to airspace" (e.g. airspace users, ATS providers etc.).

9.3 The Client, on identifying a possible requirement to change airspace, will inform the National HLAPB, which will then be available to offer advice on aspects concerning the guidelines, design, safety management and consultation exercise. Ownership of the proposal will always remain with the Client.

9.4 The Client will carry out, if required, initial informal consultation and in the event of a deadlock situation or undue delay may refer the problem to the HLAPB for advice. The HLAPB may then make a judgement, after further consultation with the objector, as necessary, to decide how the objection should be handled.

9.5 On completion of the informal consultation, the Client will submit a formal proposal with full details of the change.

9.6 The HLAPB will be responsible, where necessary, for conducting the case study, formal consultation, proposal refinement, approval and establishment phases of the process.

9.7 The flowchart presented at Appendix E illustrates the phases and activities of the Common Airspace Change Process.

9.8 On completion of the formal consultation and eventual refinement, the HLAPB will formally accept the project and agree a completion date with the Client. The Client will be responsible for developing and subsequently publishing the ATC operational procedures, if so required.

9.9 For some major changes (e.g. involving extensive new procedures, cross-border airspace etc.), ICAO requires two AIRAC cycles for promulgation. The formal process may take seven months (which must be reflected in the target completion date). Some changes may be concluded in less than the stated period, but where such changes are subject to publication by AIRAC cycle, unless a full AIRAC cycle can be achieved, no reduction can be initiated.

9.10 All significant airspace changes will be subject to review by the HLAPB to ensure that they efficiently serve the purposes for which they were designed. The period between introduction and review will vary according to the complexity and purpose of the airspace change. The time of the review will be agreed by the HLAPB and the Client prior to introduction of the changes.

## 10. FAST TRACK PROCESS

- 10.1 HLAPB must secure a continuation of ASM functions application for benefits off all stakeholders.
- 10.2 When an urgent action is required, in cases of national security and defence need as well as necessity for protection of safety operation of civil aviation, HLAPB can apply a fast-track decision making process.
- 10.3 If HLAPB is not in position to apply required processes, the [national Authority] is authorized to make an appropriate temporary decision relevant to safety of operation of civil aviation.

## 11. DYNAMIC AIRSPACE MANAGEMENT

- 11.1 The aim of Dynamic Airspace Management (DAM) is to establish processes exploiting the airspace in a dynamic manner as close as practical to the time of operations to better accommodate users' requirements in accordance with ever evolving network operations
- 11.2 The DAM process enables all airspace users to follow preferred and flexible flight profiles and provides two major benefits: equitable treatment in allocation of airspace and trajectories required at short notice; increase in aircraft operators' awareness of possible routeing options.
- 11.3 The HLAPB is to ensure that the DAM process refers to the use of additional procedures for the delineation and allocation of airspace, and the associated dissemination of information with the aim of enhancing the current FUA process in order to respond to specific airspace requirements and/or route optimization.
- 11.4 The HLAPB is to ensure that DAM addresses the planning, allocation and use of dynamic airspace structures in order to exploit optimum airspace capacity as part of defining airspace configurations. This may be achieved through either existing airspace structures or those delineated ad hoc.
- 11.5 The HLAPB is to ensure that 'ad hoc structures' can be established, whether routes or areas, on an ad hoc basis to meet operational needs at shorter notice than the usual ASM Level 1 process and supports these structures with an adequate information awareness system, if required. The establishment of such ad hoc structures at ASM Level 2 or ASM Level 3 should follow the general design and safety management criteria.
- 11.6 To implement the DAM process, the HLAPB is responsible for establishing airspace structures and defining their conditions of use through a series of options based on sub-division of temporary airspace reservations or restrictions and an increased number of related conditional routes. The HLAPB also defines and establishes processes and procedures allowing for the delineation of additional ad hoc airspace structures at ASM Levels 2 and 3 as appropriate.
- 11.7 The State has to define the criteria and process regarding to the Dynamic Airspace Management and/or to make reference to documents such as Letters of Agreement (LoAs) in which the coordination procedures between the airspace users and ATS providers concerned are published.

## 12. CROSS-BORDER OPERATIONS

The aim of Cross-Border/FIR/UIR Boundary Operations (CBO) is to establish a process which would encompass activities conducted by [State] or other States, within an area established across international borders or entirely within [State/FAB] FIR.

The CBO Process would rationalise the requirements for national airspace reservation and/or airspace restriction by the allocation and shared use of areas established on both sides of a border (Cross-Border Areas, CBAs), as well as through a shared use of existing, relocated or newly developed areas, entirely established within [State] airspace but adjacent to a neighbouring State or States.

To apply Cross-Border/FIR Boundary Operations, formal agreements are necessary to set up the required cooperation in order to mitigate regulatory and procedural differences. These agreements should cover all relevant legal, operational and technical issues (e.g. sovereignty, defence, operations, the environment and search and rescue) and specify a single common set of criteria for separation between civil and military flights. As a baseline [State] intends to use EUROCONTROL templates<sup>30</sup> of the following agreements:

- STATE LEVEL FRAMEWORK AGREEMENT ON THE CROSS BORDER / FIR BOUNDARY OPERATIONS
- LETTER OF AGREEMENT on Coordination Procedures between Airspace Management Cells (AMCs) in regard to Allocation and Shared Use of Common Cross Border Areas (CBAs)
- LETTER OF AGREEMENT on Coordination Procedures in regard to Cross-Border Operations in Shared AMC-Manageable Areas

### 12.1 Cross-Border Area

- 12.1.1 In order to optimise the airspace structure in the area around the boundary, Cross-Border
  - Areas (CBAs) are established on both sides of the border allowing OAT operations without any boundary constraints.
- 12.1.2 The HLAPB is responsible for ensuring that a framework agreement is established between the States concerned and will address all relevant CBA issues.
- 12.1.3 The HLAPB is responsible for setting priority rules in the agreement between the respective national administrations to resolve the problem of the allocation of this airspace between potential users, and for tasking the competent AMCs with such allocation.
- 12.1.4 The HLAPB is responsible for coordinating the definition of commonly agreed use criteria and airspace classifications for the establishment of the CBA, including Flight Plan Buffer Zone (FBZ) if required.
- 12.1.5 The HLAPB ensures that when there is a possibility of rationalising the requirements for national TRAs/TSAs and D and R areas on both sides of a border, the States concerned endeavour to optimise the airspace and route

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<sup>30</sup> Ref ERNIP Part 3 ASM Handbook

structures in the area around the border by establishing a “Cross-Border Area” (CBA). This can be achieved by establishing such CBAs in the form of either TRAs/TSAs, or AMC-manageable D and R areas.

- 12.1.6 The HLAPB is responsible for ensuring that a common AMC process, including the planning of reservations, airspace request and allocation and activation/deactivation procedures, is established between the AMCs concerned in line with agreed priority rules and an associated timetable.
- 12.1.7 The HLAPB is responsible for ensuring that Common procedures for Cross-Border/FIR/UIR Boundary Operations to share CBAs between two or more adjacent States or at [FAB] level are developed, offering States willing to merge their national collaborative airspace planning process to do so in order to apply common airspace management rules
- 12.1.8 The State has to define the criteria and process regarding to CBAs activities, and/or to make reference to the document(s) as the LoAs wherein the coordination procedures between the airspace users and ATS providers concerned are published.

## **12.2 Cross-Border CDR1s**

- 12.2.1 In order to optimise traffic flow and to maintain flight consistency in the area around the boundary, Cross-Border CDR1s are established across the border allowing GAT operations without any boundary constraints.
- 12.2.2 The HLAPB is to ensure that the coordination process between the neighbouring States is set up to allow harmonisation to the greatest possible extent of the categorisation, flight levels and intended availability of CDR1s.
- 12.2.3 In the case of cross-border arrangements, the AMCs agree to harmonise route availability by coordinating area status. The individual AMCs publish route status in their national AUP.
- 12.2.4 The HLAPB is to ensure that a common AMC process is established to allow the AMCs concerned to delegate their responsibility for the coordination of the harmonised availability of an individual CDR1 on a route by route basis to a Lead AMC.
- 12.2.5 The State has to define the criteria and process regarding to Cross-Border CDR1s activities.

## **12.3 Lead AMC**

- 12.3.1 In order to have a single point of contact for the NM/CADF for each single CDR1 extending through the area of responsibility of [list the States], the AMCs of [list the States] have agreed to delegate their responsibility for the coordination of the harmonised availability of an individual CDR1 on a route by route basis and for the coordination of CBA allocation to AMC [insert the State] acting as Lead AMC.
- 12.3.2 The State has to define the criteria and process regarding to Lead AMC activities, and/or to make reference to the document(s) as the LoAs in which the coordination procedures between the AMCs concerned are published.

### 13. AIRSPACE DELINEATION

- 13.1 In order to ensure more transparency and predictability of airspace management measures and to reconcile opposite requirements in airspace utilisation between commercial aviation and military aviation, the HLAPB is responsible for establishing objective criteria for the design of airspace.
- 13.2 The HLAPB is to ensure that airspace planning and design principles in accordance with European Route Network Improvement Plan Part I "European Airspace Design Methodology – Guidelines" are executed within [State] FIR under the authority given pursuant to existing national and international regulations and agreements in force.
- 13.3 The HLAPB is responsible for establishing the defined criteria allowing delineation of ad hoc structures at ASM Levels 2 and 3, taking into account all airspace users and ANS providers, as well as the various issues regarding the impact of the potential ad hoc structure on the current airspace structures, procedures and ATFCM measures in force.
- 13.4 The HLAPB is responsible for establishing an efficient coordination process between all airspace users and ANS providers, allowing the delineation of ad hoc structures at ASM Levels 2 and 3. During the process development, care should be taken to ensure that operations at short notice will not be hindered by other activities already allocated; furthermore, the HLAPB should be informed of any discrepancies in order to review the process, ensuring that it serves efficiently the purposes for which it was designed initially.
- 13.5 The HLAPB is responsible for establishing LoAs where ASM Levels 2 and 3 negotiation procedures are published. These rules should clearly define the civil/military coordination process, the circumstances (nature of activity, civil/military coordination capability, etc.) and the conditions (ad hoc airspace classification, coordination procedures, etc.) under which the ad hoc structures could be delineated. Coordination between all parties involved (civil and military airspace users, ANS providers, NM, adjacent AMCs), should be conducted in order to maintain consistency with the current airspace structures, while ensuring that operational and safety requirements are met and that ad hoc structures do not impact on ATFCM measures in force.

### 14. PUBLICATION

- 14.1 Aeronautical Information is published in accordance with ICAO standards and ERNIP Part 1 and Part 3.
- 14.2 Explanation of the notification process, publication means and associated timescale used to notify all airspace users and ATS providers about airspace policy and airspace change.

**APPENDIX A****REFERENCE DOCUMENTS RELATING TO AIRSPACE  
MANAGEMENT AND DESIGN****1. ICAO DOCUMENTS**

- Annex 2 Rules of the Air
- Annex 6 Operation of Aircraft
- Annex 11 Air Traffic Services
- Annex 15 Aeronautical Information Services
- Annex 16 Environmental Protection
- Doc 4444 Procedures for Air Navigation Services - Air Traffic Management (PANS-ATM)
- Doc 7754 EUR Air Navigation Plan
- Doc 8126 Aeronautical Information Services Manual
- Doc 8168 Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS, Vol. 1 & 2)
- Doc 9426 Air Traffic Services Planning Manual
- Doc 9554 Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations Doc 10066 Procedures for Air Navigation Services - Aeronautical Information Management

**2. EU Documents**

Commission Regulation (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace;

Commission Implementing Regulation (EU) 2019/123 of 24 January 2019 laying down rules for the implementation of the air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011;

Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013;

**3. EUROCONTROL DOCUMENTS**

European Route Network Improvement Plan (ERNIP) Part 3 – Procedures for Airspace Management

European Route Network Improvement Plan (ERNIP) Part 1 - Technical Specifications EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (EUROCONTROL Document EUROCONTROL - SPEC -0112 - Edition 1.1 - 10 January 2009)

**4. NATIONAL DOCUMENTS**

**Appendix B****STRUCTURE OF THE NATIONAL HIGH-LEVEL AIRSPACE POLICY  
BODY**

*[Insert the structure of the National High Level Policy Body that consists of a joint civil/military body responsible for the Strategic ASM functions (see Section 3)]*

**Appendix C****NATIONAL AIRSPACE MANAGEMENT ADVISORY COMMITTEE****Terms of Reference**

*[Insert the Terms of Reference defining the Scope, Objectives, Authority and Tasks of the National Airspace Management Advisory Committee. However, depending on the size of the ATS organisation and the mandate of the National High-Level Airspace Policy Body, the tasks dedicated to the Advisory Committee can be carried out inside the National High-Level Airspace Policy Body, as a supplementary function (see para 3.2.4)]*

**Appendix D****AIRSPACE POLICY FORMULATION AND REVIEW PROCESS**

*[Insert the flowchart illustrating the State's process applied for the formulation and review of the Airspace Policy (see para 3.2.5 and Figure 1)]*

**Appendix E**

**AIRSPACE CHANGE PROCESS**

*[Insert the flowchart illustrating the State's Airspace Change Process]*

# Annex 5 – Description of the Airspace Use plan

## 1. The AUP

1. The "Airspace Use Plan" (AUP) is the official medium for the daily notification by an AMC of the national airspace allocation for a reference day. An AMC shall release only ONE AUP per day.
2. Changes to the AUP published at D-1 could be affected by the AMC through an "Updated Airspace Use Plan" (UUP), see Annex 6.
3. As AUPs are not sent individually to AOs, the information provided by AMCs on the airspace structures use plans in the ECAC area shall be disseminated by the NM/CADF via the NOP portal and via eAMI messages, to operators for awareness as well as for flight planning purposes.

## 2. Preparation, Publication & Distribution of the AUP

1. The AUP shall be prepared by the AMC and distributed to the NM via CIAM or via authorised ASM tools using B2B service.
2. During the pre-AUP coordination procedure, draft AUPs will be used and identified as "Draft AUP". Draft AUPs will be available to each AMC. At any time, there will be only ONE stored AUP per day and per AMC in "Airspace Use Plan" or "Draft" form identified in the first line of the header as "Draft AUP" or "Airspace Use Plan" respectively. The D-1 "Airspace Use Plan" content will be decided by the AMC itself at D-1 14.00 UTC at the very latest or if none, automatically by the NM system, unless the AMC informed the NM of a late release of the AUP.
3. The NM collects and consolidates the D-1 AUP, publishes the EAUP on the NOP portal and produces eAMI messages for the B2B service.
4. The DRAFT AUPs available from D-6 to D-2 are published on the NOP Portal. Due to the fact that they are not mandatory, no EAUP is expected.

## 3. Description of the AUP

1. The elements included in the AUP are described below and summarised in table form in the next pages.

### 2. Header

- a) *First Line:* **Identification of the Type of Message**  
[e.g. Airspace Use Plan or Draft AUP]
- b) *Second Line:* **Identification of the Sending Unit**  
[e.g. AMC: EDDAZAMC - GERMANY -]
- c) *Third Line:* **Definition of the Validity Period of the AUP**  
[e.g. 06/06/2008 06.00 - 07/06/2008 06.00] The validity period shall cover the 24 hour time period between 06.00 UTC the next day to 06.00 UTC the day after.

This time period has to be considered for continuity purposes as a semi-open interval with the first limit included and the last one not.

- d) *Fourth Line:* **Date and Time of Transmission of the AUP**  
[e.g. 05/06/2008 13.53]

In addition to the type of message defined in the first line, the AUP is identified by the day and time of its transmission.

3. **Lists ALPHA to FOXTROT**

For each allocated airspace structure listed in the AUP in the following sequence, the different columns will contain:

<b>ALPHA</b>	List of Permanent ATS Routes, and CDR1s temporary unavailable for flight planning.
<b>BRAVO</b>	List of Active areas, including NPZs, defined in CACD as AMC Manageable areas (AMA).  List of active temporary AMC-manageable areas established via NOTAM/AIP Supplement/AIC, list of active FBZ areas linked to AMAs.
<b>CHARLIE</b>	List of Active areas, including NPZs, defined in CACD as Non AMC manageable areas (NAM); List of active temporary Non AMC manageable areas established via NOTAM/AIP Supplement/AIC, list of active FBZ areas linked to NAMs.
<b>DELTA</b>	List of SIDs and STARs temporary unavailable for flight planning due to areas activations as appropriate.
<b>ECHO</b>	AUP/RAD Restrictions.
<b>FOXTROT</b>	Additional Information.

First Column: **Number**  
[e.g. 1]

Each airspace structure shall be listed with a sequence number and shall contain only one "Validity Period" and one "Flight Level Block" per number element. For each list ALPHA to FOXTROT, the sequence number shall start with [1] for the first item of the list in alphanumeric order. Upper and lower ATS routes having the same generic name shall be placed one above the other.

In order to meet requirements of various readers of the AUP, the different lists ALPHA to FOXTROT can be divided by FIR/UIR, but in keeping their unique sequence number of the alphanumeric order to allow their identification in the UUP in case of cancellation or reallocation.

Second Column: **Designator**

[e.g. UR 80 PERDU TBO or LF-D 31 CAZAUX or UF REIMS]

Each airspace structure shall be identified as follows:

For List ALPHA with the AIP ENR 3-2 route designator followed by the two ICAO identifiers of the first and last points of the portion of the CDR1/ATS route concerned.

For Lists BRAVO & CHARLIE with the AIP ENR designator followed, if needed, by the name of the airspace or portion thereof concerned; With the

ID of the temporary areas published by States via NOTAM/AIP Supplement/AIC.

- For List DELTA With the AIP AD 2 airport designator + the designator used for SID/STAR.
- For List ECHO AUP/RAD designator according to RAD document.
- For list FOXTROT Not Applicable (N/A).

Third Column: **FlightLevel Block**

[e.g. FL110 - FL240 or FL250 - UNL or GND or SFC - 900M AGL]

Each airspace structure shall be described vertically as follows:

For List ALPHA with the upper and lower limits of the ATS route, and CDR1 or portion thereof unavailable inclusive of the IFR flight levels given.

For Lists BRAVO & CHARLIE with the upper and lower limits of the affected airspace expressed either in flight levels, altitudes or heights inclusive of the figures given.

For list DELTA Due to the different altitudes/FLs used in the descriptions of SID/STAR, "Not Applicable (N/A)" should be used.

For list ECHO Not Applicable (N/A).

For list FOXTROT Not Applicable (N/A).

Note: due to the technology used by NM system, the EAUP published on the NOP portal will use intermediate FL as described in 6.1.3.

Fourth Column: **Validity Period**

[e.g. 12.05 – 06.00]

For each allocated airspace structure listed in ALPHA to ECHO, the "Validity Period" shall not exceed the 24 hours period of the AUP. The AUP shall repeat daily all data affecting more than one day. The "Validity Period" expressed with date/time groups indicating the start and the end of the period means variously:

For List ALPHA the "Period of unavailability for flight planning".

For List BRAVO the "Period of Use".

For List CHARLIE the "Period of Use".

For List DELTA the "Period of unavailability for flight planning".

For List ECHO the "Period of AUP/RAD Restriction applicability".

For list FOXTROT Not Applicable (N/A).

This time period has to be considered for continuity purposes as a semi-open interval with the first limit included and the last one not.

Date will be referred to the day only and time will be expressed in hours and minutes.

Fifth Column: **Restrictions**

This column will allow the AMC to indicate when an NM restriction is required according to the follow:

For List ALPHA Not Applicable (N/A)

For Lists BRAVO & CHARLIE FUA Restrictions / FUA/RAD Restrictions/ FUA restrictions group / Airspace Scenario Restriction Group is required for a permanent area and/or a temporary area.

For List DELTA Not Applicable (N/A).

For List ECHO Not Applicable (N/A).

For List FOXTROT Not Applicable (N/A).

FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions group/ Airspace Scenario Restriction Group should be available in the CACD. Coordination with national responsible Authority is required for their definition.

Sixth/Seventh Columns: **Responsible Unit and/or Remarks Field**

[e.g. For continuation see AUP Germany EDFFFIR or

ETNT BOMBING 3 /F4]

For each allocated airspace structure listed in ALPHA to ECHO, the "Remarks Field" may be used to input any specific comments.

For List ALPHA when the ATS route closure information needs to be repeated in the EAUP for safety repetition, the word "NOTAM" shall be included without any reference.

For List BRAVO the column dedicated to the responsible unit shall contain the indication "AMC" for those areas subject to negotiation. In case of airspace reservation made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM, the NOTAM ID shall be specified in the Remarks column. The same information shall be repeated in the EAUP.

For List CHARLIE the unit responsible may be indicated for the concerned airspace during the time specified by the Validity Period; then the remarks field may be divided into two parts separated by a tab to

indicate additional information, such as FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group ID codes, the type of activity and the number and type of aircraft concerned. In case of airspace reservation made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM, the NOTAM ID shall be specified in the Remarks column. The same information shall be repeated in the EAUP.

For list DELTA

Not Applicable (N/A).

For list ECHO

the FMP unit responsible for the AUP/RAD Restriction management.

For list FOXTROT

Not Applicable (N/A).

4. **Additional Information**

Finally, any additional information may be added in plain language at the end of the message (List FOXTROT).

## Format & Contents for the Airspace Use Plan

MESSAGE TYPE	"Airspace Use Plan" or "Draft AUP"
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SENDING UNIT – REFERENCE	AMC NAME
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VALIDITY PERIOD	D/ 06.00      D+1/ 06.00
-----------------	--------------------------

DATE/TIME FOR TRANSMISSION	D-6 to D-2 for DRAFT AUP D-1/ 14.00 (at the very latest) for AUP
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ALPHA		LIST OF UNAVAILABLE ATS Routes and UNAVAILABLE CDR1s		
Number	Designator	Flight Level Block	Validity Period	Remarks
Sequence number starting with [1] for the first item.	AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers.	<b><u>Upper and lower limits inclusive of the IFR flight levels given</u></b>	Date/time groups indicating the start and the end of the period of unavailability	Any additional information in plain language.

**BRAVO****LIST OF "AMC-MANAGEABLE" AREAS (AMA) and associated FBZs**

Number	Designator	Flight Level/ft Block	Validity Period	Responsible Unit	Restrictions <sup>31</sup>	Remarks
Sequence number starting with [1] for the first item.	AIP ENR designator and name of the airspace or portion thereof concerned. Designator of Temporary AMC-manageable areas published via AIP SUPP/NOTAM /AIC. Designator of any FBZ or NPZ area.	Affected airspace described vertically between the concerned two flight levels and feet, if necessary.	Date/time groups indicating the start and the end of the <b>period of activation</b>	Indicate "AMC" whenever the area is eligible for negotiation	YES/NO for activation	FUA Restriction and/or FUA/RAD Restrictions and/or FUA restrictions group/ Airspace Scenario Restriction Group ID Codes if YES. The NOTAM ID in case of airspace reservation made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM.  Any additional information in plain language.

**CHARLIE****LIST OF "Non AMC-MANAGEABLE" AREAS (NAM) and associated FBZs**

Number	Designator	Flight Level/ft Block	Validity Period	Responsible Unit	Restrictions <sup>31</sup>	Remarks
Sequence number starting with [1] for the first item.	AIP ENR designator and name of the airspace or portion thereof concerned. Designator of Temporary AMC-manageable areas published via AIP SUPP/NOTAM/ AIC. Designator of any FBZ or NPZ area.	Affected airspace described vertically between the concerned two flight levels and feet, if necessary.	Date/time groups indicating the start and the end of the <b>period of activation</b>	Unit responsible for the airspace concerned during the time indicated by the Validity Period.	YES/NO for activation	FUA Restriction and/or FUA/RAD Restrictions and/or FUA restrictions group/ Airspace Scenario Restriction Group ID Codes if YES. The NOTAM ID in case of airspace reservation going made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM. Any additional information in plain language.

<sup>31</sup> For a particular area which has one or more associated FBZs, the area AND/OR the selected associated FBZ(s) could be published in an AUP/UUP. For an FBZ or NPZ type area, the "FUA" value is always YES, meaning that at least one FUA restriction is active for that area, therefore any flight plan through this area is rejected by IFPS according to the content of the activated FUA restriction.

<b>DELTA</b>		<b>LIST OF UNAVAILABLE SIDs and STARs</b>		
<b>Number</b>	<b>Designator</b>	<b>Flight Level Block</b>	<b>Validity Period</b>	<b>Remarks</b>
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP AD 2 airport designator + the designator used for SID/STAR</i>	<i>N/A</i>	<i>Date/time groups indicating the start and the end of the <u>period</u> of unavailability</i>	<i>Any additional information in plain language.</i>

<b>ECHO</b>		<b>AUP/RAD Restrictions</b>	
<b>Number</b>	<b>Designator</b>	<b>Validity Period</b>	<b>Responsible Unit / Remarks</b>
<i>Sequence number starting with [1] for the first item.</i>	<i>AUP/RAD Restriction ID published in the RAD Document and according to the ERNIP Part 1 coding rules.</i>	<i>Date/time groups indicating the start and the end of the <u>period of unavailability</u></i>	<i>FMP responsible with the AUP/RAD Restriction management</i>

<b>FOXTROT</b>	<b>ADDITIONAL INFORMATION</b>
<i>Any additional information in plain language, if not "NIL".</i>	

**FICTIOUS EXAMPLE OF "AUP"****AIRSPACE USE PLAN**

**AMC** : LFFAZAMC - FRANCE -  
**VALIDITY** : 13/09/2008 06.00 - 14/09/2008 06.00  
**TIME OF TRANSMISSION** : 12/09/2008 13.30

LFFFUIR**A) Unavailable ATS Routes and CDR1s:**

Nr	Route	Portion	FL Min	FL Max	From	Until	Remarks
1	UN858	ABRIX CGC	FL195	FL460	10:00	12:30	NOTAM A2238

**B) AMC-Manageable Areas (AMA) and associated FBZs:**

Nr	Area	ft Min / ft Max	FL Min	FL Max	From	Until	Resp. Unit	Restrictions	Remarks
1	CBA1A	ft 11200/UNL	FL115	UNL	07:15	08:15	LFYA	YES	LFFFFIR, CBA1AR
2	CBA1A	ft 11200/UNL	FL115	UNL	08:30	09:30	LFYA	YES	LFFFFIR, CBA1AR
3.	CBA1B		FL225	UNL	07:15	08:15	LFYA	YES	CBA1AR
4	LFTSA10A		FL195	FL315	07:15	10:00	LFXO	NO	ARA
5.	LFTSA10B1		FL195	FL315	07:15	10:00	LFXO	NO	ARA
6	LFTSA20A		FL195	UNL	07:15	07:45	LFYA	NO	
.....									
41	LITSA9B		FL285	UNL	06:00	10:00	LFXO	YES	LITSA9BR

**C) Non AMC-manageable areas (NAM) and associated FBZs:**

Nr	Area	ft Min / ft Max	FL Min	FL Max	From	Until	Resp. Unit	Restrictions	Remarks
1	CER BORD		FL205	FL450	08:00	17:30	LFFAZAMC	NO	
2.....									

**D) Unavailable SIDs and STARS:**

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remarks

NIL

**E) AUP/RAD Restrictions**

Nr	Restriction ID	From	Until	Resp. Unit / Remarks
1.....	LF2001	17:00	21:00	LFFF

**F) Additional information**

NIL

***FICTIOUS EXAMPLE OF A "DRAFT AUP"*****DRAFT AUP**

**AMC** : LFFAZAMC - FRANCE -  
**VALIDITY** : 11/07/2002 06.00 - 12/07/2002 06.00  
**TIME OF TRANSMISSION** : 10/07/2002 13.50

LFFFUIR

**A) Unavailable ATS Routes and CDR1s:**

NIL

**B) AMC-Manageable Areas (AMA) and associated FBZs:**

NIL

**C) Non AMC-manageable Areas (NAM) and associated FBZs:**

NIL

**D) Unavailable SIDs and STARs:**

NIL

**E) AUP/RAD Restrictions:**

NIL

**F) Additional information:**

NIL

# Annex 6 – DESCRIPTION OF THE UPDATED AIRSPACE USE PLAN

## 1. The UUP

1. After the AMC has completed the allocation process and published accordingly the "Airspace Use Plan" (AUP) [see Annex 5] at D-1, modifications to the airspace allocation might be necessary in order to take advantage of the cancellation of any previously reserved airspace structure or to provide information of new allocation of areas. Changes to the airspace allocation will be promulgated by the AMC through an "Updated Airspace Use Plan" (UUP).
2. The CDR1s new availability/unavailability described in UUPs, will be published via the EUUP on the NOP portal and the CACD database will be updated accordingly.
3. UUPs shall consist of alterations to the current AUP. In particular, UUPs will contain details of:
  - a) the cancellation of areas allocated in the current AUP;
  - b) the cancellation/relaxation of FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group;
  - c) the new allocation of RSAs;
  - d) the new/more constraining activation of FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group;
  - e) new CDR1s unavailability due to new allocation of areas and/or new/more constraining activation of FUA restrictions;
  - f) modifications made to CDR1s already listed in the current AUP;
  - g) alterations to, or cancellations of, unavailable ATS routes or CDR1s, RSAs and FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group listed in the current AUP.
  - i) extension or new relaxation of the AUP/RAD restrictions;
  - f) reduction of FPL opportunities offered by the AUP/RAD restrictions previously published or cancellation of AUP/RAD relaxation.
4. The UUP represents a snapshot and contains full information on airspace allocation for the reference validity time. As consequence:
  - a) an ATS route or CDR1 becoming available will disappear from List ALPHA;
  - b) an ATS route or CDR1 becoming unavailable will appear in List ALPHA;
  - c) the released RSAs will disappear from the Lists BRAVO and CHARLIE;
  - d) the new RSAs allocation will appear in the Lists BRAVO or CHARLIE;
  - e) the change of FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions groups/ Airspace Scenario Restriction Group will update the related column and the information in the remark field;

- f) the SIDs and STARs becoming available due to the release of the areas, they will disappear from list DELTA;
- g) the SIDs and STARs becoming unavailable will appear in List DELTA;
- h) the AUP/RAD restrictions will appear in list ECHO in case of new relaxation;
- i) the AUP/RAD restrictions will disappear from list ECHO in case of cancellation;
- j) reduction of the FPL opportunities offered by the AUP/RAD restrictions previously published.

Note: The function "Compare" of the CIAM application will visualise the differences from the previous AUP/UUPs.

## 2. Preparation, Publication & Distribution of the UUP

1. The UUP shall be prepared by the AMC in the same common format as the AUP and distributed to the NM.
2. The UUPs information will be used by NM/CADF to produce eAMI messages as well as available on the NOP portal.
3. The UUPs shall be prepared by means of the CIAM software set up in NM terminals or any other ASM tool interoperable via B2B with NM.

## 3. Description of the UUP

1. The UUP shall contain lists in the same sequence as for the AUP and for easy reference, the number element of each amended route/airspace in the UUP shall be the same number as the item in the corresponding AUP it is amending.
2. The elements included in the UUP are described below and summarised in table form in the next pages.

### 3. Header

- a) First Line: **Identification of the Type of Message**  
[e.g. Updated Airspace Use Plan]
- b) Second Line: **Identification of the Sending Unit**  
[e.g. AMC: EDDAZAMC - GERMANY]
- c) Third Line: **Definition of the Validity Period of the UUP**  
[e.g. 08/06/2008 12.00 - 09/06/2008 06.00]  

The validity period of an UUP shall not exceed the validity period of the AUP it is amending and shall end at the same time. As for the AUP, this validity period has to be considered for continuity purposes as a semi-open interval with the first limit included and the last one not.
- d) Fourth Line: **Date, Time of Transmission and "With Effective From (WEF)" Time of the UUP**  
[e.g. 08/06/2008 08.53 10.30]

In addition to the type of message defined in the first line, it is important to identify the day, time of transmission and the WEF Time. The WEF Time is the time when the UUP will be published. The time sequence is: 1) Time of Transmission, 2) WEF Time, and 3) the start of the Validity Period of the UUP.

**Note:** An AMC could prepare multiple Draft UUPs with different WEF Time.

#### 4. Lists ALPHA to FOXTROT

The UUP shall contain lists in the same following sequence as for the AUP:

<b>ALPHA</b>	Amended List of Permanent ATS routes and CDR1s temporary unavailable for flight planning.
<b>BRAVO</b>	Amended List of Active areas defined in CACD as AMC Manageable (AMA's).  Amended List of Active temporary AMC-manageable areas established via NOTAM/AIP Supplement/AIC, active FBZ areas linked to AMAs, active NPZs classified as AMA.
<b>CHARLIE</b>	Amended List of Active Non AMC-Manageable areas (NAM's); Active temporary Non AMC-manageable areas established via NOTAM/AIP Supplement/AIC, active FBZ areas linked to NAMs, active NPZs classified as NAM.
<b>DELTA</b>	Amended List of Unavailable SIDs and STARs, as appropriate.
<b>ECHO</b>	Amended list of AUP/RAD Restrictions.
<b>FOXTROT</b>	Additional information.

For each amended airspace structure listed in the UUP, the different columns will contain:

First Column: **Number**

[e.g. 3]

For ease of reference, the number element of each amended route/airspace in the UUP shall be the same number as the item in the corresponding AUP it is amending. For the new airspace structures made available, a sequence number following the last number element of the corresponding list in the AUP shall be used to avoid any confusion. Where two or more airspace structures in the AUP are being replaced by one in the UUP, the second and following airspace structures must also appear in the UUP, but with only the word "deleted" in the Remarks field. In order to meet requirements of various readers of the UUP, the different lists ALPHA to FOXTROT can be divided by FIR/UIR, but in keeping their unique sequence number of the alphanumeric order in the original AUP.

**Second Column: Designator**

[e.g. UR 80 PERDU TBO or LF-TSA 42 or UF REIMS]

Each amended airspace structure shall be identified as follows:

For Lists ALPHA with the AIP ENR 3-2 route designator followed by the two ICAO identifiers of the first and last points of the portion of the CDR1/ATS route concerned.

For Lists BRAVO & CHARLIE with the AIP ENR designator followed, if needed, by the name of the airspace or portion thereof concerned; With the ID of the temporary areas published by States via NOTAM/AIP Supplement/AIC.

For List DELTA With the AIP AD 2 airport designator + the designator used for SID/STAR.

For List ECHO AUP/RAD Restrictions according to RAD document.

For List FOXTROT Not Applicable (N/A)/

**Third Column: Flight Level Block**

[e.g. FL110 - FL240 or FL250 - UNL or GND or SFC - 900M AGL]

Each amended airspace structure shall be described vertically as follows:

For List ALPHA with the upper and lower limits of the ATS route, and CDR1 or portion thereof unavailable inclusive of the IFR flight levels given.

For Lists BRAVO & CHARLIE with the upper and lower limits of the affected airspace expressed either in flight levels, altitudes or heights.

For List DELTA Due to the different altitudes/FLs used in the descriptions of SID/STAR, "Not Applicable (N/A)" should be used.

For List ECHO Not Applicable (N/A).

For List FOXTROT Not applicable (N/A).

Note: due to the technology used by NM system, the EAUP publish on the NOP portal will use intermediate FL as described in 6.1.3.

**Fourth Column: Validity Period**

[e.g. 12.05 – 06.00]

For each amended airspace structure listed in ALPHA to ECHO, the "Validity Period" shall not exceed the validity period of the UUP. The "Validity Period" expressed with date/time groups indicating the start and the end of the period means variously:

For List ALPHA	the "Period of unavailability for flight planning".
For List BRAVO	the "Period of Use".
For List CHARLIE	the "Period of Use".
For List <u>DELTA</u>	the "Period of unavailability for flight planning";
For List ECHO	"Period of AUP/RAD Restriction applicability".
For List FOXTROT	Not Applicable (N/A).

This time period has to be considered for continuity purposes as a semi opened interval with the first limit included and the last one not. Date will be referred to the day only and time will be expressed in hours and minutes.

Fifth Column: **Restrictions**

This column will allow the AMC to indicate when an NM restriction is required according to the follow:

For List ALPHA	Not Applicable (N/A).
For Lists BRAVO & CHARLIE	FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions group/ Airspace Scenario Restriction Group is required for a permanent area and/or temporary area;  FUA Restrictions/ FUA/RAD Restrictions/ FUA restrictions group/ Airspace Scenario Restriction Group should be available in the CACD. Coordination with national responsible Authority is required for their definition.
For List DELTA	Not Applicable (N/A).
For List ECHO	Not Applicable (N/A).
For List FOXTROT	Not Applicable (N/A).

Sixth/Seventh: **Responsible Unit and/or Remarks Field**

[e.g. Deleted or ETNT BOMBING 3 /F4]

For each amended airspace structure listed in ALPHA to ECHO, the Remarks field may be used to input any specific comments.

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For Lists ALPHA	when continuation of the ATS route has been coordinated with (a) neighbouring State(s) in (an) adjacent FIR/UIR(s), <i>[the following information shall be given "For continuation see AUP + country name + FIR designator"]</i> or <i>[the information on the consolidated CDR1 portion commonly accessible shall be given only once in the AUP of the designated Lead AMC];</i>
For List BRAVO	the column dedicated to the responsible unit shall contain the indication "AMC" for those areas subject to negotiation; In case of airspace reservation made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM, the NOTAM ID shall be specified in the Remarks column. The same information shall be repeated in the EUUP.
For List CHARLIE	the unit responsible may be indicated for the concerned airspace during the time specified by the Validity Period; then the remarks field may be divided into two parts separated by a tab to indicate additional information, such as FUA restrictions/ FUA/RAD Restrictions/ FUA restrictions group/ Airspace Scenario Restriction Group ID codes, the type of activity and the number and type of aircraft concerned. In case of airspace reservation made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM, the NOTAM ID shall be specified in the Remarks column. The same information shall be repeated in the EUUP.
For list DELTA	Not Applicable (N/A).
For list ECHO	the FMP unit responsible for the AUP/RAD Restriction management.
For list FOXTROT	Not Applicable (N/A).

5. Additional Information

Finally, any additional information may be added in plain language at the end of the message (List FOXTROT).

## FORMAT & CONTENTS FOR THE UPDATED AIRSPACE USE PLAN

MESSAGE TYPE	"Update Airspace Use Plan"
SENDING UNIT – REFERENCE	AMC NAME
VALIDITY PERIOD	D/ 06.00      D+1/ 06.00
DATE/TIME FOR TRANSMISSION	D-1 (after AUP) to D

ALPHA		LIST OF UNAVAILABLE ATS Routes and UNAVAILABLE CDR1s		
Number	Designator	Flight Level Block	Validity Period	Remarks
Sequence number starting with [1] for the first item.	AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers.	<u>Upper and lower limits inclusive of the IFR flight levels given</u>  If an AUP element is cancelled, these fields shall not be completed.	Date/time groups indicating the start and the end of the <u>period of unavailability</u>	Any additional information in plain language.  If an AUP elements cancelled, this Field shall contain the word "Deleted".

<b>BRAVO</b> LIST OF "AMC-MANAGEABLE" AREAS (AMA) and associated FBZs						
Number	Designator	Flight Level/ft Block	Validity Period	Responsible Unit	Restrictions <sup>28</sup>	Remarks
Sequence number starting with [1] for the first item.	AIP ENR designator and name of the airspace or portion thereof concerned. Designator of Temporary AMC-manageable areas published via AIP SUPP/NOTAM/AIC. Designator of any FBZ or NPZ area.	Affected airspace described vertically between the concerned two flight levels and feet, if necessary.	Date/time groups indicating the start and the end of the <b>period of activation</b>	Indicate "AMC" whenever the area is eligible for negotiation	YES/NO for activation	FUA Restrictions and/or FUA/RAD Restrictions and/or FUA restrictions group/ Airspace Scenario Restriction Group ID Codes if YES.  The NOTAM ID in case of airspace reservation going outside the AIP published times/vertical limits according to temporary modifications published via NOTAM.  If an AUP element is cancelled, this Field shall contain the word "Deleted".  Any additional information in plain language.
If an AUP element is cancelled, these fields shall not be completed.						

<b>CHARLIE</b> LIST OF "Non AMC-MANAGEABLE" AREAS (NAM) and associated FBZs						
Number	Designator	Flight Level/ft Block	Validity Period	Responsible Unit	Restrictions <sup>28</sup>	Remarks
Sequence number starting with [1] for the first item.	AIP ENR designator and name of the airspace or portion thereof concerned. Designator of Temporary AMC-manageable areas published via AIP SUPP/NOTAM/AIC. Designator of any FBZ or NPZ area.	Affected airspace described vertically between the concerned two flight levels and feet, if necessary.	Date/time groups indicating the start and the end of the <b>period of activation</b>	Unit responsible for the airspace concerned during the time indicated by the Validity Period.	YES/NO for activation	FUA Restriction and/or FUA/RAD Restrictions and/or FUA restrictions group/ Airspace Scenario Restriction Group ID Codes if YES. The NOTAM ID in case of airspace reservation going made outside the AIP published times/vertical limits according to temporary modifications published via NOTAM.  If an AUP element is cancelled, this Field shall contain the word "Deleted".  Any additional information in plain language.
If an AUP element is cancelled, these fields shall not be completed.						

<b>DELTA</b>		<b>LIST OF UNAVAILABLE SIDs and STARs</b>		
<b>Number</b>	<b>Designator</b>	<b>Flight Level Block</b>	<b>Validity Period</b>	<b>Remarks</b>
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP AD 2 airport designator + the designator used for SID/STAR</i>	<i>N/A</i>	<i>Date/time groups indicating the start and the end of the <u>period of unavailability</u></i>	<i>Any additional information in plain language.</i>

<b>ECHO</b>		<b>AUP/RAD Restrictions</b>	
<b>Number</b>	<b>Designator</b>	<b>Validity Period</b>	<b>Responsible Unit / Remarks</b>
<i>Sequence number starting with [1] for the first item.</i>	<i>AUP/RAD Restriction ID published in the RAD Document and according to the ERNIP Part 1 coding rules.</i>	<i>Date/time groups indicating the start and the end of the <u>period of unavailability</u></i>	<i>FMP responsible with the AUP/RAD Restriction management</i>

<b>FOXTROT</b>	<b>ADDITIONAL INFORMATION</b>
<i>Any additional information in plain language, if not "NIL".</i>	

## FICTITIOUS EXAMPLES OF "UUP"

### UPDATED AIRSPACE USE PLAN

**AMC** : LFFAZAMC - FRANCE -  
**VALIDITY** : 13/09/2008 12.00 - 14/09/2008 06.00  
**TIME OF TRANSMISSION** :

LFFFUIR

#### A) Unavailable ATS Routes and CDR1s:

Nr	Route	Portion	FL Min	FL Max	From	Until	Remarks
1	UL851	LUVAL EPL	FL215	FL285	14:30	20:00	
2	UZ707	FAMEN BSM	FL275	FL460	14:30	20:00	

#### B) AMC-Manageable Areas (AMA) and associated FBZs:

NIL

#### C) Non AMC-Manageable Areas (NAM) and associated FBZs:

NIL

#### D) Unavailable SIDs and STARs:

NIL

#### E) AUP/RAD Restrictions

Nr	Restriction ID	From	Until	Resp. Unit / Remarks
1.....	LF2001	17:00	21:00	LFFF

#### F) Additional information:

NIL



# Annex 7 – MODEL STATE LEVEL FRAMEWORK AGREEMENT ON THE CROSS BORDER / FIR BOUNDARY OPERATIONS

## EUROCONTROL

### INTRODUCTION

*The purpose of this Model Framework Agreement on the Cross Border / FIR Boundary Operations (CBO) is to create a sound legal basis for Cross Border and FIR Boundary Operations through an agreement at State level. At the same time, it aims at facilitating and harmonising the process which would encompass military<sup>32</sup> activities involving more than one State, either within an area established across international borders or entirely within airspace under the jurisdiction of one State, i.e. Cross-Border Areas (CBAs) or Temporary Segregated/Reserved Areas (TRA/TSAs), and hence contributing to the optimisation of airspace utilisation. The Model Agreement has been endorsed by the EUROCONTROL Network Operations Team (formally named Airspace and Navigation Team -ANT).*

*The model Framework Agreement is intended to be voluntary in nature and to be flexible rather than prescriptive. It provides options whenever possible and defines a list from which States can draw as appropriate. The suggested clauses may be used and modified as the parties consider it necessary to reflect the different institutional arrangements in the States and different approaches to shared use of CBAs, TRA/TSAs and other AMC-Manageable airspace structures.*

*The Model Framework Agreement addresses the legal and institutional aspects of cross border / FIR boundary operations, and allows the appropriate Approved Agencies (AAs), Airspace Management Cells (AMCs) and ATS units/Authorities concerned to negotiate and conclude Letters of Agreement containing the operational and technical aspects of cross border/FIR boundary operations. The States are recommended to follow templates of Letters of Agreement at Annexes 10 and 11 to the ERNIP Part 3 – ASM Handbook Version 5.2.*

*This Model Framework Agreement is a part of the ERNIP Part 3 – ASM Handbook Version 5.2, Annex 8.*

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<sup>32</sup> This model Framework Agreement may in some specific cases refer to civil operations, e.g. flight-test, sport and other similar operations requiring airspace reservation.

<b>Proposed Text</b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b>PREAMBLE</b></p> <p>The Government of.....(State) and the Government of.....(State) (hereinafter: "the Contracting States") Desiring to promote efficient use of airspace for their mutual benefit and to facilitate the safe conduct of Cross Border / FIR Boundary Operations which encompass military activities conducted by one or more than one Contracting State, within an area established across national borders/FIR boundaries or entirely within airspace under the jurisdiction of one State in the interests of the airspace users;</p> <p>Recognising without prejudice national and international requirements of the Contracting States related to security and defence policy needs;</p> <p>Referring to the 'COMMISSION REGULATION (EC) No 2150/2005' laying down common rules for the Flexible Use of Airspace', which, in its Article 3 (d) [Principles] stipulates that Member States shall develop cooperation for the efficient and consistent application of the concept of flexible use of airspace across national borders and/or the boundaries of flight information regions and shall in particular address cross-border activities, and that this cooperation shall cover all relevant legal, operational and technical issues;</p> <p>Recognising that the conclusion of an agreement between States regarding the cross border/FIR boundary operations shall not prejudice the principle that every State has complete and exclusive sovereignty over the airspace above its territory and territorial waters, or the capacity of every State to exercise its prerogatives with regard to security and defence in its national airspace;</p> <p>Recognising, that the aim of this agreement is to address legal and institutional aspects of the cross border/FIR boundary operations to allow competent authorities involved to negotiate and conclude Letters of Agreement containing the specific operational and technical aspects related to these matters described in the ERNIP Part 3 – ASM Handbook Version 5.9 in its Section 3, chapter 3.3.6 (1);</p> <p>Have agreed as follows:</p>	<p>Any other specific reference may be added as appropriate.</p> <p>As explained in the introductory footnote this model Framework Agreement is predominantly facilitating military cross border/FIR operations but may be used to facilitate specific civil cross border/FIR boundary operations that require airspace reservation or segregation. In such case the terminology and references used should accommodate specific civil requirements, including a reference to the International Convention on Civil Aviation (Chicago Convention) and its Annexes.</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 1</u></b></p> <p style="text-align: center;"><b>Cross Border / FIR Boundary Operations</b></p> <ol style="list-style-type: none"> <li>1. The Contracting States authorise each other to conduct cross border / FIR boundary operations in the airspace under their respective jurisdiction.</li> <li>2. The cross border/FIR boundary operations may – as necessary – involve: <ol style="list-style-type: none"> <li>a) The allocation and shared use of common cross border areas (CBAs) established across their national border/FIR boundary;</li> <li>b) The allocation and shared use of national areas (TRAs/TSAs, including AMC-manageable D and R areas) entirely established within the airspace under the jurisdiction of one of the Contracting States;</li> <li>c) Delegation of responsibility for the provision of air traffic services in designated airspace from one to the other Contracting State(s).</li> </ol> </li> <li>3. The Contracting States agree that the cross border / FIR boundary operations shall be executed in accordance with the terms of this Agreement.</li> </ol>	<p>Based on the ERNIP Part 3 – ASM Handbook Version 5.3, chapter 3.3.6. (1)</p>
<p style="text-align: center;"><b><u>Article 2</u></b></p> <p style="text-align: center;"><b>Sovereignty</b></p> <p>The provisions of this Agreement shall be without prejudice to the Contracting States' sovereignty over their airspace or their rights under the Chicago Convention and other instruments of international law.</p>	<p>Sovereign States are responsible for the regulation, supervision and provision of air navigation services in the airspace over their territory and territorial waters, whatever arrangements they have taken with respect to those services (Articles 1 and 28 of the Chicago Convention).</p> <p>The arrangements agreed upon through the provisions of this Agreement shall be without prejudice to Contracting States' sovereignty over their airspace as well as to the rights and obligations of Member States under the Chicago Convention (Articles 1, 2 and 3).</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p data-bbox="582 383 687 412" style="text-align: center;"><b><u>Article 3</u></b></p> <p data-bbox="504 448 766 477" style="text-align: center;"><b>Security and Defence</b></p> <ol data-bbox="336 504 970 768" style="list-style-type: none"><li data-bbox="336 504 970 622">1. The provisions of this Agreement shall be without prejudice to the Contracting States' requirements related to security and defence policy needs.</li><li data-bbox="336 645 970 768">2. Arrangements for the effective cross-border / FIR boundary operations shall be established by the competent authorities of the Contracting States and be laid down in writing.</li></ol>	<p data-bbox="994 349 1295 577">The arrangements agreed upon through the provisions of this Agreement shall be without prejudice to national and international requirements of the Contracting States related to security and defence policy needs.</p> <p data-bbox="994 600 1295 853">It is therefore recommended that regardless their participation in executing cross-border / FIR boundary operations, national air defence institutions are considered partners in developing the provisions this Agreement.</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 4</u></b></p> <p style="text-align: center;"><b>Authorisation to Competent Authorities (AA / AMC / ATS Unit/Authority)</b></p> <ol style="list-style-type: none"> <li>1. The Contracting States agree to authorise their competent agencies (Approved Agencies (AAs), Airspace Management Cells (AMCs) and ATS units concerned), to negotiate and conclude Letters of Agreement (LoA) containing specific operational and technical aspects related to pre-tactical and tactical airspace management; and delegation of responsibility for the Air Traffic Services provision if applicable.</li> <li>2. The Letter(s) of Agreement(s) shall, inter alia, contain the following: <ol style="list-style-type: none"> <li>a) Definition of applicable CBAs, TRA/TsAs and D and R areas;</li> <li>b) Definition of the responsibility for allocation of the areas concerned based on the principle of delegation of responsibility to a "Lead AMC";</li> <li>c) Air defence coordination and notification procedures</li> <li>d) Priority allocation rules, time based parameters and booking assurance instruments;</li> <li>e) Determination of the responsibility and certification for the provision of Air Traffic Services in the area(s) concerned following the principle of delegation of responsibility if deemed necessary;</li> <li>f) Certification for the provision of Air Traffic Services if deemed necessary;</li> <li>g) Contingency procedures, and</li> <li>h) Other operational issues pertinent to cross border / FIR boundary operations as appropriate.</li> </ol> </li> </ol>	<p>The 'Lead AMC' concept is described in the ERNIP Part 3 – ASM Handbook Version 5.9 chapter 4.5.3</p> <p>The factors affecting delegation of responsibility for provision of ATS as well as other operational issues related to CBO are described in the ERNIP Part 3 – ASM Handbook Version 5.9 chapter 3.3.6.(1)</p> <p>The templates for the Letters of Agreement (LoA) on Coordination Procedures are available at Annexes 9 and 10 of ERNIP Part 3 – ASM Handbook Version 5.9</p> <p>The specification of the certification requirements (if deemed necessary) may be based upon Article 7 of the REGULATION (EC) No 549/2004 (the framework Regulation) as amended by Regulation (EC) 1070/2009.</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 5</u></b></p> <p style="text-align: center;"><b>Application of Rules and Procedures</b></p> <p>The Contracting States shall agree on the rules and procedures applicable to cross-border / FIR boundary operations performed under this Agreement. The details of these arrangements shall be set out in an Annex (x) to this Agreement.</p>	<p>As a principle of sovereignty, the rules and procedures of the hosting State should apply in its territory. If, however, differently agreed, in the interest of safety and for the sake of efficiency, it is necessary that all partners involved are able to apply only one set of rules and procedures. This procedure may be appropriate when delegation of the ATS provision is involved.</p>
<p style="text-align: center;"><b><u>Article 6</u></b></p> <p style="text-align: center;"><b>Financial Arrangements</b></p> <ol style="list-style-type: none"> <li>1. Each Contracting State shall bear the costs of any activity performed by it under this Agreement, unless otherwise agreed by the Contracting States.</li> <li>2. The introduction of financial arrangements requires prior written agreement between the appropriate representatives of the Contracting States.</li> <li>3. To that effect, the financial arrangements agreed between the Contracting States shall be listed at Annex (x) to this agreement.</li> </ol>	<hr/> <p>Activities involving inter alia cost sharing are subject to bilateral negotiations. Reasons for doing it could be manifold. If there are no financial arrangements pertinent to this Agreement, paragraph (3) should be deleted.</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 7</u></b></p> <p style="text-align: center;"><b>Liability</b></p> <ol style="list-style-type: none"> <li>1. Air navigation service provider(s) providing services to cross border / FIR boundary operations under the provisions of this agreement shall be liable for the loss or damage caused by its/their negligence or that of its/their staff or agents. No direct claim shall be brought against the air navigation services provider(s)' staff or agents when fulfilling their duties.</li> <li>2. The Contracting State in whose territory the damage occurred may bring an action against another Contracting State for any compensation or costs paid or incurred as a result of loss or damage caused by the negligence of the other Contracting State.</li> <li>3. The Contracting State in whose territory the damage occurred may bring an action against the air navigation services provider(s) to recover any compensation or costs paid or incurred as a result of loss or damage caused by the negligence of the air navigation services provider(s) or that of its/their staff or agents.</li> <li>4. Where through acts or omissions the Contracting States contribute to the damage, the air navigation service provider(s) may bring an action to recover compensation or cost paid or incurred pursuant to paragraph 1 proportionate to the Contracting States' contribution to the loss or damage.</li> <li>5. All claims referred to in this Article shall be made in the courts of the Contracting State in whose territory the loss or damage occurred and subject to the law of that Contracting State.</li> </ol>	<p>Provisions of this article are only applicable in the relationship between the Contracting States and do not constitute rights or obligations for third parties.</p> <p>This article is equivalent to the Article 16 of the Model State Level FAB Agreement.</p> <p>Liability arrangements should assist States in allocating responsibilities between those involved, as well as provide clarity on primary liability, recourse actions, place of jurisdiction and applicable law. The Contracting States should furthermore have a close and comparative look at their respective national law on State liability for the provision of ATS in their airspace. They will most likely have to reconcile different national approaches.</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 8</u></b></p> <p style="text-align: center;"><b><u>Environmental Issues</u></b></p> <ol style="list-style-type: none"> <li>1. The Contracting States agree that the environmental issues shall be respected when determining the extent of cross border / FIR boundary operations.</li> <li>2. Cross border/FIR boundary operations shall be conducted without prejudice to the environmental rules and regulations of the Contracting State in whose airspace the operations take place.</li> <li>3. To that effect, the restrictions arising from the law of the Providing State shall be listed at Appendix (x) to this agreement.</li> </ol>	<p>In case there are no environmental restrictions pertinent to environmental law, paragraph (3) should be deleted.</p>
<p style="text-align: center;"><b><u>Article 9</u></b></p> <p style="text-align: center;"><b><u>Diplomatic Clearance</u></b></p> <ol style="list-style-type: none"> <li>1. The Contracting States agree to simplify diplomatic clearance issuing in order to facilitate seamless execution of the cross border / FIR boundary operations.</li> <li>2. To that effect, the diplomatic clearance issuance procedure shall be defined at Appendix (x) to this Agreement.</li> </ol>	<p>The issue of diplomatic clearance may also be subject to high level political agreements between the States concerned (e.g. NATO agreements). In such case joint reference to existing agreement(s) should be listed in Appendix (x).</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b>Article 10</b></p> <p style="text-align: center;"><b>Contingency Procedures</b></p> <p>This Agreement shall be supplemented by contingency procedures at Appendix (x) as agreed between the parties concerned in accordance with Article 4.</p>	<p>The contingency procedures could include the following items:</p> <ul style="list-style-type: none"> <li>e) alerting service</li> <li>f) service to aircraft in the event of an emergency</li> <li>g) steps to be taken regarding in-flight contingencies</li> <li>h) steps to be taken to assist strayed aircraft</li> <li>i) steps to be taken concerning interception of (civil) aircraft / unlawful use of the airspace</li> <li>j) coordination between military authorities and air traffic services</li> <li>k) coordination of activities potentially hazardous to civil aircraft</li> <li>l) information exchange between the appropriate civil and military authorities / units</li> <li>m) additional items as appropriate.</li> </ul>

<b><u>Proposed Text</u></b>	Explanatory Notes
<p style="text-align: center;"><b><u>Article 11</u></b></p> <p style="text-align: center;"><b>Investigation of Accidents or Serious Incidents</b></p> <ol style="list-style-type: none"> <li>1. The Contracting States will institute an inquiry into the circumstances of accidents or serious incidents occurring in their territory. Regarding military aircraft involved in accidents or serious incidents, pertinent national regulations shall be observed.</li> <li>2. At its request, the Contracting State in which the accident or serious incident occurred (State of Occurrence) shall be provided with and have access to the necessary materials from ATS units/authorities involved (e.g. radar data recordings, tape transcriptions, etc.) in order to enable the conduct of an investigation into the accident or serious incident.</li> <li>3. To enable the efficient and unimpeded inquiry the Contracting States shall allow the Contracting State(s) conducting the inquiry to carry out the necessary investigations on its territory. The Contracting States shall ensure that the Contracting State conducting the investigation is granted access to premises, facilities and materials of the ATS units/authorities referred to under paragraph (2).</li> <li>4. The Contracting State(s) shall be given the opportunity to appoint observers to be present at the investigation initiated by the Contracting State over which territory the accident or serious incident occurred. At their request, the report and findings of the inquiry shall be communicated to all Contracting States.</li> </ol>	
<p style="text-align: center;"><b><u>Article 12</u></b></p> <p style="text-align: center;"><b>Search and Rescue</b></p> <p>Search and Rescue operations in the territory of each Contracting State shall be conducted by the competent bodies/authorities of that individual Contracting State.</p>	<p>The search and rescue operations could also be organised jointly by the Contracting States. In such cases, States should also address the financial arrangements related to the provision of joint search and rescue operations. Procedures to be applied with respect to the alerting services shall be detailed in the applicable Letters of Agreement (LoA).</p>

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b><u>Article 13</u></b></p> <p style="text-align: center;"><b>Dispute Resolution</b></p> <ol style="list-style-type: none"> <li>1. If any dispute arises between the Contracting States regarding the interpretation or application of any provision of this Agreement, the Contracting States shall in the first place endeavour to settle it by negotiation.</li> <li>2. If the Contracting States are unable to resolve any disagreement by negotiation, the dispute shall be submitted for final decision to a third party (arbitrator) designated by the Contracting States involved.</li> <li>3. The costs of arbitration, including its fees and expenses, shall be shared equally by the Contracting States that are parties to the arbitration procedure.</li> </ol>	<p>This provision is meant to provide the mechanism that will apply between States in relation to a dispute regarding the interpretation and application of their rights and obligations derived from the implementation of this Agreement.</p> <p>The Liability provisions of Article 7 provide the structure/allocation of liability between the parties involved in the provision of air navigation services in case loss or damage would arise further to the implementation of this Agreement.</p> <p>Two or more Contracting States could be involved cross-border / FIR boundary operations. It seems fair that only those involved in an arbitration procedure should bear the arbitration costs.</p>
<p style="text-align: center;"><b><u>Article 14</u></b></p> <p style="text-align: center;"><b>Termination</b></p> <ol style="list-style-type: none"> <li>1. The Contracting States may jointly decide to terminate the Agreement at any time after the expiry of [x] years from the date of its entry into force.</li> <li>2. The termination shall be affected by a written declaration of all Contracting States that the Agreement shall cease to have effect on a specified date [x] years after receipt of the request according to paragraph (1).</li> <li>3. The contracting Parties shall jointly determine and allocate the cost resulting from the termination.</li> </ol>	

<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
<p style="text-align: center;"><b>Article 15</b></p> <p style="text-align: center;"><b><u>Suspension</u></b></p> <ol style="list-style-type: none"> <li>1. In order to safeguard public order and security or in case of international tensions and conflicts, each Contracting State has the right to suspend the application of the Agreement or parts thereof. It shall notify the other States accordingly.</li> <li>2. The Contracting State shall endeavour to terminate the suspension as soon as practicable.</li> <li>3. The Contracting State that suspends the application of the Agreement or parts thereof shall bear the costs resulting from the suspension.</li> </ol>	<p>The Contracting States have to agree on measures to be taken by each individual State in the interest of public order and security or in case of international tensions and conflicts – this could be addressed in their contingency arrangements.</p>
<p style="text-align: center;"><b>Article 16</b></p> <p style="text-align: center;"><b><u>Entry into Force and Duration</u></b></p> <ol style="list-style-type: none"> <li>1. This Agreement shall enter into force as soon as the Contracting States have notified each other in writing of the completion of their respective constitutional requirements. It shall remain in force until terminated in accordance with Article 14 above.</li> <li>2. The date on which cross-border/FIR boundary operations become operational shall be agreed by exchange of letters between the Contracting States.</li> </ol>	

<b><u>Proposed Text</u></b>	Explanatory Notes
<p style="text-align: center;"><b><u>Article 17</u></b></p> <p style="text-align: center;"><b>Amendment</b></p> <ol style="list-style-type: none"> <li>1. If a Contracting State considers it desirable to amend any provisions of this Agreement it may request consultations with the other Contracting State(s).</li> <li>2. The present Agreement may be modified only by an instrument in writing of equal formality, signed by the duly authorised representatives of the Contracting States.</li> <li>3. The Appendices to the Agreement may be modified by exchange of letters between the duly authorised representatives of the Contracting States.</li> </ol>	
<p style="text-align: center;"><b><u>Article 18</u></b></p> <p style="text-align: center;"><b>Transitional Measures for Agreements Already in Operation</b></p> <p>Agreements which are in operation on the date of entry into force of this Agreement shall be assessed for possible revision in accordance with the provisions set out in this Agreement.</p>	<p><i>"Agreements already in operation" refers to agreements on coordination procedures as well as agreements at the State level.</i></p>
<p>In witness whereof, the undersigned, being duly authorised by their respective Governments, have signed this Agreement.</p> <p>Done in duplicate at.....[place].....,on .....[date].....in English and (.....[language].....) languages.</p> <p>In case of any divergence of interpretation of the text, the English version shall prevail.</p> <p>For the Government of</p> <p>For the Government of</p>	

<p><b><u>Appendix 1</u></b></p> <p><b>Definitions</b></p> <p>For the purpose of this Agreement, unless otherwise stated, the term:</p> <ol style="list-style-type: none"> <li>1. "Agreement" means this Agreement, its Appendices and any amendments thereto.</li> <li>2. "Airspace Management (ASM)" is a planning function with the primary objective of maximising the utilisation of available airspace by dynamic time-sharing and, at times, the segregation of airspace among various categories of users based on short-term needs. In future systems, airspace management will also have a strategic function associated with infrastructure planning. (ICAO)</li> </ol> <p>In the context of the Flexible Use of Airspace Concept, is a generic term covering any management activity at the three Strategic, Pre-tactical and Tactical Levels, provided for the purpose of achieving the most efficient use of airspace based on actual needs and, where possible, avoiding permanent airspace segregation.</p> <ol style="list-style-type: none"> <li>3. "Airspace Management Cell (AMC)" is a joint civil/military cell responsible for the day-to-day management and temporary allocation of national or sub-regional airspace under the jurisdiction of one or more ECAC State(s).</li> <li>4. "Airspace Reservation" is a defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for exclusive use by another aviation authority. (ICAO). In the context of the Flexible Use of Airspace Concept, airspace reservation includes "Temporary Reserved Area" (TRA) and "Temporary Segregated Area" (TSA).</li> <li>5. "Air Traffic Control Service (ATC)" is a service provided for the purpose of: <ol style="list-style-type: none"> <li>a) preventing collisions; <ol style="list-style-type: none"> <li>1) between aircraft, and</li> <li>2) on the manoeuvring area between aircraft and obstructions, and</li> </ol> </li> <li>b) expediting and maintaining an orderly flow of air traffic. (ICAO)</li> </ol> </li> <li>6. "Air Traffic Service (ATS)" is a generic term meaning variously, Flight Information Service, Alerting Service, Air Traffic Advisory Service, Air Traffic Control Service" (ICAO)</li> </ol>	<p><i>The definitions are in conformity with:</i></p> <p><i>ERNIP Part 3 – ASM Handbook Version 5.9;</i></p> <p><i>COMMISSION REGULATION (EC) No 2150/2005 laying down common rules for the flexible use of airspace;</i></p> <p><i>ICAO Annex 11 of the Chicago Convention; marked (ICAO) and are to be used to the extent relevant to national legislation.</i></p>
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<b><u>Proposed Text</u></b>	Explanatory Notes
<p>7. <i>“Air Traffic Services Unit (ATSU)”</i> is a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office. (ICAO)</p> <p>8. <i>“AMC-Manageable Area”</i> is an area subject to management and allocation by an AMC at ASM Level 2. Under the TAA Process, these manageable areas are either formal structures entitled ‘TRAs or TSAs’ or R and D Areas that are manageable at ASM Level 2 in the same way as TRA/TSAs.</p> <p>9. <i>“(Appropriate) ATS authority”</i> means the relevant authority designated by the State responsible for providing air traffic services in the airspace concerned. (ICAO)</p> <p>10. <i>“Approved Agencies (AAs)”</i> are units, which are authorised by a State to deal with an Airspace Management Cell for airspace allocation and utilisation matters.</p> <p>11. <i>“Area Control Centre (ACC)”</i> is a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction. (ICAO)</p> <p>12. <i>“Civil/Military Coordination”</i> is the communication between civil and military elements (human and/or technical) necessary to ensure safe, efficient and harmonious use of the airspace.</p> <p>13. <i>“Conditional Route (CDR1)”</i> is an ATS route that is only available for flight planning under specified conditions. CDR1 routes are available for flight planning at times and levels published in the relevant national Aeronautical Information Publication (AIP), unless they are Made unavailable by the EAUP/EUUP(s) published daily.</p>	

<p>14. "Cross Border Area (CBA)" is an airspace restriction or reservation established over international borders for specific operational requirements. This may take the form of a Temporary Segregated Area or Temporary Reserved Area</p> <p>15. "Cross Border / FIR Boundary Operations" (CBO) is a process which encompasses activities conducted by one or more than one State, within an area established across national borders/FIR boundaries or entirely within airspace under the jurisdiction of one State.</p> <p>16. "Danger Area (D)" is an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. (ICAO) In the context of the Flexible Use of Airspace Concept, some Danger Areas subject to management and allocation at ASM Level 2 are established at ASM Level 1 as "AMC-Manageable Areas" and identified as such in Aeronautical Information Publication.</p> <p>17. "Delegation of ATS" means the delegation from one State (the Delegating State) to another State (the Providing State) of the responsibility for providing air traffic services in a portion of airspace extending over the territories of the former.</p> <p>18. "Flexible Use of Airspace (FUA) Concept" is based on the fundamental principle that airspace should not be designated as either pure civil or military airspace, but rather be considered as one continuum in which all user requirements have to be accommodated to the extent possible.</p> <p>19. "Flight Information Region (FIR)" is airspace of defined dimensions within which flight information service and alerting service are provided. (ICAO)</p> <p>20. "General Air Traffic (GAT) encompasses all flights conducted in accordance with the rules and procedures of ICAO and/or the national civil aviation regulations and legislation. <i>GAT can include military flights for which ICAO rules and procedures satisfy entirely their operational requirements. (HBK)</i></p> <p>21. "ASM Level 1 - Strategic ASM" is the act of defining and reviewing, as required, the national airspace policy taking into account national and international airspace requirements. (HBK)</p> <p>22. "ASM Level 2 - Pre-Tactical ASM" is the act of conducting operational management within the framework of predetermined existing ATM structure and procedures defined in Level 1 and of reaching specific agreement between civil and military authorities involved. (HBK)</p> <p>23. "ASM Level 3 - Tactical ASM" is the act, on the day of operation, of activating, deactivating or real time</p>	
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<p>reallocating of airspace allocated in ASM Level 2 and of solving specific airspace problems and/or of individual OAT/GAT traffic situations in real time between civil and military ATS units and/or controllers, as appropriate. This coordination can take place either in active or passive mode with or without action by the controller. (HBK)</p> <p>24. <i>"Operational Air Traffic (OAT)"</i> encompasses all flights which do not comply with the provisions stated for GAT and for which rules and procedures have been specified by appropriate national authorities. <i>OAT can include civil flights such as test-flights, which require some deviation from ICAO rules to satisfy their operational requirements. (HBK)</i></p> <p>25. <i>"Originating State"</i> means the State from where the cross border / FIR boundary operations have been originated.</p> <p>26. <i>"Providing State"</i> means the State that is accommodating cross border / FIR boundary operations.</p> <p>27. <i>"Restricted Area (R)"</i> is an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with specific conditions. (ICAO) In the context of the FUA Concept, some Restricted Areas are subject to management and allocation at ASM Level 2 are established at ASM Level 1 as "AMC-Manageable Areas" and identified as such in AIP. (HBK)</p> <p>28. <i>"Temporary Airspace Allocation (TAA) Process"</i> consists in the allocation process of an airspace of defined dimensions assigned for the temporary reservation (TRA/TSA) or restriction (D/R) and identified more generally as an "AMC-manageable" area. (HBK)</p> <p>29. <i>"Temporary Reserved Area (TRA)"</i> is a defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for the specific use by another aviation authority and through which other traffic may be allowed to transit, under ATC clearance. (HBK)</p> <p>30. <i>"Temporary Segregated Area (TSA)"</i> is a defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily segregated, by common agreement, for the exclusive use by another aviation authority and through which other traffic will not be allowed to transit. In the context of the FUA Concept, all TRAs and TSAs are airspace reservations subject to management and allocation at ASM Level 2. (HBK)</p>	
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<b><u>Proposed Text</u></b>	<b>Explanatory Notes</b>
31. "Territory" in relation to a State, has the meaning specified in Article 2 of the Chicago Convention.	<i>Article 2 of the Chicago Convention: "Territory: For the purposes of this Convention the territory of a State shall be deemed to be the land areas and the territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State."</i>

# **Annex 8 – Letter of Agreement on Coordination procedures between AMCs in regard to Allocation and Shared Use of Common Cross Border RSAs**

<b>LETTER OF AGREEMENT</b>	
on	
<b>Coordination Procedures between Airspace Management Cells (AMCs)</b>	
in regard to	
<b>Allocation and Shared Use of Common Cross Border RSAs</b>	
between	
<b>[Approving Authority State A]</b>	<b>[Approving Authority State B]</b>
and	
<b>[AMC 1/ACC 1]</b>	<b>[AMC 2/ACC 2]</b>

Effective:

## 1. General

### 1.1 Purpose

1. The purpose of this Letter of Agreement is to define the coordination procedures which will be applied between [AMC 1/ACC 1] and [AMC 2/ACC 2] for:
  - a) the airspace allocation of different parts of Cross-Border Areas (CBAs) defined in the AIPs of States concerned;
  - b) the availability of specific Conditional Routes (CDR1s), including, where appropriate, weekend procedures;
  - c) The allocation of cross border No Planning Zones (NPZs) defined in the AIPs of States concerned.

These coordination procedures shall take place prior to the publication of the relevant Airspace Use Plans (AUPs).

2. These procedures are supplementary to the State Level Framework Agreement on the Cross-Border / FIR Boundary Operations concluded between [State 1] and [State 2] [relevant details to be included].

### 1.2 Operational Status

1. [AMC 1/ACC 1/AMC 2/ACC 2] shall keep each other and the Central Airspace Data Function (CADF) advised of any changes in the operational status of their facilities which may affect the procedures specified in this Letter of Agreement.

## 2. Areas of Responsibility - Delegation of Responsibility to a Lead AMC

1. The Areas of Responsibility of [AMC 1/ACC 1] and [AMC2/ACC2] are described in Appendix B to this Letter of Agreement.
2. [AMC 1/ACC 1] and [AMC2/ACC2] have mutually delegated to the other AMC designated as "Lead AMC" on a route by route and/or RSA by RSA basis the responsibility for coordinating and publishing the harmonised availability of Cross-Border CDR1s and CBAs and NPZs as described in Appendix B to this Letter of Agreement.
3. During declared national holidays as described in Appendix F, the Lead AMC responsibility reverts to the other AMC. Such information shall be transmitted to the NM/CADF. In case the Lead AMC is designated for a limited period of time it is recommended that the change of AMC status to be done at AIRAC date. The AMC change of roles can be executed more dynamic when the system capabilities permit.

## 3. Routes and/or CBAs/NPZs to be Coordinated prior to publication of the respective Airspace Use Plans

1. The Cross-Border Areas, No Planning Zones and Conditional Routes to be coordinated prior to publication of the respective Airspace Use Plans are described in Appendix C to this Letter of Agreement.

## 4. Promulgation and Distribution of Information on Availability of Cross-Border Structures

1. Each AMC (a Lead AMC or another AMC) creates its national AUP for its relevant portion of the Cross-Border Area, NPZ and/or Cross-Border CDR1 according to the provisions of the present Letter of Agreement.

Or

2. The Lead AMC creates its national AUP for all the Cross-Border structures it has the responsibility according to the provisions of this Letter of Agreement, including the appropriate extension within neighbouring FIR/UIR(s). Therefore, an AMC not designated as Lead AMC, shall not include any information in its national AUP/UUP on cross-border structures for which a Lead AMC is designated.
3. The current procedures for promulgation and distribution of information on availability of CDR1s and TRAs/TSAs other than Cross-Border structures remain unaffected.

## **5. Coordination Procedures**

1. The procedures to be applied by [AMC 1/ACC 1] and [AMC2/ACC2] are detailed in the Appendices to this Letter of Agreement:

Appendix A: Definitions and Abbreviations.

Appendix B: Responsibilities of [AMC 1/ACC 1/AMC 2/ACC2] - Delegation of Responsibilities to a "Lead AMC".

Appendix C: CBAs, NPZs and Conditional Routes to be Coordinated.

Appendix D: Procedures for the Coordination of Cross-Border Areas, NPZs, and/or Conditional Routes availability prior to AUP Publication.

Appendix E: Communications Facilities.

Appendix F: Hours of Operation of [AMC 1/ACC 1/AMC 2/ACC 2], Fall-Back Procedures and Declared National Holidays.

## **6. Revisions and Deviations**

### **6.1 Revision of the Letter of Agreement**

1. Revisions to this Letter of Agreement, excluding Appendices, require the mutual consent of the signatory authorities.
2. Revisions to the Appendices to this Letter of Agreement require the mutual consent of, normally, the civil and military representatives of the AMC/ACCs.

### **6.2 Temporary Deviations**

1. When necessary, the AMC/ACCs concerned may introduce, by mutual agreement and for a specified time periods, temporary modifications to the procedures laid down in this Letter of Agreement.

### **6.3 Incidental Deviations**

1. Instances may arise where incidental deviations from the procedures specified in the Appendices to this Letter of Agreement may become necessary. Under these circumstances AMC/ACC staff is expected to exercise their best judgment to ensure efficient [AMC 1/ACC 1/AMC 2/ACC 2] coordination.

## **7. Cancellation**

1. Cancellation of this Letter of Agreement by mutual agreement of the respective Approving Authorities may take place at any time.
2. Cancellation of this Letter of Agreement by either Approving Authority is possible at any time, provided that the cancelling party declares its intention to cancel the Letter of Agreement with a minimum pre-notification time of [time period] before the date the cancellation is to take effect.

## **8. Interpretation and Settlement of Disputes**

1. Should any doubt or diverging views arise regarding the interpretation of any provision of this Letter of Agreement or in case of dispute regarding its application, the parties shall endeavour to reach a solution acceptable to both of them.
2. Should no agreement be reached, each of the parties shall refer to its superior national authority, to which the dispute shall be submitted for settlement.

## 9. Validity

This Letter of Agreement becomes effective [date]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name]

\_\_\_\_\_  
[name]

[Approving Civil Authority State A]

[Approving Civil Authority State B]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name]

\_\_\_\_\_  
[name]

[Approving Military Authority State A]

[Approving Military Authority State B]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name of civil representative of  
AMC1/ACC1]

\_\_\_\_\_  
[name of civil representative of  
AMC2/ACC2]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name of military representative of  
AMC 1/ACC1]

\_\_\_\_\_  
[name military representative  
AMC2/ACC2]

## Appendix A

### Definitions and Abbreviations.

Effective:

Revised:

#### A.1 Definitions

##### A.1.1. AMC Area of Responsibility

An airspace of defined dimensions where a sole AMC has responsibility for pre-tactical airspace management coordination.

##### A.1.2. Lead AMC

A predetermined AMC responsible for the coordination with adjacent AMCs of the harmonised allocation of Cross Border Areas (CBAs), No Planning Zones (NPZs) and/or the availability of specific Cross-Border CDR1s.

#### A.2 Abbreviations

Note: Abbreviations marked with an \* are non-ICAO abbreviations.

## Appendix B

### Responsibility of [AMC 1/ACC 1/AMC 2/ACC2]

#### Delegation of Responsibility to a Lead AMC

Effective:

Revised:

#### **B.1 Area of Responsibility of the [AMC 1/ACC 1]**

1. Details of the Area of Responsibility of AMC 1/ACC 1.

#### **B.2 Area of Responsibility of the [AMC2/ACC2]**

1. Details of the Area of Responsibility of AMC 2/ACC 2.

#### **B.3 Delegation of Responsibility to the Lead AMC 1**

1. Details of the responsibility of/to AMC 1/ACC 1.

#### **B.4 Delegation of Responsibility to the Lead AMC 2**

1. Details of the Responsibility of/to AMC 2/ACC 2.

## Appendix C

### **Cross-Border Areas, No Planning Zones and Conditional Routes to be Coordinated**

Effective:

Revised:

#### **C.1 Cross-Border Areas (CBAs) to be Coordinated**

1. Including details of sub-divided portions, boundary positions, associated restrictions, relevant flight levels and delegations.

#### **C.2 No Planning Zones (NPZs) to be Coordinated**

1. Including details of sub-divided portions, boundary positions, associated restrictions, relevant flight levels and delegations.

#### **C.3 Conditional Routes to be Coordinated**

1. Including details of route portions, boundary positions, relevant flight levels and delegations relevant for the application of Lead AMC Concept. These routes will be communicated to NM for enabling their allocation by the Lead AMC.

## Appendix D

### Procedures for the Coordination of Cross-Border Areas, No Planning Zones and/or Conditional Route Availability Prior to AUP Publication

Effective:

Revised:

#### D.1 General Provisions.

1.

#### D.2 Coordination Procedures.

1. [AMC 1/ACC 1] is responsible for the Lead-AMC coordination of the following CBAs, NPZs, and/or CDR1s:

a)

b)

c)

2. [AMC 2/ACC 2] is responsible for the Lead-AMC coordination of the following CBAs, NPZs, and/or CDR1s:

a)

b)

c)

#### D.3 Allocation Procedures

1. The following priority allocation rules, time based parameters and booking assurance instruments apply:

a)

b)

c)

#### D.4 Air Defence Coordination and Notification Procedures

1. (if applicable)

## Appendix E

### Communications Facilities

Effective:

Revised:

#### **E.1 Means of Communications and their Use**

##### *E.1.1 Equipment*

2. The following lines are available between [AMC 1/ACC 1] and [AMC2/ACC2]:
  - a)  data line [s]
  - b)  telephone line [s]
  - c)  fax line [s]

#### **E.2 Telephone Co-ordination**

1. All telephone communications should be terminated with the initials of the staff parties concerned.

## Appendix F

### Hours of Operation of [AMC1/ACC1/AMC 2/ACC2].and Fall-Back Procedures

Effective:

Revised:

#### F.1 Hours of Operation of the ACCs/AMCs.

1. The Hours of Operation of [AMC 1/ACC 1] are as follows:
  - a)
  - b)
  - c)
2. The Hours of Operation of [AMC 2/ACC 2] are as follows:
  - a) ☒
  - b) ☒
  - c) ☒

#### F.2 Fall-Back Procedures for Coordination

1. In the event of failure of the direct lines between the coordinating partners, coordination may be affected via:
  - a) switchboard, or
  - b) [other common coordination partner], or
  - c) public telephone:
2. [AMC 1/ACC 1]: [additional listing of available public telephone numbers to the operations room and the relevant working positions, if available]
3. In the event of the closure of [AMC1/ACC1] the fall-back coordination point is [detail]:
4. [AMC 2/ACC2]: [additional listing of available public telephone numbers to the operations room and the relevant working positions, if available]
5. In the event of the closure of [AMC2/ACC2] the fall-back coordination point is [detail]:

#### F.3 Declared National Holidays

1. By the end of every year, [AMC1/ACC1] and [AMC2/ACC2] shall provide the other AMC/ACC and the NM/CADF with the list of declared national holidays for the following year which may impact on the allocation process of cross-border structures described in the present Letter of Agreement.



# **Annex 9 – Letter of agreement on Coordination procedures in regard to Cross- Border Operations in Shared AMC- Manageable Areas**

<b>LETTER OF AGREEMENT</b>	
on	
<b>Coordination Procedures</b>	
in regard to	
<b>Cross-Border Operations in Shared AMC-Manageable Areas</b>	
between	
[Approving Authority Originating State]	[Approving Authority Host State]
and	
[Originating AMC & ACC]	[Host AMC & ACC]

Effective:

## **1. General**

### **1.1 Purpose**

1. *The purpose of this Letter of Agreement is to define the coordination procedures which will be applied between [Originating AMC & ACC] and [Host AMC & ACC] for the allocation and shared use of national areas (TRAs/TSAs, including AMC-manageable D and R areas) entirely established within the airspace under the jurisdiction of one of the Host AMC & ACC.*
2. *The coordination procedures between [Originating AMC] and [Host AMC] shall take place prior to the publication of the relevant Airspace Use Plans (AUPs).*
3. *The coordination procedures between [Originating ACC] and [Host ACC] shall take place prior to transiting to and operation in the area(s) subject to sharing.*
4. *These procedures are supplementary to the State Level Framework Agreement on the Cross- Border / FIR Boundary Operations concluded between [Originating State] and [Host State].*

### **1.2 Operational Status**

1. *Participating AMCs shall keep each other and the Central Airspace Data Function (CADF) advised of any changes in the operational status of their facilities which may affect the procedures specified in this Letter of Agreement.*

## **2 Areas Subject to Sharing**

1. The area(s) that are subject to cross-border sharing between [Originating State] and [Host State] are defined in Appendix B.

## **3 Jurisdiction**

1. The AMC of the [Host State] in the area(s) subject to cross-border sharing [Host AMC] is responsible for airspace allocation in accordance with the provisions of this Letter of Agreement. Standard procedures for creation of AUP/UUP remain unaffected.
2. The ACC(s) of the [Host State] having jurisdiction over the area(s) subject to cross-border sharing [Host ACC(s)] is responsible for provision of ATS for aircraft transiting from the [Originating State] to the area(s) subject to cross-border sharing and/or operating inside the area subject to cross-border sharing, in accordance with the provisions of this Letter of Agreement.

## **4 Airspace Management (ASM) Procedures**

### **4.1 Common Language**

1. Any exchange of written requests and notifications, as well as the verbal coordination is performed in [to be specified] language.

### **4.2 Airspace Sharing Request and Vacancy Notification**

1. The [Originating AMC] initialises airspace sharing in the [Host State] by sending appropriate written request to the [Host AMC].
2. The [Host AMC] notifies daily the [Originating AMC] of the potential vacancy slots within the area(s) subject to sharing.
3. The exchange of request and/or vacancy notification is supplemented by verbal coordination between the two AMCs as appropriate.

4. The content of the request and notification, together with notification means are described in the Appendix C.

#### **4.3 Booking, Allocation and Allocation Notification**

1. The procedures related to booking, allocation and allocation notification of airspace in the area(s) subject to sharing are specified in the Appendix D, in particular:
  - a) Periods of activity taking into consideration the national holidays of the States concerned;
  - b) Subdivision of the area(s) subject to sharing;
  - c) Booking method(s) (e.g. ASM tool, fax, other);
  - d) Booking assurance instruments;
  - e) Maximum number of participating aircraft;
  - f) Priority allocation rules;
  - g) Time based parameters;
  - h) Allocation notification method (e.g. ASM tool, fax, other);
  - i) Communication with the parent unit;
  - j) (Additional items as appropriate)

#### **4.4 ATS Related Procedures**

- a) The ATS related procedures are specified in Appendix E, in particular:
- b) Responsibility and liability for the provision of ATS to the aircraft transiting to and operating in the area(s) subject to sharing;
- c) Airspace classification relevant to the aircraft transiting to and operating in the area(s) subject to sharing;
- d) Minimum ATS facilities (e.g. primary radar, secondary radar, operating frequencies, telephone lines etc.)
- e) Language used in the provision of ATS;
- f) Flight plan data exchange, revision to previously provided and/or coordinated flight plan data;
- g) ATC sectorisation;
- h) ATC procedures, in particular:
  - Transfer of identity;
  - Transfer of control;
  - Transfer of communication;
  - SSR code assignment (CCAMS States in coordination with NM);
  - Communication facilities and procedures;
  - Transit procedures;
  - Procedures within the area(s) subject to cross-border sharing
  - Procedures for unmanned flights (e.g. UAV);
  - Separation criteria;
  - Buffers applied in relation to area(s) subject to sharing;

- ATC coordination;
- i) ATS occurrence reporting;
- j) (Additional items as appropriate.)

## **5 Contingency Procedure**

1. The contingency procedures are specified in Appendix F, in particular
  - a) Alerting Service;
  - b) Service to the aircraft in the event of an emergency;
  - c) Steps to be taken in case of in-flight contingencies;
  - d) Steps to be taken in case of interception of (civil) aircraft and/or unlawful use of the airspace;
  - e) Information exchange between appropriate civil and military authorities / units;
  - f) Failure of ground-ground communication;
  - g) Failure of air-ground communication;
  - h) (Additional items as appropriate).

## **6 Revisions, Deviations and Cancellation**

### **6.1 Revision of the Letter of Agreement**

1. Revision of this Letter of Agreement, excluding Appendices, requires the mutual consent of the signatory authorities.
2. Revision of the Appendices to this Letter of Agreement requires the mutual consent of both civil and military representatives of the AMCs and/or ACCs concerned.

### **6.2 Temporary Deviations**

1. When required, the AMCs and/or ACCs concerned may introduce, by mutual agreement and for a specified time periods, temporary modifications to the procedures laid down in this Letter of Agreement.

### **6.3 Incidental Deviations**

1. Instances may arise where incidental deviations from the procedures specified in the Appendices to this Letter of Agreement may become necessary. Under these circumstances AMC/ACC staff is expected to exercise their best judgment to ensure efficient coordination.

### **6.4 Cancellation**

1. Cancellation of this Letter of Agreement may take place at any time by mutual agreement of the respective Approving Authorities.
2. Cancellation of this Letter of Agreement by any of the Approving Authorities is possible at any time, provided that the cancelling party declares its intention to cancel the Letter of Agreement with a minimum pre-notification time of [time period] before the date the cancellation is to take effect.

## **7 Interpretation and Settlement of Disputes**

1. In case of any doubt or diverging views arise regarding the interpretation of any provision of this letter of agreement or in case of dispute regarding its application, the parties shall endeavour to reach a solution acceptable to both of them.
2. Should no agreement be reached, each of the parties shall refer to its superior national authority, to which the dispute shall be submitted for settlement.

## 8. Validity

This Letter of Agreement becomes effective [date]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name]

\_\_\_\_\_  
[name]

[Approving Civil Authority State A]

[Approving Civil Authority State B]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name]

\_\_\_\_\_  
[name]

[Approving Military Authority State A]

[Approving Military Authority State B]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name of civil representative of the  
Origination AMC or ACC]

\_\_\_\_\_  
[name of civil representative of the Host  
AMC or ACC]

[Place], date:

[Place], date:

\_\_\_\_\_  
[name of military representative of  
the Originating AMC or ACC1]

\_\_\_\_\_  
[name military representative of the Host  
AMC or ACC2]

## Appendix A

### Definitions and Abbreviations.

Effective:

Revised:

#### A.1 Definitions

1. **Area Subject to Cross-Border Sharing**

An airspace of defined dimensions where aircraft from another State may operate.

2. **Host ACC**

An ACC responsible for ATS provision in the Host State.

3. **Host AMC**

An AMC responsible for airspace planning and allocation in the Host State.

4. **Originating ACC**

An ACC responsible for ATS provision in the Originating State.

5. **Originating AMC**

An AMC responsible for airspace planning and allocation in the Originating State.

6. **Originating State**

A State from which aircraft that operate in an area subject to cross-border sharing are originated.

#### A.2 Abbreviations

Note: Abbreviations marked with an \* are non-ICAO abbreviations.

## Appendix B

### List of Areas Subject to Cross-Border Sharing

Effective:

Revised:

#### **B.1 List of Areas Applicable**

1. TRA or TSA or D or R area [x] (Details describing position, geographical coordinates, subdivided portions, applicable flight levels and other relevant information as appropriate).
2. ...

## Appendix C

### Airspace Sharing Request and Vacancy Notification

Effective:

Revised:

#### **C.1 Airspace Sharing Request Format and Content**

(Details of Airspace Sharing Request to be described here).

#### **C.2 Airspace Sharing Vacancy Notification**

(Details of Airspace Sharing Vacancy Notification to be described here).

#### **C.3 Means of Airspace Sharing Request and Vacancy Notification**

(Means of exchanging Airspace Sharing Request and Vacancy Notification to be described here, e.g. using ASM Tool, fax, email, etc.).

## Appendix D

### Booking, Allocation and Allocation Notification

Effective:

Revised:

#### D.1 General Provisions.

1. The following procedures related to booking, allocation and allocation notification of airspace in the area(s) subject to cross-border sharing apply:

#### D.2 Periods of Activity

1. (Details of potentially available activation periods of the area(s) subject to cross-border sharing to be specified).

#### D.3 Subdivision of the Area(s) Subject to Cross-Border Sharing

1. (Details of subdivision to be specified if applicable).

#### D.4 Booking Method(s)

1. (Details of agreed methods to be specified, e.g. responsibilities, procedures, means, etc.)

#### D.5 Booking Assurance Instruments

1. (Details of agreed booking assurance instruments to be specified).

#### D.6 Maximum Number of Participating Aircraft

1. (Maximum agreed number of participating aircraft in the area(s) subject to cross-border sharing to be specified).

#### D.7 Priority Allocation Rules

1. D.7.1 (Agreed priority airspace allocation rules in the area(s) subject to cross-border sharing to be specified).

#### D.8 Time-Based Parameters

1. (Any time-based parameters related to airspace allocation in the area(s) subject to cross border sharing to be specified).

#### D.9 Allocation Notification Method

1. (The agreed format, content and the means of airspace allocation in the area(s) subject to cross-border sharing to be specified).

#### D.10 Communication with Parent Unit

1. (Roles and responsibilities of communication with a parent unit(s) of aircraft transiting to operate in the area(s) subject to cross-border sharing to be specified).

#### D.11 (Additional items as appropriate

## Appendix E

### ATS Procedures

Effective:

Revised:

#### **E.1 Responsibility and Liability for Provision of ATS**

1. The [ACC] is responsible and liable for the provision of ATS to the aircraft transiting from the Originating State to the area(s) subject to cross-border sharing.

(Detailed transit conditions to be specified).

2. E.1.2 The [ACC and/or appropriate Air Defence Unit] is responsible and liable for the provision of ATS to the aircraft operating within the area(s) subject to cross-border sharing.

(Detailed operating conditions to be specified).

3. (Additional details relevant to responsibility and liability to be specified).

#### **E.2 Airspace Classification**

1. (Details of airspace classification relevant to the aircraft transiting to the area(s) subject to cross-border sharing if applicable).

2. (Details of airspace classification relevant to the aircraft operating within the area(s) subject to cross-border sharing if applicable).

#### **E.3 Minimum ATS Facilities**

(The following minimum agreed ATS facilities to be specified):

1. (Radar service details, e.g. primary and/or secondary radar service for each aircraft transiting to and operating within the area(s) subject to cross-border sharing).
2. (Operating frequencies, e.g. frequencies relevant for each phase of a flight).
3. (Ground-ground communication facilities).
4. (Other applicable facilities).

#### **E.4 Language Used in ATS Provision**

1. In communication with aircraft transiting to or operating within the area(s) subject to cross border sharing [language] and/or [language] is used.
2. (Details of language applicable to different phases of the flight of aircraft transiting to or operating within the area(s) subject to cross-border sharing if more than one language applies).

#### **E.5 Flight Plan Data Exchange**

1. (Specify flight plan data exchange requirements, formats and means).
2. (Specify methods, timing, format and means of revision to previously provided and/or coordinated flight data).

#### **E.6 ATC Sectorisation**

1. (Specify ATC sectorisation relevant for transiting to or operating within the area(s) subject to cross-border sharing).

**Appendix E (Cont.)**

Effective:

Revised:

**E.7 ATC Procedures**

*E.7.1 Transfer of identity*

*E.7.2 Transfer of control*

*E.7.3 Transfer of communication*

*E.7.4 SSR code assignment (CCAMS States in coordination with NM);*

*E.7.5 Communication facilities and related procedures*

*E.7.6 Transit procedures*

*E.7.7 Procedures within the area(s) subject to Cross-Border Sharing*

*E.7.8 Procedures for unmanned operating flights*

*E.7.8 Separation criteria*

*E.7.9 Buffers applied in relation to area(s) subject to sharing*

*E.7.10 ATC Coordination procedures*

*E.7.11 (Other if applicable).*

**E.8 ATS Occurrence Reporting**

*E.8.1 (Specify format, content and means of ATS occurrence reporting).*

**E.9 (Additional Items as appropriate)**

## Appendix F

### **Contingency Procedures**

Effective:

Revised:

#### **F.1 Contingency Procedures**

(Applicable procedures specific for each contingency to be specified in detail)

*F.1.1 Alerting Service*

*F.1.2 Service to aircraft in emergency*

*F.1.3 In-flight contingencies*

*F.1.4 Interception of (civil) aircraft / unlawful use of airspace*

*F.1.5 Information exchange between civil and military authorities / units*

*F.1.6 Failure of ground-ground communication*

*F.1.7 Failure of air-ground communication*

*F.1.8 (Additional items as appropriate).*



## Annex 10 – ASM-NM Agreement

<p style="text-align: center;"><b>ASM-NM AGREEMENT</b></p> <p style="text-align: center;"><b>between</b></p> <p style="text-align: center;"><b>Airspace Management Cell of STATE NAME</b> (hereinafter "AMC")</p> <p style="text-align: center;"><b>and</b></p> <p style="text-align: center;"><b>the European Organisation for the Safety of Air Navigation</b> (hereinafter EUROCONTROL)</p> <p style="text-align: center;"><b>on</b></p> <p style="text-align: center;"><b>Flexible Use of Airspace Coordination and Contingency Procedures</b></p>
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Classification:

AMBER

Sensitive information with limited disclosure.

Effective:

Day-month-year (Date of last signature or other date agreed in writing by the parties (see section 10))

The terms and abbreviations contained in this Agreement shall have the meaning conferred to them in the European Route Network Improvement Plan Part 3 - Airspace Management Procedures - The ASM Handbook<sup>1</sup>.

## 1. PURPOSE

1. The purpose of this ASM-NM Agreement is to set out the coordination and contingency procedures to be applied between AMC and EUROCONTROL as required for the implementation of the Flexible Use of Airspace (FUA) concept.

## 2. SCOPE

1. The roles and responsibilities of the AMC and EUROCONTROL relating to the FUA Concept as well as the applicable procedures are described in the EUROCONTROL ASM Handbook and the Flexible Use of Airspace AMC/CADF Operations Manual, referred to in Section 3 below.
2. This ASM-NM Agreement sets out in Annex C, where necessary, the complementary procedures (Specific National Contingency Measures) to be applied in addition to the contingency procedures described in Section 4 below.

## 3. CO-ORDINATION PROCEDURES

3. The AMC and EUROCONTROL shall apply the co-ordination procedures set out in the latest version of the following documents<sup>2</sup>:
  - a) EUROCONTROL Specification for the application of the Flexible Use of the Airspace (FUA) [Edition 1.1, dated 10.01.2009, EUROCONTROL-SPEC-0112, Chapter 4];
  - b) European Route Network Improvement Plan Part 3 – Procedures for Airspace Management, The ASM Handbook Edition 5.9 - dated 23 November 2021 (Section 2, Section 4, and Section 6);
  - c) Flexible Use of Airspace AMC/CADF Operations Manual Edition 12.0, dated 30.06.2020.
  - d) FTIs (FUA Temporary Instructions);
4. The documents referred to in paragraph 3.1 above and any specific procedures set out at Annex C form an integral part of this ASM-NM Agreement.
5. It is understood that it will always be the latest versions of the documents referred to in paragraph 3.1 above that will be applicable. The latest versions can be found on the dedicated Airspace library sections of the EUROCONTROL website and under the specific web links indicated at Annex A.

## 4. CONTINGENCY PROCEDURES

1. The generic contingency procedures are described in Annex B.

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<sup>1</sup> Internet links to the reference documents are available at Annex A.

<sup>2</sup> Internet links to the reference documents are available at Annex A.

2. Additional Specific National Contingency Measures are presented in Annex C. The AMC may provide an AMC-AUP contingency template in Annex C. It is the responsibility of the AMC to inform EUROCONTROL/CADF of any modification that does affect the content of Annex C. For that purpose, the AMC shall follow the procedure to modify Annex C as indicated at Section 6 below.
3. In case of temporary measures, a dedicated FTI will be prepared between AMC and EUROCONTROL.

## 5. PUBLICATION OF AUP/UUP DATA

1. In addition to the information related to the conditional routes ("CDR1") status, EUROCONTROL is authorised to provide public access through its NOP Portal to the following information related to the areas published in the AUPs/UUPs:
  - a) AIP areas designator;
  - b) Flight level block;
  - c) Validity period, and
  - d) Associated restrictions.
2. Any other information related to the areas published in AUPs/UUPs has to be considered as "restricted", with access limited to national civil and military units.

## 6. AMENDMENTS AND DEVIATIONS

### 6.1. Amendments

- a) Amendments to this ASM-NM Agreement require the mutual consent of the Parties at the level of the signatories of the ASM-NM Agreement in writing.
- b) The revision of the Annexes A and/or C to this ASM-NM Agreement requires the mutual consent of:

AMC: STATE NAME: IDENTIFICATION OF THE RESPONSIBLE AUTHORITY  
EUROCONTROL: Head of Network Operations Services
- c) The revision of Annexes A or C shall be triggered in writing<sup>3</sup> respectively by either Party to the other Party mentioned in paragraph b) above.

### 6.2. Temporary Deviations

- a) If necessary and subject to the prior approval by EUROCONTROL, the AMC may introduce temporary deviations (i.e. FTI) from the procedures laid down in this ASM-NM Agreement.
- b) The AMC responsible person (as indicated in Annex C) will trigger the coordination by e-mail, fax or telephone providing identification number.
- c) The FTI shall override the contents of this ASM-NM Agreement if established in accordance with the procedures contained in paragraph

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<sup>3</sup> be sent by email and acknowledged by return of email. If there is an AMC-AUP contingency template in Annex C, any change to it by the AMC must be specified in the email and validated by EUROCONTROL in return.

4.10 of the ASM Handbook and if established in accordance with paragraph a) above.

### 6.3 Incidental Deviations

3. In situations where urgency requires incidental deviation from the procedures specified in this ASM-NM Agreement without following the formal requirements set out in paragraphs 6.1. and 6.2. above, AMC and EUROCONTROL staff are expected to exercise their joint best judgment to ensure efficient co-ordination.

## 7. DISPUTE SETTLEMENT

1. The Parties shall endeavour to reach an acceptable solution between them on any dispute relating to this ASM-NM Agreement.
2. In the event that the Parties should be unable to find an amicable solution, each Party shall refer the dispute to its superior authority and/or body for final and binding settlement.

## 8. POINTS OF CONTACT

1. The details of points of contact are listed in Annexes A and C.

## 9. ENTIRE AGREEMENT

1. This ASM-NM Agreement and its attached Annexes represent the entire agreement between the Parties and supersede any previous oral or written agreements regarding the same subject matter.

## 10. ENTRY IN TO EFFECT - DURATION - TERMINATION

1. This ASM-NM Agreement shall enter into effect on the date of its signature by both Parties unless another date has been agreed in writing between the Parties.
2. This ASM-NM Agreement shall remain in effect for an indeterminate period.
3. This ASM-NM Agreement may be terminated by either Party at any time, subject to providing the other Party with 60 (sixty) calendar days written notice. Done in two (2) originals:

For and on behalf of XXX	For EUROCONTROL For and on behalf of the Director General
Signature  _____	Signature  _____
NAME	Iacopo PRISSINOTTI
Director XXX	Director Network Management
Date:	Date:

**Annex A****Specific Network Manager Information Subject to Regular Updates****1 Details of the NM points of contact**

EUROCONTROL
<i>First Name - Last Name</i>
Head of NMD/NOM/NOS
Tel.: +32 2 729 98 20
Email: xxxxxx.xxxxxx@eurocontrol.int

**2 Internet links to download NM reference documents**

1. EUROCONTROL Specification for the application of the Flexible Use of the Airspace:  
<https://www.eurocontrol.int/publication/eurocontrol-specification-application-flexible-use-airspace-fua>
2. European Route Network Improvement Plan Part 3 - Airspace Management Procedures -The ASM Handbook:  
<https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3>
3. Flexible Use of Airspace AMC/CADF Operations Manual:  
<https://www.eurocontrol.int/publication/flexible-use-airspace-fua-amccadf-operations-manual>
4. Airspace library sections of the EUROCONTROL website:  
<https://www.eurocontrol.int/network-operations#library>

**Annex B****Generic Contingency Procedures**

**Preamble:** these procedures refer only to the publication of AUP at D-1 and in principle no UUP Publication is expected during the application of the contingency procedures.

**B.1. The AMC cannot process AUP via CIAM/local ASM tool but all NM systems are serviceable and other communication means between AMC and NM are working.**

It means that:

- the contingency does not impact the AIRAC CACD Database preparation (static data) but only the dynamic updates of CACD by the national AUP and the EAUP preparation/distribution,
- the CIAM/local ASM tool is not available for the AMC but other means of communication with CADF are available (e.g. telephone or email), and
- CIAM is available for CADF

In the situation described above, the following procedures (also valid in case of unavailability of B2B service) shall be applied:

**B.1.1 ACTION BY THE AMC**

- a. The AMC:
  1. sends the relevant AUP information to CADF by other means (message or file in ACA format, via email), or
  2. asks CADF to implement the AMC-AUP contingency template (ASM-NM Agreement-Annex C and/or file in ACA format)
- b. If none of the information described in a) above is available, informs CADF if there is a NOTAM published with the AUP content on the non-availability of CDR1/ATS routes and/or the activation of RSAs and their associated restrictions, for CADF to create an AUP with the NOTAM information on behalf of the AMC, or
- c. Requests CADF to issue a NIL AUP<sup>4</sup>.

**B.1.2 ACTION BY CADF:**

- a. CADF will create manually in CIAM (see MANUAL PROCEDURE at point B.3) an AUP on behalf of the AMC with the information on non-availability of CDR1/ATS routes and/or activation of RSAs and their associated restrictions:
  1. received by other means (e.g. ACA format via email), or
  2. published by NOTAM if so informed, or
  3. from the AMC-AUP contingency template (ASM-NM Agreement-Annex C) if so requested
- b. In case of discrepancy<sup>5</sup> between the information received and CACD, if communication is possible with AMC, CADF will verify the information with the AMC and proceed accordingly.

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<sup>4</sup> A "NIL AUP" means that the CACD data will not be modified (e.g. all NAM are automatically published in the EAUP/EUUP and will remain published in case of NIL AUP.

<sup>5</sup> A discrepancy is a mismatch, an inconsistency, between the CACD definition of a CDR1/ATS route or RSA and the information from a NOTAM, from the AUP/UUP received by other means than the nominal automated process or B2B or from the AMC-AUP contingency template.

- c. In case of discrepancy between the information received and CACD and no communication possible with the AMC, CADF will apply the DISCREPANCY PROCEDURE (B.3bis).
- d. If no AUP is received, no AMC-AUP contingency template exists, no NOTAM was published and if so requested by the AMC, CADF will create a NIL AUP<sup>6</sup> on behalf of the AMC.

**B.1.bis: The local ASM tool (authorised to provide AUP via B2B) is unserviceable at the AMC for B2B process of the AUP**

If the AMC is using a local ASM tool and cannot process the AUP via B2B, CIAM can be used as backup. If alternate utilisation of CIAM is not feasible (unserviceable or not available), case B.1 above will apply.

**B.2 NM cannot process the national AUPs into EAUP but CACD (static data) and IFPS are serviceable.**

It means that:

- all is serviceable on the AMC side (CIAM or any ASM tool authorised to provide AUP via B2B)
- the unavailability of the CACD and CIAM at NM does not impact the AIRAC CACD Database preparation (static data) but only the dynamic updates of CACD by the national AUP and the EAUP preparation / distribution.

In the situation described above, the following contingency procedures shall be applied:

**B.2.1 Action by CADF:**

- a. CADF will send an AIM and publish the information on the NOP portal<sup>7</sup> (if necessary, CADF will inform stakeholders by any means of communication available) to create awareness on the contingency situation and that the EAUP publication might be delayed.
- b. If return to normal is expected before 2000UTC (1900UTC Summer)
  - 1. **A delay may be expected** for EAUP publication.
  - 2. If the contingency situation persists so that EAUP cannot be published at 1600UTC (1500UTC Summer), CADF will send out an AIM and publish the information on the NOP portal<sup>8</sup> to inform that the **EAUP publication will be delayed**
- c. If it appears that the contingency situation will persist after 2000UTC (1900UTC Summer), CADF will send an AIM and publish the information on the NOP portal<sup>9</sup>, and if necessary, inform stakeholders by any means of communication available to indicate that **no EAUP will be published.**

As soon as possible, CADF will apply **B.3 MANUAL PROCEDURE.**

**B.2.2 Action by the AMC:**

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<sup>6</sup> See footnote 4

<sup>7</sup> "Network Headlines News" section.

<sup>8</sup> See footnote 7

<sup>9</sup> See Footnote 7

- a. If the AMC is still open when NM returns to normal, the AMC will prepare/validate the AUP and process it normally;
- b. If the AMC will not remain open until 2000UTC (1900UTC Summer), the AMC will prepare/validate the AUP and send it to CADF before closing (message or file in ACA format, via email), or request CADF to implement the NOTAM, the AMC-AUP contingency template or a NIL AUP<sup>10</sup>, for CADF to be able to use the information received in the case the systems return to normal or for manual implementation, as applicable<sup>11</sup>.

### **B.3 MANUAL PROCEDURE (applicable to both B.1 and B.2 or a combination thereof)**

- a. For all cases where CADF will not be able to use the nominal automated process, CADF will implement manually into CIAM or CACD the AUP information (non-availability of CDR1/ATS routes and/or the activation of RSAs and their associated restrictions) made available via:
  1. email or file in ACA format (applicable for case B1 only),
  2. a published NOTAM (applicable for case B1 only),
  3. the AMC-AUP contingency template (ASM-NM Agreement-Annex C) (applicable for cases B1 and B2); **For case B2, in absence of AMC-AUP contingency template, a NIL AUP<sup>12</sup> will be applied<sup>13</sup>.**

The manual implementation is a long and heavy process due the huge amount of data to be inserted manually by CADF into CACD. When applied, and in particular for the case B.2, the manual implementation will intervene as soon as possible and CADF will coordinate the actual progress with the relevant AMC(s) and indicate the progress of the manual implementation by AIM and on the NOP portal<sup>14</sup>, for all stakeholders and airspace users to be informed.

- b. In cases as described in a. above, the NM system cannot act as a filter and automatically notify the AMC of possible discrepancies between the information received and CACD. In case of discrepancy detected by CIAM or CACD, if communication is possible with AMC, CADF will verify the information with the AMC and proceed accordingly.
- c. In case of discrepancy between the information received and CACD and no communication possible with the AMC, CADF will apply the DISCREPANCY PROCEDURE (B.3 bis).

### **B.3bis DISCREPANCY PROCEDURE**

- a. **DEFINITION<sup>15</sup>:** A discrepancy is a mismatch, an inconsistency, between the CACD definition of a CDR1/ATS route or RSA (and the associated restrictions) and the

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<sup>10</sup> See footnote 4

<sup>11</sup> In such case, AMCs shall verify as soon as possible if their input has been implemented manually by NM and act accordingly.

<sup>12</sup> See footnote 4

<sup>13</sup> Even during the application of this contingency procedure, States are responsible for traffic separation.

<sup>14</sup> See footnote 7

<sup>15</sup> Explanatory note: the nominal automated CIAM/B2B process would normally reject a non-conform AUP and automatically notify any discrepancy with CACD to the AMC. This "discrepancy" procedure is relevant for any contingency case where:

- The AUP is transmitted by other means than the nominal automated CIAM/B2B process and therefore the AUP content is not automatically rejected in case of discrepancy,
- A discrepancy is detected against CACD while attempting a manual update, directly or via CIAM,
- No contact at all is possible between CADF and the AMC to solve the discrepancy.

information from a NOTAM, from the AUP/UUP received by other means than the nominal automated process or B2B or from the AMC-AUP contingency template.

Based on the AUP content, the discrepancies could refer to the following elements<sup>16</sup>:

- For routes:
  - Route ID = wrong ID submitted (doesn't exist in CACD);
  - Between/And Points = wrong Between/And Points (doesn't exist in CACD or refers to another route);
  - MNM FL = outside the limits defined in CACD
  - MAX FL = outside limits defined in CACD
  - WEF = outside limits defined in CACD
  - TILL = outside limits defined in CACD
- For RSAs:
  - RSA ID = wrong ID submitted (doesn't exist in CACD);
  - FBZ ID = wrong ID submitted (doesn't exist in CACD);
  - MNM FL = outside the limits defined in CACD;
  - MAX FL = outside the limits defined in CACD;
  - WEF = outside the limits defined in CACD;
  - TILL = outside the limits defined in CACD;
  - Restrictions ID = wrong ID submitted (doesn't exist in CACD or refers to another RSA)
  - NPZ wrong ID submitted (doesn't exist in CACD);

#### b. ACTIONS:

If, for any reason, there is a discrepancy between the AUP received and implemented manually<sup>17</sup> by CADF (email with message or file in ACA format, or NOTAM) or the AMC-AUP contingency template<sup>18</sup> Applicable for cases B1 and B2. and CACD, CADF shall **verify the information with the AMC and proceed accordingly**.

If there is **no contact at all with the AMC** (or the backup facility, or FMP), the following actions will be taken by CADF:

1. If the AMC has published the AUP information in a NOTAM, this NOTAM will be implemented<sup>19</sup> under the State's responsibility, even if there is a discrepancy with CACD. This is valid only for the vertical and time parameters.
2. If the subject of the discrepancy is one of the flexible elements of a correct and identified CDR1/RSA, like time or vertical limits activated, but not notified via NOTAM, the CACD will be kept as the reference and applied as it is.

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<sup>16</sup> FIR/UIR are defined by the NM system automatically.

<sup>17</sup> Applicable for case B1 only.

<sup>18</sup> Applicable for cases B1 and B2.

<sup>19</sup> Applicable for case B1 only.

3. If the subject of the discrepancy is a non-existing RSA ID, or FBZ ID or Restriction ID or a mismatch between the activated RSA and the Restriction ID, NM will “sterilize” (activate) all flexible structures to implement the safest possible option and notify that by AIM and by publishing the information on the NOP portal<sup>20</sup>.
4. For the cases where the CDR1/ATS route IDs concerned by the discrepancy cannot be ascertained, NM will “sterilize” all CDR1s (make all CDR1s unavailable) and all ATS routes crossing an RSA<sup>21</sup> (make all ATS routes crossing an RSA unavailable) to implement the safest possible option and notify that by AIM and by publishing the information on the NOP portal<sup>22</sup>.
5. If the subject of the discrepancy is a non-existing NPZ ID, NM will activate all the NPZs from the concerned AMC AoR and notify that by AIM and by publishing the information on the NOP portal<sup>23</sup>.
6. CADF will send a specific AIM to explain to airspace users the measures applied for the State concerned and their justification and will publish the information on the NOP portal<sup>24</sup>.

#### **B.4 CACD serviceable at NM, but IFPS cannot be updated with EAUP/EUUP information**

- a. CADF will receive an alerting message from CSO about the failure of CACD to pass EAUP/EUUP information to IFPS for validation of FPL;
- b. CADF will inform AMCs of the situation and actions executed. AMCs will inform local FMPs/Supervisors of the situation (risk of potential flights accepted on);
- c. FMPs/Supervisors will evaluate the need to ask for regulations;
- d. NM will send an AIM and publish the information on the NOP portal<sup>25</sup> as soon as possible to inform stakeholders and create awareness on the situation and the impossibility for IFPS to process EAUP/EUUP data.

#### **B.5 Complete outage of AMC**

- a. The AMC will decide/contact the alternate AMC facility to take over all AMC tasks;
- b. If no alternate AMC facility exists<sup>26</sup>, the AMC will try to contact CADF;
  1. if communication is possible, the AMC will ask CADF:
    - to implement the AUP published in a NOTAM
    - to implement the contingency measures described in Annex C of the ASM-NM Agreement, (and AMC-AUP contingency template when applicable), or
    - any other specific measures, including NIL AUP<sup>27</sup>.

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<sup>20</sup> See footnote 7.

<sup>21</sup> In case of contingency, ATS routes that are not crossing an RSA shall not be made unavailable by AUP.

<sup>22</sup> See footnote 7.

<sup>23</sup> See footnote 7.

<sup>24</sup> See footnote 7.

<sup>25</sup> See footnote 7

<sup>26</sup> It implies that NO local actor, e.g. FMP, is in the position to replace the AMC.

<sup>27</sup> See footnote 4

2. if communication is not possible, CADF will implement the contingency measures described in Annex C of the ASM-NM Agreement (and AMC-AUP contingency template when applicable).
- c. If there is no NOTAM and no ASM-NM Agreement, and no contact possible with the AMC, CADF will close all flexible structures (as described above in points 3, 4 and 5 of “b.actions” in the DISCREPANCY PROCEDURE (B.3 bis)).
- d. CADF will send a specific AIM to explain to airspace users the measures applied for the State concerned and their justification and will publish the information on the NOP portal<sup>28</sup>.

Note: In those cases when the failures described in the contingency procedures occur after the EAUP publication, the following needs to be considered:

- For the release of an airspace that had been booked, the procedure is to be considered as non-blocking and is therefore not eligible among the contingency procedures. The additional availability of airspace will be treated tactically by ATCOs.
- For the additional non-availability of CDR1/ATS routes and/or RSAs activation notified by local AMCs (UUP format or NOTAM via email/fax as well as information of published NOTAM via email), CADF will create a UUP on behalf of the AMC (“Procedure 3”), or will introduce the information in CACD, according to the procedures described in the previous paragraphs.

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<sup>28</sup> See footnote 7.

**Annex C****SPECIFIC NATIONAL INFORMATION SUBJECT TO REGULAR UPDATES****1. Details of the national points of contact**

AMC	Other
NAME	
FUNCTION/JOB TITLE	
TELEPHONE NUMBER	
EMAIL	

**2. Specific National Contingency Measures**

AS APPLICABLE

**3. AMC-AUP Contingency template**

AS APPLICABLE

## **Annex 11 – ASM System Support**

### **ASM System Support**

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### **Baseline Operational Requirements**

Effective:

## 1 INTRODUCTION

### 1.1. Scope

The scope of this document is limited to the operational requirements, organised as follows:

- General operational requirements.
- Baseline operational requirements for the ASM/ATFCM process:
  - collection of airspace structures' reservations requests;
  - airspace structures' reservations requests impact assessment at local/FAB and network level;
  - airspace allocation data distribution;
  - notification of airspace data information:
    - update data environment;
    - notification process.
- Operational requirements for ASM performance monitoring.

The document does not cover hardware requirements. It does not aim to determine networks, conceptual and physical links. In the ISO/OSI model it is limited to the application layer.

ASM/ATFCM-ATC systems interoperability for ATC tactical operations (e.g. tactical crossing of areas) are out of the scope of this Annex. Improvements derived by ASM/ATFCM developments at tactical level will be addressed in the review of ADEX-P standard.

The operational requirements will be used by operational and technical experts to identify the technical specifications to develop and implement tools required. These technical specifications are not covered by this Annex.

Policies and procedures including legal, physical and technical controls involved in information risk management processes (e.g. cyber-security risk assessments; business continuity management) are out of the scope of this document.

NM data management and system-to-system interoperability are out of the scope of this Annex.

### 1.2. Purpose

The purpose of this Annex is to describe the operational requirements for the system support required for the implementation of ASM/ATFCM processes and procedures as well as ASM performance monitoring activities, as described in the "ERNIP Part 3 - ASM Handbook".

This Annex is addressed to ATM managers and operational and system experts:

- Managers should be able to decide on the selection and development of certain support systems capabilities;
- Operational experts should be able to understand the operational requirements for system support and assist system experts in the design and development tasks.

### 1.3. Structure of the document

The Annex consists of three sections:

- **Section 1 "Introduction"** defines the context, scope and purpose of the document and provides reference information.
- **Section 2 "Overview of system support to airspace management"** is addressed to operational and technical ATM managers. This section:
  - provides a general overview of the operational requirements for system support to airspace management;
  - presents the operational concept for system support;
  - describes the baseline processes.

This section updates the information in the chapter "Operational concept for system support" in the light of current developments of the ASM/ATFCM CONOPS providing information to managers to:

- understand the system support operational requirements;
  - decide on the relevance of these operational requirements;
  - plan and budget related systems developments.
- **Section 3 "Baseline requirements"** is addressed to operational and system experts. It is intended to be a baseline for the development of more detailed operational requirements and system specifications. It will be useful for the development of information and training programs for technical and operational staff.

This section is broken down in specific subsections covering the different phases of the ASM/ATFCM process, including ASM performance monitoring activities, in order to better understand systems support required for each phase as well as to better clarify which stakeholders are involved. It also includes a set of generic requirements aiming at highlighting the compliance of system functionalities with regulatory requirements.

Here is the list of subsections identified:

- Regulatory requirements
- Planning phase requirements
- Local/FAB assessment requirements
- Airspace data transmission requirements
- Network assessment requirements
- Data repositories update requirements
- User notification requirements
- ASM performance monitoring requirements

In addition, the following three appendixes complete the Annex:

- **Appendix A** provides the list of reference documents;
- **Appendix B** contains the table of definitions;
- **Appendix C** contains the table of abbreviations.

#### 1.4. Requirements characterisation

The operational requirements described in this Annex are compliant with the following keyword conventions:

- Requirements using the operative verb "SHALL" are baseline requirements;
- Requirements using the operative verb "SHOULD" are recommended requirements;
- Requirements using the operative verb "MAY" are options;
- Requirements using the operative verb "WILL" represent a statement of intent by any partner to implement a requirement.

The requirements are individually referenced by an identifier based on the following structure:

**SSA-[Fn]-[nnn]**

where:

- **SSA** stands for System Support ASM
- **[Fn]** is a 2-5 characters code identifying the operational procedure or category to which the requirement applies (e.g. PL - Planning);
- **[nnn]** is a numeric identifier, for a sequence of requirement with the same [Fn] identifier;

Each requirement is also followed by a system functional allocation:

- Local system: any systems used by external stakeholders exchanging data concerning the ASM/ATFCM processes.
- NM system: any systems used by the Network Manager.

Requirements may be followed by a free text note or example to give additional explanations or supplementary information.

## 2. OVERVIEW OF SYSTEM SUPPORT TO AIRSPACE MANAGEMENT

This section is primarily addressed to decision-makers and planners in the field of ATM. However, it can also be read by experts as an introduction to the operational requirements described in Section 3 "Baseline requirements".

### 2.1 Operational concept for system support

The European Commission Regulation (EC) No 2150/2005 of 23 December 2005 **Error! Reference source not found.** lays down common rules for the flexible use of the airspace. It reinforces and harmonises the application, within the Single European Sky, of the concept of the flexible use of airspace in order to facilitate airspace management and air traffic management within the limits of the common transport policy. In particular, this Regulation sets out rules to ensure better cooperation between civil and military entities responsible for air traffic management that operate in the airspace under the responsibility of Member States.

The Airspace Management (ASM) Handbook specifies the general ASM functions needed to apply and fully exploit the Concept of the Flexible Use of Airspace.

The ASM process addresses different activities:

- collection of long term airspace planning data, also refer to as strategic, ASM Level 1, data;
- negotiation and consolidation of the airspace planning/reservation data;
- distribution of the airspace allocation plan for the notification to the users;
- tactical activation and deactivation of the airspace structures.

These activities involve entities and organisations, which vary per country, depending on the way the FUA concept is implemented. However, the final product as a result of the planning activities and relevant to the aviation community is the daily airspace use plan and the updates thereof (AUP/UUPs)<sup>1</sup>.

Today, the AUP/UUPs are the output of a local civil - military airspace coordination process based on local/national procedures, rules and agreements in place. The production and sharing of the AUP/UUPs follow the agreed procedures described in the ASM Handbook. The Network Manager collects the national AUP/UUPs and produces the European EAUP/EUUPs. The EAUP/EUUPs are the common harmonised format to share on network level the planned and consolidated information with regard to airspace allocation.

At FUA Level 3, the tactical activation and de-activation of the airspace structures is performed by the responsible entities and follows the latest airspace allocation plan. This does not exclude deviations from the plan where they are agreed.

ASM support systems shall support the Deployment Baseline Operational Improvement steps identified in the SESAR Master Plan relevant to airspace management, in compliance with standard data formats and protocols agreed on regional (pan-European) level, in order to ensure systems seamless interoperability and relevant regional (pan-European) databases synchronisation.

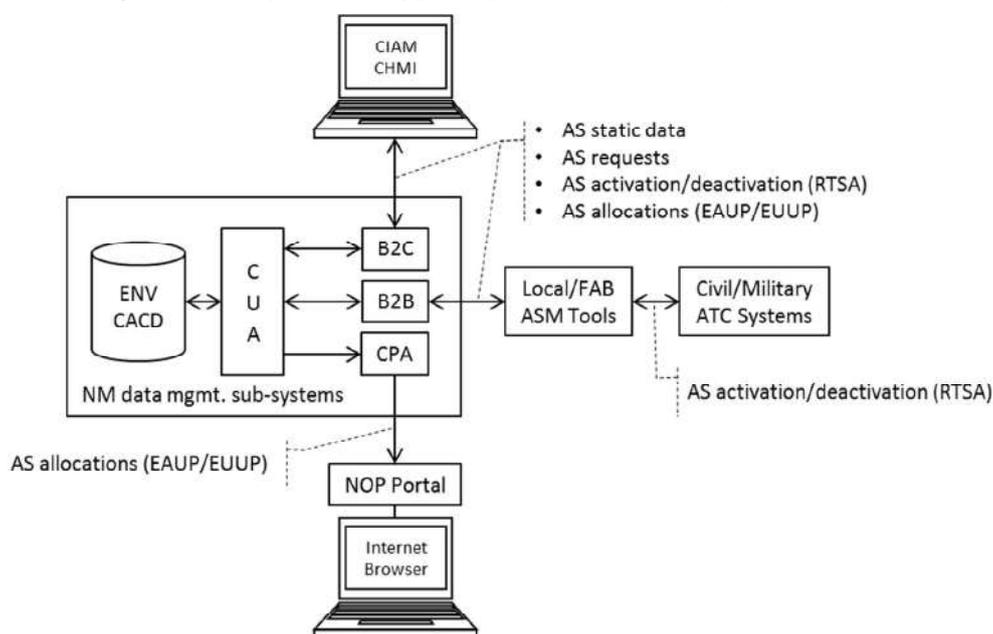
The operational requirements for system support to the ASM improvement Initiative can be divided in three macro-categories:

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<sup>1</sup> The evolution of real time data management could introduce modification in the means of notification, according to SESAR Network Operations concept developments, Ref [8].

1. Regulatory requirements derived from the relevant regulatory provisions and based on existing best practices.
2. Support to ASM/ATFCM management process, aiming at improving the effectiveness of the entire planning process, including analysis of the requests in order to identify the best options to satisfy civil/military requests.
3. Support to users notification process, aiming at ensuring a timely effective distribution of updated airspace status to the users in order to provide information for FPL operations.

**Error! Reference source not found.** describes the information/messages flows among different systems components supporting the ASM/ATFCM process<sup>2</sup>.



### 2.1.1. Concept elements in a FAB environment

In a FAB environment ASM Support Systems shall facilitate the seamless application of the ASM/FUA processes at FAB level, including the coordination of CBOs within CBAs. The collaboration between local ASM Support Systems should enable the optimization of airspace allocation within FABs, thus ensuring safety, providing more capacity for civil traffic while maintaining the military mission effectiveness.

Depending on the ASM Support Systems currently in use or planned to be developed in the countries within a FAB, different system architectures are possible. E.g. it could be that one system is used by each of the FAB members or FAB members are using different systems. It is also possible to have a FAB where all members use a single ASM Support System and the airspace management is performed on FAB level. To this end, mechanisms and functionalities supporting the negotiation and the coordination of the airspace allocation at FAB level shall be available.

<sup>2</sup> This figure will be reviewed according to the implementation of relevant Centralised Services (i.e. CS4 and CS5).

While the use of a common or a single ASM Support System could ease the exchange of ASM data among FAB members, the use of different systems requires functionalities on the systems that support exchange of ASM data among them. These functionalities shall use the standard data formats and protocols agreed on regional (pan-European) level for data exchange.

Within a FAB, the ASM Support System of one state interfacing with the other states' ASM Support Systems shall present an overview of the planning and airspace structures status, covering pre-tactical and tactical phases, i.e. the ASM actors of one state, subject to given privileges, shall be able to follow airspace structures status managed by the ASM Support Systems of other FAB members. Moreover, the ASM actors shall be able to reserve and coordinate via the HMI of their own system, airspace structures that are subject to CBO (e.g. CBA) and managed by the other states' ASM Support Systems.

The functionalities of the ASM systems interfacing in a FAB environment shall support a CDM process, involving all parties concerned and allowing transparent and informed decision making. These functionalities shall include at least options for exchanging airspace allocation proposals.

## 2.2 Baseline process

The system support required for the ASM/ATFCM processes includes the following activities, starting with the definition of the airspace structures data, the collection of airspace requests, until the final notification to the users:

- **Definition of airspace structures:**
  - The responsible authorities share with the NM the definitions of the national airspace structures, called "Static data".
  - Ensure consistency between the local and NM airspace structures definitions.
- **Strategic/Long term airspace planning:**
  - Civil and Military authorities draft and share the planning of major exercises and events with each other and the Network Manager.
  - Civil and Military authorities continuously update their strategic planning.
  - NM collects and includes the local plans into the NOP.
  - NM negotiates, as required, the local plans to ensure consistency at Pan-European level.
- **Pre-tactical and tactical airspace planning:**
  - Airspace users request airspace structures in line with missions' requirements.
  - Airspace users link, if require, the airspace structures requests with the relevant strategic planning.
  - Military airspace requests are de-conflicted within the military organisation and shared with the national AMC.
  - Civil requests are shared with national AMCs.
  - Intent AUPs and UUPs are used locally to collect the requests received and first result of local/FAB impact assessment.

- AMCs negotiate the national airspace allocation plan (draft AUP) and its updates (draft UUP) with the relevant stakeholders (e.g. adjacent AMCs, NM).
- AMCs share the final daily airspace allocation plan (AUP) and its updates (UUPs) with the NM.
- NM publishes the daily airspace allocation plan (EAUP) and its updates (EUUP).

AUPs ready are produced, as results of the coordination, daily at a pre-defined time from national Airspace Management Cells to the NM, ATC Units involved and to Approved Agencies/Squadrons.

UUPs are produced from national Airspace Management Cells to the NM, ATC Units involved and to Approved Agencies/Squadrons. At this stage of the development of the ASM/ATFCM process, AUPs/UUPs are issued according to the procedure described in the "ERNIP Part 3 - ASM Handbook", section 4.8.

Tactically-managed airspace changes do not imply the update of the NM ENV database, therefore such information are not available for flight planning purposes<sup>3</sup>.

Due to the heterogeneity of airspace users in terms of capability to get and process airspace status information, different systems are used or planned to be developed in order to disclose airspace information through messages, which can be broadcasted or customised and sent to specific users by means of a publish/subscribe mechanism.

The notification of the users and the support of the FPL management are done through EAUP/EUUP.

EAUP/EUUPs are sent daily via electronic Airspace Management Information (eAMI)<sup>4</sup>, by means of a B2B connection to the subscribed AOs, to all ACCs/FMPs concerned and to all AMCs. Alternatively, the EAUP/EUUP can be publicly accessed on the NOP portal.

- **Execution phase:**

- The responsible airspace manager collects geographical coordinates and monitors any update to RSA information.
- The responsible airspace manager gives pre-notice to the counterpart airspace manager(s) for activation of requested airspace structures.
- The responsible airspace manager activates the requested airspace structures.
- The counterpart airspace manager acknowledges the requested airspace structures activation.
- The responsible airspace manager de-activates the requested airspace structures
- The counterpart airspace manager(s) acknowledges the de-activation
- The responsible airspace manager amends the requested airspace structures as needed.

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<sup>3</sup> To be reconsidered according to the evolution of real time airspace data management.

<sup>4</sup> The eAMI is an electronic message in AIXM format containing much more information, de facto providing the overall airspace status valid at the time of publication.

- **Post-ops analysis:**

- ASM data are collected for analysis.
- ASM data are shared for performance measuring purposes.

### 2.2.1 FAB process

The following actions, constituting the FAB process, shall be conducted in conjunction with the ones listed in the previous baseline process.

- **Strategic/Long term airspace planning:**

- Civil and Military authorities draft, share and negotiate if relevant the planning of major exercises and events with the FAB members.
- Civil and Military authorities continuously update their strategic planning.

- **Pre-tactical and tactical airspace planning:**

- The airspace users request airspace subject to CBO in line with their missions' requirements.
- The airspace users link, if require, the airspace structures with the relevant strategic planning.
- The military airspace requests are de-conflicted within the military organisation of the FAB member hosting the Lead AMC and shared with the other FAB members, if relevant.
- The civil requests are shared with the Lead/FAB AMC.
- Intent AUPs and UUPs are used at FAB level to collect the requests received and the first results of FAB assessment.
- The airspace structures are approved in line with the FAB Level 2 approval process.
- The Lead/FAB AMC negotiate the national airspace allocation plan with the aim to accommodate civil and military demands.
- Draft AUPs are used to share planned requests and support coordination at FAB level.
- The Lead/FAB AMC shares the final daily airspace allocation plan (AUP) with the NM.
- The airspace users share updates to their airspace requests with the Lead/FAB AMC.
- Draft UUPs are used to share planned requests and support coordination at FAB level.
- The Lead/FAB AMC updates the final airspace allocation plan (UUP).
- NM publishes the daily airspace allocation plan (EAUP) and its updates (EUUP).

- **Execution phase:**

- The responsible airspace manager collects geographical coordinates and monitors any updates to RSA information.
- The responsible airspace manager gives pre-notice to the counterpart airspace manager(s) for activation of the area subject to CBO (e.g. in CBAs).
- The responsible airspace manager activates the area subject to CBO.
- The counterpart airspace manager acknowledges the area activation.

- The responsible airspace manager de-activates the area subject to CBO.
  - The counterpart airspace manager(s) acknowledges the de-activation.
  - The responsible airspace manager amends the area as required.
- **Post-ops analysis:**
    - ASM data relevant to FAB is collected for analysis.
    - ASM data relevant to FAB is shared for performance measuring purpose.

### 3. Baseline requirements

The requirements contained in this section are divided in macro-categories covering the different phases of the ASM/ATFCM process. They are introduced by generic regulatory and operational requirements providing the frame supporting any system development.

#### 3.1 Regulatory requirements

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-REG-001</b>	The relevant ASM/ATFCM stakeholders SHALL develop ASM Support Systems in compliance with the requirements stemming from the Commission Regulation (EC) No 482/2008 of 30 May 2008, establishing a software safety assurance system to be implemented by air navigation service providers, in particular Annex I and II.	X	X	
<b>SSA-REG-002</b>	The relevant ASM/ATFCM stakeholders SHALL develop ASM Support System in compliance with the essential requirements stemming from the Regulation (EC) N° 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation), as amended by Regulation (EC) No° 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) N° 549/2004, (EC) N° 550/2004, (EC) N° 551/2004 and (EC) N° 552/2004 in order to improve the performance and sustainability of the European aviation system, in particular Annex II.	X	X	

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-REG-003</b>	The relevant ASM/ATFCM stakeholders SHALL ensure ASM Support Systems provide the NM with the required data specified in commission Regulation (EU) No 123/2019 Annex II Part B 7 (d), and in commission Regulation (EU) No 255/2010, in particular Article 6, 5 (a) and (h).	X	X	
<b>SSA-GEN-001</b>	ASM/ATFCM stakeholders SHALL be able to access the ASM system at any time, through authentication and authorisation mechanisms.	X	X	
<b>SSA-GEN-002</b>	ASM/ATFCM stakeholders SHALL be able to configure ASM support systems in order to adapt to changes to the ASM organisation and procedures.	X	X	
<b>SSA-GEN-003</b>	ASM/ATFCM stakeholders SHALL be able to seamlessly implement ASM/FUA processes by means of support systems for the airspace data collection, booking, data sharing, negotiation, collaboration, allocation, activation and deactivation of airspace structures.	X	X	
<b>SSA-GEN-004</b>	ASM/ATFCM stakeholders SHALL be able to manage any airspace structures and conditions (e.g. FUA restrictions) subject to ASM/ATFCM process.	X	X	
<b>SSA-GEN-005</b>	ASM/ATFCM stakeholders SHALL be able to collect, process and record ASM/FUA data for performance measurement purposes.	X	X	
<b>SSA-GEN-006</b>	ASM/ATFCM stakeholders SHALL be able to exchange airspace status information ensuring a common situational awareness at all times.	X	X	
<b>SSA-GEN-007</b>	ASM/ATFCM stakeholders SHALL be able to archive any recorded ASM/FUA data.	X	X	

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-GEN-008</b>	ASM/ATFCM stakeholders SHALL be able to work according to ICAO standard geodetic reference system.	X	X	
<b>SSA-GEN-009</b>	ASM/ATFCM stakeholders SHALL be able to work according to ICAO standard units of measurement.	X	X	
<b>SSA-GEN-010</b>	ASM/ATFCM stakeholders SHALL be able to work according to ICAO standard temporal reference system.	X	X	
<b>SSA-GEN-011</b>	ASM/ATFCM stakeholders SHALL be prompted with error/warning messages in case of exceptions (e.g. business rules violation; process deviation).	X	X	
<b>SSA-GEN-012</b>	ASM/ATFCM stakeholders SHALL be able to monitor systems operational status.	X	X	
<b>SSA-GEN-013</b>	ASM/ATFCM stakeholders SHALL be at any time able to unambiguously assign an airspace structure to only one ASM Authority.	X		
<b>SSA-GEN-014</b>	ASM/ATFCM as well as AO/CFSP stakeholders SHALL be able to support the different phases of ASM/ATFCM CDM processes (as described in ERNIP Part 3 - ASM Handbook) by exchanging and processing ASM/ATFCM data.	X	X	

### 3.2 ASM reference database

#### 3.2.1 Background

A centralised reference database, up-to-date with the latest information available, will ensure an effective ASM/ATFCM process including a prompt notification to airspace users for FPL purposes.

#### 3.2.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-DB-001	AIS units SHALL be able to update AIS data in the EAD.	X	X	
SSA-DB-002	EAD service provider SHALL be able to update AIS data provided by AIS Units in the NM ENV database.		X	
SSA-DB-003	EAD service provider SHALL be able to update AIS data in the NM ENV database on behalf of those States who have not yet migrated to EAD.		X	
SSA-DB-005	AIS units SHALL be able to perform data integrity checks to validate the AIS static data.	X		
SSA-DB-006	ASM/ATFCM stakeholders SHALL be able to define ad-hoc areas in both local and NM systems.	X	X	Online creation of airspace structures.
SSA-DB-007	ASM/ATFCM stakeholders SHOULD be able to visualise 3D maps representing airspace data at a given effective date.	X	X	
SSA-DB-008	ASM/ATFCM stakeholders SHOULD be able to define business rules to be associated to airspace structures.	X		
SSA-DB-009	ASM/ATFCM stakeholders SHOULD be able to visualise pre-defined airspace scenarios in both local and NM systems.	X	X	
SSA-DB-010	ASM/ATFCM stakeholders SHALL be able to manage complex FUA restrictions, FUA/RAD restrictions and AUP/RAD restrictions, composed by different sub-restrictions.	X	X	

Req. ID	Description	Local System	NM System	Remarks
SSA-DB-011	ASM/ATFCM stakeholders SHALL be able to express airspace availability and activation referring to either Sunrise or Sunset.	X	X	
SSA-DB-012	ASM/ATFCM stakeholders SHALL be able to manage the partial/total overlap of areas/FBZs reservations.	X	X	
SSA-DB-013	ASM/ATFCM stakeholders SHALL be able to retrieve/manage pre-defined airspace scenarios using a common ASM Scenario Repository.	X	X	Airspace configurations management
SSA-DB-014	ASM/ATFCM stakeholders SHALL be able to express airspace availability and activation referring to different UOM			
SSA-DB-015	ASM/ATFCM stakeholders SHALL be able to define FUA restrictions groups to process via AUP/UUP	X	X	

### 3.2.3 Planning

#### 3.2.3.1 Background

At this stage of the ASM/ATFCM process the local/regional ASM units collect the airspace requests from the different stakeholders (e.g. military squadrons, Approved Agencies, FMPs). Consequently, it shall be possible to collect daily requests, as well as to utilise data available from requests planned months or days before the Day of Operations.

The process will be paperless, with the utilization of electronic standard formats, and will allow the stakeholders to manage both planning and real time airspace information.

The use of the Aeronautical Information Exchange Model (AIXM) for collecting airspace/route requests facilitates their analysis and allows a graphical presentation of conflicting requests possibly customised according to specific AMC working arrangements.

#### 3.2.3.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-PL-001	AMCs SHOULD be able to retrieve by automated means information on the planned utilisation of airspace reservation (TRA, TSA, CBA) (e.g. 7 days in advance).	X		Rolling AUP.

Req. ID	Description	Local System	NM System	Remarks
SSA-PL-002	Daily submission of airspace reservation and conditional route requests to AMCs by approved agencies SHOULD be made through a common interface using a data exchange format supported by the NM ENV database.	X	X	Publication of eAMI via B2B publish/subscribe.
SSA-PL-003	AMCs SHALL be able to use all areas published and based on local agreements for planning purposes.	X		RSA definition as AMA/NAM only.
SSA-PL-004	Authorised users/units SHOULD be able to book an ad-hoc area, according to common standards and coordination procedures.	X		Dynamic airspace allocation at levels 2 and 3.
SSA-PL-005	authorised users/units SHALL have an assigned restricted access for planning purposes.	X		User authentication.
SSA-PL-006	Authorised users/units SHALL be able to create/modify/delete area reservations within the lateral and vertical limits of an airspace structure (or a combination of).	X		
SSA-PL-007	Authorised users/units SHALL be able to create/modify/delete the following minimum set data for planning request into the local system: <ul style="list-style-type: none"> <li>• Reference number;</li> <li>• Start/end date and time;</li> <li>• 3D airspace block (airspace ID, vertical extension);</li> <li>• Responsible unit;</li> <li>• Requestor (PoC).</li> </ul>	X		

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-PL-008</b>	<p>Authorised users/units SHOULD be able to enter/modify/delete additional static and dynamic data for planning request into the local system:</p> <ul style="list-style-type: none"> <li>• ADEP;</li> <li>• ADES;</li> <li>• Aircraft type;</li> <li>• Number of aircraft;</li> <li>• Priority;</li> <li>• Call sign(s);</li> <li>• Mission ID;</li> <li>• Link to other missions;</li> <li>• Controlling Units;</li> <li>• Remarks.</li> </ul>	X		FBZ and FUA restrictions activation.
<b>SSA-PL-009</b>	<p>Authorised users/units, within their area of responsibility, MAY be able to create/modify/delete alternative options into the local system, in terms of:</p> <ul style="list-style-type: none"> <li>• Time shifting;</li> <li>• Different airspace blocks with or without FBZ/FUA restrictions;</li> <li>• Different FUA restrictions and/or FUA/RAD restrictions and/or FUA restrictions groups/Airspace Scenario Restriction Group. AUP/RAD Restrictions for the requested areas;</li> <li>• Alternate areas or feasible flying distance from the A/B and requested shape in order to identify alternate areas.</li> </ul>	X		

Req. ID	Description	Local System	NM System	Remarks
SSA-PL-010	Authorised users/units SHOULD be able to save/open/update edition/delete operational documents (unstructured information).	X		
SSA-PL-011	Authorised users/units SHALL be able to set up/visualise/modify/delete operational procedures (workflow structured information).	X		
SSA-PL-012	Authorised users/units SHALL be able to display the name of the Authority responsible for issuing documents and procedures.	X		
SSA-PL-013	Authorised users/units SHALL be able to practise a version control on any records (both documents and procedures) under their responsibility.	X		
SSA-PL-014	Authorised users/units SHALL be able to set up an effective date for any records (both documents and procedures) under their responsibility.	X		
SSA-PL-015	Authorised users/units SHALL be able to revert back to older versions of any records (both documents and procedures) under their responsibility.	X		
SSA-PL-016	Authorised users/units MAY be able to enter an airspace request (airspace/route booking, amendment, cancellation) into the local system, on behalf of other users/units, following relevant FAB rules if applicable.	X		
SSA-PL-017	Authorised users/units SHALL be prompted with an acknowledgement message once an airspace request (airspace/route booking, amendment, cancellation) is successfully entered into the local system.	X		

Req. ID	Description	Local System	NM System	Remarks
SSA-PL-018	Authorised users/units SHALL be able to retrieve a log of all the recorded airspace requests (airspace/route booking, amendment, cancellation) entered into the local system.	X		
SSA-PL-019	Authorised users/units MAY be able to visualise both the airspace requests (airspace/route booking, amendment, cancellation) entered into the local system either by themselves or other users/units.	X		
SSA-PL-020	Authorised users/units SHALL be able to delete a request from the local system.	X		
SSA-PL-021	Authorised users/units SHALL be able to visualise any modifications occurred to any airspace requests.	X		
SSA-PL-022	Authorised users/units SHALL be prompted with error messages in case of validation errors and database inconsistencies, related to airspace requests under their responsibility.	X		
SSA-PL-023	Authorised users/units SHALL be prompted with warning messages in case of conflicts detected related to airspace requests under their responsibility.	X		
SSA-PL-024	Authorised users/units SHOULD be able to visualise 4D maps (3D representation + time) of any airspace requests and associated events.	X		
SSA-PL-025	Authorised users/units SHALL be able to receive feedback on the evolution of airspace requests.	X		
SSA-PL-026	Authorised users/units SHALL be able to create/visualise/accept/reject change proposals to airspace requests on their own responsibility.	X		

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-PL-027</b>	Authorised users/units SHALL be able to set up/join collaborative workspaces (e.g. web conferencing, file sharing).	X		
<b>SSA-PL-028</b>	Authorised users/units SHOULD be able to generate NOTAM proposals associated to an airspace request to be published when required.	X		
<b>SSA-PL-029</b>	AMCs SHOULD be able to retrieve by automated means information on the foreseen establishment of specific airspaces required for major military exercises (e.g. 3 months in advance).	X		
<b>SSA-PL-030</b>	AMCs SHALL be able to publish AUP information from D-6 to D-2 whenever available.	X	X	Rolling AUP
<b>SSA-PL-031</b>	AMCs SHALL be able to activate simultaneously different sub-restrictions.	X	X	Complex FUA Restrictions and FUA/RAD restrictions
<b>SSA-PL-032</b>	AMCs SHALL be able to make area reservations outside the AIP published times/vertical limits.	X	X	

### 3.2.4 Local/FAB impact assessment

#### 3.2.4.1 Background

Local/FAB ASM units assess airspace requests, resolving potential conflicts between them and identifying the best combination of routes, sector configurations and areas to meet both civil and military needs. Such combination relies on the knowledge of the traffic demand, either historical or actual, according to the phase of the process. In general, the definition of parameters used by the system will facilitate the process and define the required granularity of the assessment.

The ASM Level 2 CDM process among AMCs, ACCs/FMPs concerned, military agencies and the NM, shall be supported by advanced systems in order to ensure a quick assessment of all the elements; nevertheless, human intervention is always expected, even to override the solutions proposed by the system.

At this stage, the availability of Draft AUP will facilitate the FAB coordination when required to support the assessment.

In addition, teleconferencing/message exchange capabilities shall be provided to support the CDM process, allowing users to set up and join teleconferences, as well as to read and post text messages to conferences.

#### 3.2.4.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-LOC-001	AMCs involved in cross-border operations SHOULD be able to exchange airspace request information, including: <ul style="list-style-type: none"> <li>• AIS static and dynamic data;</li> <li>• reservations and missions information;</li> <li>• alternative operational solutions proposals.</li> </ul>	X		
SSA-LOC-002	The Lead AMC SHOULD be able to manage airspace requests submitted by approved agencies from a different State.	X		
SSA-LOC-003	AMCs WILL be able to propose alternative local/FAB airspace allocation options.	X		
SSA-LOC-004	AMCs WILL be able to perform a local/FAB impact assessment based on what-if analysis of different airspace allocation options, highlighting and solving potential conflicting requests (both spatial and temporal overlaps).	X		Booking de-conflicting.

Req. ID	Description	Local System	NM System	Remarks
SSA-LOC-005	AMCs, ACCs/FMPs concerned, military agencies, SHALL be able to visualise any airspace requests.	X		
SSA-LOC-006	AMCs SHOULD be able to access documents (e.g. local ASM manual) supporting the assessment process.	X		
SSA-LOC-007	AMCs SHALL be able to step through the protocols to determine the optimal usage of the airspace based on all the allocation requests.	X		
SSA-LOC-008	AMCs SHALL be able to override any automatic protocol workflow step.	X		
SSA-LOC-009	AMCs SHALL be able to retrieve a log of the allocation decisions (including overrides), actions and notes associated with a specific airspace request.	X		

Req. ID	Description	Local System	NM System	Remarks
<b>SSA-LOC-010</b>	<p>AMCs SHALL be able to process the following data in order to support local/FAB impact assessments:</p> <ul style="list-style-type: none"> <li>• Route structures;</li> <li>• Manageable and not manageable Area Structures;</li> <li>• NPZs, as required;</li> <li>• CDR1 route status (past, current, proposed and future);</li> <li>• AIP data associated with each route;</li> <li>• Area status (past, current, proposed and future);</li> <li>• AIP data associated with each area;</li> <li>• NOTAMs;</li> <li>• Airport Information;</li> <li>• FUA Restrictions;</li> <li>• FUA/RAD Restrictions;</li> <li>• FUA Restrictions groups;</li> <li>• AUP/RAD Restrictions;</li> <li>• Airspace Scenario Restrictions Group;</li> <li>• FBZ Activation;</li> <li>• NPZ Activation.</li> </ul>	X		
<b>SSA-LOC-011</b>	<p>AMCs SHOULD be able to process the following additional data in order to support local/FAB impact assessments:</p> <ul style="list-style-type: none"> <li>• Pre-defined sector configurations;</li> <li>• Pre-defined airspace scenarios;</li> <li>• RAD information;</li> <li>• Traffic data;</li> <li>• Pre-defined regulations.</li> </ul>	X	X	

Req. ID	Description	Local System	NM System	Remarks
SSA-LOC-012	The Lead AMC SHALL have unique access and right of managing assigned cross borders airspace structures.	X	X	Unique ASM Authority for cross border airspace structures
SSA-LOC-013	AMCs SHALL be able to generate AUP/UUP from the agreed simulated scenario.	X		

### 3.2.5 AUP/UUP Airspace data exchange

#### 3.2.5.1 Background

Based on the result of the local/FAB impact assessment, Draft AUPs/UUPs will be produced to share information and to support additional coordination at network level.

Once the coordination is finalised, Ready AUPs/UUPs will be produced to disseminate airspace planning information to the stakeholders involved.

#### 3.2.5.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-TR-001	AMCs SHALL be able to generate AUP/UUP messages compliant with the format specified in the ERNIP Part 3 - ASM Handbook.	X		
SSA-TR-002	AMCs SHALL be able to export AUP/UUP data.	X		
SSA-TR-003	AMCs SHALL be able to promote/demote the AUPs/UUPs status as: <ul style="list-style-type: none"> <li>• Intent;</li> <li>• Draft;</li> <li>• Ready;</li> <li>• Released (NM only).</li> </ul>	X	X	
SSA-TR-004	AMCs SHALL be able to submit AUP/UUP messages in both Draft and Ready status.	X	X	
SSA-TR-005	AMCs SHALL be able to classify areas as: <ul style="list-style-type: none"> <li>• AMC Manageable area (AMA);</li> </ul>	X	X	RSA definition as

Req. ID	Description	Local System	NM System	Remarks
	<ul style="list-style-type: none"> <li>Not AMC Manageable area (NAM).</li> </ul>			AMA/NAM only.
SSA-TR-006	NM SHALL be able to promote AUP/UUP messages from status Ready to Released.		X	
SSA-TR-007	AMCs SHALL be able to demote UUPs.	X	X	
SSA-TR-008	AMCs SHALL be able to populate NIL AUPs.	X	X	
SSA-TR-009	AMCs SHALL be able to notify the dynamic Lead AMC responsibilities.	X	X	
SSA-TR-010	AMCs/NM SHALL be able to process multiple UUPs simultaneously.	X	X	Initial CDM for network impact assessment in FRA

### 3.2.6 Network impact assessment

#### 3.2.6.1 Background

Currently, NM should consider Draft AUPs/UUPs when performing the network impact assessment in order to identify possible improvements. Based on the assessment, using system support, alternate airspace allocation proposals could be forwarded back to the concerned units for consideration and final decision.

NM should also be able to consider FPL change proposals submitted by AOs for fine tuning the assessment results.

#### 3.2.6.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-NET-001	NM SHALL be able to perform what-if analyses in order to support the network impact assessment.		X	
SSA-NET-002	NM SHOULD be able to retrieve ASM pre-defined scenarios (i.e. combination of sector configurations, routes availability, CDR1s and airspace blocks combinations, pre-defined regulations, pre-defined airspace scenarios) for supporting the network impact assessment.		X	
SSA-NET-003	NM SHOULD be able to retrieve information on alternate airspace allocations, in terms of: <ul style="list-style-type: none"> <li>• Time shifting;</li> <li>• Different airspace blocks with or without FBZ;</li> <li>• Alternate areas or feasible flying distances from A/B and requested shape in order to identify alternate areas.</li> </ul>	X	X	
SSA-NET-004	NM SHOULD be able to access information of national documents and protocols relevant to support the network impact assessment and the coordination process.	X	X	
SSA-NET-005	NM SHALL be able to coordinate alternate airspace allocation proposals with the AMCs concerned.	X	X	

Req. ID	Description	Local System	NM System	Remarks
SSA-NET-006	<p>NM SHALL be able to retrieve the following data in order to support the network impact assessment, identifying the best solution at regional level:</p> <ul style="list-style-type: none"> <li>• Route structures;</li> <li>• Manageable and not manageable Area Structures;</li> <li>• NPZs, as required;</li> <li>• CDR1 route status (past, current, proposed and future);</li> <li>• AIP data associated with each route;</li> <li>• Area status (past, current, proposed and future);</li> <li>• AIP data associated with each area;</li> <li>• Pre-defined sector configurations;</li> <li>• Pre-defined airspace scenarios;</li> <li>• RAD information;</li> <li>• Pre-defined regulations;</li> <li>• NOTAMs;</li> <li>• Airport Information;</li> <li>• FUA Restrictions;</li> <li>• FUA/RAD Restrictions;</li> <li>• FUA Restrictions groups</li> <li>• Airspace Scenario Restrictions Group;</li> <li>• AUP/RAD Restrictions;</li> <li>• FBZ Activation;</li> <li>• NPZ Activation;</li> <li>• Traffic demand.</li> </ul>		X	<p>Special event or any temporary activation via NOTAM/AIP supplement.</p> <p>FUA Restrictions, FUA/RAD restrictions, AUP/RAD Restrictions, FUA restrictions groups, Airspace Scenario Restrictions Group, FBZ Activation NPZ Activation</p>

### 3.2.7 Airspace status

#### 3.2.7.1 Background

A common, secure exchange of consolidated airspace status information shall be allowed, guarantying data integrity, which is a major flight safety concern.

Real-time airspace data management process shall be supported, including the activation, de-activation, short-term cancellation or amendments to reservations and reallocation of the airspace structures.

It shall also be possible to visualise and share real-time airspace data among the stakeholders involved, including ATC.

### 3.2.7.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-AS-001	ASM/ATFCM stakeholders SHALL be able to exchange airspace status information through a B2B publish/subscribe mechanism.	X	X	Publication of eAMI via B2B publish/subscribe mechanism.
SSA-AS-003	ASM/ATFCM stakeholders MAY be able to visualise 4D maps (3D representation + time) of the real time status of airspaces.	X	X	
SSA-AS-004	Local ASM units MAY be able to exchange real time airspace status data with ATC systems.	X		
SSA-AS-005	ASM responsible units SHOULD be able to confirm and acknowledge any changes to the status of an airspace structure (i.e. activation, de-activation, cancellation, amendment).	X		
SSA-AS-006	ASM/ATFCM stakeholders and Airspace Users/CFSPs SHOULD be able to exchange rerouting scenarios associated to relevant real time airspace status information.	X	X	
SSA-AS-007	ASM responsible units SHALL be able to introduce any changes to the status of an airspace structure (i.e. activation, de-activation, cancellation, amendment).	X		

### 3.2.8 Notification to users

#### 3.2.8.1 Background

According to the up-to-date information available in the NM ENV database, appropriate messages are generated to disseminate the information to the users. Such information is made available in electronic format for automated processing.

#### 3.2.8.2 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-NU-001	NM SHALL be able to publish consolidated airspace information.		X	
SSA-NU-002	NM SHALL be able to update the ENV database according to the information contained in the EAUPs/EUUPs.		X	
SSA-NU-003	ASM/ATFCM stakeholders and Airspace Users/CFSPs SHALL be able to retrieve planned airspace information, as described in the EAUP/EUUP messages via B2B web services.	X	X	Publication of eAMI via B2B publish/subscribe mechanism.
SSA-NU-004	NM SHALL be able to publish event-based real time airspace status information on the web.		X	NOP Portal
SSA-NU-005	Local ASM units SHOULD be able to publish event-based real time airspace status information on the web.	X		Local web sites.
SSA-NU-006	ASM/ATFCM stakeholders and airspace users/CFSPs SHALL be able to compare EAUP/EUUP messages belonging to the same chain, in order to highlight the differences in terms of both routes availability and areas allocation.		X	Graphical display of AUP/UUP information.
SSA-NU-007	ASM/ATFCM stakeholders and airspace users/CFSPs SHALL be able to visualise restrictions activated via EAUP/EUUP.		X	
SSA-NU-008	NM SHALL allow the graphical display of EAUP/EUUP data.		X	Graphical display of AUP/UUP information.

Req. ID	Description	Local System	NM System	Remarks
SSA-NU-009	NM SHALL be able to receive t a warning in case of missed transmission of EAUP from CACD to IFPS.		X	
SSA-NU-010	NM SHALL distribute eAMI data via other means in case of B2B failure.		X	

### 3.2.9 ASM performance monitoring

#### 3.2.9.1 Requirements

Req. ID	Description	Local System	NM System	Remarks
SSA-APM-001	ASM/ATFCM stakeholders SHALL be able to store ASM data (e.g. AUP/UUP messages, traffic data, real time airspace status information, CDM data).	X	X	
SSA-APM-002	ASM/ATFCM stakeholders SHALL be able to access stored ASM data (e.g. AUP/UUP messages, traffic data, real time airspace status information, CDM data).	X	X	
SSA-APM-003	ASM/ATFCM stakeholders SHALL be able to process ASM data for performance monitoring purposes (e.g. FUA indicators).	X	X	
SSA-APM-004	NM SHALL be able to retrieve RRP messages for Post Ops analysis.		X	
SSA-APM-005	NM SHALL allow authorised users to access ASM monitoring data according to its area of interest.		X	NMIR
SSA-APM-006	NM SHALL provide a performance monitoring dashboard with different layers of analysis.		X	NMIR
SSA-APM-007	NM SHALL be able to retrieve FUA Restrictions information for post-ops analysis.		X	

## Appendix B

## DEFINITIONS

List of definitions complementary to the one provided in the ERNIP Part 3 - ASM Handbook.

Term	Definition
Cross Border Airspace	An airspace structure extending across national borders and/or the boundaries of flight information regions.
Flight Intention	The flight path and associated flight data describing the planned trajectory of a flight to its destination, as updated at any moment.
Interoperability	A set of functional, technical and operational properties required of the systems and constituents of the European ATM network and of the procedures for its operation, in order to enable its safe, seamless and efficient operation. Interoperability is achieved by making the systems and constituents compliant with the essential requirements.
Modus Operandi	A combination of areas, routes, permanent and temporary, ATC sectors and flow restrictions to better accommodate airspace requirements and traffic demand minimising penalisations for civil and military traffic.
Operational Data	Information concerning all phases of flight that are required to take operational decisions by air navigation service providers, airspace users, airport operators and other actors involved.
Procedures	As used in the context of the interoperability Regulation, means a standard method for either the technical or the operational use of systems, in the context of agreed and validated concepts of operation requiring uniform implementation throughout the European ATM network.
Route Network	A network of specified routes for channelling the flow of general air traffic as necessary for the provision of ATC services.
Routing	The chosen itinerary to be followed by an aircraft during its operation.
Sector	Part of a control area and/or a flight information region/upper region.
System	The aggregation of airborne and ground based constituents, as well as space-based equipment, that provides support for air navigation services for all phases of flight.
Users	Civil or military aircraft operating in the air as well as any other parties requiring airspace.

## Appendix C

## ABBREVIATIONS

List of abbreviations complementary to the one provided in the ERNIP Part 3 - ASM Handbook.

Acronym	Description
ARR	Arrival
ARS	Automatic Route Selection
CACD	Central Airspace and Capacity Database
CBO	Cross Border Operations
CDM	Collaborative Decision Making
CFMU	Central Flow Management Unit
CFSP	Computerised Flight Plan Service Provider
CPA	CFMU Portal Application
CRC	Control and Reporting Centre
CUA	Common User Access
DEP	Departure
EAD	European AIS Database
EAUP	European AUP
EC	European Commission
ENV	Environment
EU	European Union
EUUP	European UUP
FAB	Functional Airspace Block
ID	Identifier
ISO	International Standards Organization
OSD	Operational Service and Environment Definition
OSI	Open Systems Interconnection
RTSA	Real Time Status of Airspace



## Annex 12 – Notification procedure and planning timetable for a large-scale activity and/or military exercise/activity

### 1. PURPOSE

1. The purpose of this annex is to provide a procedure for notification and timetable for planning of the event in order to standardise the process of coordination between civil, military and international organisations.

### 2. SCOPE

1. The procedures described in this Annex are applicable to any special event, including new entrants HAO, requiring a preliminary coordination among relevant stakeholders, including ECTL NM, as well as appropriate AIS publication and preparation of data in NM system.

### 3. COORDINATION PROCEDURE

1. The planning and coordination process follows the concept of Flexible Use of Airspace (FUA) and it complies with the published airspace management procedures.
2. The process has 3 phases: planning, execution and post activity. Each phase consists of one or more activities, describing the action to be taken by each responsible function/actor and which other concerned Operational Stakeholders are to be involved within a predefined timeframe.

#### 3.1. Phase 1 - Planning

1. The planning phase for the large-scale activity consists of a succession of activities with predefined actions for a number of involved Operational Stakeholders.
2. The main activities are addressing the following issues:
  - Notification and establishment of a planning timetable for the event;
  - Definition of required airspace structure (existing or temporary);
  - Network Impact Assessment;
  - Validation of airspace and respective mitigation measures (i.e. RAD restrictions, rerouting options);
  - AIS Publication;
  - SSR code requirements;
  - Drafting and approval of temporary OPS procedures when required, which will include safety assessment as appropriate;
  - Notification of the event on the NOP Portal.
3. Once an event has been scheduled, the organisers shall notify to the relevant national authorities, air navigation service providers and EUROCONTROL/NM. The organiser should be a recognised Approved Agency (AA) or submit the request through a recognised AA, according to national procedures. Based on the nature of the event and lead-time to execution, a timetable based on the main activities in Appendix A shall be established and agreed between the

- concerned Operational Stakeholders. Its aim is to assist the event planner/host in smooth planning coordination.
4. The nature of the event dictates the airspace structure required. This could be already published airspace structures and/or establishment of new temporary airspace structures. In both cases, an appropriate AIS publication is required for the notification of the event, according to ICAO Annex 15 and DOC 10066 provisions.
  5. With specific reference to new airspace structures, additional actions shall be undertaken during the planning phase in accordance with ICAO, ERNIP Part 1 and ERNIP Part 3 provisions. If the new temporary airspace structures are to be managed through the EAUP/EUUP process, then an AIP Supplement should be published 56 days prior to the start date of the AIRAC cycle within which the event is taking place. This will allow the proper load of data in NM system to grant their management according to the FUA process. In exceptional cases, modification of airspace structures can be introduced via NOTAM seven days prior to the event. Subsequent changes in the NM system remain at the discretion of EUROCONTROL/NM.
  6. It is recommended for each event to publish a dedicated AIP Supplement when new temporary airspace structures are established in accordance with ICAO Annex 15 and Doc 10066. Within it, the following items are to be defined: general/description of the event, exercise area, restrictions, airspace activation, management of the airspace, flight planning information for participating traffic, flight planning information for non-participating traffic, communication/notification, responsible authorities/contacts and appendices including chart of the exercise areas. This is not an exhaustive list and any other information relevant to the event should be published.
  7. A specimen AIP Supplement containing the above mentioned items is presented in Annex/Appendix B. The specimen should aid event planners to compile an AIP Supplement for a dedicated event, with the necessary information. This recommendation aims to consolidate all information for the relevant event in a single dedicated publication.
  8. In parallel with the preparation of the AIP Supplement for the event, it is recommended for the exercise planner/airspace manager to analyse if new restrictions need to be implemented and/or existing restrictions need to be modified for the execution period. All relevant restrictions are to be published in an "Annex for Special Event/s" according to the procedure defined in ERNIP Part 4. This Annex should be published in advance (e.g. D-34, if possible) allowing sufficient time for its publicity, and can be updated up to D-2 before the event.
  9. Once the airspace requirements are known by the event planner/host, they shall be forwarded it to EUROCONTROL/NM for the network impact assessment. The outcome of the assessment shall be distributed to the event planner/host and concerned actors, for review and, if necessary, for the establishment of mitigation measures. Depending on the scale of the event, several iterations of the network impact assessment might be required to fine-tune the potential mitigation measures. Next step is the validation process in the NM system with the participation of the event planner/host and NM airspace data staff. Detailed information about the methodology used for the execution of the network impact assessment (NIA) are provided in Appendix C. The early notification of required data, according to the schedule

described in the table, is necessary for the execution of full NIA. Any late notification will limit the NIA outputs, based on the time availability to support the preparation of the required AIS publications.

10. Concerning surveillance issues, the planning needs for the use of discrete SSR Mode 3/A and Mode S must be considered, in order to be consistent with the airspace classification/rules anticipated. Once the amount of discrete SSR codes for the event is finalised, it is essential that that appropriate coordination is initiated with EUROCONTROL/NM for any potential supplementary requests and to ensure proper regional utilisation of the SSR code series.

### 3.2. Phase 2 - Execution

1. With the majority of the coordination achieved during the planning phase, the critical topics to be considered during the execution phase should include:
  - Daily Airspace management i.a.w. FUA procedures;
  - Refinement of operational procedures if required;
  - Daily notification of active airspace structures according to FUA process;
  - Daily sharing of relevant weather information, if available
  - Update of NOP Portal information if required, including weather information with forecasted "high probability" for adverse weather and expected ATFM measures, if available.
2. The event's Persons of Contacts (PoCs) for all major activities will need to act swiftly and in-line with remedial actions in response to deviation from planned execution. Where necessary, a daily review process shall be established between the PoCs during the execution phase, in order to assess and adjust operational procedures, if necessary.
3. The sharing of available weather information, starting at D-1 and during the D-OPS between local units and NM, becomes relevant when there are potential needs to apply ATFM measures, according to the procedures described in the ATFCM manual.

### 3.3. Phase 3 - Post event

1. After the event's termination, the event host/planner and/or EUROCONTROL/NM shall initiate, if required, coordination with relevant Operational Stakeholders to conduct a review of the planning and execution phase. Lessons identified shall be reported in written (i.e. report) and recommendations for future events shall be proposed to ensure appropriate remedial action can be taken, where necessary. The remedial action can be revision of procedures and process. Based on the lessons identified, best practices are to be developed and shared with the aviation community.

**Appendix A**

<b>Time to Event</b>	<b>Task</b>	<b>Action</b>	<b>Lead</b>	<b>Coordination with</b>
<b>16-30 Months</b>	Activity notification	<ul style="list-style-type: none"> <li>State's aviation administrations (i.e. CAA, ANSP, military, approved agencies) and EUROCONTROL/NM to be notified about planned activity</li> <li>State's aviation administrations and EUROCONTROL/NM to provide their requirements and constraints back to activity host / planner</li> </ul>	Event host / planner	EUROCONTROL/NM Relevant national authorities Concerned service providers Military Approved Agencies
<b>12-15 Months</b>	Initial Planning Activity and Airspace pre-coordination Meeting	<ul style="list-style-type: none"> <li>For a complex large-scale activity, a pre-coordination meeting with National Airspace Authority/Authorities, ANSPs and EUROCONTROL/NM should be established up to 24-months out to consider the broad airspace requirements, planning constraints and establish a tailored planning timeline</li> <li>Planning timeline to be agreed and distributed between all parties concerned</li> <li>Provide initial airspace structure and draft schedule if available and development of initial network impact assessment</li> <li>Consider outline of regulations/limitations etc.</li> <li>SSR code requirements</li> </ul>	Event host / planner	Relevant national authorities Concerned service providers Relevant airspace managers Military EUROCONTROL/NM Approved Agencies
<b>9-12 Months</b>	Gathering of airspace requirements	<ul style="list-style-type: none"> <li>Activity host / planner collects airspace requirements from all domains</li> <li>Fine-tuning SSR code requirements</li> </ul>	Event host / planner	Relevant airspace managers Military Concerned airspace providers
<b>7-8 Months</b>	Airspace Structure matured definition	<ul style="list-style-type: none"> <li>Activity host/planner and airspace managers to refine requests and request network impact assessment</li> <li>Nomination of Point of Contact (PoCs) for all critical functions</li> </ul>	Event host / planner and EUROCONTROL/ NM	Relevant airspace managers Concerned airspace providers EUROCONTROL/NM

<b>6 Months</b>	Civil pre-validation of airspace requirements	<ul style="list-style-type: none"> <li>• Consolidation of requirements for airspace publications</li> </ul>	States authorities and EUROCONTROL/NM	Event host / planner
<b>6 Months</b>	Mature airspace requirements provision	<ul style="list-style-type: none"> <li>• Final Airspace requirements from all domains</li> <li>• Confirm SSR Code request to EUROCONTROL NM</li> </ul>	Event host / planner	Relevant airspace managers Concerned airspace providers EUROCONTROL/NM
<b>5 Months</b>	Mature NM Impact Assessment and Mitigation Proposals	<ul style="list-style-type: none"> <li>• Consider critical aspects of traffic constraints and seek possible adjustment of exercise airspace requirements</li> </ul>	EUROCONTROL/NM Concerned airspace manager and service providers	Event host/planner
<b>3-4 Months</b>	Confirm Airspace & Draft docs for publication	<ul style="list-style-type: none"> <li>• Confirm and agree the final airspace requirement and activation schedule</li> <li>• Participate in drafting required documentation for publication / notification</li> </ul>	Event host/planner	States
<b>56 days*</b>	AIP Supplement for activity (new airspace structure)	<ul style="list-style-type: none"> <li>• Publication of AIP Supplement</li> <li>• Finalisation of NM airspace data</li> </ul>	States Concerned EUROCONTROL/NM	Activity host/planner
<b>34 days</b>	New RAD restrictions and/or changes	<ul style="list-style-type: none"> <li>• Publication of RAD restriction through a dedicated "Annex for Special Event/s" <i>(Note: modifications can be applied up to D-2)</i></li> </ul>	EUROCONTROL/NM	Activity host/planner
<b>28 days*</b>	AIP Supplement for activity (no new airspace structure)	<ul style="list-style-type: none"> <li>• Publication of AIP Supplement</li> </ul>	States concerned	Activity host/planner
<b>4 Weeks</b>	Document preparation and notification on NOP Portal	<ul style="list-style-type: none"> <li>• Issue of Operational Instructions, FUA Temporary Instructions, relevant NOTAMs</li> <li>• Notification of event on NOP Portal together with network mitigation measures for civil airspace users</li> </ul>	Event host/planner Relevant national authorities	Airspace users EUROCONTROL/NM
<b>18 days</b>	NOTAM changes for (new airspace structures)	<ul style="list-style-type: none"> <li>• Publication of relevant NOTAM</li> <li>• Update of NM airspace data for final validation</li> </ul>	States Concerned EUROCONTROL/NM	Activity host/planner

<b>7 days</b>	NOTAM last minute changes (new airspace structures)	<ul style="list-style-type: none"> <li>• Publication of relevant NOTAM<sup>1</sup></li> </ul>	States Concerned EUROCONTROL/ NM	Activity host/planner
<b>7 days</b>	NOTAM last changes (NO new airspace structures)	<ul style="list-style-type: none"> <li>• Publication of relevant NOTAM</li> </ul>	States concerned	Activity host/Planner
<b>D-2</b>	Last minute changes of restrictions	<ul style="list-style-type: none"> <li>• Modification of RAD restriction published in the dedicated "Annex for Special Event/s"</li> </ul>	EUROCONTROL/ NM	Activity host/planner
<b>Up to D-1</b>	Last minute changes of restrictions	<ul style="list-style-type: none"> <li>• Update relevant restrictions in NM system, which will be published through the Increment File</li> <li>• Update NOP Portal information</li> </ul>	EUROCONTROL/ NM	Service Providers concerned
<b>During event</b>	Monitor event performance and modifications	<ul style="list-style-type: none"> <li>• Collect / record relevant information on event performance to assess: <ul style="list-style-type: none"> <li>○ Military objectives;</li> <li>○ Service provider objectives;</li> <li>○ Update of relevant restrictions in NM system;</li> <li>○ Relevant weather information, if available</li> <li>○ Update NOP Portal information, including relevant weather information;</li> <li>○ NM objectives.</li> </ul> </li> <li>• Daily airspace management (i.e. AUP/UUP)</li> <li>• Refinement of operational procedures, if required</li> <li>• Monitoring of the execution and network impact: <ul style="list-style-type: none"> <li>○ Management of mitigation measures.</li> </ul> </li> </ul>	All	Airspace users
<b>Post event</b>	Lessons Identified	<ul style="list-style-type: none"> <li>• Development of lessons identified;</li> <li>• Development of best practices;</li> <li>• Revision of existing processes/procedures.</li> </ul>	Event host/planner and EUROCONTROL/ NM	National authorities Service Providers Airspace Managers Military Approved Agencies

**Table 6: Planning timetable for large-scale activities**

<sup>1</sup> In exceptional cases, modification of airspace structures seven days prior to the event can be introduced in the NM system subject to EUROCONTROL/NM assessment.

*Note: "Time to event" marked with "\*" refers to the days with respect to the start of the AIRAC cycle within which the event is taking place.*

**Appendix B**

Phone:	<State>	AIRAC AIP Supplement
Fax:	Aeronautical Information Service	13/20
AFS:		Effective from: 22 September 2020
E-mail:	<Address>	Effective to: 24 September 2020
URL		Published: 13 August 2020

**MILITARY EXERCISE – MIKE ECHO 2020**

<i>National language</i>	<i>English language</i>
	<p><b>1. General</b></p> <p>During the period 22 September – 24 September 2020 a multinational military exercise will be conducted in the &lt;State&gt; FIR.</p> <p>The military exercise will be conducted in airspaces published in ENR 5.1 and 5.2 of &lt;State&gt; AIP. In addition, a number of temporary airspaces have been established. Details can be found in paragraph 2.</p> <p>Restriction applies to non-participating traffic.</p> <p>All times are in UTC.</p> <p><b>2. Exercise areas</b></p> <p><b>2.1. New Temporary Reserved/ Restricted Areas</b></p> <p>Training areas are plannable H24 unless otherwise specified. Planned use is specified in paragraph 4 and daily via AUP/UUP.</p> <p>Flight planning buffer zones (FBZs) are established for each temporary reserved/restricted area. These zones enable IFPS to intercept and reject non-participating IFR flight plans with a planned routing touching</p>

	<p>training areas which are planned activated in accordance with daily AUP/UUP.</p> <p>Each FBZ has an ID that corresponds with the related reserved/restricted area ID, with the addition of an Z to the end: e.g. EXTS101 and EXTS101Z.</p> <p>The FBZs description are below the corresponding TSA.</p> <p>Planned use of the new temporary reserved/restricted is specified in remark column/paragraph 4 and daily via AUP/UUP.</p>
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Identification, Name and Lateral limits	Upper limit Lower limit	Remark (time of activity, FUA restrictions)
<p><b>EXTS101</b></p> <p>533539N 0155452E 533512N 0160451E 532509N 0154129E 533309N 0153440E 534250N 0152807E 533539N 0155452E</p>	<p><u>FL 500</u> GND</p>	<p>AMC Manageable area (AMA)</p> <p>Planned usage: daily 0700-1130  or 23/09/2020: 1500-1630</p> <p>Time of activity will be published by AUP/UUP.</p>
<p><b>EXTS101Z</b></p> <p>534740N 0153033E 534033N 0155704E 534006N 0160651E 533841N 0161058E 533623N 0161301E 533347N 0161257E 533121N 0161020E 532032N 0154449E</p>	<p><u>FL510</u> GND</p>	<p>AMC Manageable area (AMA)</p> <p>Time of activity will be published by AUP/UUP.</p> <p>FUA restriction: <b>EXTS101ZR</b> - Not available for traffic.</p>

532011N 0154056E 532052N 0153710E 532224N 0153433E 533107N 0152704E 534153N 0151949E 534432N 0152007E 534636N 0152232E 534743N 0152606E 534740N 0153033E		<i>or</i> see paragraph 3
<b>EXTS102</b> 533309N 0153440E 532807N 0153323E 531801N 0153110E 531539N 0152232E 530150N 0153443E 530453N 0155659E 532509N 0154129E 533309N 0153440E	<u>FL500</u> GND	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.
<b>EXTS102Z</b> 533611N 0154122E 532734N 0154848E 530713N 0160422E 530441N 0160521E 530203N 0160400E 530016N 0160021E 525652N 0153548E 525719N 0153104E 525906N 0152748E 531413N 0151426E 531726N 0151441E 531954N 0151803E 532124N 0152330E 533420N 0152626E 533642N 0152839E 533806N 0153251E 533753N 0153741E 533611N 0154122E	<u>FL500</u> GND	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.  FUA restriction: <b>EXTS102ZR</b> - Not available for traffic.  <i>or</i> see paragraph 3

<p><b>EXTS103</b></p> <p>532509N 0154129E  533512N 0160451E  533401N 0161907E  532231N 0163205E  531248N 0163508E  530824N 0162848E  530546N 0160734E  530453N 0155659E  532509N 0154129E</p>	<p><u>FL500</u></p> <p>GND</p>	<p>AMC Manageable area (AMA)</p> <p>Time of activity will be published by AUP/UUP.</p>
<p><b>EXTS103Z</b></p> <p>533915N 0155954E  533942N 0160109E  534000N 0160232E  534010N 0160358E  534011N 0160526E  534009N 0160600E  533858N 0162017E  533846N 0162143E  533826N 0162304E  533757N 0162418E  533721N 0162522E  533648N 0162606E  532519N 0163902E  532433N 0163944E  532343N 0164013E  532326N 0164019E  531346N 0164320E  531254N 0164329E  531201N 0164323E  531111N 0164302E  531023N 0164226E  530940N 0164138E  530932N 0164127E  530507N 0163506E  530431N 0163403E  530402N 0163251E  530341N 0163131E</p>	<p><u>FL500</u></p> <p>GND</p>	<p>AMC Manageable area (AMA)</p> <p>Time of activity will be published by AUP/UUP.</p> <p>FUA restriction:  <b>EXTS103ZR</b> - Not available for traffic.</p> <p><i>or</i></p> <p>see paragraph 3</p>

530330N 0163029E 530050N 0160900E 525956N 0155808E 525953N 0155642E 530000N 0155515E 530015N 0155352E 530039N 0155234E 530110N 0155125E 530148N 0155025E 530232N 0154938E 530249N 0154924E 532302N 0153353E 532351N 0153323E 532443N 0153308E 532535N 0153308E 532627N 0153323E 532716N 0153353E 532801N 0153437E 532841N 0153533E 532912N 0153633E 533915N 0155954E		
<b>EXTS104</b> 530150N 0153443E 525433N 0153741E 524956N 0153918E 524215N 0154240E 524324N 0155851E 524724N 0163416E 524956N 0165037E 530521N 0164230E 531248N 0163508E 530824N 0162848E 530546N 0160734E 530453N 0155659E 530150N 0153443E	<u>FL500</u> GND	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.
<b>EXTS104Z</b> 530948N 0155530E 531041N 0160609E	<u>FL500</u> GND	AMC Manageable area (AMA)

531258N 0162422E 531605N 0162850E 531642N 0162953E 531711N 0163105E 531732N 0163225E 531745N 0163350E 531748N 0163517E 531743N 0163644E 531728N 0163808E 531706N 0163926E 531635N 0164037E 531557N 0164138E 531521N 0164219E 530724N 0165006E 525129N 0165829E 525038N 0165848E 524945N 0165853E 524853N 0165842E 524803N 0165817E 524717N 0165738E 524635N 0165646E 524559N 0165542E 524531N 0165430E 524510N 0165310E 524505N 0165239E 524231N 0163602E 523828N 0160006E 523717N 0154341E 523715N 0154214E 523722N 0154049E 523739N 0153927E 523803N 0153811E 523835N 0153703E 523914N 0153605E 523958N 0153519E 524047N 0153447E 524058N 0153442E 524846N 0153115E 525326N 0152936E		Time of activity will be published by AUP/UUP.  FUA restriction: <b>EXTS104ZR</b> - Not available for traffic.  <i>or</i> see paragraph 3
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530037N 0152639E 530129N 0152625E 530221N 0152627E 530313N 0152643E 530401N 0152715E 530446N 0152759E 530526N 0152856E 530559N 0153004E 530624N 0153120E 530641N 0153242E 530642N 0153251E 530948N 0155530E		
<b>EXTS201</b> 534250N 0152807E 533309N 0153440E 532807N 0153323E 531801N 0153110E 531539N 0152232E 534018N 0150241E 534439N 0152120E 534547N 0152604E 534250N 0152807E	<u>FL500</u> FL095	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.
<b>EXTS201Z</b> 533501N 0154228E 533411N 0154254E 533319N 0154305E 533227N 0154300E 533224N 0154259E 532725N 0154142E 531724N 0153928E 531633N 0153910E 531545N 0153837E 531500N 0153751E 531422N 0153652E 531349N 0153543E 531328N 0153439E 531107N 0152604E 531049N 0152442E	<u>FL500</u> FL095	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.  FUA restriction: <b>EXTS201ZR</b> - Not available for traffic.  <i>or</i> see paragraph 3

531040N 0152316E 531040N 0152148E 531049N 0152022E 531107N 0151900E 531133N 0151744E 531207N 0151637E 531247N 0151541E 531330N 0151459E 533806N 0145506E 533855N 0145434E 533946N 0145417E 534039N 0145416E 534130N 0145430E 534220N 0145458E 534305N 0145541E 534346N 0145637E 534420N 0145743E 534447N 0145859E 534456N 0145934E 534918N 0151812E 535025N 0152254E 535041N 0152418E 535047N 0152546E 535044N 0152714E 535033N 0152841E 535012N 0153002E 534944N 0153116E 534908N 0153221E 534826N 0153314E 534740N 0153354E 534443N 0153557E 533501N 0154228E		
<b>EXTS202</b> 534547N 0152604E 535226N 0155910E 534903N 0160736E 533401N 0161907E 533512N 0160451E	<u>FL500</u> FL095	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.

533539N 0155452E 534250N 0152807E 534547N 0152604E		
EXTS202Z 535710N 0155624E 535726N 0155834E 535721N 0160047E 535656N 0160253E 535634N 0160356E 535311N 0161220E 535219N 0161359E 535114N 0161512E 535107N 0161518E 533603N 0162648E 533448N 0162726E 533329N 0162729E 533213N 0162659E 533104N 0162556E 533008N 0162425E 532927N 0162232E 532904N 0162026E 532902N 0161814E 532904N 0161756E 533014N 0160357E 533040N 0155417E 533055N 0155207E 533106N 0155122E 533816N 0152441E 533857N 0152248E 533954N 0152117E 534056N 0152018E 534355N 0151813E 534511N 0151740E 534629N 0151741E 534745N 0151817E 534852N 0151924E 534947N 0152058E 535025N 0152254E	<u>FL500</u> FL095	AMC Manageable area (AMA)  Time of activity will be published by AUP/UUP.  FUA restriction: <b>EXTS202ZR</b> - Not available for traffic.  <i>or</i> see paragraph 3

535031N 0152318E 535710N 0155624E		
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### 1.1. Existing Reserved/ Restricted areas

The military exercise will also be conducted in the following existing areas as published in <State> AIP ENR 5.1:

**EXD510**  
**EXD511**  
**EXD512**  
**EXD513**  
**EXD514**  
**EXD515**  
**EXD516**

And AIP ENR 5.2:

**EXTR250A, EXTR250AZ**  
**EXTR250B, EXTR250BZ**  
**EXTR250C, EXTR250CZ**  
**EXTR250D, EXTR250DZ**  
**EXTR251**  
**EXTR252**  
**EXTR253**

### 2. Restrictions

For the temporary restricted/reserved areas published in paragraph 2.1, the following temporary FUA restrictions will be published:

**EXTS101ZR** - Not available for traffic.

**EXTS102ZR** - Not available for traffic.

**EXTS103ZR** - Not available for traffic.

**EXTS104ZR** - Not available for traffic.

**EXTS201ZR** - Not available for traffic except for traffic to/from EXAA, EXBC and EXDE aerodromes.

**EXTS202ZR** - Not available for traffic except for traffic to/from EXAA, EXBC and EXDE aerodromes.

For a full list of restrictions applied during the military exercise MIKE

	<p>ECHO 2020 see the dedicated Annex for Special event published on the NM RAD Homepage.</p> <p>On the day of the exercise during the activation windows specified in paragraph 4, the following RAD restrictions shall be temporarily suspended: EX2056, EX2058 and EX2038.</p> <p><b>3. Airspace activation schedule</b></p> <p>Information on the airspace activation schedule will be published by NOTAM on &lt;insert date&gt;.</p> <p>OR</p> <p>Information on the airspace activation schedule will be published by NOTAM on &lt;insert number of days&gt; prior to execution of the military exercise/activity.</p> <p>OR</p> <p>Exercise airspace will be activated daily as follows:</p> <p><b>22/09/2020</b></p> <p>0800-1000 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR105Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ</p> <p>1200-1400 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR105Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ</p> <p><b>23/09/2020</b></p>
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	<p>0800-1000 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR104Z, EXTR201, EXTR201Z, EXTR202, EXTR202Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ</p> <p>1200-1400 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR104Z, EXTR201, EXTR201Z, EXTR202, EXTR202Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ, EXTR251, EXTR252, EXTR253</p> <p><b>24/09/2020</b></p> <p>0800-1000 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR105Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ</p> <p>1200-1400 (UTC):</p> <p>EXTR101, EXTR101Z, EXTR102, EXTR102Z, EXTR103, EXTR103Z, EXTR104, EXTR105Z, EXTR250A, EXTR250AZ, EXTR250B, EXTR250BZ, EXTR250C, EXTR250CZ, EXTR250D, EXTR250DZ</p> <p><b>4. Management of the areas</b></p> <p>The reserved/restricted areas will be managed daily via AUP/UUP.</p> <p>NOTAMs will be also published for the activation of the Danger (D) areas as stated in paragraph 2.2. and &lt;state&gt; AIP ENR 5.1.</p> <p>NOTAM/s will be also published for the activation of all airspace structures used during &lt;insert name</p>
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	<p>of the military exercise/activity OR the military exercise/activity&gt; as stated in section 2 of this AIP Supplement.</p> <p><b>5. Flight planning information for participating traffic</b></p> <p>Participating flights to and from the exercise area will be conducted according to flight plans (FPLs) and will have the remark "MIKE ECHO 2020" in field 18.</p> <p>Crews of aircraft conducting flights for the exercise shall avoid active reserved/restricted areas, which are not used for the exercise.</p> <p><b>6. Flight planning information for non-participating traffic</b></p> <p>During hours according to paragraph 4 (or) NOTAM, flight planning through exercise areas for non-participating traffic are not allowed or allowed according to the exemptions described in paragraph 3. Real unavailability of ATS route segments, DCTs, FRA and airspace concerned will be notified via EAUP/EUUP. The corresponding restrictions will be activated for flight planning purposes.</p> <p><b>6.1. Mandatory routes for traffic to/from EXQQ and EXYY</b></p>
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<b>Departure from EXQQ to</b>	<b>shall flight plan</b>
EXWW	DCT ALPHA N254 BRAVO
EXUU	DCT DELTA K132 HOTEL
Other destinations	DCT FOX DCT INDIA, then at AO's discretion
	DCT FOX DCT OSCAR, then at AO's discretion

Departure from EXYY to	shall flight plan
EXWW	DCT TANGO U234 INDIA
EXUU	DCT ROMEO M134 SIERA
Other destinations	DCT GABON, then at AO's discretion
	DCT RAT DCT TONGA, then at AO's discretion

	<p><b>1.1. Mandatory re-routing for en-route traffic</b>  <i>&lt;insert mandatory re-routing to avoid active exercise areas&gt;</i></p> <p><b>1.2. Procedures for VFR traffic</b>  <i>&lt;insert procedures, authorisation and other information deemed relevant for VFR traffic&gt;</i></p> <p><b>2. Communication/Notification</b></p> <p><b>3. Authorities / Contacts</b></p> <p><b>3.1. Before the exercise</b>  Information prior to the exercise is available from:  <i>&lt;insert contact details&gt;</i></p> <p><b>3.2. During the exercise</b>  Information during the exercise is available from:  <i>&lt;insert contact details&gt;</i></p> <p style="text-align: center;"><b>Appendices</b></p> <p>Appendix 1 – Map of the MIKE ECHO 2020 military exercise areas.</p> <p>Appendix 2 – Map with mandatory re-routing.</p>
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**Appendix C**Methodology for the execution of Network Impact Assessment (NIA)

1. In principle, the proposed methodology includes a number of steps applicable to any kind of event requiring the execution of a Network Impact Assessment (NIA). Indeed, whether a large-scale temporary event or the establishment of a permanent airspace structure or the establishment of airspace structures for new entrants' operations, the data required and the steps necessary to perform the analysis and provide required feedback are basically the same:
  - Preparation of the ATM environment;
  - Identification of the impacted traffic and the effects on ATM performance, both in terms of flight efficiency (nominal trajectory vs required re-routings) and capacity (sectors loads and associated possible ATFM measures with the event vs. without the event);
  - Identification of what-if solutions to mitigate the impacts on ATM performance.
2. The type and complexity of the events can determine the granularity of the analysis necessary to provide the required information. Such granularity is also influenced by the lead-time available before the events, as well as by the specific requests of the stakeholders.
3. With regards to the lead time, the Annex 12 provisions give a clear indication about the need to address the request well in advance, to facilitate the planning, to make simulations, and to allow the identification of proposals that could help to eventually introduce modifications for minimising network impacts. Later the request is submitted, less opportunities to perform an effective NIA to provide advice up to the point where any NIA can only detect potential implications (e.g. traffic impacted and impacts in terms of flight efficiency or flights potentially subject to re-schedule).
4. Hereafter, the methodology to be applied for a NIA is defined, including the different steps and required inputs/outputs. The NIA execution period varies due to the complexity of the ATM environment to be analysed, the time extent of the event (e.g. whether one day or few weeks), the relation and inter-dependency with other events in the network. This is covered by the coordination procedures of Annex 12 and the schedule of Appendix A. Moreover, the number of requests received to perform a NIA brings to the need to define priorities in the execution (e.g. expected magnitude of the network impact or time to the event) and establish a schedule together with the concerned stakeholders which affects the period of execution.
- 5 Preparation of ATM environment
  - 5.1 To perform a NIA, it is essential to gather/agree on a set of data to be used. In principle, the following data should be made available by the relevant stakeholders:
    - Period of the event/s;

- Description of the temporary airspace changes requested (coordinates, vertical limits, time windows for expected activation);
  - Associated restriction types (e.g. no exemption or specific ones);
  - Management of the airspace volumes (e.g. AUP/UUP);
  - Agreement on the ATM geographical scope to consider for the evaluation, taking into consideration the network modifications available for the period of the events. It should include the reference sector configurations of the relevant airspace, with available sector capacity values;
- 5.2 The following parameters should be agreed with the stakeholders for execution of NIA:
- Consideration of any other ATM event/s in the network (e.g. change of systems in relevant ATM centres, planned strikes, etc);
  - Definition of Scenarios, such as combination of RSAs among the new and/or in combination with existing ones that shall not be allowed, therefore, not to be considered;
  - AUP/UUP data for the reference Scenarios, normally one week in the past during the same period of the events or the most penalising if so agreed.
  - Traffic demand to be used.
  - Parameters definition for re-routing of the traffic.
6. Identification of the traffic impacted and the effects on the ATM performance
- 6.1. With the available set of data, a NIA could be launched to analyse the potential impact of the event/s on the network. This normally addresses:
- Identification of number of flights affected by the activation of the RSA/s;
  - Number of flights with rerouting possibility, according to the agreed parameters;
  - Calculation of the flight efficiency indicators;
  - Number of flights for which a reasonable re-routing has NOT been found, according to the defined parameters for reasonable re-routing;
  - Identification of impacted stakeholders (e.g. ANSPs, Airports, AOs);
  - Identification of any possible curfew issues for these flights at the involved airports, on request of stakeholders, providing the availability of the curfew information; Identification of the sector load variation (onloaded vs. offloaded sectors) as a result of the re-routed traffic and/or with a shifted EOBT.
- 6.2. Regarding the capacity assessment described in the last two bullet points, it is paramount that relevant information on sectorisation, sector capacities and sector configurations, available during the event, is promptly communicated by the stakeholder/s. This affects the estimation of potential ATFM delays to be used for analysis and comparison purposes in case of what-if simulations are performed to identify the least penalising solution. It should be noted that ATFM delay simulations in the context of NIA aim to provide guidance in the decision-making process and in the definition of the most suitable ATFM measures for the event. The actual extent of application of ATFM measures for the event is further adjusted and set at Pre-tactical and Tactical level.
- 6.3. This analysis could become more complex in case of simultaneous events., In these cases, the effects on the traffic could be multiple, generating a domino effect.

7. Identification of what-if solutions to mitigate the impacts on ATM performance
- 7.1. The last step, (what-if simulations), is the most complex part of the NIA and requires long execution time, including necessary coordination with the stakeholders. There is not a unique technique, it depends on case by case to judge which parameters/data makes more sense to be modified to evaluate whether mitigations of the potential impact are possible. In case of multiple simultaneous event the difficulties are exponential and not always possible to find solutions with the current available systems. In these cases, the experience and the judgement of the experts is essential. The outcomes of these simulations could bring for consideration of the following parameters:
- Modification of the event/s period;
  - Modification of the airspace changes requested (dimensions, time windows, vertical limits);
  - Identification of the shifting time that potentially will allow these flights to be executed;
  - Definition of additional Scenarios to avoid more cases of simultaneous activations of RSA. This could include situation of RSAs across boundaries, to be coordinated with relevant stakeholders;
  - Modification of sector configurations (e.g. different sector configurations, more sectors for the period of the events, increased of capacity values);
  - Definition of new restrictions to tune the traffic flows;
  - Potential delays generated in case of ATFM measures applied to the overloaded sectors, with implications on the flight rotation cycle.
- 7.2. The results of the NIA should be used to finalise the required publications.

## References

- [1] EUROCONTROL Manual for Airspace Planning (EUROCONTROL Document ASM.ET1.ST03.4000.EAPM.02.02 - 22 October 2003)
- [2] EUROCONTROL “The 2015 Airspace Concept and Strategy for the ECAC Area and Key Enablers”,  
(EUROCONTROL Document ASM.ET1.ST03.4000-EAS-02-00 - 28 February 2008)
- [3] EUROCONTROL “Strategic Guidance in Support of the Execution of the European ATM Master Plan”  
(EUROCONTROL Document Edition 1.0 - 13 May 2009)
- [4] European Commission Interoperability Regulation (EC) No 552/2004 of 10 March 2004
- [5] Commission Implementing Regulation (EU) 2019/123 of 24 January 2019 laying down rules for the implementation of the air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011
- [6] Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) 391/2013
- [7] Implementation and Application of the Flexible Use of Airspace Regulation (EC) No 2150/2005 of 23 December 2005
- [8] Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011
- [9] Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulation (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system
- [10] EUROCONTROL Specification for the Application of the Flexible Use of Airspace (FUA) (EUROCONTROL Document EUROCONTROL - SPEC -0112 - Edition 1.1 - 10 January 2009)

**ICAO Documentation**

- [1] **Annex 2 - Rules of the Air**
- [2] **Annex 11 - Air Traffic Services**
- [3] **Annex 15 Aeronautical Information Services**
- [4] **Doc 4444** Procedures for Air Navigation Services – Air Traffic Management
- [5] **Doc 7754** EUR Air Navigation Plan
- [6] **Doc 8126** Aeronautical Information Services Manual
- [7] **Doc 9426** Air Traffic Services Planning Manual
- [8] **Doc 9554** Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations
- [9] **Doc 10066** Procedures for Air Navigation Services - Aeronautical Information Management Reference 1
- [10] **Doc 10088** Manual on Civil-Military Cooperation in Air Traffic Management, First Edition 2021

## Definitions

1. The terms used in the ASM Handbook have the following meanings.
2. The ICAO definitions are identified with an **(I)** at the end of the text.
3. Some terms may have an explanatory note in italics.

### A

**Active Mode of Real Time Civil/Military Coordination** is the communication mode in real time between civil and military units which results from an action by the controller(s).

*It encompasses both "Verbal" coordination by speech only, and "Silent" coordination, the communication process by manual input only.*

**Ad hoc Structures** refer to airspace structures, whether routes or areas, required to meet operational needs at shorter notice than ASM Level 1 process. The establishment of such ad hoc structure at ASM Level 2 or ASM Level 3 should follow the general design and safety management criteria.

**Aerial Work** is an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc. **(I)**

**Aeronautical Information Publication (AIP)** is a publication issued by or with the authority of a State containing aeronautical information of a lasting character essential to air navigation. **(I)**

**Aeronautical Information Service (AIS)** A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation. **(I)**

*Such information includes the availability of air navigation facilities and services and the procedures associated with them and must be provided to flight operations personnel and services responsible for flight information service.*

**Aircraft Operating Agencies (AOs)** are the person, organisation or enterprise engaged in, or offering to engage in, an aircraft operation. **(I)**

*In the context of the FUA Concept, "AOs" encompass all aircraft operations other than aerial work operations, that is to say commercial air transport operations and general aviation operations.*

**Airspace Configuration** Is a pre-defined and coordinated organisation of ATS routes of the ARN and/or Terminal Routes and their associated airspace structures (including temporary airspace reservations, if appropriate) and ATC sectorisation.

**Airspace Data Repository** provides an unified source of updated information about the past, present and future status of airspace, routes, sector capacities, airport capacities, runways in use, pre-determined ATFCM scenarios and their modus operandi to resolve problematic traffic areas, etc. for which a recognised authority has taken a decision in terms of implementation, allocation, activation, etc.

**Airspace Management (ASM)** is a planning function with the primary objective of maximising the utilisation of available airspace by dynamic time-sharing and, at times, the segregation of airspace among various categories of users based on short-term needs. In future systems, airspace management will also have a strategic function associated with infrastructure planning. (I)

*In the context of the FUA Concept, airspace management is a generic term covering any management activity at the three Strategic, Pre-tactical and Tactical Levels, provided for the purpose of achieving the most efficient use of airspace based on actual needs and, where possible, avoiding permanent airspace segregation.*

**Airspace Management Cell (AMC)** is a joint civil/military cell responsible for the day-to-day management and temporary allocation of national or sub-regional airspace under the jurisdiction of one or more ECAC State(s).

**Airspace Reservation** is a defined volume of airspace temporarily reserved for exclusive or specific use by categories of users.

**Airspace Restriction** is a defined volume of airspace within which, variously, activities dangerous to the flight of aircraft may be conducted at specified times (a 'danger area'); or such airspace situated above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions (a 'restricted area'); or airspace situated above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited (a 'prohibited area').

**Airspace Scenario** is a pre-defined and coordinated set of temporary airspace reservations identifying a possible ASM Solution supporting the ASM/ATFCM CDM process. The final decision to activate a pre-defined airspace scenarios/areas allocation decision remains the responsibility of the AMC/Lead AMC (for cross-border airspace scenario). It is managed as a stand-alone scenario or supporting an associated Airspace Configuration.

**Airspace Scenario restrictions group** is a sum of different restrictions linked to an Airspace Scenario and with dependent applicability on at least one RSA from the Airspace Scenario.

**Airspace Structure** is a specific volume of airspace designed to ensure the safe and optimal operation of aircraft.

**Airspace Use Plan (AUP)** is an ASM message of NOTAM status notifying the daily decision of an Airspace Management Cell on the temporary allocation of the airspace within its jurisdiction for a specific time period, by means of a standard message format.

**Air Traffic** encompasses all aircraft in flight or operating on the manoeuvring area of an aerodrome. (I)

**Air Traffic Control Clearance** is an authorisation for an aircraft to proceed under conditions specified by an Air Traffic Control unit. (I)

*For convenience, the term "Air Traffic Control Clearance" is frequently abbreviated to "ATC Clearance" or "Clearance" when used in appropriate contexts. (I)*

*The abbreviated term "Clearance" may be prefixed by the words "taxi", "take-off", "departure", "en-route", "approach" or "landing" to indicate the particular portion of flight to which the Air Traffic Control Clearance relates. (I)*

**Air Traffic Control Service** is a service provided for the purpose of:

- a) preventing collisions:
  - 1) between aircraft, and
  - 2) on the manoeuvring area between aircraft and obstructions, and
- b) expediting and maintaining an orderly flow of air traffic. (I)

**Air Traffic Flow and [Capacity] Management (ATF[C]M)** is a service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilised to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

*Note: The above-mentioned is the ICAO definition of the ATFM. ATFCM is EUROCONTROL term that includes process that ensures better realisation of the ATM capacity towards the traffic demand.*

**Air Traffic Flow Management Notification Message (ANM)** is the official medium for the notification of ATFCM measures. It is produced by the NM the day before the day of operation to provide a summary of planned ATFCM measures and to promulgate any specific instructions or communications requirements associated with those measures.

**Air Traffic Management (ATM)** is the dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management - safely, economically and efficiently - through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions. (I)

*The general objective of ATM is to enable aircraft operators to meet their planned departure and arrival times and to adhere to their preferred flight profiles with the minimum constraints, without compromising agreed levels of safety.*

**Air Traffic Services (ATS)** is a generic term meaning variously, Flight Information Service, Alerting Service, Air Traffic Advisory Service, Air Traffic Control Service (Area Control Service, Approach Control Service or Aerodrome Control Service). (I)

**Airway (AWY)** is a control area or portion thereof established in the form of a corridor. (I)

**AMC-Manageable Area** is an area subject to management in terms of negotiation and allocation decision of an AMC at ASM Level 2.

*Under the TAA Process, these manageable areas are either formal structures entitled "TRAs or TSAs" or R and D Areas that are manageable at ASM Level 2 in the same way as TRAs/TSAs.*

**AMC-AUP contingency template** is a template AUP established and maintained under the responsibility of the State/AMC and provided in advance to NM/CADF for implementation in specific cases where the nominal AUP procedure cannot be followed.

**Approved Agency (AA)** is an entity, military or civil, which is authorised by a State to communicate with an Airspace Management Cell for airspace allocation and utilisation matters. The State is responsible for the designation of an Approved Agency.

**Area Control Centre (ACC)** is a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction. **(I)**

**Area Navigation (RNAV)** is a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these. **(I)**

**ATC Clearance** (see Air Traffic Control Clearance)

**ATC Coordination** is the process of communication between ATC units, or controllers within such units, of the necessary flight plan data, radar data and control information with a view to reaching an agreed course of action as the controlled flight(s) progress(es).

**ATC Instructions** are directives issued by air traffic control for the purpose of requiring a pilot to take a specific action. **(I)**

**ATC Unit** is a generic term meaning variously, area control centre, approach control office or aerodrome control tower. **(I)**

**ATS Unit** is a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

**ATS Airspaces** are airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified. **(I)**

*ATS airspaces are classified as Class A to G (I).*

**ATS Reporting Office (ARO)** is a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure. **(I)**

**ATS Route** is a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services. **(I)**

*The term "ATS route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.*

*An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.*

## **B**

**Buffer Timers for an RSA** – An additional time beyond the scheduled activity for which an active RSA is protected, to ensure the flight plans crossing the area are rejected in case of a deviation from the EOBT used by IFPS for validating FPLs against an allocated RSA. Buffer Times could be added before and/or after the scheduled RSA activity. The implementation of buffer times is based on national decisions.

**B2B - Business to Business** - means that the services are offered via a programmatic interface; this implies that the customer has to develop software that uses that interface in order to access our services; this is the case of the NOP B2B web services.

**B2C - Business to Client** - means that the services (the business) are offered via client interface that are property of the NM (CHMI, Portal); this implies that the

customer does not need to develop any software to access the offered services.

## C

**Centralised Airspace Data Function (CADF)** is an ASM function entrusted to the NM by the ECAC States for consolidating national AUPs/UUPs to be published on the NOP Portal as EAUP and EUUP.

**Changed Airspace Restriction (CAR)** concerns any Danger or Restricted Area not suitable for Pre-Tactical management, but for which a change in its use, either in time or size, could be notified to AMC the day before activity for publication in the List "DELTA" of AUP/UUP.

**Civil/Military Coordination** is the communication between civil and military elements (human and/or technical) necessary to ensure safe, efficient and harmonious use of the airspace.

**Clearance** (see Air Traffic Control Clearance) (I)

**Cleared Flight Level (CFL)** is the flight level at or to which an aircraft is authorised to proceed under conditions specified by an ATC unit.

**Conditional Route (CDR1)** is an ATS route that is only available for flight planning and use under specified conditions. CDR1 routes are available for flight planning at times and levels published in the relevant national Aeronautical Information Publication (AIP), unless it is made unavailable by the EAUP/EUUP(s) published daily.

*Note: When Single CDR Category (SCC) was implemented (removing CDR2s and CDR3s), it was decided, for software reasons and to minimize the cost of the changes, that the remaining conditional routes would be named with the acronym CDR1 and not CDR.*

**Control Area (CTA)** is a controlled airspace extending upwards from a specified limit above the earth. (I)

**Control Zone (CTR)** is a controlled airspace extending upwards from the surface of the earth to a specified upper limit. (I)

**Controlled Airspace** is an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification. (I)

*Controlled Airspace is a generic term, which covers ATS airspace classes A, B, C, D and E.*

**Controlled Flight** is any flight, which is subject to an ATC clearance. (I)

**Controller's Intentions** are updated flight data, which shall be exchanged, as laid down in LoAs, either simultaneously with or before, the corresponding ATC clearance is issued.

**Controlling Military Unit (CMU)** means any fixed or mobile military unit handling military air traffic and/or pursuing other activities which, owing to their specific nature, may require an airspace reservation or restriction

**Cross-Border Area (CBA)** is an airspace restriction or reservation established over international borders for specific operational requirements. This may take the form of a Temporary Segregated Area or Temporary Reserved Area

**Current Flight Plan (CPL)** is the flight plan, including changes, if any, brought about by subsequent clearances. (I)

*When the word "message" is used as a suffix to this term, it denotes the content and format of the current flight plan data sent from one unit to another. (I)*

## D

**Danger Area (D)** is an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. **(I)**

*In the context of the FUA Concept, some Danger Areas subject to management and allocation at ASM Level 2 are established at ASM Level 1 as "AMC-Manageable Areas" and identified as such in AIP.*

**DCT** Direct (*in relation to flight plan clearances and type of approach*) **(I)**

Decoded abbreviation/indicator DCT (Direct) or Encoded abbreviation/indicator Direct (DCT) should be used only:

- For flight planning purposes when submitting FPL;
- When executing specified type of approach.

## E

**eAMI** or electronic ASM Information is an electronic message containing all airspace allocations (ASM Level 1 and ASM Level 2) and the derived availabilities/unavailability of CDR1/ATS routes published daily in EAUP/EUUPs.

**European Route Network Improvement Plan (ERNIP)** means the plan developed by the Network Manager in coordination with the operational stakeholders that includes the result of its operational activities with respect to route network design on short and medium terms in accordance with the guiding principles of the Network Strategy Plan.

## F

**Filed Flight Plan (FPL)** is the flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes. **(I)**

*When the word "message" is used as a suffix to this term, it denotes the content and format of the filed flight plan data as transmitted. (I)*

**Flexible Use of Airspace (FUA)** Concept is based on the fundamental principle that airspace should not be designated as either pure civil or military airspace, but rather be considered as one continuum in which all user requirements have to be accommodated to the extent possible.

**Flight Information Region (FIR)** is an airspace of defined dimensions within which flight information service and alerting service are provided. **(I)**

**Flight Management System (FMS)** is an integrated system, consisting of airborne sensor, receiver and computer with both navigation and aircraft performance data bases, which provides performance and RNAV guidance to a display and automatic flight control system.

**Flight Plan** is a specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft. **(I)**

**Flow Management Position (FMP)** is a working position established within an ACC to ensure the necessary interface with the NM on matters concerning the provision of the ATFCM Service and the interface with national AMCs on matters concerning the ASM Service.

**FPL Buffer Zone (FBZ)** is an airspace volume, which may be established in association to a reserved/restricted area. The FBZ defines the lateral, vertical and time limits for the purpose of validating submitted IFR FPLs when the associated area is activated or planned to be activated.

**Free Route Airspace (FRA)** is a specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) significant points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

**FUA Restriction** is the restriction introduced in the CACD database in order to manage the acceptance of FPLs through a specific restricted/reserved area and/or associated FBZ. With the activation of a FUA restriction, all the FPLs affected by the restriction will be rejected, unless related to any exclusions defined in the restriction. The activation of a FUA restriction is triggered by the allocation of the reserved/restricted area and/or associated FBZ through AUP/UUP. FUA Restrictions are published in Route Availability Document Appendix 7 – FUA Restrictions.

**FUA/RAD Restriction** is the restriction introduced in the CACD database in order to manage the acceptance of FPLs impacted by a specific restricted/reserved area and/or associated FBZ. The activation of a FUA/RAD restriction is triggered by the allocation of the reserved/restricted area and/or associated FBZ through AUP/UUP. FUA/RAD Restrictions are published in the Route Availability Document Appendix 4 – En-route DCT Limits and Annex – Pan European.

**FUA restrictions group** is a combination of different types of restrictions with dependent applicability on the same RSA or multiple RSAs managed as a group and/or individually via AUP/UUP.

**FUA Temporary Instruction (FTI)** is a temporary instruction published by the NM and agreed/applied by appropriate AMCs and the NM/CADF for all or for a part, of the FUA area.

## G

**General Air Traffic (GAT)** encompasses all flights conducted in accordance with the rules and procedures of ICAO and/or the national civil aviation regulations and legislation.

*GAT can include military flights for which ICAO rules and procedures satisfy entirely their operational requirements.*

**General Aviation** encompasses an aircraft operation other than a commercial air transport operation or an aerial work operation. **(I)**

## I

**Integrated Initial Flight Plan Processing System (IFPS)** is the NM system receiving and processing the GAT IFR flight plan data and associated update messages for the area covered by the participating States. It subsequently distributes these messages in a format, which can be received and processed automatically by ATC Flight Plan Processing Systems (FPPS). The IFPS is installed at two geographical sites.

**K**

**Known Traffic Environment (KTE)** is the environment within which all traffic is known to ATS.

**L**

**Level 1 - Strategic ASM** is the act of defining and reviewing, as required, the national airspace policy taking into account national and international airspace requirements.

**Level 2 - Pre-Tactical ASM** is the act of conducting operational management within the framework of pre-determined existing ATM structure and procedures defined in ASM Level 1 and of reaching specific agreement between civil and military authorities involved.

**Level 3 - Tactical ASM** is the act, on the day of operation, of activating, deactivating or real time reallocating of airspace allocated in ASM Level 2, and of solving specific airspace problems and/or of individual OAT/GAT traffic situations in real time between civil and military ATS units and/or controlling military units and/or controllers, as appropriate. This coordination can take place either in active or passive mode with or without action by the controller.

**Large-scale activity** - An event requiring multi-agency (i.e. civil - military coordination) and/or cross border coordination which potentially requires temporary ASM measures that has an impact at network level.

**M**

**Manoeuvring Area** is that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons. (I)

**Military activity/exercise** is a military event requiring multi-agency (i.e. civil - military coordination) and/or cross border coordination which potentially requires temporary ASM measures that has an impact at network level.

**N**

**NM Environment Data Base** is a specific part of the NM Data Base containing all environment data concerning airspace organisation and structure, ACC operational organisation and ATC capacities. The Environment Data Base is used by the NM systems for the calculation of flight profiles taking account of all airspace constraints.

**Network Manager** means the entity established under Article 6 of regulation (EC) No 551/2004 (the Airspace regulation) as amended by Regulation (EC) 1070/2009 to perform the duties provided for in that article and in the Commission Implementing Regulation (EU) 2019/123 laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011.

**Network Management Directorate** is a Eurocontrol Directorate nominated by the EC as European Network Manager to perform the network functions under the conditions defined in Commission Implementing Regulation (EU) 2019/123 (the ATM Network Functions regulation).

**Network Manager Operation Centre (NMOC)** is a Network Manager Unit being the operational component of the Network Manager, established in accordance with the applicable regulations and requirements to provide the ATFCM and

Initial Flight Planning Service, on behalf of the participant States. For ASM purposes, the NMOC is also entrusted with the Centralised Airspace Data Function (CADF).

**Network Operation Plan** means the plan developed by the Network Manager in coordination with the operational stakeholders to organise its operational activities in the short and medium term in accordance with the guiding principles of the Network Strategic Plan. For the European route network design (ERND) specific part of the Network Operation Plan, it includes the European Route Network Improvement Plan (ERNIP).

**Network Strategy Plan** means the plan developed by the Network Manager, consistent with the European ATM Master Plan, in coordination with member States and the operational stakeholders defining the guiding principles for the network operation and its long term perspective.

**Non-standard Planning Zone (NPZ)** is an airspace of defined dimensions within which the planning of flight trajectory is either not permitted or allowed under certain specified conditions.

**Non AMC-Manageable Area** is an area not subject to the management in terms of negotiation and allocation decision of an AMC at Level 2. This area is eligible to be processed and notified via AUP/UUP according to its conditions described in AIP/AIS publication and reflected in CACD.

**Notice to Airmen (NOTAM)** is a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations. (I)

## O

**Off-Route Traffic** encompasses all GAT flying outside the published ATS Routes Network.

**On-Route Traffic** encompasses all GAT flying along the published ATS Routes Network.

**Operational Air Traffic (OAT)** encompasses all flights which do not comply with the provisions stated for GAT and for which rules and procedures have been specified by appropriate national authorities.

*OAT can include civil flights such as test-flights, which require some deviation from ICAO rules to satisfy their operational requirements.*

**Operations Division (OPSD)** is the NM unit responsible for the planning, coordination and execution of the Strategic, Pre-Tactical and Tactical Air Traffic Flow and Capacity Management as well as for the collection, updating, processing and dissemination of data on flight operations and on the air navigation infrastructure. This includes the running of, amongst other systems, the Integrated Initial Flight Plan Processing System and the Environment Database.

## P

**Passive Mode of Real Time Civil/Military Coordination** is the system-supported communication mode of information in real time between civil and military units without any action by the controller(s).

**Permanent ATS Route** is a permanently designated ATS route which is not subject to daily management at ASM Level 2 by AMCs.

**Pre-Tactical Civil/Military Coordination** - (see definition of ASM Level 2 - Pre-Tactical ASM).

**Prior Coordination Airspace (PCA)** is a volume of airspace of defined dimensions within which individual GAT is permitted to fly outside an authorised published ATS route segment or an allowed DCT between two waypoints, only after prior coordination initiated by controllers of GAT flights with controllers of OAT flights.

**Prohibited Area (P)** is airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited. **(I)**

## R

**Real-Time airspace data** - includes activation, deactivation or reallocation of the airspace structure (areas, including NPZ, and routes – CDR1, SID/STAR<sup>2</sup>), shared airspace status (PCA/RCA), dynamic airspace classification (e.g. TMA) and restrictions.

**Real-Time Civil/Military Coordination** - (see definition of ASM Level 3 - Tactical ASM).

**Reduced Coordination Airspace (RCA)** is a volume of airspace of defined dimensions within which GAT is permitted to fly outside an authorised published ATS route segment or an allowed DCT between two waypoints, without requiring controllers of GAT flights to initiate coordination with controllers of OAT flights.

**Restricted Airspace (RSA)** is the generic term used to define any type of restricted/reserved areas uploaded in the CACD and managed by NM systems. AMC/CADF Operations manual provides more information and operational instructions (chapter 4) for the RSA management.

**Restricted Area (R)** is airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions. **(I)**

*In the context of the FUA Concept, some Restricted Areas are subject to management and allocation at ASM Level 2 are established at ASM Level 1 as "AMC-Manageable Areas" and identified as such in AIP.*

**Route Availability Document (RAD)** is a strategically planned routing system for the NM area agreed at the annual meeting. The RAD is designed as a part of the NM ATFCM operation to make the most effective use of ATC capacity while allowing aircraft operators' flight planning flexibility. The RAD enables ATC to maximise capacity by defining routings that provide an organised system of major traffic flows through congested areas and reduce the crossing of major flows at critical points

## S

**Silent Coordination** (see definition of Active Mode of Real Time Coordination)

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<sup>2</sup> Not yet implemented in AUP/UUP.

**Standard Instrument Arrival (STAR)** is a designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced. (I)

**Standard Instrument Departure (SID)** is a designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences. (I)

**Strategic Civil/Military Coordination** - (see definition of ASM Level 1 - Strategic ASM).

## T

**Tactical Civil/Military Coordination** - (see definition of ASM Level 3 - Tactical ASM).

**Temporary Airspace Allocation Process** consists in the allocation process of airspace of defined dimensions assigned for the temporary reservation/segregation (TRA/TSA) or restriction (D/R) and identified more generally as an "AMC-manageable" area.

**Temporary Reserved Area (TRA)** is a defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for the specific use by another aviation authority and through which other traffic may be allowed to transit, under ATC clearance.

*In the context of the FUA Concept, all TRAs are airspace reservations subject to management and allocation at ASM Level 2.*

**Temporary Segregated Area (TSA)** is a defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily segregated, by common agreement, for the exclusive use by another aviation authority and through which other traffic will not be allowed to transit.

*In the context of the FUA Concept, all TSAs are airspace reservations subject to management and allocation at ASM Level 2.*

**Terminal Airspace** is a generic term encompassing Terminal Control Area (TMA), Control Area (CTA), Control Zone (CTR), Aerodrome Traffic Zone (ATZ), Flight Information Zone (FIZ), or any other nomenclature used to describe the airspace around an airport.

**Terminal Control Area (TMA)** is a control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes. (I)

## U

**Unknown Traffic Environment (UTE)** is the environment within which not all traffic is known to ATS.

**Updated Airspace Use Plan (UUP)** is an ASM message of NOTAM status issued by an AMC to update and supersede AUP/previous UUP information.

## V

**Verbal Coordination** (see definition of Active Mode of Real Time Coordination)



## Acronyms

Abbreviations and acronyms used in this document are available in the EUROCONTROL Air Navigation Inter-site Acronym List (AIRIAL) which may be found online:

<http://www.eurocontrol.int/airial/definitionListInit.do?skipLogon=true&glossaryUid=AIRIAL>.

Abbreviations for which an explanation is given in the ASM Handbook are marked with one asterisk \*.

5LNC Five Letter Name-Codes (for Significant Points)

### A

AA	Approved Agency *
ACC	Area Control Centre*
ACP	Airspace Crossing Acceptance Message
ADR	Airspace Data Repository
ADT	Approved Departure Time
AFTN	Aeronautical Fixed Telecommunications Network
AIM	Air Traffic Flow Management Information Message
AIP	Aeronautical Information Publication*
AIS	Aeronautical Information Service*
AIXM	Aeronautical Information Exchange Model
AMA	AMC Manageable Area
AMC	Airspace Management Cell*
AME	ATM Message Exchange
ANM	ATFCM Notification Message*
ANT	Airspace and Navigation Team
AO	Aircraft Operator*
AOLO	Aircraft Operation Liaison Officer
AOWIR	Aircraft Operator What if Re-routeing (NM Function)
ARO	ATS Reporting Office*
ARN	ATS Route Network
ASM	Airspace Management*
ASMSG	Airspace Management Sub-Group (Sub-Group of NET-OPS Team)
ATC	Air Traffic Control*
ATFCM	Air Traffic Flow and Capacity Management*
ATM	Air Traffic Management (ATS+ASM+ATFCM)*
ATS	Air Traffic Services*

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ATSU	Air Traffic Services Unit*
ATZ	Aerodrome Traffic Zone
AUA	ATC Unit Airspace
AUAG	ATC Unit Airspace Grouping
AUP	Airspace Use Plan*
AW	Arial Work
AWY	Airway*
<b>B</b>	
BFD	Basic Flight Data Message
B2B	Business to Business
B2C	Business to Client
<b>C</b>	
CACD	Central Airspace and Capacity Database (former ENV)
CADF	ECAC Centralised Airspace Data Function*
CAR	Changed Airspace Restriction
CBA	Cross-Border Area*
CDR1	Conditional Route*
CFD	Change to Flight Data Message
CFL	Cleared Flight Level*
CHMI	Collaborative Human Machine Interface (CHMI) is a remote tool in use by Network Management clients
CIAM	Collaboration Interface Airspace Management
CMU	Controlling Military Unit
CPL	Current Flight Plan*
CTA	Control Area*
CTR	Control Zone*
CSO	Customer technical Service desk and Operations
<b>D</b>	
D	Danger Area
DAM	Dynamic Airspace Management
DCT	Direct
DES	De-Suspension Message
DOC	Document
<b>E</b>	
EANPG	ICAO European Air Navigation Planning Group
EAPM	ECAC Airspace Planning Manual

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eAMI	Electronic ASM Information
EAUP	European Airspace Use Plan
EAW	Early Access to Weekend Routes
ECAC	European Civil Aviation Conference
ENV	NM Environment Database (presently CACD)
EOBT	Estimated Off-Block Time
EUR ANP	ICAO European Air Navigation Plan
EUUP	European Updated Airspace Use Plan

**F**

FBZ	FPL Buffer Zone
FIR	Flight Information Region*
FLS	Flight Suspension Message
FMP	Flow Management Position*
FMS	Flight Management System
FMU	Flow Management Unit
FPL	Flight Plan*
FPPS	Flight Plan Processing System
FRA	Free Route Airspace
FTI	FUA Temporary Instruction*
FUA	Flexible Use of Airspace*

**G**

GAT	General Air Traffic*
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**H**

HX	No specific working hours
HLAPB	National High Level Airspace Policy Body

**I**

ICAO	International Civil Aviation Organisation
IFPS	Integrated Initial Flight Plan Processing System*
IFR	Instrument Flight Rules

**L**

LoA	Letter of Agreement
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**M**

MOD	Ministry of Defence
MOT	Ministry of Transport

**N**

NATO	North Atlantic Treaty Organisation
NAM	Non AMC-Manageable Area
NAS	National Airspace System
NETOPS	Network Operations Team
NM	Network Manager
NMD	Network Management Directorate
NOP	Network Operations Portal
NOTAM	Notice to Airmen*
NPZ	Non-standard Planning Zone

**O**

OAT	Operational Air Traffic*
OLDI	On-Line Data Interchange
OPSD	Operations Division (NM)

**P**

P	Prohibited Area
PBN	Performance Based Navigation
PCA	Prior Coordination Airspace*
PRISMIL	Pan-European Repository of Information Supporting Military

**R**

R	Restricted Area
RAD	Route Availability Document*
RCA	Reduced Coordination Airspace*
RDPS	Radar Data Processing System
RJC	Airspace Crossing Reject Message
RNAV	Area Navigation*
RNDSG	Route Network Development Sub-Group
RRN	Re-routeing Notification Message
RSA	Restricted Airspace

**S**

SAM	Slot Allocation Message
SAR	Search and Rescue
SID	Standard Instrument Departure*
SITA	Société Internationale de Télécommunications Aéronautiques
SLC	Slot Cancellation Message

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SRM	Slot Revision Message
SSR	Secondary Surveillance Radar
STAR	Standard Instrument Arrival*
<b>T</b>	
TAA	Temporary Airspace Allocation Process*
TACT	NM Tactical System
TMA	Terminal Control Area*
TRA	Temporary Reserved Area*
TSA	Temporary Segregated Area*
<b>U</b>	
UAC	Upper Area Control Centre
UIR	Upper Flight Information Region
UTC	Coordinated Universal Time
UUP	Updated Airspace Use Plan
<b>V</b>	
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
<b>W</b>	
WGS	World Geodetic Survey
<b>X</b>	
XAP	Airspace Crossing Counter-Proposal Message
XRQ	Airspace Crossing Request Message







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