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EUROCONTROL Guidelines

**The ASM Handbook
Airspace Management Handbook for Application
of the Concept of the Flexible Use of Airspace**

EUROCONTROL Guidelines

-The ASM Handbook-

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

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The EUROCONTROL Guidelines - The ASM Handbook - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace specifies the general Airspace Management (ASM) functions and Air Traffic Management (ATM) procedures needed to apply and fully exploit the Concept of the Flexible Use of Airspace.			
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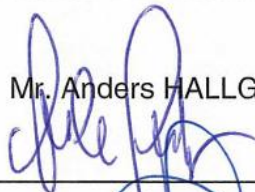
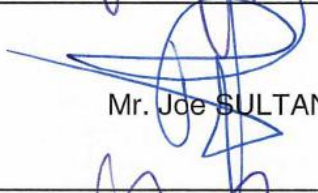


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FOREWORD

The Third Edition of the EUROCONTROL Guidelines for Airspace Management - The ASM Handbook - (EUROCONTROL-GUID-140), hereinafter referred to as the "ASM Handbook", specifies the general Airspace Management (ASM) functions and Air Traffic Management (ATM) procedures needed to apply and fully exploit the Concept of the Flexible Use of Airspace (FUA), adopted in June 1994 (EUROCONTROL Document 94.70.08, dated March 1994).

In this Third Edition the name of the ASM Handbook has been amended to reflect the naming convention of the REGULATION (EC) N° 549/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 10 March 2004, laying down the framework for the creation of the Single European Sky (the framework Regulation); *Article 2 - Definitions*; definition 22. refers to the ASM Handbook as the FUA Concept reference document. It also contains the EUROCONTROL Regulatory and Advisory Framework (ERAF) naming requirements.

The ASM Handbook should be regarded as a set of actions implemented by the ECAC States to be used in conjunction with the EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA).

The ASM Handbook should neither be considered as a substitute for official national regulations in individual ECAC States nor for the ASM Part of the ICAO European Region Air Navigation Plan.

The ASM Handbook is updated by the Airspace & Navigation Team (ANT). Airspace managers and users should submit proposed amendments to their representatives for consideration by the ANT.

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ABBREVIATIONS

Abbreviations for which an explanation is given in the ASM Handbook are marked with one asterisk *.

AA	Approved Agency *
ACC	Area Control Centre*
ACP	Airspace Crossing Acceptance Message
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	Airspace Manageable Area
AMC	Airspace Management Cell*
AME	ATM Message Exchange
ANM	ATFCM Notification Message*
ANT	Airspace & Navigation Team
AO	Aircraft Operator*
AOLO	Aircraft Operation Liaison Officer
AOWIR	Aircraft Operator What if Re-routing (CFMU Function)
ARO	ATS Reporting Office*
ARN	ATS Route Network
ASM	Airspace Management*
ASMSG	Airspace Management Sub-Group (Sub-Group of ANT)
ATC	Air Traffic Control*
ATFCM	Air Traffic Flow and Capacity Management*
ATM	Air Traffic Management (ATS+ASM+ATFCM)*
ATS	Air Traffic Services*
ATSU	Air Traffic Services Unit*
ATZ	Aerodrome Traffic Zone
AUP	Airspace Use Plan*
AW	Arial Work
AWY	Airway*
BFD	Basic Flight Data Message
CADF	ECAC Centralised Airspace Data Function*
CAR	Changed Airspace Restriction
CAS	Controlled Airspace
CASA	CFMU Computer Assisted Slot Allocation
CBA	Cross-Border Area*
CDN	Airspace Crossing Coordination Message
CDR	Conditional Route*
CEAC	NATO Committee for European Airspace Coordination
CFD	Change to Flight Data Message
CFL	Cleared Flight Level*
CFMU	EUROCONTROL Central Flow Management Unit*
CIAM	CFMU Interface Airspace Management
CIDIN	Common ICAO Data Interchange Network
CIMILSYSCO	Civil-Military System Supported Coordination
CMU	Controlling Military Unit
CPL	Current Flight Plan*

CRAM	Conditional Route Availability Message*
CTA	Control Area*
CTR	Control Zone*
D	Danger Area
DAM	Dynamic Airspace Management
DES	De-Suspension Message
DOC	Document
E	
ANPG	ICAO European Air Navigation Planning Group
EAPM	ECAC Airspace Planning Manual
eAMI	Electronic ASM Information
EAW	Early Access to Weekend Routes
ECAC	European Civil Aviation Conference
ENV	CFMU Environment Database
EOBT	Estimated Off-Block Time
EUR ANP	ICAO European Air Navigation Plan
F	
FDOD	Flight Data Operations Division*
FIR	Flight Information Region*
FLO	Informal ATS/ATFCM Coordination Meeting
FLOE	Informal ATS/ATFCM Coordination Meeting - Europe East
FLOW	Informal ATS/ATFCM Coordination Meeting - Europe West
FLS	Flight Suspension Message
FMD	Flow Management Division* (CFMU)
FMP	Flow Management Position*
FMS	Flight Management System
FMU	Flow Management Unit
FPL	Filed Flight Plan*
FPPS	Flight Plan Processing System
FTI	FUA Temporary Instruction*
FUA	Flexible Use of Airspace*
G	
GAT	General Air Traffic*
H	
HX	No specific working hours
HLAPB	High Level Airspace Policy Body
I	
IATA	International Air Transport Association
IACA	International Air Carriers Association
IAOPA	International Council of Aircraft Owner and Pilot Associations
ICAO	International Civil Aviation Organisation
IFATCA	International Federation of Air Traffic Controllers' Associations
IFPS	Integrated Initial Flight Plan Processing System*
IFR	Instrument Flight Rules
L	
LoA	Letter of Agreement
M	
MOD	Ministry of Defence
MOT	Ministry of Transport
N	
NATO	North Atlantic Treaty Organisation
NAM	Non AMC-Manageable Area

NMC	Network Management Cell (CFMU)
NOP	Network Operations Portal
NOTAM	Notice to Airmen*
OAT	Operational Air Traffic*
OLDI	On-Line Data Interchange
OPSD	Operations Division (CFMU)
P	Prohibited Area
PCA	Prior Coordination Airspace*
PRISMIL	Pan-European Repository of Information Supporting Military
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
SAM	Slot Allocation Message
SAR	Search and Rescue
SID	Standard Instrument Departure*
SITA	Société Internationale de Télécommunications Aéronautiques
SLC	Slot Cancellation Message
SRM	Slot Revision Message
SSR	Secondary Surveillance Radar
STAR	Standard Instrument Arrival*
TAA	Temporary Airspace Allocation Process*
TACT	CFMU Tactical System
TMA	Terminal Control Area*
TRA	Temporary Reserved Area*
TSA	Temporary Segregated Area*
UAC	Upper Area Control Centre
UIR	Upper Flight Information Region
UTC	Coordinated Universal Time
UUP	Updated Airspace Use Plan
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
WGS	World Geodetic Survey
XAP	Airspace Crossing Counter-Proposal Message
XCM	Airspace Crossing Cancellation Message
XIN	Airspace Crossing Intention Notification Message
XRQ	Airspace Crossing Request Message

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EXPLANATION OF TERMS

The terms used in the ASM Handbook have the following meanings.

The ICAO definitions are identified with an **(I)** at the end of the text.

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 refers to the predefined 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.

Note: Airspace Configurations are an extension of the notion of airspace scenarios used in DMEAN.

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 Structures are specific portions of airspace designed to accommodate the safe operation of aircraft.

In the context of the FUA Concept, "Airspace Structures" include Controlled Airspace, ATS Route, ATC Sectors, Danger Area (D), Restricted Area (R), Prohibited Area (P), Temporary Segregated Area (TSA), Temporary Reserved Area (TRA), Cross-Border Area (CBA)...

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 CFMU 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)**

Air Traffic Services Unit (ATSU) is a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office. **(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 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.

Approved Agencies (AAs) are units, which are authorised by a State to deal with an Airspace Management Cell for airspace allocation and utilisation matters.

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)**

In the context of the FUA Concept, the term "ATS route" is used to mean variously Upper Air Route, Airway, Advisory Route, Standard Instrument Departure or Standard Arrival Route, RNAV Route, Permanent Route and Conditional Route.

C

Central Flow Management Unit (CFMU) is a EUROCONTROL Directorate established in accordance with the ICAO Centralised ATFCM Organisation to provide the ATFCM Service, on behalf of the participant States, in a specified part of the EUR Region. The CFMU comprises among others the Network Management Cell (NMC) and the Integrated Initial Flight Plan Processing System (IFPS). For ASM purposes, the CFMU is also entrusted with the Centralised Airspace Data Function (CADF).

CFMU Environment Data Base is a specific part of the CFMU 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 CFMU systems for the calculation of flight profiles taking account of all airspace constraints.

Centralised Airspace Data Function (CADF) is an ASM function entrusted to the CFMU by the ECAC States for extracting Conditional Route (CDR) information contained in the various national AUPs. The CADF compiles it into a single coherent list, the Conditional Route Availability Message (CRAM).

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 (CDR) is an ATS route that is only available for flight planning and use under specified conditions.

A Conditional Route may have more than one category, and those categories may change at specified times:

a) *Category One - Permanently Plannable CDR:*

CDR1 routes are available for flight planning during times published in the relevant national Aeronautical Information Publication (AIP).

b) *Category Two - Non-Permanently Plannable CDR:*

CDR2 routes may be available for flight planning. Flights may only be planned on a CDR2 in accordance with conditions published daily in the CRAM, *and*

c) *Category Three - Not Plannable CDR:*

CDR3 routes are not available for flight planning; however, ATC Units may issue tactical clearances on such route segments.

Conditional Route Availability Message (CRAM) is a special consolidated ASM message issued daily by the CADF to promulgate in one message, on behalf of ECAC States, the AMC decisions on Conditional Routes availability notified by the AUPs for all the ECAC area. The CRAM is used by Aircraft Operators for flight planning purposes.

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 airspace of defined dimensions within which air traffic control services are provided to IFR flights and to VFR flights in accordance with the airspace classification. **(I)**

Controlled Airspace is a generic term, which covers ATS airspace classes A, B, C, D & E.

Controlled Airspace includes Control Area (CTA), Terminal Control Area (TMA), Airway (AWY) and Control Zone (CTR).

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.

E

eAMI or electronic ASM Information is an electronic message containing all airspace allocations (ASM Level 1 and ASM Level 2) and the derived opening of CDR2 routes and the confirmation of closure of CDR1 and ATS routes published previously by NOTAM.

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 Data Operation Division (FDOD) is the CFMU unit responsible 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 (IFPS) and the Environment Data Base.

Flight Information Region (FIR) is 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 contains specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft. **(I)**

Flow Management Division (FMD) is the CFMU unit responsible for the planning, coordination and execution of the Strategic, Pre-Tactical and Tactical Air Traffic Flow and Capacity Management.

Flow Management Position (FMP) is a working position established within an ACC to ensure the necessary interface with the CEU on matters concerning the provision of the ATFCM Service and the interface with national AMCs on matters concerning the ASM Service.

FUA Temporary Instruction (FTI) is a temporary instruction published by the CFMU and agreed/applied by appropriate AMCs and the CFMU/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 CFMU 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) and the CEU (West) without further intervention. 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.

M

Manoeuvring Area is that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons. **(I)**

N

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 CFMU 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 portion of airspace of defined dimensions within which individual GAT is permitted to fly "off-route" 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 Civil/Military Coordination - (see definition of ASM Level 3 - Tactical ASM).

Reduced Coordination Airspace (RCA) is a portion of airspace of defined dimensions within which GAT is permitted to fly "off-route" without requiring controllers of GAT flights to initiate coordination with controllers of OAT flights.

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 CFMU area agreed at the annual meeting. The RAD is designed as a part of the CFMU 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)

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), Special Rules Zone (SRZ), Aerodrome Traffic Zone (ATZ), or any other nomenclature, such as Traffic Information Area (TIA) or Traffic Information Zone (TIZ), 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)

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SECTION 1

INTRODUCTION

1.1 INTRODUCTION TO THE ASM HANDBOOK

1.1.1 Purpose

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.

1.1.2 Status

The ASM Handbook should be regarded as a set of actions intended as guidelines 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

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)

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.

EUROCONTROL Guidelines 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 relates 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 guidance to ASM working arrangements, processes and procedures.

1.1.5 Applicability

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**

The conventions used the ASM Handbook are:

- a) “**Should**” - indicates a recommendation or best practice, which may or may not be satisfied by all systems claiming conformity to the specification;
- b) “**May**” - indicates an optional element.

1.2 **BACKGROUND**

1.2.1 **ASM Objective**

1.2.1.1 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 of the FUA Concept**

1.2.2.1 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.

1.2.2.2 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 10th 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

1.3.1 The ASM Handbook consists of 7 sections preceded by the Record of Amendments, a Checklist, the Foreword, a Table of Contents, Abbreviations and an Explanation of Terms.

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).

Bibliography of reference documents is also presented prior to the Annexes to provide more detailed information on the implementation of the FUA concept.

Annexes

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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).

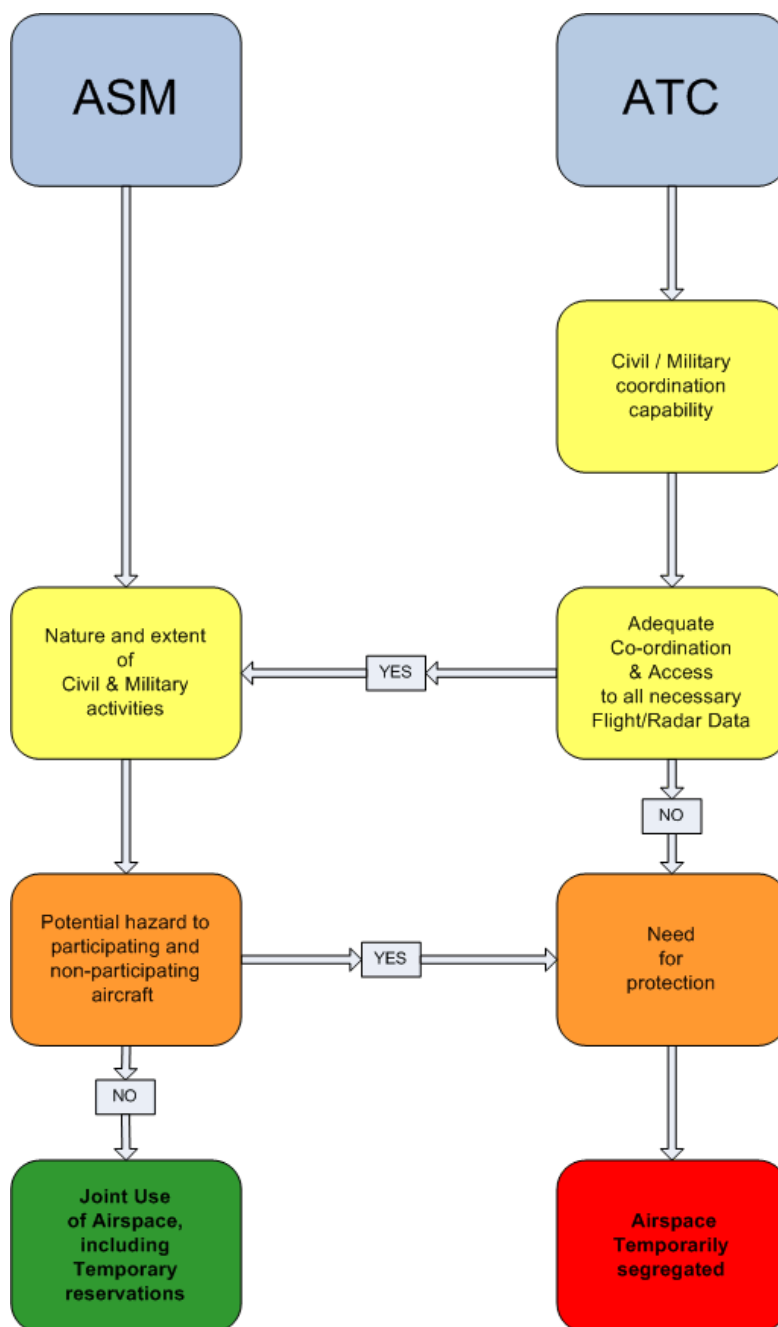


Figure 1: Process to determine requirement for temporary segregation of airspace within the FUA concept

2.1.1.5 The 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) more efficient ways to separate Operational and General Air Traffic where required;
- e) enhanced real time civil/military coordination;
- f) a reduction of ATC workload;
- g) a reduction in airspace segregation/reservation needs to better reflect actual military requirements;
- h) 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 EUROCONTROL Central Flow Management Unit (CFMU) for the dissemination to aircraft operators of the daily availability of non-permanent ATS routes.

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 national¹ HLAPB, which formulates the national ASM policy and carries out the necessary strategic planning work, taking into account national and international airspace users' requirements.

2.2.2.2 In order to maintain a flexible airspace organisation, ECAC States continually assess their national 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.

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

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 CFMU.

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 HLAPB. AMCs collect and analyse all airspace requests. After coordination AMCs promulgate the airspace allocation as an Airspace Use Plan (AUP) and changes thereto in UUP.

2.2.3.3 CFMU collects AUPs/UUPs and compiles them into a consolidated list of Conditional Routes availability used by 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.

2.2.4.2 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 (CDRs), Temporary Reserved Areas (TRAs), Temporary Segregated areas (TSAs), Cross-Border Areas (CBAs), Reduced Coordination Airspace (RCA) and Prior Coordination Airspace (PCA).

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

2.3.2.2 CDRs can be established at ASM Level 1:

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

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

2.3.2.4 CDRs are divided into different categories according to their estimated availability and flight planning possibilities. A CDR can be established at ASM Level 1 in one or more of the three following categories:

2.3.2.4.1 **CATEGORY ONE (CDR1)** - Permanently Plannable CDR

2.3.2.4.1.1 CDRs1 are available for flight planning during times published in the relevant national AIP.

2.3.2.4.1.2 When a CDR is expected to be available for most of the time, it should be declared as permanently plannable for stated time periods and published as a CDR1 in AIPs. CDRs1 can either be established on an H 24 basis or for fixed time periods or at fixed flight level bands.

2.3.2.4.1.3 The closure of a CDR1, which requires re-filing of the affected flight plans, has to be published with appropriate advance notification. Any exceptional specific closure of CDR1 which does not require flight planning action by AOs can be treated tactically when appropriate.

2.3.2.4.2 **CATEGORY TWO (CDR2)** - Non-Permanently Plannable CDR

2.3.2.4.2.1 CDRs2 may be available for flight planning. Flights may only be planned on a CDR2 in accordance with conditions published daily in the CRAM or its equivalent.

2.3.2.4.2.2 CDRs2 form part of predefined routing scenarios depending on the allocation of associated AMC-Manageable Areas or for addressing specific ATC conditions.

2.3.2.4.2.3 CDRs2 availability can be requested to adjust traffic flow, when a capacity shortfall has been identified and after consideration of relevant ATC factors by the Flow Management Positions (FMPs)/ACCs concerned.

2.3.2.4.3 **CATEGORY THREE (CDR3)** - Not Plannable CDR

2.3.2.4.3.1 CDRs3 are not available for flight planning. Flights must not be planned on these routes but ATC units may issue tactical clearances on such route segments, when made available.

2.3.2.4.3.2 CDRs3 are those CDRs that are expected to be available at short notice when the pre-notified activity in the associated AMC-Manageable Areas has ceased, or for addressing specific ATC conditions.

2.3.2.4.3.3 After coordination with the ATS or controlling military unit(s) in charge of the associated AMC-Manageable Area(s), the responsible controller may offer an aircraft a short-notice routing through the area using a predefined CDR3.

2.3.2.4.3.4 CDRs3 are published in AIPs as CDRs usable on ATC instructions only and are not subject to allocation the day before by AMCs.

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.

2.3.3.5 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.

2.3.4 **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 CDRs through them, permit the improvement of the airspace structure in border areas and assist in the improvement of the ATS route network.
- 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 portion of airspace of defined dimensions within which individual GAT is permitted to fly "off-route" 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 portion of airspace of defined dimensions within which GAT is permitted to fly "off-route" without requiring coordination between controllers.
- 2.3.5.4 When OAT traffic is of low intensity, the need for civil/military coordination of off-route GAT 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 "off-route", 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.

2.4 **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 designated for the routing of GAT and for the provision of air traffic services. The term "ATS route" is used in the ASM Handbook to mean variously: Upper Air Route, Airway, Advisory Route, Standard Instrument Departure or Standard Instrument Arrival Route, RNAV Route or Conditional Route.
- 2.4.1.2 The term "Permanent ATS Route" is used in this Handbook to designate all ATS routes other than Conditional Routes (CDRs). 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 **Controlled Airspace**

2.4.3.1 In controlled airspace CDRs, 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.

2.4.4 **Uncontrolled Airspace**

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

2.4.4.2 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 is not recommended. Therefore, only airspace structures compulsorily published in the AIP with predefined activation/deactivation time are applicable.

2.4.4.3 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 are not required to obtain an ATC clearance or carry a radio and, therefore, this airspace has to be considered as an unknown traffic environment.

2.4.4.4 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.

2.4.4.5 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.

- 2.4.4.6 The procedures for activation, deactivation and operating within the segregated volume of airspace shall 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 (Figure 2):

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...	→	CDR1, CDR2 and/or CDR3
TRAs, MTAs, 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

Figure 2: Transition to the FUA concept

2.6 AT/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, in particular the promulgation of AMCs deliverables (AUPs & UUPs) and CFMU deliverables (CRAM & ANM) 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 ASM Level 1 ATFCM 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 permanent ATS routes and CDRs is conducted nationally and at sub-regional level within the framework of a coordinated and cooperative European-wide ATS Route Structure. This cooperative and continuous planning process is done within the specialised ANT Sub-Group (RNDSG).
- 2.6.2.4 The national airspace review of CDRs also assists the annual ICAO StratPlan meetings, organised by the EUROCONTROL CFMU, to establish solutions to identified bottlenecks for the following summer.
- 2.6.2.5 The Route Availability Document (RAD) enables ATC to maximise capacity by defining route restrictions that provide an organised system of major traffic flows while allowing aircraft operators flight planning flexibility. The RAD is therefore based primarily on permanent ATS routes and CDRs¹ and includes route restrictions as published in the national AIPs, LOAs, NOTAMs and AIP Supplements. The RAD includes a number of permanent routing suggestions to assist AOs in the preparation of their flight plans; these suggestions are advisory and not mandatory.
- 2.6.2.6 In addition, routing scenarios in conformity with the RAD are implemented by the FMD after coordination, through the teleconference procedure, with FMPs and AOs concerned. These routing 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 CDRs 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 CDRs in terms of sector capacity increase and/or better traffic distribution, in addition to the shorter routing provided. This review of CDRs usage will allow the identification of predefined CDR² scenarios, if possible for the following summer, to be used during the

pre-tactical ATFCM phase by the CFMU/CEU in coordination with FMPs concerned, to solve any ATFCM problems.

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

- 2.6.3.1 In the pretactical ATFCM phase, the CFMU highlights areas of insufficient ATC capacity. Routing 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.

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 CDRs and re-route traffic flows 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. 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 for temporary OAT use.
- 2.6.4.2 The use of the RCA procedure, by direct agreement between the control units involved, reduces the GAT controller's workload by suppressing the need for individual coordination of any off-route GAT under PCA procedure and allows more direct routings 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 deactivated early and available for use as a CDR is an ASM Level 3 task. The identification of particular CDRs required to resolve an ACC/sector or another ACCs capacity problem is more a Pre-Tactical ATFCM task. The consequent re-routing of the GAT flow at short notice is a tactical ATFCM task. Finally, the control of the GAT on the newly re-opened CDR 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.

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SECTION 3

STRATEGIC AIRSPACE MANAGEMENT (ASM LEVEL 1)

3.1 GENERAL

- 3.1.1 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.
- 3.1.2 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).
- 3.1.3 The main function of the HLAPB is therefore to ensure a safe and efficient use of the national 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.
- 3.1.4 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

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).

3.2.2 Responsibilities

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

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 CDRs, TRAs, TSAs, CBAs, AMC-manageable D and R areas, if 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 temporary conversion of some CDRs2 to CDRs1, 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.

3.2.3 **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 international plans evolve in an overall risk-reducing manner. In particular, a risk assessment should be systematically conducted by each ECAC State before FUA implementation.

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* 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.

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

- 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, "*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:
1. identification of need;
 2. analysis of the potential impact;
 3. decision to proceed;
 4. consultation;
 5. approval; and
 6. publication.
- 3.2.5.4 The flowchart presented at Figure 3 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 shall take into account the scale of impact of the new or revised policy.

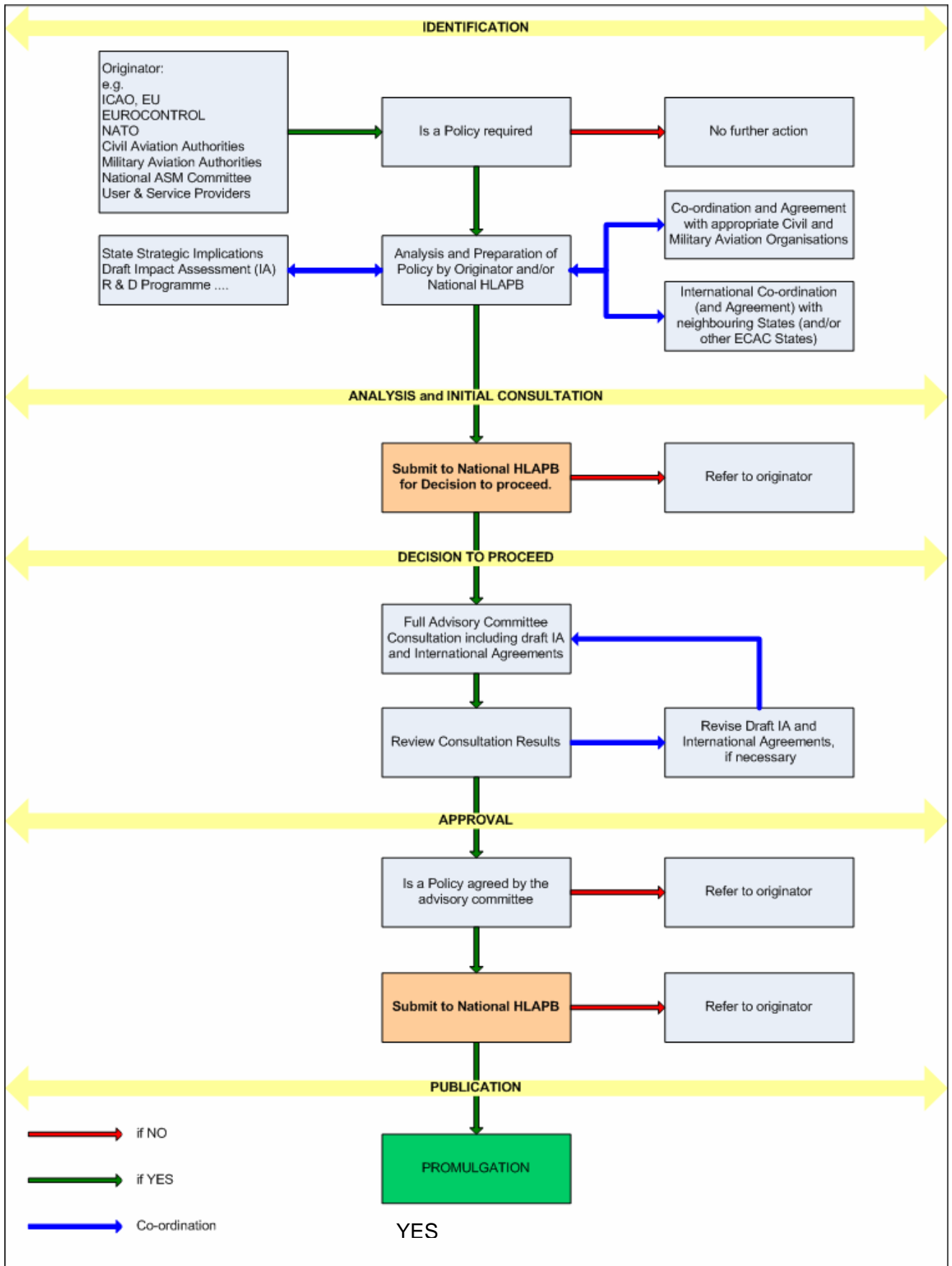


Figure 3: Common Airspace Policy Formulation and Review Process

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 to request 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 4 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.

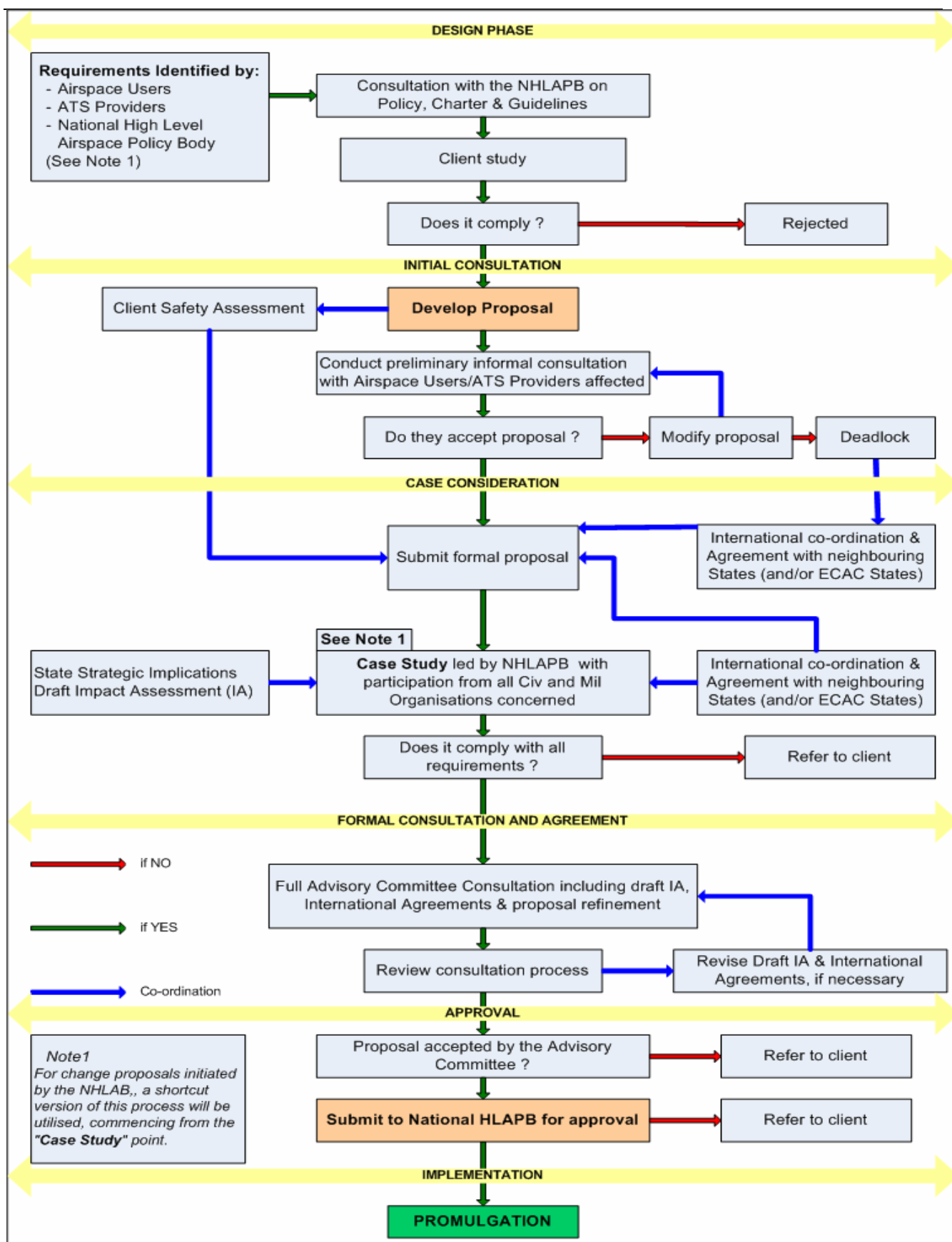


Figure 4: Common Airspace Change Process

3.2.7 **Dynamic Airspace Management**

3.2.7.1 **General**

- 3.2.7.1.1 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).
- 3.2.7.1.2 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.
- 3.2.7.1.3 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.
- 3.2.7.1.4 The elements of the dynamic airspace structure planning are:
- greater choice of routes by including route options supplemented by suitable alternatives as a function of modularity of airspace reservation or restriction;
 - greater flexibility to respond to short notice military operational requirements for existing or additional portion of airspace;
 - provision of proactive route activation/airspace reservation or restriction allocation through a collaborative decision making process to accommodate short-term changes in routings and civil traffic demand in coordination with airspace reservation or restriction requests, adjusted to match the military training and operational profile.
- 3.2.7.1.5 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.
- 3.2.7.1.6 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:
- 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 CDR routes. 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.
 - 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 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.
 - 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.

3.2.7.1.7 Within these dynamic airspace structures planning, allocation and using processes, permanent ATS routes and available CDRs should be plannable, while predefined or ad hoc temporary airspace reservations or restrictions would remain inactive until formally allocated.

3.2.7.1.8 The DAM process enables all airspace users to follow preferred and flexible flight profiles and provides for two major benefits:

- equitable treatment in allocation of airspace and trajectories required at short notice;
- aircraft operators to increase their awareness of possible routing options.

3.2.7.1.9 Summary table

ASM		ASM Level 1	ASM Level 2	ASM Level3
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 / de-activation
	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 / CRAM	Tel / Fax / Radio / NOTAM / Data Processing
	Dynamic Airspace Management	Airspace Data Repository	Airspace Data Repository	Airspace Data Repository Tel / Radio / Data Link

Figure 5: Enhanced Basic FUA Process with Dynamic Airspace Management

3.2.7.2 **Delineation of dynamic airspace structures**

3.2.7.2.1 ASM Level 1 Process for design of dynamic airspace structures enabling activation of predefined airspace configurations

3.2.7.2.1.1 The design of an ATS route structure, including CDRs and OAT routes and of temporary airspace reservations or restrictions (TRA/TSA/CBA) 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:

- the route architecture should be planned to include adjustable elements in order to accommodate variations in expected traffic demand, while
- the traffic distribution conforms with the set of predefined airspace configurations in order to derive the best possible capacity.

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

3.2.7.2.2.1 With reference to the definition of DAM (contained in paragraph 3.2.7.1.2), the daily delineation of ad hoc structures at ASM Levels 2 and 3 should be based on clear criteria established at ASM Level 1.

3.2.7.2.2.2 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 tactical level.

3.2.7.2.2.3 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 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.

3.2.7.2.2.4 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.

3.2.7.2.2.5 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.

3.2.7.2.2.6 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.).

3.2.7.2.2.7 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 centered on a point (defined by 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 refueling or civil photo missions);
- e) in relation to a navigational aid.

3.2.7.2.2.8 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.

3.2.7.2.2.9 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.

3.2.7.2.2.10 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, CFMU, 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.

3.2.7.2.3 Delineation of ad hoc structures at ASM Level 2

3.2.7.2.3.1 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.

3.2.7.2.3.2 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 CFMU.

3.2.7.2.3.3 The methods used to delineate ad hoc routeing and areas should comply with the guidelines established at ASM Level 1.

3.2.7.2.3.4 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.

3.2.7.2.4 Delineation of ad hoc structures at ASM Level 3

3.2.7.2.4.1 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.

3.2.7.2.4.2 Adequate real time co ordination facilities (airspace design tool, direct controller-controller communication means, etc.) should be required and accurate procedures should be published in relevant LoAs.

3.2.7.2.4.3 The methods used to delineate ad hoc routeings and areas should comply with the guidelines established at ASM Level 1.

3.2.7.2.4.4 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.

3.2.7.3 **Airspace Allocation Process**

3.2.7.3.1 Dynamic Airspace Allocation Process at ASM Level 2

3.2.7.3.1.1 Pre-tactical ATFCM activities for an optimised capacity management allow the CFMU 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 CFMU and designated AMCs (in addition to standard coordination with ACCs/FMPs) providing them with wider information on overall traffic demand.

3.2.7.3.1.2 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 CFMU in order to assess the impact of local AMC decisions on the overall traffic situation.

3.2.7.3.1.3 This coordination is supported by various systems allowing for the required exchange of information between them as illustrated in Figure 6 below.

3.2.7.3.2 Dynamic Airspace Allocation Process at ASM Level 3

3.2.7.3.2.1 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.

3.2.7.3.2.2 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.

3.2.7.3.2.3 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.

3.2.7.3.2.4 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:

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

3.2.7.3.2.5 The goal of the ASM Level 3 airspace allocation decision-making process illustrated in Figure 7 below is to enable the actors to improve mutual knowledge of the forecast/current situations and of each others' 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.

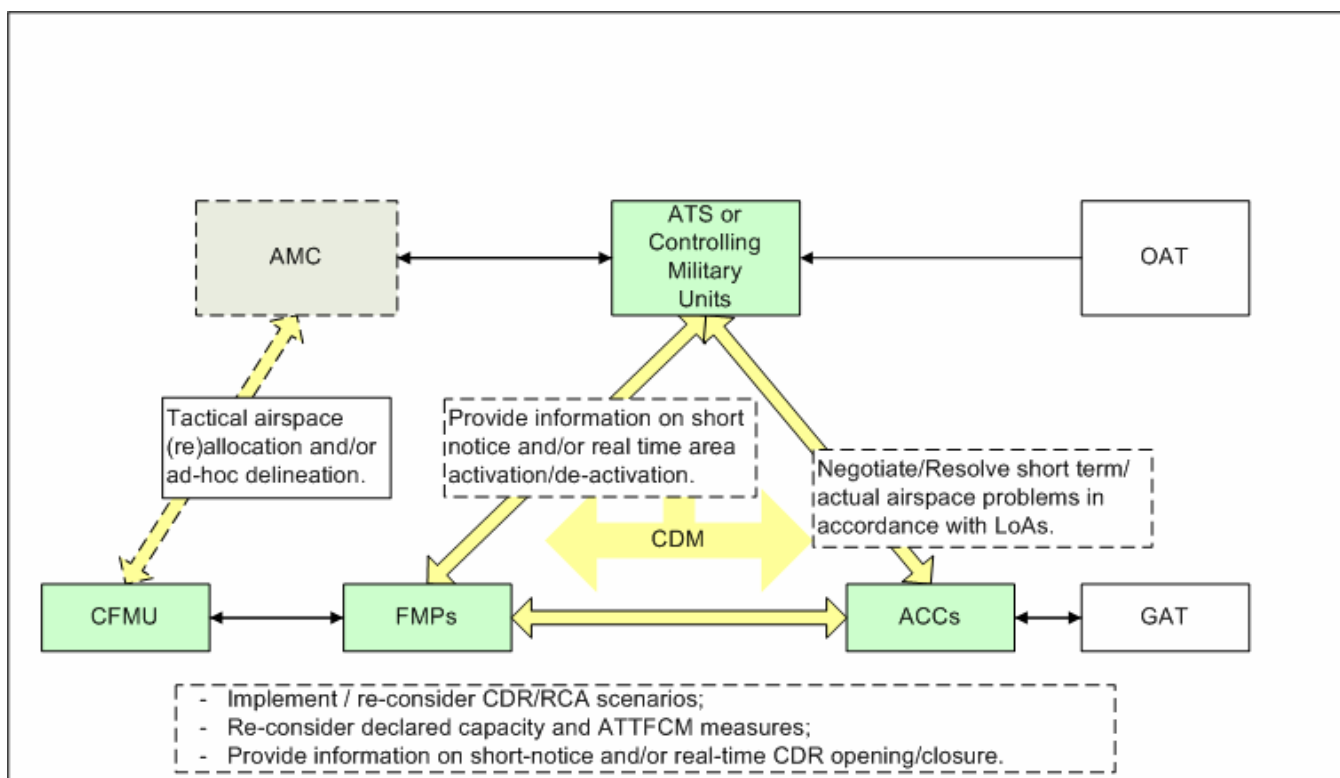


Figure 7: Establishment of a CDM process for dynamic airspace allocation at ASM Level 3

3.2.7.4 **Dissemination of Information on Short-notice Changes to Airspace Status**

3.2.7.4.1 Current AUP/UUP Process

3.2.7.4.1.1 Within the current AUP/UUP process described in Section 6, the dissemination of dynamic airspace allocation decisions is based on broadcasting messages such as CRAM for AUP and eAMI for UUPs. These messages are provided in a paper format and/or electronic format, pending the ability of AOs to process the information manually or automatically.

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

3.2.7.4.2 Airspace Data Repository

3.2.7.4.2.1 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*'.

3.2.7.4.2.2 The ADR is based on a link between the European AIS Database (EAD), the CFMU Environment Database and local data bases 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.

3.2.7.4.3 ATM Units Communication

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

3.2.7.4.4 Controller - Pilot Communication

3.2.7.4.4.1 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.

3.2.7.4.4.2 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.

3.2.7.4.5 Flight Plan Updates

3.2.7.4.5.1 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 clear definition of the responsibility of the IFPS as regards FPL amendments close to the EOBT (i.e. until an agreed time before EOBT);
- similarly, the definition of responsibility of the ATSU concerned in FPL amendments (from an agreed time before EOBT);
- 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 AUP/UUP process, AOs should update their flight plan according to the changes proposed until an agreed time, e.g. 2 hours, before EOBT. Any change that has occurred based on the AUP/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, 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.

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) CDRs and other routes on other busy days;
- c) Cross Border / FIR/UIR Boundary Operations;
- d) night routes;
- e) direct routes;
- f) free routes.

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 may be established in accordance with ICAO Annex 2 – *Rules of the Air*. In this context it should be noted that the establishment of such areas are to be 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 FUA concept may be employed over the high seas in accordance 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.
- 3.3.3.6 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.
- 3.3.3.7 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.
- 3.3.3.8 Similarly, the criteria for the establishment of CDRs over the high seas are the same as those for CDRs in sovereign airspace. The categorisation and subsequent review of these CDRs is a 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 CDR 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* 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 a minimum of 26 Busy Fridays per year, from with the first Friday in May to the last Friday in October inclusive. Participating States are encouraged to increase the number of Busy Fridays whenever practicable.

3.3.4.1.3 The main purpose of the international agreement for EAW routes on agreed Busy Fridays is to inform the Aircraft Operators accordingly, through appropriate promulgation in the AIPs, and allowing them to flight plan in advance on available CDRs re-classified as CDR1 specifically for that reason.

3.3.4.1.4 Even though the following agreed procedures are not applicable to all ECAC States, the agreement reached between participating States as published in their AIPs should encourage the downstream States to seek continuity in the early usage of weekend routes in their airspace.

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 AOs and ATSUs through publication in their national AIP (ENR) of the agreed procedures allowing early access to weekend routes on a minimum of 26 Busy Fridays per year during the summer season.

3.3.4.2.2 In addition, the national AIP (ENR) should contain the list of CDRs included in the International Early Access Agreement together with the extension of their categorisation as CDR1 from 1000 UTC on the agreed Busy Fridays.

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

3.3.4.3.1 If EAW routes are not applicable in one participating State for one or more of the 26 common Busy Fridays for the next summer season, or the list of CDRs concerned needs to be amended, national differences are to be notified early in March preceding the summer season to AOs and ATSUs by a common format AIP Supplement published by each State concerned.

3.3.4.3.2 In such a case the necessary coordination process between the States concerned should be performed through the EAW web-based application on the EUROCONTROL web site. Whenever required, a specific coordination arrangement can be put in place.

3.3.4.4 **Agreed Procedures - Exceptional Deviations**

3.3.4.4.1 The HLAPB of the participating States can determine exceptional circumstances in which the early access arrangements for Busy Fridays may be cancelled because of urgent or unexpected military activities.

*As agreed at the Airspace and Navigation Team (ANT/42), the Airspace Management Sub-Group (ASM-SG) of 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.

3.3.4.4.2 Under these circumstances a NOTAM is to be dispatched at least four days in advance and the information on this cancellation is to be repeated in the national AUP and the CRAM on the preceding Thursday.

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. in 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" (NOP).

(a) DATES	(b) EXERCISES	(c) 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

Figure 8: 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 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.
- 3.3.6.1.4 The framework agreement to be established between the States willing to apply CBO should take into account the following factors:
- a) responsibility and liability for the provision of ATS;
 - b) SAR responsibility;
 - c) ATS procedures and common language;
 - d) SSR code allocation;
 - e) type of flight (VFR or IFR);
 - f) maximum number of participating aircraft;
 - g) harmonised coordination procedures and flight plan data exchange;
 - h) communications;
 - i) Air Defence notification procedures;
 - j) common AMC procedures;
 - k) planning/scheduling procedures, relationship with AMC(s) concerned;
 - l) activation/deactivation procedures, relationship with ACC(s) concerned;
 - m) priority rules;
 - n) ATS occurrences reporting procedures;
 - o) environmental issues.

3.3.6.1.5 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 CDRs 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 time table. In order to harmonise the AUP/UUP publication and simplify the relationship with the CFMU, the Lead AMC Concept should be applied.

3.3.6.3 TRA/TSA and D or R Areas Sharing

3.3.6.3.1.1 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.

3.3.6.3.1.2 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.

3.3.6.3.1.3 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).

3.3.6.3.1.4 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 CDRs

- 3.3.6.4.1 Aircraft transiting between neighbouring States must be able to do so experiencing the least possible changes in ATS procedures. For this reason, States will establish Cross-Border CDRs according to the cooperative planning process taking place within the specialised ANT - ATS Route Network Development Sub-Group (ATS RND SG).
- 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 CDRs.
- 3.3.6.4.3 As the CDR 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 CDR 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 permanent ATS routes and CDRs, including OAT Transit Routes System, as well as of military reserved or segregated airspace (TRA/TSA/CBA) is conducted nationally and internationally within the framework of an European coordinated and cooperative process.
- 3.3.7.3 The optimisation of the existing and future ATS route and other airspace structures network planning 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 ANT sub-groups.
- 3.3.7.5 The annual national airspace review including the use of CDRs and CDR/routing scenarios and of military training areas (TRA/TSA/CBA) 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 ANT structure (see Figure 9 and Annex 2). Particular attention should be paid to the consistency with the ATFCM process.

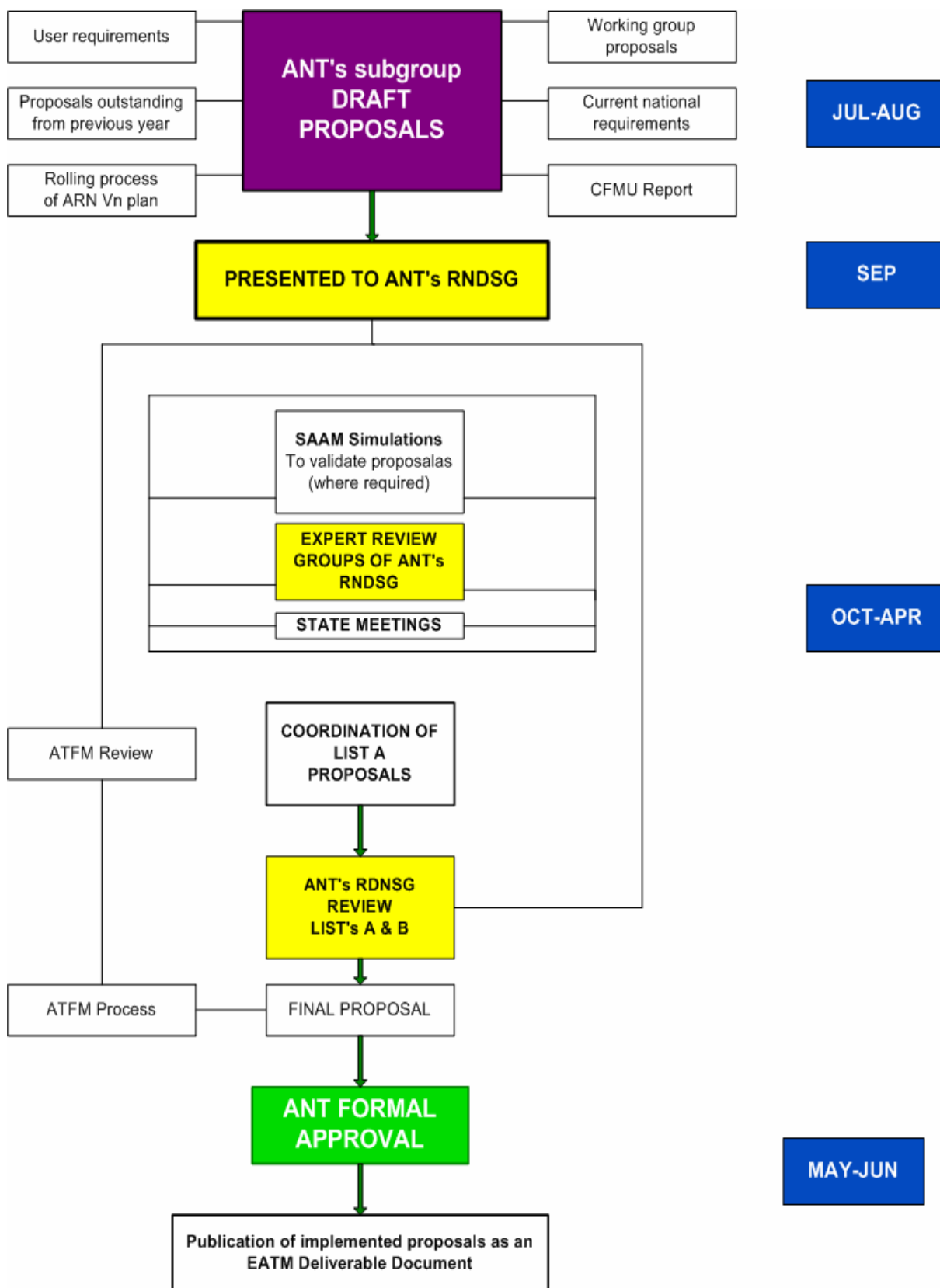


Figure 9: Annual rolling process for short term improvements to the ATS route network

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

3.4.1 The CDR Concept and the Temporary Airspace Allocation (TAA) Process

3.4.1.1 The pre-tactical allocation of airspace by AMCs at ASM Level 2 is performed through the activation of CDRs and TRAs/TSAs in close coordination with FMPs and CFMU 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 Among the three different categories of CDRs, only CDRs1 can be closed and CDRs2 can be allocated by AMCs, both on a daily basis and in accordance with the priority rules and negotiation process established at ASM Level 1.

3.4.1.2 Due to operational or weather considerations, after adequate coordination with FMPs and CFMU and in accordance with ASM Level 1 guidelines, an AMC can amend the published AUP decision concerning the availability of a CDR or the allocation of AMC-Manageable Areas by the publication of UUPs. 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 CRAM/AUP;
- d) the possible impact on ATS airspace classification.

3.4.2 Establishment at ASM Level 1 of Priority Rules and Negotiation Process for the pre-tactical allocation of airspace by AMC

3.4.2.1 In order to avoid a lengthy negotiation process of civil/military and military/military conflicting requests ASM Level 1 is to establish priority rules.

3.4.2.2 ASM Level 1 should establish clear priority rules when CDRs request conflicts with the associated TRAs/TSAs.

3.4.2.3 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 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 CDR or the allocation of a TRA/TSA. 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 CRAM/AUP/UUPs;
- d) the possible impact on ATS airspace classification.

3.5.2 The simultaneous use of a CDR 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 CDRs through the active TRA.

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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 allocated CDRs, 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, 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 AGENCIES (AAs)

- 4.2.1 Units that represent entities (e.g squadrons), which wish to utilise TRAs/TSAs, CBAs, or R and D areas that are suitable for management/allocation by the AMC, are identified as AAs and are authorised by the national authority concerned. AAs are permitted to negotiate for airspace to be allocated by the AMC. When AAs are submitting airspace requests to the AMC, the safety should be paramount.
- 4.2.2 AAs are 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.

4.2.2 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 10.

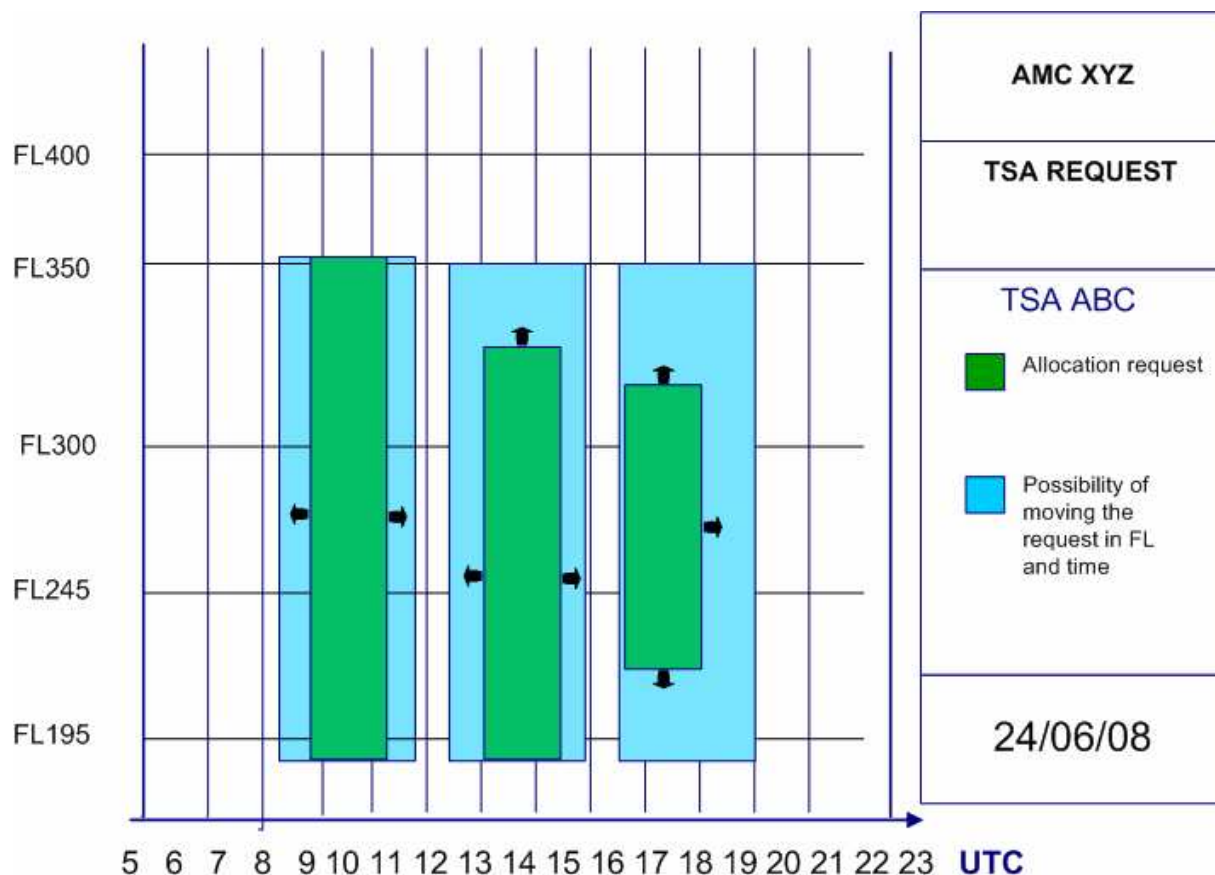


Figure 10: Example of TRA/TSA Request

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

4.2.4 The requests should cover a 24H period of time.

4.3 CDR REQUESTS - ACCs/FMPs

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

4.3.2 The FMPs/ACCs concerned should in coordination with the CFMU:

- a) assess the traffic forecast for the day of operations;
- b) identify areas of insufficient ATC capacity;
- c) agree on the requests for CDR2;
- d) agree on the most appropriate sector configuration;
- e) agree on the need for ATFCM measures.

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 and

staff availability, the FMPs/ACCs submit a request for the activation of CDRs2 to the AMCs concerned. CDR2 requests are presented together with traffic forecasts showing the expected capacity shortfall. Examples of such CDR requests and traffic forecasts are presented respectively at Figure 11 and 12.

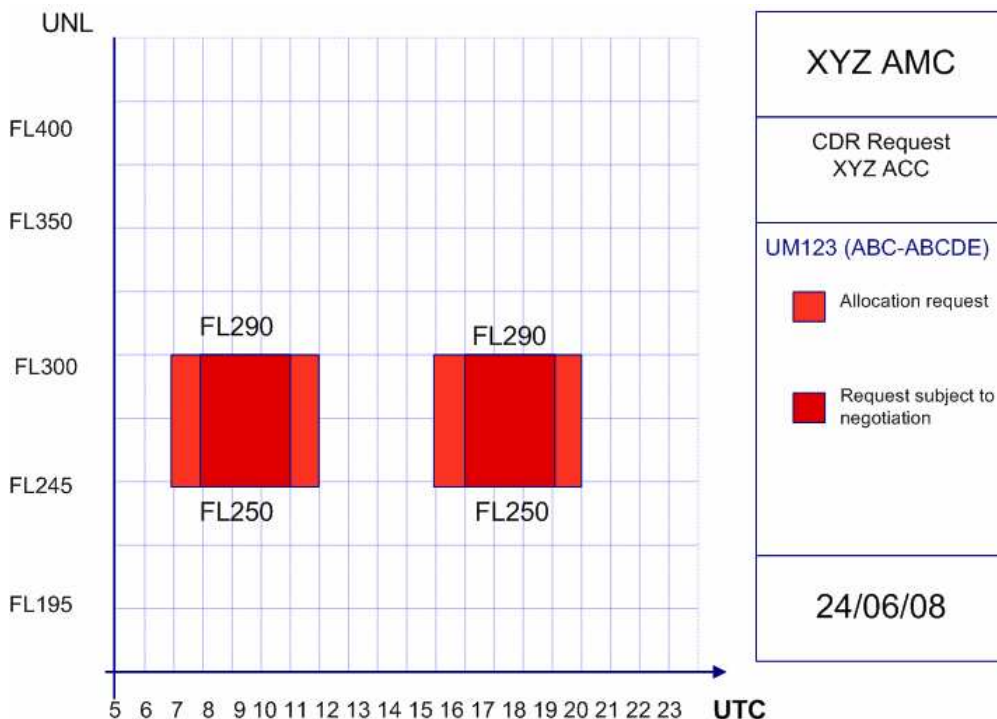


Figure 11: Example of CDR Request

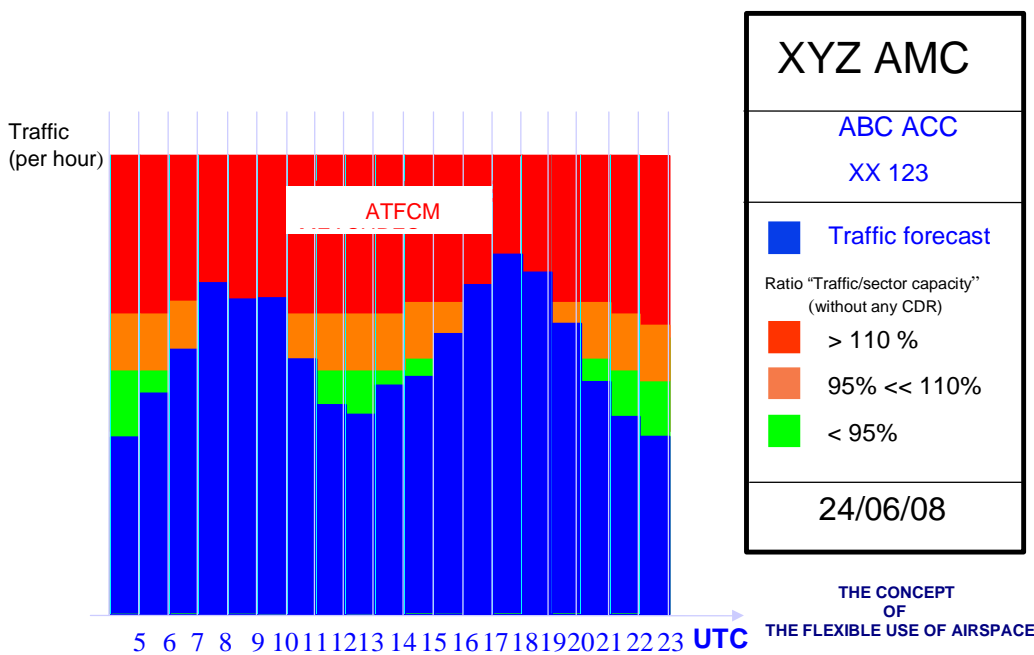


Figure 12: Example of GAT Traffic Forecast

THE CONCEPT OF THE FLEXIBLE USE OF AIRSPACE

- 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 activation of CDR2, FMPs/ACCs cancel the CDR2 request and advise the AMC.

4.4 RESTRICTED/DANGER AREAS - NOTIFICATION OF REDUCED ACTIVITY

- 4.4.1 States may require designated airspace managers or users of some R and D areas 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 reduced period of R and D area activity in the AUP list "DELTA" of Reduced Airspace Restrictions (R or D).

4.5 AIRSPACE MANAGEMENT CELLS - 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 13). 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 After the AMC has completed the allocation process through the promulgation of the AUP, modification of the airspace allocation might be necessary. Modifications of the airspace allocation are effected by the AMC through an Updated AUP (UUP) and consist of any cancellations, changes or new requests.

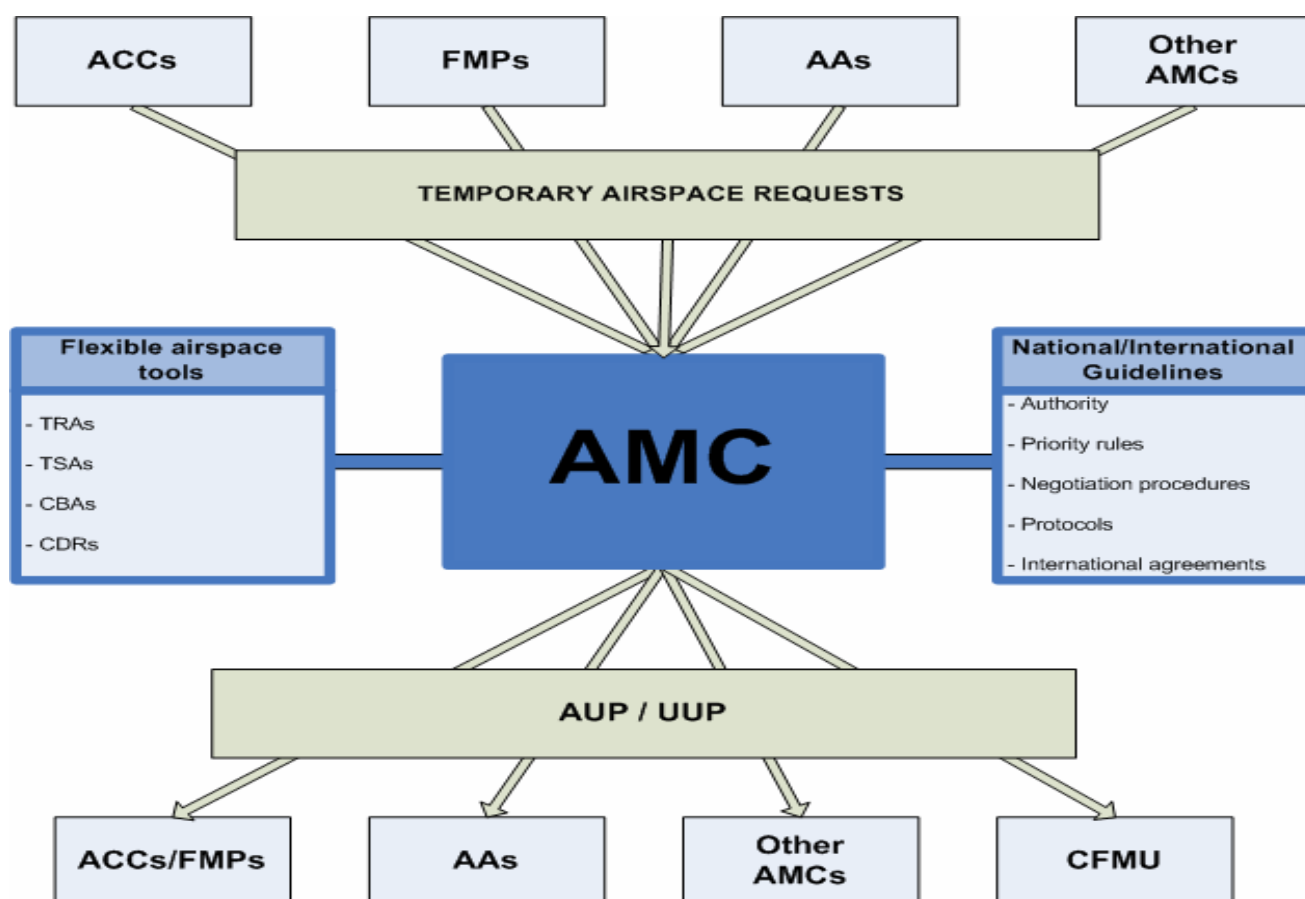


Figure 13: Airspace Management Cell Operations

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),

Quote:

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 all Airspace Requests which may require temporary airspace segregation, including airspace allocation decisions taken at ASM Level 1 in respect of major military exercises, air shows etc.;
- c) Shall analyse the CDR 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 TSA/TRA and CDRs utilising all relevant information;
- 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” CDRs;

- g) Shall respond to any additional request for assistance by the Single Central Unit for Flow Management, the ACC/FMPs and other Approved Agencies or matters arising from major ATS routes inconsistencies or unexpected events;
- h) Shall decide on the allocation of national TSA/TRA and CBAs, after completion of the collation, coordination, analysis, negotiation and resolution process;
- i) Shall activate CDR2 in accordance with established procedures and for a minimum time of two hours (2H), but with no limit when it is the extension of the availability of the same route with CDR1 status;
- j) Shall decide in accordance with criteria established at ASM Level 1 on the provisional closure of CDRs1 to be handled in real time at ASM Level 3 in conjunction with the notification of activity in associated TSA(s)/TRA(s) and/or AMC-Manageable D and R area(s);
- k) Shall promulgate the airspace allocation by transmitting the AUP to adjacent AMCs and to AAs, including ACC/FMPs and to the Single Central Unit for Flow Management/ATM message exchange via the CIAM. The AUP is published in a common format, as soon as possible, and by 1400 hrs UTC Summer or 1500 hrs UTC Winter, at the latest, to cover the period between 0600 hrs the next day to 0600 hrs the day after (D 0600 hrs to D + 1 0600 hrs);
- l) Shall, after the AUP distribution, provide clarification to the Single Central Unit for Flow Management, if needed, and cross-check the “Draft CRAM” upon reception;
- m) Shall collect and analyse more up-to-date information on the day of operation from AAs concerning the cancellation of TSA/TRA already published in the current AUP;
- n) Shall promulgate on the day of operation, if necessary, UUPs containing additional bookings, deletions of airspace restrictions during the period of validity of the current AUP. A minimum of 1 hour is allowed between the release of the UUP and the commencement of any additional Airspace Structures made available by the UUP;
- o) Shall participate in a post analysis of airspace allocation;
- p) Shall conduct, where authorised, some Level 3 co-ordination tasks.

(End quote)

Note 1: The common format referred to k) is described in detail in Section 6.

Note 2: The process referred to n) is different, as described under 4.8.3.

- 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, the publication of CDRs1 unavailability known or decided at pre-tactical level, is to be promulgated for information to national AAs and ACCs concerned through national AUPs /UUPs in the list “BRAVO” of Closed ATS Routes.
- 4.5.2.4 Considering the impact on RPL/FPL processing, 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.
- 4.5.2.5 CDR1 closures are for safety promulgated in the CRAM/eAMI as a repetition of the decision already published with appropriate advance AIS notice and repeated in daily national AUP/UUPs in the list “BRAVO” of Closed ATS Routes as for any other closures of permanent routes.
- 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, CFMU and other AMCs).

4.5.2.8 In addition, the communication with CFMU is performed (e.g. via CIAM), which enables the AMC to promulgate AUP/UUPs and allows CFMU to promulgate CRAM/eAMI.

4.5.3 **Lead AMC Concept**

4.5.3.1 The lead AMC concept should be applied whenever required for operational reasons within the scope of CBO or any cross border interdependency between neighbouring States.

4.5.3.2 The lead AMC concept is based on the delegation of AMCs' responsibilities for the coordination of CBA(s) allocation and harmonised availability of CDR(s) on a route by route basis. It should result in harmonising the AUP/UUPs promulgation process and having a single point of contact for the coordination with CFMU.

4.5.3.3 The lead AMC concept should be established according to agreed priority rules and an associated time table.

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**

4.6.1 When military operations are foreseen to be significantly reduced during a long-term holiday period, some CDRs2 could be reclassified as CDRs1 on ASM Level 1 decision.

4.6.2 A NOTAM (see Figure 14) should be issued, whenever possible at least seven days before the extended holiday period, in order to inform the operators and allowing them to flight plan available CDRs in advance (e.g. RPL). The description of affected CDRs listed in the NOTAM will include the applicable segments and flight levels.

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 CDR2 ROUTES LISTED HEREAFTER ARE CONSIDERED CDR1 AND WILL BE PERMANENTLY AVAILABLE FOR FLIGHT PLANNING DURING THE ABOVE MENTIONED PERIOD.)		
UG109	KOK/DIK/KHR	195/460
UJ158	BAM/LNO	250/460

Figure 14: 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 when appropriate.

4.6.4 Once those CDRs have CDRs1 status, and during all the holiday period defined in the NOTAM, CDRs1 procedures will apply and in particular those concerning the closure of CDR1.

4.7 INTERNATIONAL FUNCTIONS

4.7.1 Central Flow Management Unit (CFMU)

- 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 CFMU.
- 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 CFMU and AMCs. Annex 12 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 CFMU and each AMC in order to ensure the publication of all AUPs required by the CIAM system for the production of the CRAM. 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 CFMU collects and analyses draft AUPs/UUPs in order to perform network assessment. Whenever required it coordinates with relevant AMCs and/or FMPs to make proposals taking account of the network assessment. Based on the final decision by AMCs, CFMU collects, consolidates the AUP and UUP, and publishes European AUP/UUP on NOP portal. The publication of information related to the reserved/restricted area 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. The CFMU extracts from AUP/UUPs the list of available CDRs for incorporation into a single coherent CDR Availability Message (CRAM) and/or electronic Airspace Management Information (eAMI). In particular, the CFMU does the following:
- a) collects, collates and analyses the AUPs and UUPs;
 - b) detects any remaining lack of continuity in “Cross-Border” CDRs2 availability and publish in the CRAM only those CDRs2 that are commonly accessible on both sides of the FIR/UIR boundary;
 - c) after coordination with AMCs has been concluded, compiles the CRAM and eAMI with the list of available CDRs2. Additionally, as the repetition, for safety reasons, the CRAM/eAMI contains information on CDR1 or permanent ATS routes closures;
 - d) transmits by 1500 UTC Summer and 1600 UTC Winter the CRAM to AOs, ACCs/FMPs, CFMU, all AMCs and selected AROs;
 - e) transmits by 1700 UTC Summer - 1800 UTC Winter and 0900 UTC Summer - 1000 UTC Winter the eAMI to AOs, ACCs/FMPs, CFMU, all AMCs and selected AROs;
 - f) ensures that information on CDR availability is taken into account within CFMU operations.
- 4.7.1.5 The CFMU is authorised by the ECAC States to promulgate the decisions/information concerning national airspace.
- 4.7.1.6 The national/sub-regional AMCs are responsible for the airspace allocation. The CFMU may coordinate with specific AMCs to resolve ATC capacity problems.

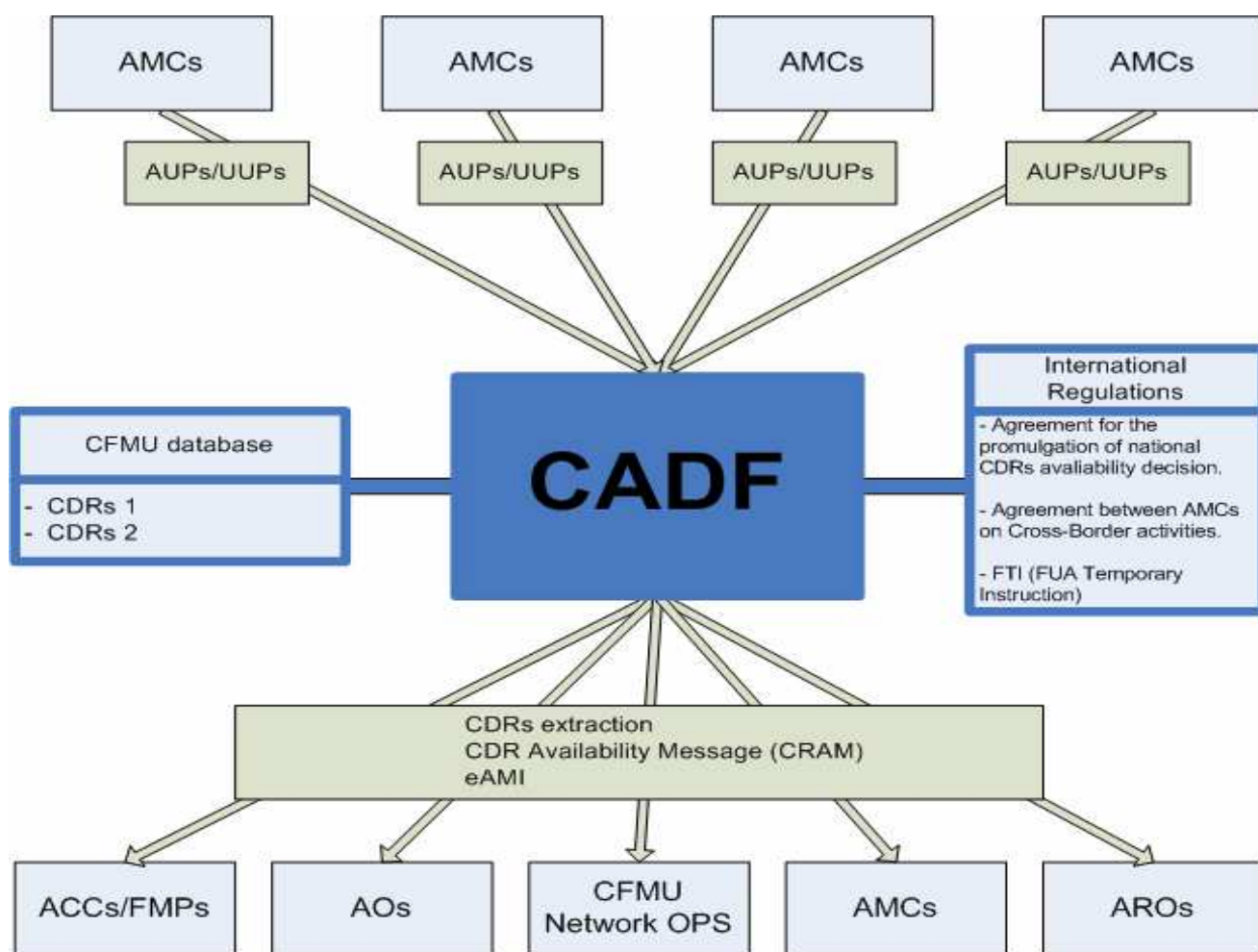


Figure 15: Central Airspace Data Function Operations

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 CDRs, 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 CDRs pertaining to a particular flight. 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 CDRs1

4.7.2.2.1 CDRs1 are plannable as permanent ATS routes during the times published in AIPs. In the event of a short notice unavailability of a CDR1, flights are instructed by ATC to use alternative routes. Operators should consider the implications of the possible use of the alternate ATS routes published for each CDR1 in the AIP.

4.7.2.2.2 Any CDR1 closure which requires a re-filing of the flight plan is published with appropriate advance notice (e.g. through NOTAM) and, for safety reasons, notified again to the operators by the CRAM and/or eAMI. 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 Users Manual.

4.7.2.3 **CDRs2**

4.7.2.3.1 Flights on CDRs2 can only be planned when the CDRs are made available through CRAM and/or eAMI. AOs should also refer to national AIPs and to ATFCM Notification Messages (ANMs) for additional information regarding the specific utilisation of available CDRs2.

4.7.2.3.2 Whenever an operator wishes to take advantage of particular available CDRs2 or is required by the ANM to use particular CDRs2, an individual flight plan should be submitted. It should contain in Item 15 the available CDRs2 to be followed. Under these circumstances, any associated RPL shall be cancelled or changed in accordance with the procedures laid down in the IFPS Users Manual.

4.7.2.3.3 The flight planning systems of aircraft operators or flight planning agencies should be able to process the CRAM and/or eAMI in AIXM format so as to automatically process the CDRs availability information.

4.7.2.3.4 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 CFMU (see para. 4.7.5).

4.7.2.3.5 In case of an ATFCM slot that prevents the CDR2 usage, the flight plan is to be changed to use an available ATS route. The revised FPL may result in a revised ATFCM slot.

4.7.2.4 **CDRs3**

4.7.2.4.1 CDRs3 are published in AIPs as CDRs that are usable on ATC instructions only. Therefore, flights cannot be planned in advance on CDRs3.

4.7.2.5 **Early Access to Weekend Routes**

4.7.2.5.1 In order to take advantage of extra availability of Weekend Routes (see [Annex 8](#)), AOs should refer to the ENR part of national AIPs and AIP Supplements, and to the CRAM for details.

4.7.2.5.2 Weekend routes available are flight plannable as CDRs1. The Early Access to Weekend (EAW) routes defined as CDRs1 from 1000 UTC on the agreed Busy Fridays (see Section 3 Figure 4), are plannable in the same way as permanent ATS routes. In the exceptional event of a cancellation of the EAW arrangement of all or part of the weekend CDRs1, AOs are notified by NOTAM four days in advance and by the Thursday CRAM preceding the Friday concerned. In that case, the procedures of RPL cancellation are to be applied.

4.7.2.5.3 Identified routes, defined as CDRs2 for other Busy Days than Busy Fridays are plannable in accordance with CRAM information. The submission of the individual flight plan is to be made in accordance with the procedures defined in para 4.7.2.3.

4.7.3 **CFMU Environment Data Base**

- 4.7.3.1 The Environment Data Base (ENV) is a specific part of the CFMU Data Base containing all environment data concerning airspace organisation and structure, ACC operational organisation and ATC centre/sector capacities. The ENV is used by the CFMU IFPS and CFMU Tactical System (TACT) for the calculation of flight profiles taking account of all airspace constraints.
- 4.7.3.2 The ENV contains the description of all ATS routes including CDRs and all R, D and AMC-Manageable Areas including TRAs/TSAs from national civil and military AIPs. The ENV is updated on an AIRAC cycle basis with AIP related data and for the CDR availability through the CRAM.
- 4.7.3.3 The ENV provides the CADF and the CIAM used by the AMCs with ENV data for the compilation of CRAM and the elaboration of the national AUP/UUPs (see Section 6 Figure 1).

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, RPL) concerning flights which are partly or completely within the IFPS Zone.
- 4.7.4.2 The IFPS is a part of CFMU 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 CFMU 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 ENV data are amended with all CDRs that have been made available through the CRAM.
- 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 CFMU 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 At an agreed time parameter before a RPL becomes active, data for the flight are extracted from the RPL Data Base and sent to IFPS which process each RPL as an individual flight plan message and disseminates it to the relevant addressees.
- 4.7.4.8 RPLs and FPLs filed on CDRs1 during the accessibility period and FPLs filed on available CDRs 2 in the published CRAM are processed by IFPS.
- 4.7.4.9 In case of non-availability of particular CDRs for a flight, the IFPU operator may modify the flight plan in accordance with agreements between the CFMU and AOs. In case on non-availability of CDRs1 and 2 the IFPU operator may reject the flight plan.

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

4.7.5.1 This CFMU function allows an AO to request a modification of a FPL routeing within the CFMU system via a CFMU Terminal Remote Client Application (RCA).

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 routeing possibility than that initially planned in the original FPL, the user must choose the FPL re-filing option between:

- **Case 1** : allowing the CFMU/IFPS to directly update the original FPL and associated IFPS messages as if a change message (CHG) had been submitted by the user or,
- **Case 2**: allowing the CFMU/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 CFMU Users Manual

4.7.6 **Airspace Data Repository**

- 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 16). 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.

Airspace Data Repository

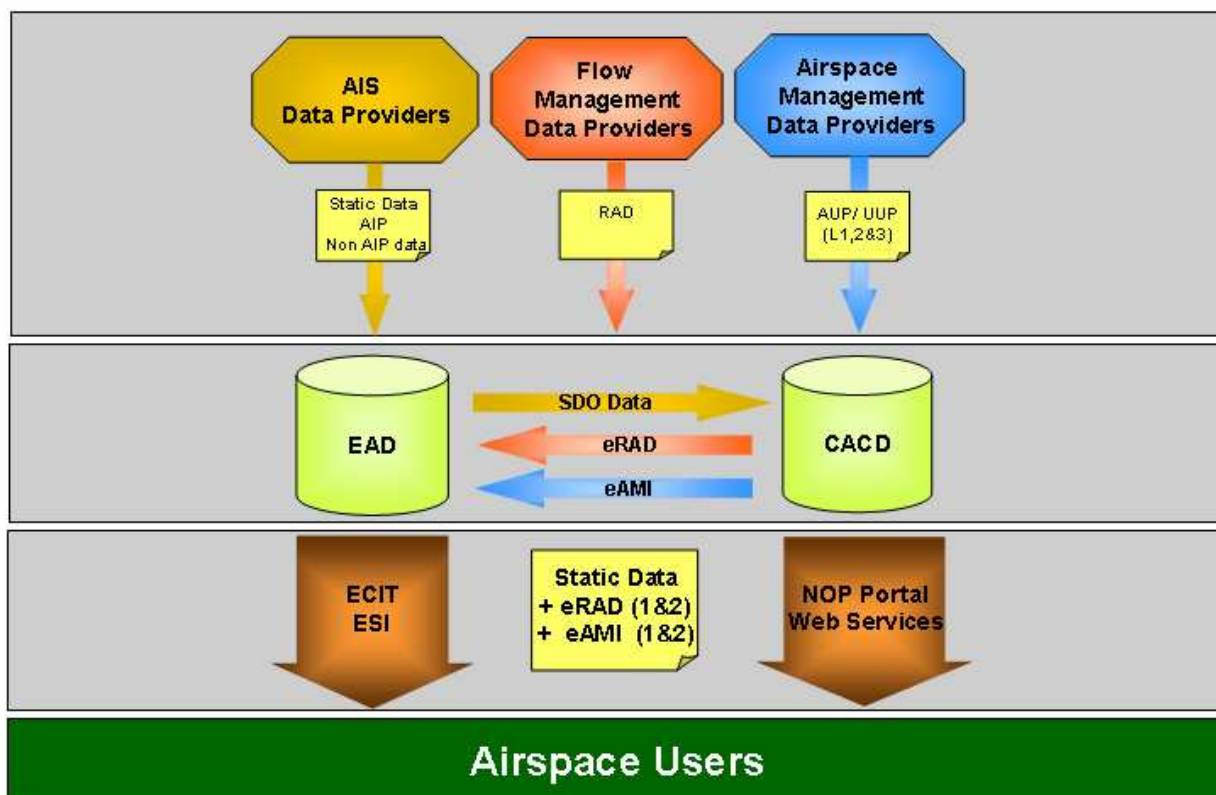


Figure 16: Airspace Data Repository

4.7.7 **ASM Support Tools**

- 4.7.7.1 This chapter specifies the system support to ASM/ATFCM process as required by GEN-TECH-01...10³ and as described by DMEAN CONOPS.
- 4.7.7.2 The entire process is assuming that capability through system support exists in order to ensure an automatic management of the data flow among users.
- 4.7.7.3 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.
- 4.7.7.4 ASM supporting tools will support the activation, deactivation, short-term cancellation or amendments to reservations and reallocation of the airspace structures.
- 4.7.7.5 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)

After 1500 UTC Summer or 1600 UTC Winter on the Day before Operations (1500 UTC D-1 Summer or 1600 UTC D-1 Winter):

4.8.1 **Up To 48 Hours In Advance**

- 4.8.1.1 The application of the procedures described below will continue to allow the tactical management of CDRs and TRAs/TSAs according to the current modus operandi.
- 4.8.1.2 No change of airspace status outside the timeframe of the AUP/UUP process as hereafter described will result in an update of the CFMU ENV. These 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 CFMU will be provided tactically (e.g. by phone, fax or UUP-like message). The detailed procedure is described in paragraph 4.8.5.
- 4.8.1.3 Up to 48 hours in advance the ACCs/FMPs, in coordination with the CFMU, should assess the expected traffic forecast for the particular day, identify and highlight capacity shortfalls, and agree on the traffic flow adjustment requirements that will be requested on the particular day of operations.

4.8.2 **The Day before Operations**

4.8.2.1 ***Before 1000 UTC * on the Day before Operations (1000 UTC D -1):***

- a) the FMP, with its related ACC, should compare the CFMU 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 CDRs2 requirements;

³ EUROCONTROL-SPEC-1012

Note * *Subject to national decision*

b) the ACC/FMP should send the CDRs2 Availability Request to the AMC, with details of traffic forecasts, capacity shortfalls and delay predictions;

c) the national AAs should collect all airspace user requirements for CDRs, TRAs/TSAs, AMC-manageable R and D Areas, other AMC-manageable airspace structures 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 reduced utilisation of these areas.

4.8.2.2 **Before 1400 UTC (1500 UTC Winter) on the Day Before Operations (1400 UTC D -1):**

a) the AMC should collect, collate and analyse all airspace requests, resolve conflicts through negotiation and coordination, respond to any additional requests to resolve route inconsistencies, and decide on allocation of CDRs, TRAs/TSAs and CBAs in accordance with priority rules established at ASM Level 1;

b) the AMC should obtain details of, or in case of CDRs1 managed at ASM Level 2, decide on, the periods of temporary closure of CDRs1, and should obtain details of the periods of use of RCAs;

c) the AMC should compose a Draft AUP after conducting, if required, coordination with other AMCs. The AMC should forward it to CFMU (CADF) via CIAM by 1200 UTC Summer (1300 UTC Winter) at the latest;

d) between 1200 and 1300 UTC Summer (1300-1400 UTC Winter) CFMU should evaluate the impact on the network of the "draft" airspace allocation in close coordination with FMPs and AMCs concerned, identify optimal scenarios and forward proposals to relevant AMCs and FMPs. A scenario may contain recommendations on change in CDRs/TRA/TSAs availability details (e.g. flight level band, availability time), sector reconfiguration, etc.

Where relevant, the 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: CFMU may identify more than one scenario

e) between 1300 and 1400 UTC Summer (1400 and 1500 UTC Winter) the AMC should consider the advice/alternatives proposed by CFMU and coordinate proposed changes with the Airspace Users that requested airspace reservations, if required;

The final airspace allocation decision remains the responsibility of the AMC.

f) by 1400 UTC Summer (1500 UTC Winter) the AMC should promulgate the AUP via CIAM for the 24-hour period from 0600 on the day of operations to 0600 UTC the next day (0600 UTC D to 0600 UTC D +1);

g) the AMC should send the AUP to AAs, FMPs, ACCs, CFMU/CADF and, if bilaterally agreed, to adjacent AMCs and to such internal agencies as agreed.

4.8.2.3 **Before 1500 UTC (1600 UTC Winter) on the Day Before Operations (1500 UTC D-1):**

a) the CADF should promulgate the CRAM to AOs, ACCs/FMPs, all AMCs and selected AROs in the requested format and post the data on eAMI server*.;

b) the CADF should ensure that information on CDR availability is made known to the CFMU Operational Units;

c) the FMPs/ACCs should notify CFMU of any resulting capacity changes that could effect ATFM measures.

* *When eAMI is available*

After 1500 UTC (1600 UTC Winter) on the Day Before Operations (1500 UTC D-1 Summer or 1600 UTC D-1 Winter):

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

4.8.2.4 *As Required On The Day Before Operations:*

4.8.2.4.1 *Alteration of AUP via UUP1 publication on D-1*

The Airspace Users that have requested airspace allocations should advise the AMC about any change in their planning. This will enable the associated CDR to be available for additional period(s) than that planned in the earlier AUP. If required, the AMC should inform the FMP and CFMU about the new airspace opportunities using a Draft UUP1.

a) as from the CRAM publication up to 1600 UTC (1700 UTC Winter) , the Airspace Users that requested airspace allocations should advise the AMC about changes in their planning for the next day, if any;

b) upon reception of a such information, the AMC should check if the airspace is needed by another user (if it is not done by the Approved Agency);

c) when required, and if there is no requirement for use of that volume of airspace from other users, AMCs should inform national FMPs and CFMU regarding the intention to lift/decrease airspace segregations (in time and/or space) via the promulgation of a Draft UUP1 by 1600 UTC at the latest, informing them about the opportunity of additional CDR availability.

4.8.2.4.2 *Between 1600 and 1700 UTC (1700 - 1800 UTC Winter)*

The CFMU and the FMPs should identify possible benefits from the opportunity (e.g. off-loading sector, sector re-configuration, etc). On the basis of the Draft UUP1 received from AMC(s), CFMU should identify the flights impacted and assess the additional CDR opening opportunities from the network perspective and provide advice (if any) to AMCs/FMPs for their consideration.

Such advice may contain recommendations on change in CDR/TRA/TSA's availability details (e.g. flight level band, availability time), sector reconfiguration, etc. Where relevant, the advice should also contain information for all States concerned with the scenario, with an indication of changes that should be agreed by those States to make the scenario work.

4.8.2.4.3 AMCs should receive the scenario proposed by CFMU and FMPs and conduct the final coordination with Airspace Users, if required.

4.8.2.4.4 AMCs should take the final airspace allocation decision and, if required, compose and release the resulting UUP1 information by 1700 UTC Summer (1800 UTC Winter) at the latest.

4.8.2.4.5 The new airspace structure (only valid as from 0600 UTC on the day of operations - CRAM update) should be implemented in the CFMU ENV database to ensure FPL consistency. CFMU should update the CFMU ENV database in accordance with the UUPs1 received in order to ensure FPL consistency.

4.8.2.4.6 The new CDRs availability information should be disseminated by CFMU through:

- AIMS, which also are available on the CFMU Network Operations Plan (NOP) portal; and
- eAMI*

The dissemination of information via eAMI should be achieved through the posting of CDRs availability updates. Such a process would allow AOs to upload the updates into their systems.

The posting of updates information should be synchronized with the publication of the relevant Air Traffic Flow Management Information Message (AIM).

**Note: When eAMI becomes available*

4.8.2.4.7 If FPLs are available, re-routing proposal messages should be submitted by CFMU (i.e. by The Aircraft Operation Liaison Officer - AOLO) to potentially interested AOs, concentrating on the most profitable CDRs.

4.8.2.4.8 Interested AOs should re-file FPLs accordingly.

4.8.3 **The Day Of Operations**

a) AAs should utilise the TRAs/TSAs, CBAs and other AMC-manageable R and D areas in accordance with the AUP allocation.

b) ACCs and AOs should utilise the CDRs2 in accordance with the AUP activation.

4.8.3.1 ***As Required on the Day Of Operations:***

4.8.3.1.1 On the Day of Operation (**D**), the Airspace Users that requested airspace advise the AMC about any change in their planning (e.g. activity completed earlier than planned, cancelled or reduced in time or volume, etc). This will enable the associated CDR to be available for additional period(s) than that planned in the AUP. If required, the AMC should inform FMP and CFMU about the new airspace opportunities using a Draft UUP2.

a) up to 0800 UTC Summer (0900 UTC Winter), the Airspace Users that requested airspace should advise the AMC about any change in their planning for the day of operation (**D**), (e.g. activity completed earlier than planned, cancelled or reduced in time or volume, etc)

b) upon reception of such information the AMC should check if airspace is needed by another user(s) (unless already done by Approved Agencies).

4.8.3.1.2 When required, and if there is no requirement for use of that volume of airspace, AMC should inform national FMPs and CFMU regarding the intention to lift/decrease airspace

segregations (in time and/or space) and the opportunity of additional CDRs availability via promulgation of Draft UUP2 at 0800 UTC Summer (0900 UTC Winter) at the latest.

4.8.3.1.3 Network and Local Network Assessment on D - 0800-0900 UTC Summer (0900-1000 UTC Winter)

a) the CFMU and the FMPs should identify possible benefits from the opportunity (e.g. offloading sector, sector reconfiguration, etc). On the basis of the Draft UUP2 received from AMC(s), CFMU should identify the flights impacted and assess the additional CDR opening opportunities from the network perspective and provide advice (if any) to AMCs for their consideration;

b) such advice may contain recommendations on change in CDR/TRA/TSA availability details (e.g. flight level band, availability time), sector re-configuration, etc. Where relevant, it should also contain information for all States concerned with the scenario, with an indication of changes that should be agreed by those States to make the scenario work.

4.8.3.1.4 AMCs should receive the scenario proposed by CFMU and FMPs and conduct final coordination with Airspace Users, if required.

4.8.3.1.5 AMCs should take their final airspace allocation decision, and, if required, compose and release the resulting UUP2 information by 0900 UTC Summer (1000 UTC Winter) at the latest.

4.8.3.1.6 CFMU should update the CFMU ENV database according to UUP2s received in order to ensure FPL consistency (only valid as from 1100 UTC of the day of operations).

4.8.3.1.7 The new CDRs availability information is disseminated by CFMU through:

- AIMS, which also are available on the NOP portal; and
- eAMI*

The dissemination of information via eAMI should be achieved through the posting of CDRs availability updates. Such a process would allow AOs to upload the updates.

Posting of the updates information should be synchronized with the publication of the relevant AIM.

* *Note: When eAMI becomes available*

4.8.3.1.8 If FPLs are available, RRP messages should be submitted by CFMU (i.e. by AOLO) to potentially interested AOs.

- 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. The re-routing option will be provided by ATC to the pilot

Note 1: Flight in the planning phase means a flight in any stage of preparation 2 hours or more before EOBT.

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

4.8.4 Use of Tactical Management

- 4.8.4.1. If required, the AMC may publish one or more UUP-like messages for the period of validity of the current AUP, for transmission to the FMPs, ACCs, the CADF and adjacent AMCs. A minimum of one hour shall be allowed between the release of those UUP-like messages and the commencement of any additional airspace structures made available by such message.
- 4.8.4.2. ACCs should utilise the CDRs2 in accordance with the UUP-like messages
- 4.8.4.3. When associated TRA/TSA activity has ceased or has been cancelled, ACCs/FMPs should utilise CDRs2 and 3 on a tactical basis and may offer an aircraft a routing through the inactive area on short-notice.
- 4.8.4.4. The AMC should decide in accordance with criteria established at ASM Level 1 on the provisional closure of CDRs1 to be handled in real time at ASM Level 3.
- 4.8.4.5. The AMC should promulgate accordingly, through the AUP, the airspace allocation decision for the 24-hour period from 0600 UTC on the day of operations to 0600 UTC the next day, which shall not contain CDR2 activation but only information on provisional CDR1 closures at ASM Level 3, and foreseen activity in associated TRA(s)/TSA(s) and/or AMC-Manageable D and R area(s).
- 4.8.4.6. Such a late AUP shall be published at least one hour before its validity period (0500 UTC) and can be updated through a UUP-like message released up to one hour before the start of CDR1 unavailability.

4.9 TEMPORARY AND CONTINGENCY PROCEDURES

4.9.1 FUA Temporary Instruction (FTI)

- 4.9.1.1 The "basic" procedures described above in para. 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 CFMU/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.
- 4.9.1.2 Procedures of the above nature are named FUA Temporary Instructions (FTI). FTIs shall be agreed/applied by the appropriate AMCs and the CFMU/CADF for all or part of the FUA area. A FTI will be published in a similar way to FMD Temporary Instructions in the format presented at Figure 5.

4.9.2 Implementation Procedure

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

4.9.2.3 The CFMU must notify the responsible EUROCONTROL working arrangement (e.g the Airspace Management Sub-Group of ANT) of the circumstances which require the implementation of a FTI. In any case, FTIs will be sent to all affected AMCs, FMPs and AOs, for application and to the Airspace Management & Navigation Unit, for information.

4.9.2.4 FTIs are issued on the authority of the CFMU Head of Operations.

4.9.3 **Subsequent Treatment**

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

4.9.3.2 Once published in the present ASM Handbook, the CFMU informs the involved parties of the change of status of the FTI.

4.9.4 **Fields of Application**

4.9.4.1 The CFMU shall issue FTIs/AIMs in the following domains:

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

<p>FUA OPERATIONS</p> <p>Issued by:</p>	<p>FUA TEMPORARY INSTRUCTION</p> <p><i>Title</i></p> <p><i>Area concerned:</i></p>	<p>Number: FTI 02/...</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>Validity from: _____ to: _____</p>
<p>EXAMPLE FORMAT (Insert text as appropriate)</p>		
Page 1	Date	CADF, FMD Supervisors, AMCs, IFPU Supervisors, VAU, MTZ, DEL, Original : BLZ

Figure 17: Example of FUA Temporary Instruction (FTI)

4.10 ASM OVER THE HIGH SEAS AT ASM LEVEL 2

4.10.1 General

4.10.1.1 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.

4.10.2 Activation of Danger Areas over the High Seas

4.10.2.1 In line with the fundamental principle of the Flexible Use of Airspace Concept, D areas over the high seas shall be notified 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.

4.10.3 Activation of CDRs over the High Seas

4.10.3.1 The activation of a CDR 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 CDR. 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 activate a CDR once it has received a notification of a D area activity. This applies to all categories of CDRs.

4.10.3.2 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 effected 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 activation of a CDR2 over the high seas. Based on the absence of any D area activation, a CDR2 can be activated by the national AMC. Similarly, if a cancellation of D area activation has been issued, a CDR2 can be activated by the AMC. Should a notification be received after the CDR has been activated, ATS must, at ASM Level 3, take measures to re-route traffic which is flying within or may have flight planned to use this CDR.

4.10.4 Alternative Method to Improve the Mechanism for the International Co-ordination

4.10.4.1 The coordination requirements and procedures for activities potentially hazardous to civil aircraft over the high seas are laid down in ICAO Annex 11 (paragraph 2.17) and in ICAO Doc. 9554 (paragraph 2.16.1). 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.

4.10.4.2 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.

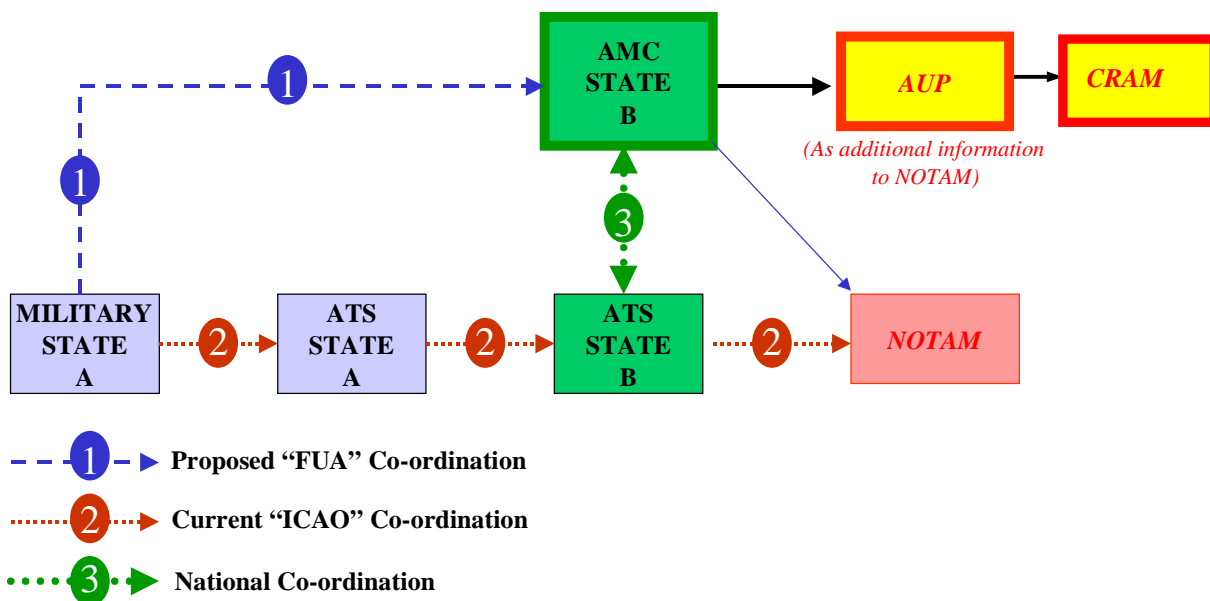


Figure 18: Alternative method to improve the mechanism for the International coordination of activities over the High Seas potentially hazardous to civil aircraft.

4.10.5 AMC Related Tasks

4.10.5.1 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.

4.10.5.2 CDRs2 over the high seas are activated by the responsible AMCs and the information is included in the daily AUP/UUPs. 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 CDRs.

4.10.5.3 When AMCs have notification of activities potentially hazardous to civil aircraft operations in airspace over the high seas which conflict with CDRs1, they can publish the corresponding closure of those CDRs1 by using the appropriate part of the AUP.

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, by speech only, 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 Route 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, 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 and 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, CDR, 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 "off-route" 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 "off-route" 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 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:

- the provision of airspace use data;
- the exchange of flight data between civil and military units;
- 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:

- crossing of ATS permanent/CDRs routes by OAT;
- crossing of controlled airspace by OAT;
- crossing of airspace reservation by GAT;
- use of additional CDRs/ direct routing/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 control 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 CDR 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, fire fighting, 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 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. 19 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.

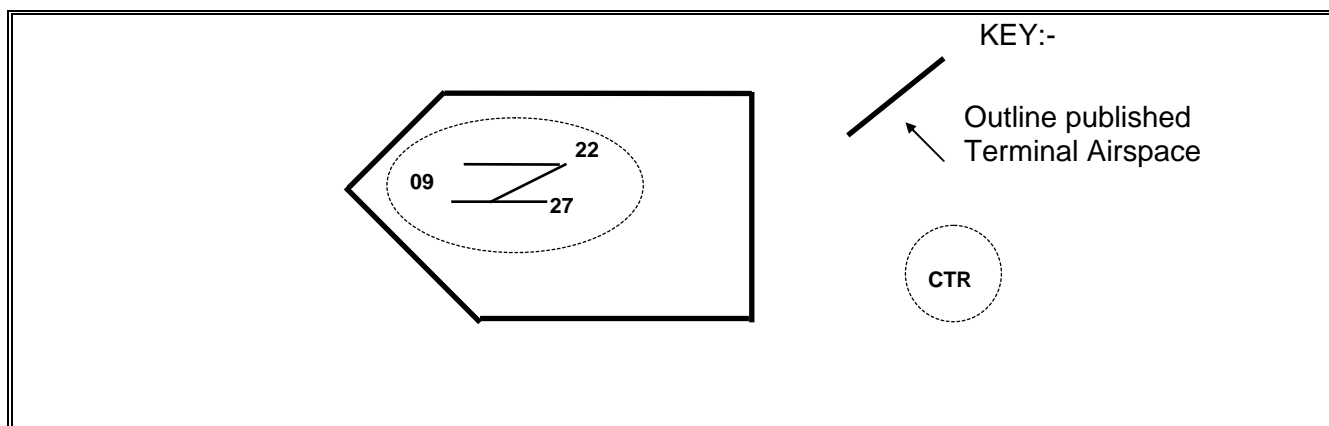


Figure 19: Terminal Airspace

5.6.2.3.2.6 Fig. 20 shows the same portion (as fig. 19) 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.

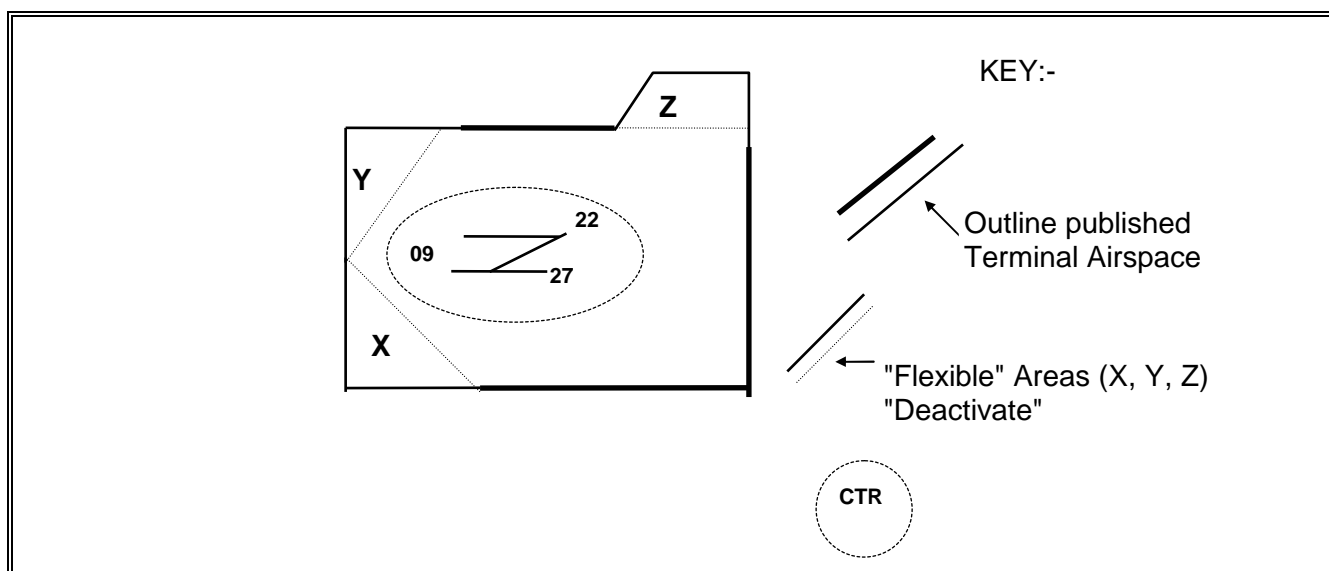


Figure 20: Flexible Terminal Airspace

5.6.2.3.2.7 Fig. 21 shows a cross-section slice through Fig. 20. 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.

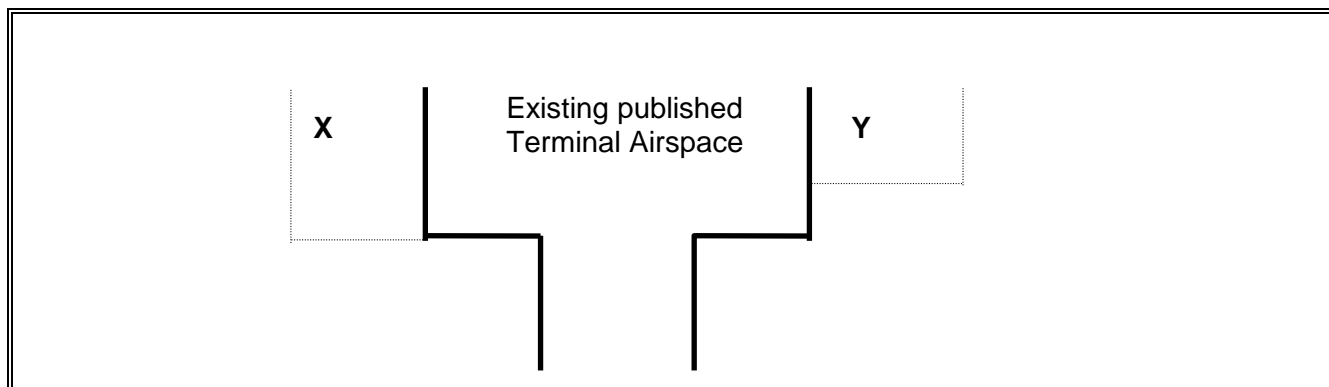


Figure 21: TMA cross section

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:

- requirement for the carriage and use of radio within a classification that does not normally require it.
- 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.
- requirement for the carriage and use of transponder.
- changes to weather minima.
- 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 shall contain sufficient information to assist the pilot in making the appropriate arrangements for flight safety. The items shall include:

- the volume name/code identifier;
- WGS coordinates;
- dimensions (lateral and vertical);
- times/days of operation;
- 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.

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SECTION 6

PUBLICATION OF ASM INFORMATION

6.1 AIP/NOTAM FOR ASM LEVEL 1 DECISION

- 6.1.1 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.
- 6.1.2 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. The guidelines for a harmonised publication of the AMC-Manageable Areas can be found in Section 3 of the EUROCONTROL Manual for Airspace Planning.

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 shall be transmitted in a common harmonized format to CFMU's dedicated interface for ASM and shall be published as soon as possible and not later than by 1400 UTC Summer or 1500 UTC Winter, to cover the 24 hours time period between 0600 UTC the next day to 0600 UTC the day after (D 0600 hrs to D+1 0600 hrs). Several AUPs can be sent in one sequence on the last day before the closure of the AMC to cover each day of a week-end or "Holidays" period, but with a maximum of seven consecutive days. The AUP shall be transmitted to AAs, ACCs/FMPs and to the CADF. Through the CIAM application AUP in ready format will be available automatically to the other AMCs.
- 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 and to enable the CRAM to be compiled automatically by the CADF, AUPs shall be prepared and distributed to the CADF/AME by means of the common CIAM software set up in CFMU terminals.

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 effected 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 ATC capacity and reducing GAT delays through the more efficient use of airspace.

All changes will be visible, according to the criteria described in Annex 6.

6.2.2.3 The UUPs information will be used by CFMU/CADF to produce eAMI messages as well as being available on the NOP portal. According to the CDRs change status, Re-Routing Proposals (RRPs) messages will be provided to interested users.

6.2.2.4 The UUP shall be published in the same common format as the AUP or previous UUP. The UUPs will be published according to the current procedures described in paragraphs 4.8.3 and 4.8.4.

6.2.2.5 The UUP shall be transmitted to the relevant AAs, ACCs/FMPs, and the CFMU/CADF. Through the CIAM application the published UUPs will be visible to the other AMCs. However, UUPs shall not be published when there are no alterations to the current AUP.

6.2.2.6 In order to automate the UUP process within AMCs and AAs to allow for the automatic storage and display of UUPs, UUPs shall be prepared by means of the CIAM software set up in CFMU terminals.

6.2.3 **Conditional Route Availability Message (CRAM)**

6.2.3.1 As AUPs are not sent individually to AOs, the information provided by AMCs on the CDR availability in the ECAC area shall be disseminated by the CFMU/CADF by means of a consolidated message, the CRAM, to operators for flight planning purposes.

6.2.3.2 The CRAM shall contain mainly CDRs2 made available in the AUPs. For safety reasons, the CRAM will additionally contain, when applicable, information on CDR1 closures, as a repetition of the decision already published with appropriate advance AIS notice, as well as any other closures of permanent ATS routes (see para. 4.5.2.4).

6.2.3.3 The CRAM shall be prepared in harmonised formats (see Annex 7) by means of the "ATFCM Messages Exchange" (AME) system. The CRAM shall be published by 1500 UTC Summer or 1600 UTC Winter to cover the 24 hours time period between 0600 UTC the next day to 0600 UTC the day after (D 0600 hrs to D+1 0600 hrs). The CRAM shall be transmitted in the required format to selected AOs and AROs (current ANM addressees), ACCs/FMPs concerned and to all AMCs.

6.2.3.4 Functional specifications for a CRAM message in ADEXP format are described in the EUROCONTROL Standard Document on "ATS Data Exchange Presentation" (ADEXP) and the Document "DPS.ET1.ST10.2000-FS-01-00". However, so as to permit manual processing, the CRAM would also be disseminated in a human-readable format (see Figure 1). As for AUPs and UUPs, different ways of transmitting the CRAM can be used including AFTN and SITA. The NOP portal will also display CRAM information, including a MAP viewer of CDRs available (CDR2) and CDRs closed (CDR1) and/or any other ATS routes closed. In addition, CFMU terminal users are able to directly display and print the CRAM messages. The CRAM is also used by the IFPS for the checking and correction

process of Flight Plan Messages (FPMs: RPL, FPL etc.) according to the daily available CDRs.

- 6.2.3.5 On very rare occasions, a released CRAM message may require updating due to errors or omissions. In such circumstances, the CRAM is amended by issuing a "CRAM Correction" message in the form of an AIM. An example of a fictitious CRAM Correction Message is at Annex_7, page 8.
- 6.2.3.6 In order to respond to the dynamic nature of the CRAM information and to allow an easy access to the daily CRAM for all airspace users and ATS providers concerned, a CRAM Viewer has been developed as an interactive secured world wide web tool (<http://cram.ecacnav.com>). The CRAM Viewer is a complementary tool to the other existing means of distribution of CRAM information and adds to this information some user aiding data access functionality including dynamic mapping of the airspace environment.

6.2.4 Electronic Airspace Management Information (eAMI)

- 6.2.4.1 eAMI or electronic Airspace Management Information is an electronic message containing all airspace allocations (ASM Level 1 and ASM Level 2) and the derived opening of CDRs2 and the confirmation of closure of CDRs1 and ATS routes published previously by NOTAM.
- 6.2.4.2 Through eAMI, authorised users can query and compare CDR/Route Availability and Airspace Allocations. This should be normally available via CFMU web services in accordance with a service agreement signed between user and CFMU.
- 6.2.4.3 Through consolidated and validated electronic eAMI messages users can therefore make full use of the benefits offered by automated data processing.

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: 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 abovementioned 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 Military) performance management system. PRISMIL, with its 8 KPIs, 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 DG. The methods and algorithms described hereafter are based on what was developed by the AHGOFI and FUA DG and agreed by the ANT 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 users 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 route if that route is the shortest possible available.

Recorded flight: Flight Plan Data for a specific flight as recorded Archive System of the CFMU (ARC).

Alternate route: The shortest route on which a flight will re-route as a consequence of a certain route segment 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 CDRs (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
<i>ARFL</i>	Total Number of Aircraft having filed an FPL on a CDR during a given time period
<i>ANRF</i>	Total Number of Aircraft having filed an FPL/RPL on the ALTN of a CDR during a given time period
<i>ARC</i>	Archive System of the CFMU
<i>AU</i>	Total Number of Aircraft having actually used a CDR 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 DG</i>	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 CDR between 0400 UTC and 2200 UTC
<i>ON</i>	Total Opening Hours of a CDR between 2200 UTC and 0400 UTC

<i>OPS LOG</i>	CFMU 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 CDR during a given time period
<i>RAI</i>	Rate of Aircraft Interested
<i>RAU</i>	Rate of Actual Use of CDR
<i>RDI</i>	Reduction in Delays Indicators
<i>RoCA</i>	Rate of CDR Availability
<i>SR1</i>	Length (in NM) of a CDR
<i>SR6</i>	Length (in NM) of an ALTN
<i>TA</i>	Total Number of Aircraft having filed an FPL/RPL on a CDR or its ALTN during a given time period
<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 CDR Availability (RoCA)**

7.2.1.1 Definition:

RoCA represents the average CDR availability according to the CRAM related to a given time period.

RoCA represents (in %) the ratio of the total CDR segment opening, whatever category it may be, to the total time of days (D) during a given time period.

RoCA is balanced according to the fact that:

- 96% of GAT is operating between 0400 and 2200 UTC
- CDRs are very often available between 2200 and 0400 UTC but, on average, only 4% of the traffic is operating during this period.

7.2.1.2 Usage:

RoCA computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

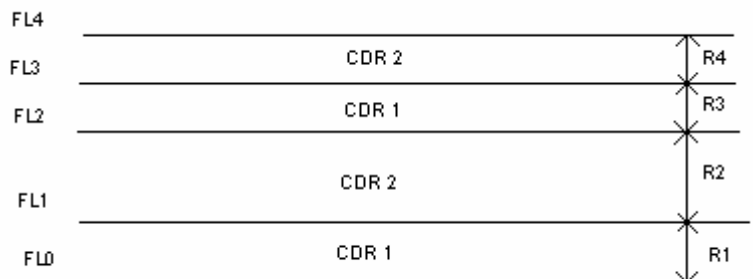
RoCA computed as an average:

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

7.2.1.3 Formula:

$$\text{RoCA} = (\text{OD} \times 0.96) / (18 \times \text{D}) + (\text{ON} \times 0.04) / (6 \times \text{D})$$

For a CDR1/2 the following method to compute the OD and ON is proposed:



In the figure above, FL0 means the lowest FL available for a given CDR segment and FL4 represents the highest FL available for the same CDR. As can be observed, the route may have a different definition on each layer of flight levels (CDR1 between FL0 and FL1, CDR2 between FL1 and FL2, etc).

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

$$\text{OD} = \sum_j (\text{OD}_{\text{CDR1j}} \times R_j) + \sum_k (\text{OD}_{\text{CDR2k}} \times R_k)$$

Where

$$R_j = (\text{maxFL}_j - \text{minFL}_j) / (\text{maxFL}_{\text{route}} - \text{minFL}_{\text{route}}) *$$

And

OD_{CDR1j} and OD_{CDR2k} are obtained by collecting the availability information (published in the AIP and in the CRAM).

A similar formula is used to obtain the ON:

$$\text{ON} = \sum_j (\text{ON}_{\text{CDR1j}} \times R_j) + \sum_k (\text{ON}_{\text{CDR2k}} \times R_k)$$

7.2.2 Rate of Aircraft Interested (RAI)

7.2.2.1 Definition:

RAI represents the average number of aircraft interested in filing flight plans to take advantage of an available CDR.

RAI represents (in %) the ratio of the number of flights planned on an available CDR to the number of potential users of this CDR.

7.2.2.2 Usage:

RAI computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation; or

Note * Expressed in number of FLs

- the effectiveness of the negotiation process (at ASM Level 1 for CDRs 1 and at ASM Level 1 and ASM Level 2 for CDRs2).

RAI computed as an average:

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

7.2.2.3 Formula: The total number of aircraft (TA) having filed an FPL/RPL on a CDR or its alternate is balanced according to the Rate of CDR Availability (RoCA) in order to represent the Potential Users (PU) of this CDR.

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

where

$$\text{PU} = \text{ARFL} + (\text{ANRF} \times \text{RoCA}**))$$

7.2.3 Rate of Actual Use of CDR (RAU)

7.2.3.1 Definition:

RAU represents the average number of aircraft having actually used an available CDR during a given time period.

RAU represents (in %) the ratio of the number of flights (AU) having actually used an available CDR to the number of potential users (PU) of this CDR.

7.2.3.2 Usage:

RAU computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

RAU computed as an average:

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

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

7.2.3.3 Formula:

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

7.2.4 Time Window of Availability (TWA)

Note * *The formula used to determine the total number of potential users may be further refined if a suitable data source is available.*

** *ANRF x RoCA represents the total number of flights which could use a particular CDR but the flight plan is filed through the alternate of that CDR.*

7.2.4.1 Definition:

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 CDR segment in a certain FIR/UIR.

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.

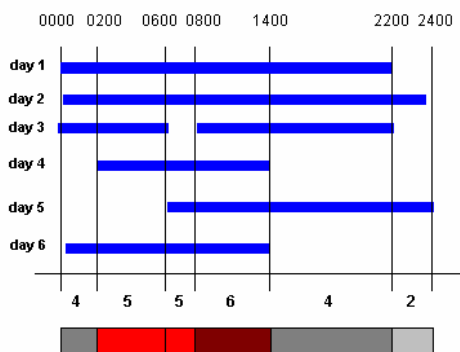
7.2.4.2 Usage:

TWAI computed for one day of operation: assessment of a particular CDR in order to determine the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2) based on the number of hour of opening and on the size of the windows of opening

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

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

7.2.4.3 Formula: The horizontal segments in Table 1 below represent the time window of opening of a certain CDR 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.

Table 1

7.2.4.4 Publication: 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	24
UA10	TRA	RESIA	200	550	2	0	0	0	0	0	0	0	0	5	5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
UA25	CGC	ARE	195	490	2	0	0	0	0	0	0	0	0	0	0	0	2	3	3	3	2	2	2	2	2	2	2	2	2	0
UA31	CJM	ASTRO	250	490	2	0	0	0	0	0	0	15	0	0	0	0	0	0	10	20	20	+	+	+	+	+	+	+	20	0
UA41	PUNSA	WAD BN	200	550	2	0	0	0	0	0	0	0	5	5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	
UB191	POI	TERMI	195	490	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	0
UB99	FFM	BATTY	250	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	15	0
UB99	FFM	BATTY	310	350	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0
UC10	D.O BAK	LBE	250	350	2	15	15	15	15	15	15	15	10	7	5	5	3	5	6	5	5	+	+	+	+	+	3	0	1	0
UC10	D.O BAK	LBE	310	350	2	0	0	0	0	0	0	0	2	5	6	7	5	2	1	2	2	1	1	0	0	2	+	2	0	
UC102	HAM	FLD	250	250	2	15	15	15	15	15	15	15	15	2	6	8	+	+	+	1	3	+	3	1	0	0	0	0	0	0
UC103	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	0	0

Table 2

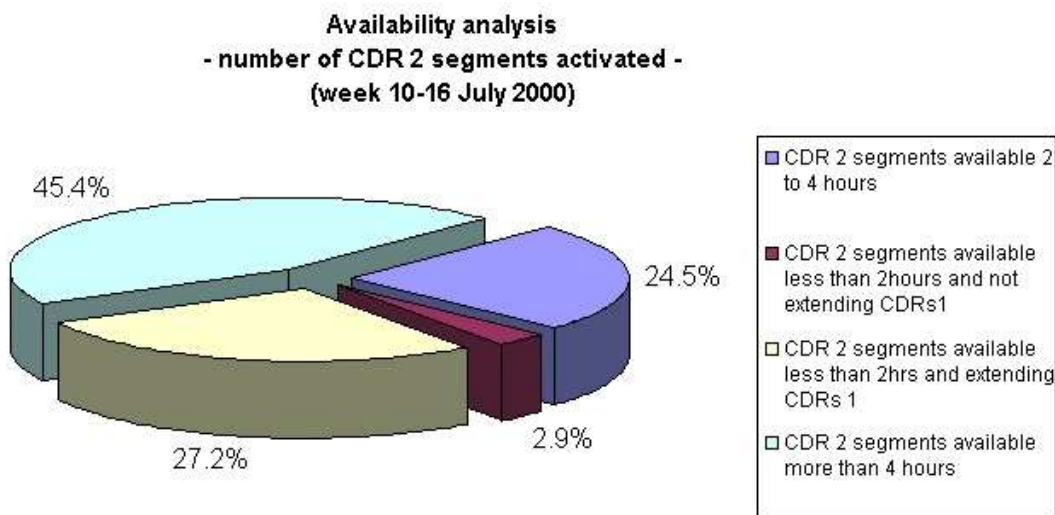
where the results are given for all the CDR segments assessed but summed up for the whole period analysed, or

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	24	
Tue	UJ31	CJN	ASTRO	250	450		0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	
Tue	UJ69	FFM	BATTY	260	350		0	0	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 10	DOBK	LBE	250	350		1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 102	HAM	FLD	250	250		1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UG 105	SPI	FFM	270	350		0	0	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 105	DIK	KRH	270	350		0	0	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 105	DIK	KRH	280	350		0	0	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 105	KO K	DIK	210	230		0	0	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 105	KO K	DIK	270	450		0	0	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	WIBER	250	250		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UJ300	ADX	CLS	250	450		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UJ400	AMR	GALTO	250	300		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tue	UJ400	AMR	GALTO	250	300		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tue	UJ155	BAM	LNO	250	450		0	0	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	LOHAM	SPY	310	450		1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3

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

The following pie chart representation may be used to better visually compare the differences in values.



7.3 FLIGHT ECONOMY INDICATORS (FEI)

7.3.1 General

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:

- Savings in fuel = {indicator value in [NM]} x coef. F [metric tones of fuel/NM];
- 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:

PFE represents flight economy to be potentially realised using a particular CDR made available H24.

PFE represents (in NM), the economy realised in using a CDR instead of its alternate (ALTN).

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:

PFE computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation or the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2);
- the value could also be used to influence the airspace design in the area of that CDR

PFE computed as an average:

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

7.3.2.3 Formula:

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

Note * SR6 represents the distance flown on the alternate of a CDR. An average value for the alternate of a CDR or for the difference (SR6 – SR1) may be used if an algorithm to determine that value is available.

7.3.3 **Total Potential Flight Economy (TPFE)**

7.3.3.1 **Definition:**

TPFE represents flight economy to be realised by all the aircraft potentially interested (TA) in using a CDR made available H24.

TPFE represents (in NM), the economy realised in using a CDR instead of its alternate route (ALTN).

7.3.3.2 **Usage:**

TPFE computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

TPFE computed as a total:

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

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 CDR.

7.3.3.3 **Formula:**

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

7.3.4 **Flight Economy Realised (FER)**

7.3.4.1 **Definition:**

FER represents flight economy realised (in NM) by flights having filed FPLs (ARFL) in order to use an available CDR.

7.3.4.2 **Usage:**

FER computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorisation; or
- the effectiveness of the negotiation process (at - ASM Level 1 for CDRs1 and at - ASM Level 1 and ASM Level 2 for CDRs2).

FER computed as a total:

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

7.3.4.3 **Formula:**

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

7.3.5 **Flight Economy Lost (FEL)**

7.3.5.1 **Definition:**

FEL represents flight economy potentially lost (in NM) by users NOT having filed a FPL to take advantage of a CDR made available

7.3.5.2 **Usage:**

FEL computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorization; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

FEL computed as a total:

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

7.3.5.3 **Formula:**

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

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

7.3.6 **Flight Economy Offered (FEO)**

7.3.6.1 **Definition:**

FEO represents flight economy (in NM) to be realised by Potential Users (PU) of a CDR made available.

FEO represents also Flight Economy Realised (FER) by flights (ARFL) having filed FPLs in order to use an available CDR and Flight Economy (FEL) that could have been saved by users (ANRF) NOT having filed a FPL on that available CDR.

7.3.6.2 **Usage:**

FEO computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorization; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

FEO computed as a total:

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

7.3.6.3 **Formula:**

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

7.3.7 **Actual Flight Economy (AFE)**

7.3.7.1 **Definition:**

AFE represents flight economy (in NM) realised by flights that have actually used an available CDR.

7.3.7.2 **Usage:**

AFE computed individually:

- assessment of a particular CDR in order to determine the potential for re-categorization; or
- the effectiveness of the negotiation process (at ASM Level 1 for CDRs1 and at ASM Level 1 and ASM Level 2 for CDRs2).

AFE computed as a total:

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

7.3.7.3 **Formula:**

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

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ICAO Documentation

Annex 2 Rules of the Air

Annex 11 Air Traffic Services

Annex 15 Aeronautical Information Services

Doc 4444 Procedures for Air Navigation Services – Air Traffic Management

Doc 7754 EUR Air Navigation Plan

Doc 8126 Aeronautical Information Services Manual

Doc 9426 Air Traffic Services Planning Manual

Doc 9554 Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations

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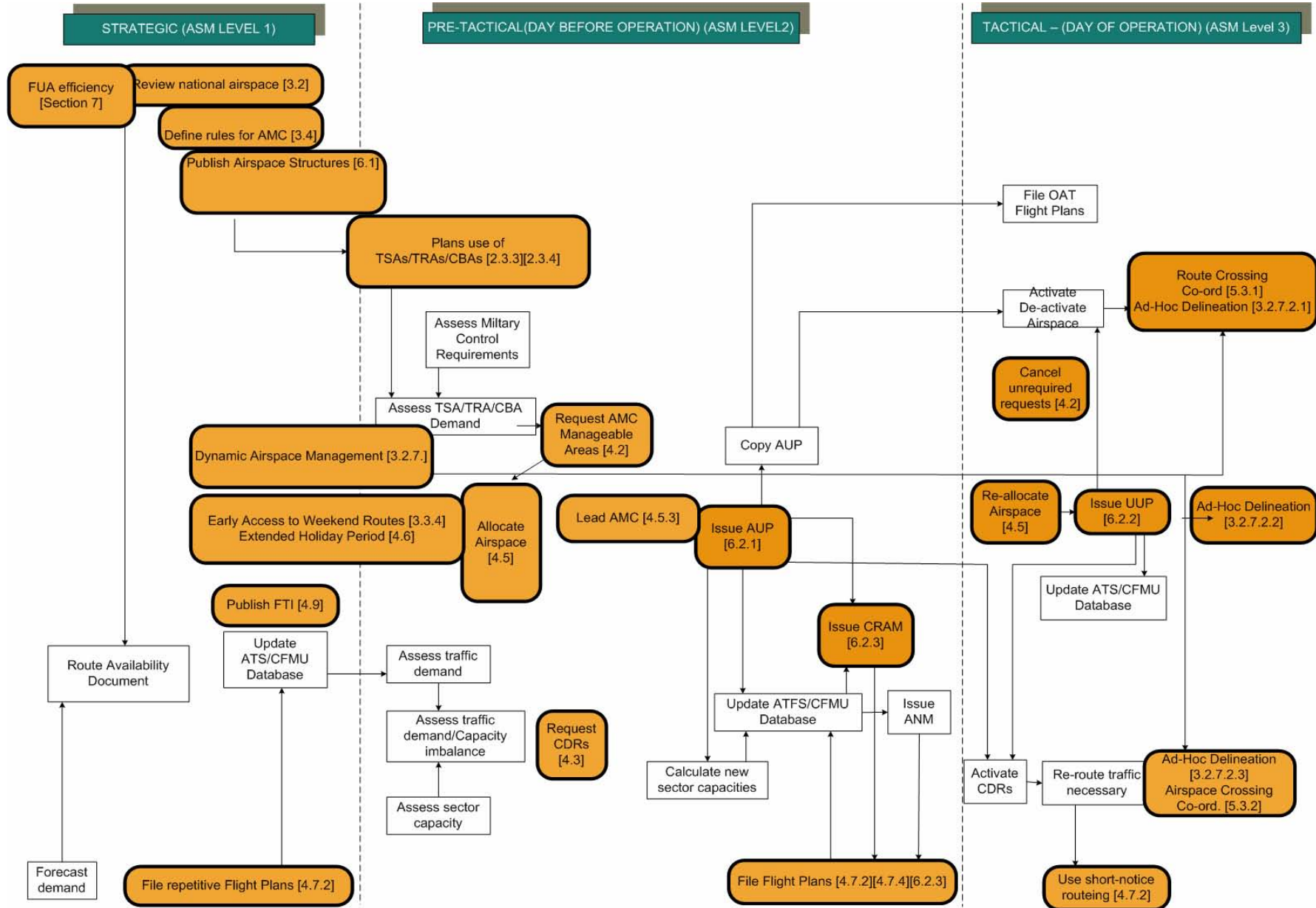
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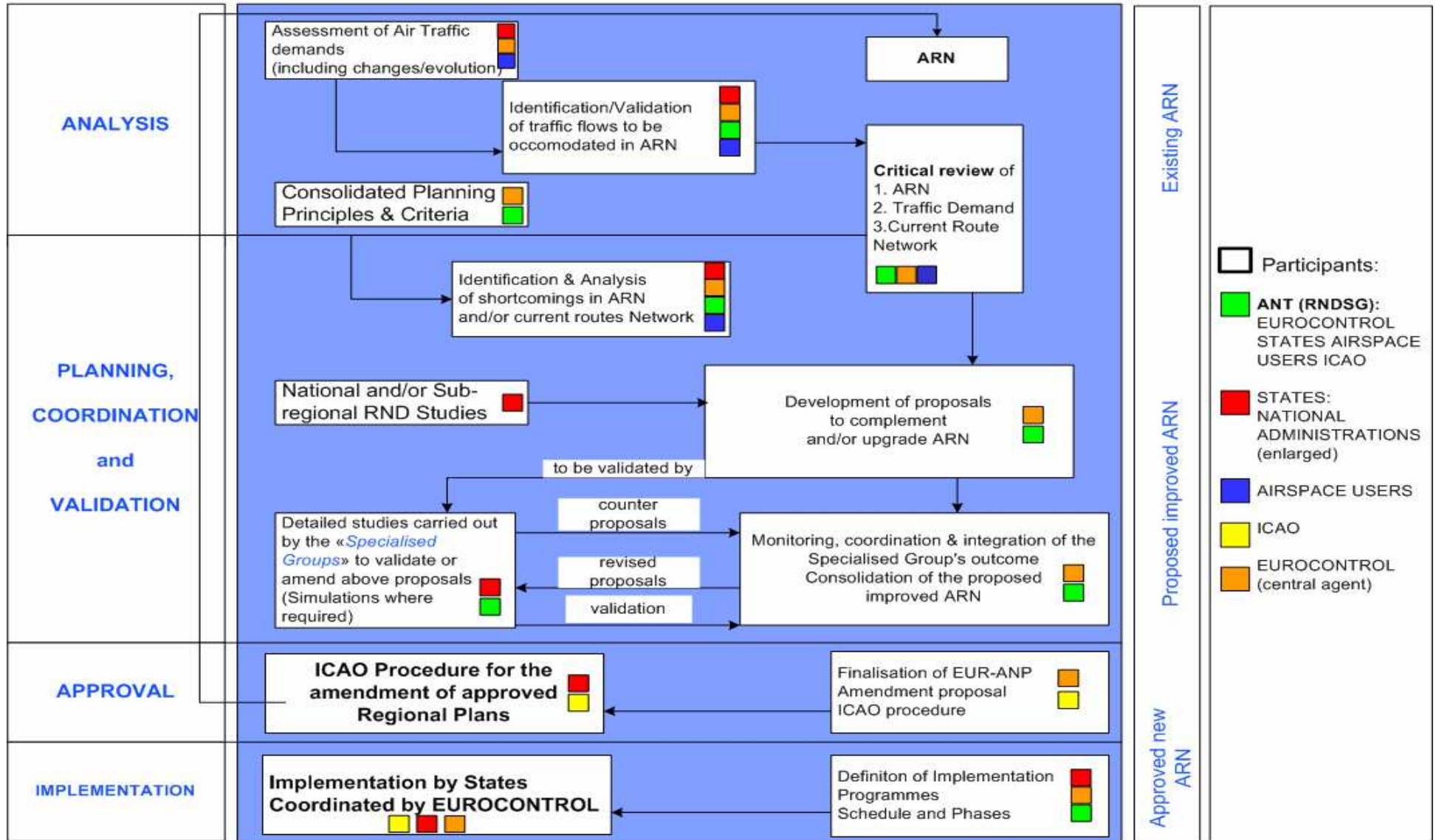
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GENERAL OVERVIEW AND PROCESS OF THE FUA CONCEPT HANDBOOK CROSS-REFERENCE TABLE

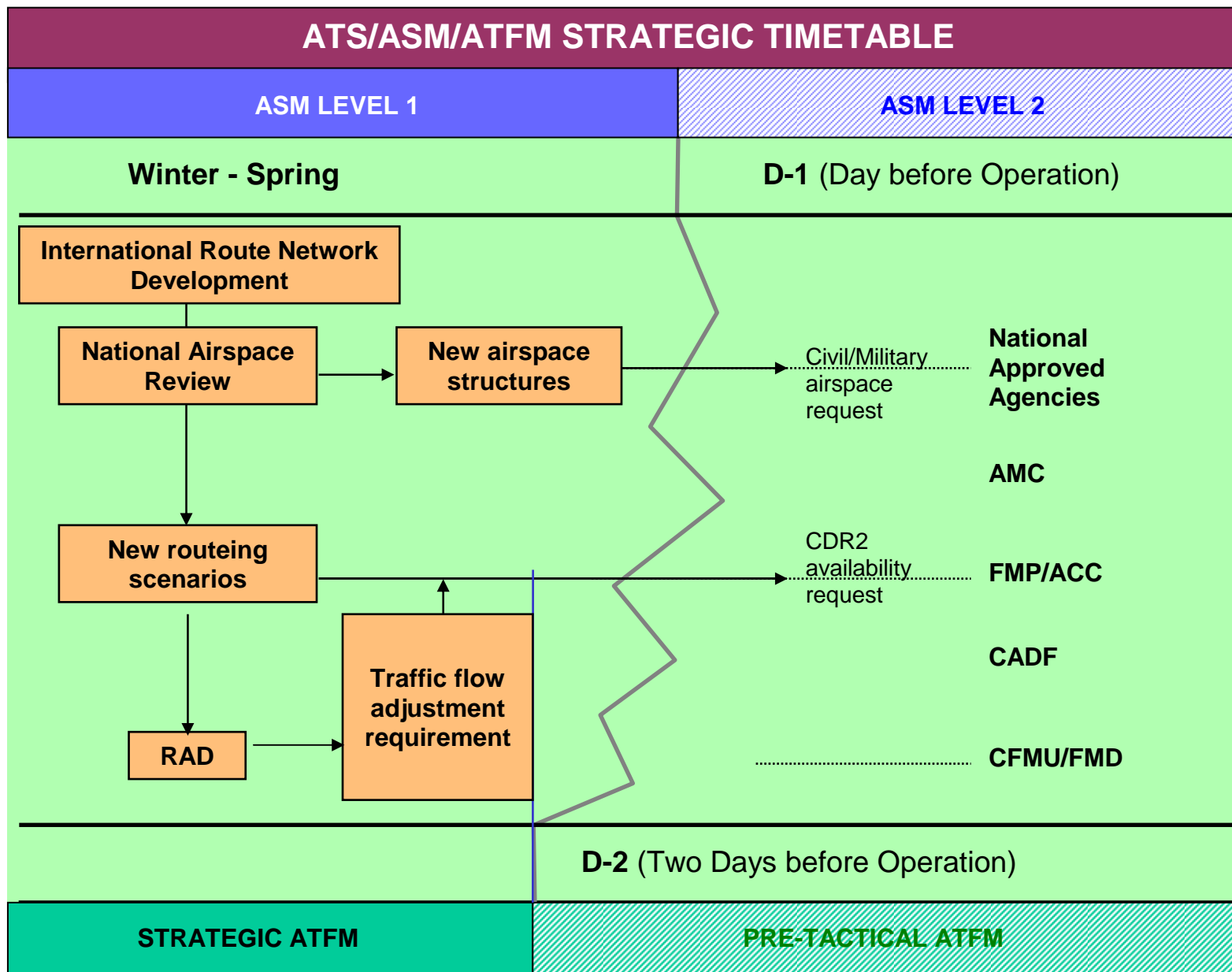
Annex 1

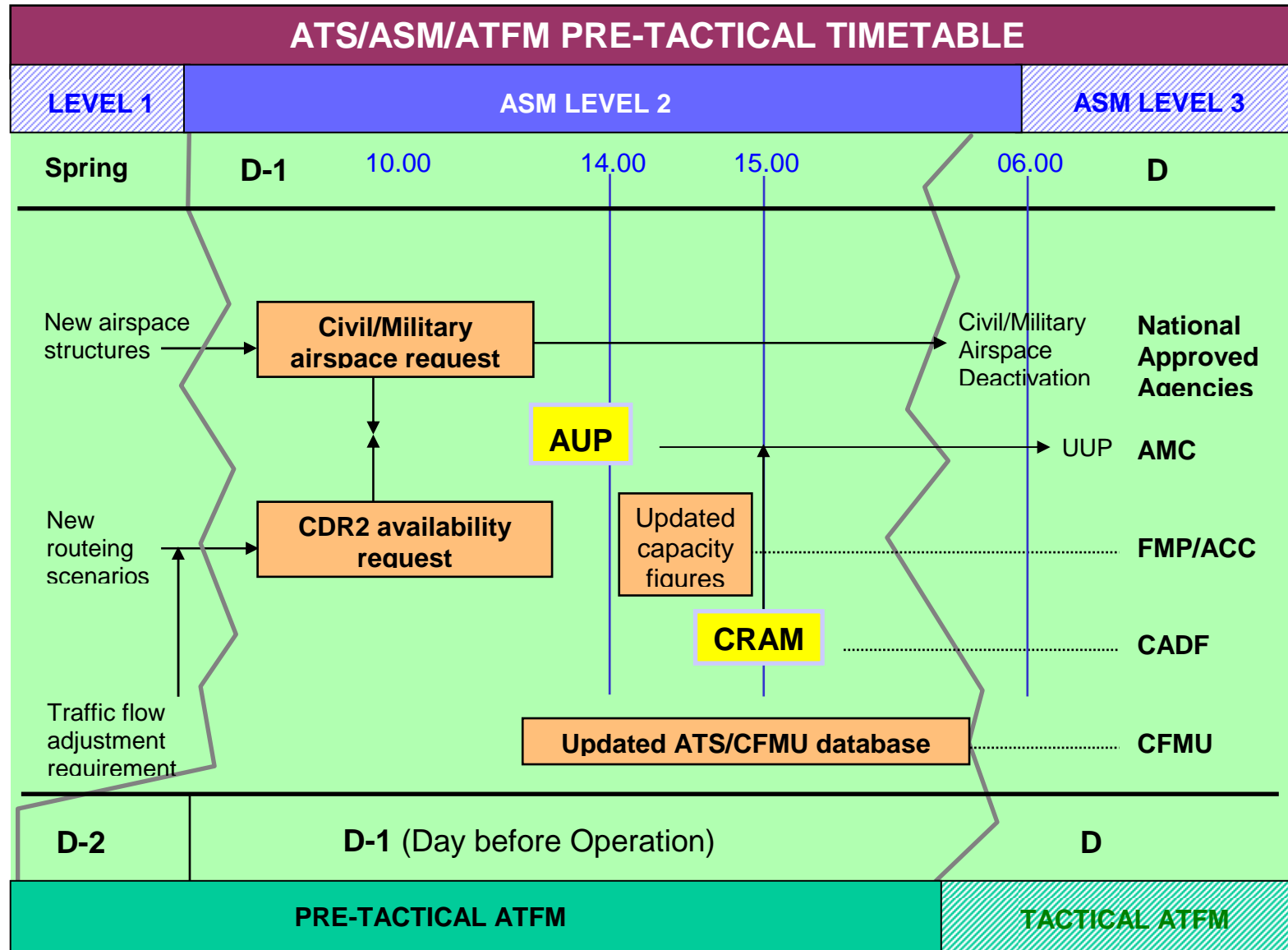


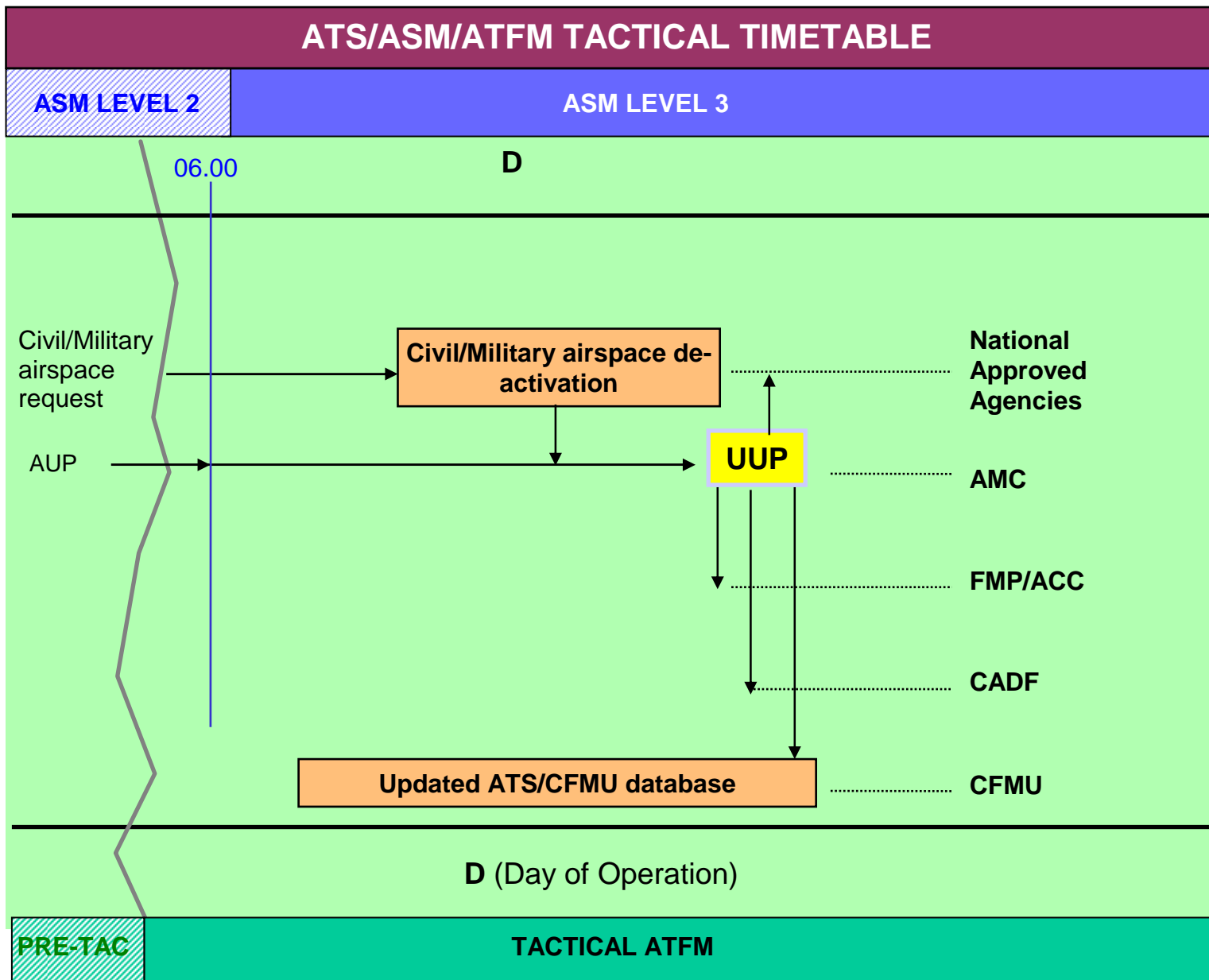
ATS ROUTE NETWORK PLANNING/ DEVELOPMENT PROCESS



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STATE REGULATORY AUTHORITY

AIRSPACE CHARTER
FOR THE FORMULATION OF
THE NATIONAL AIRSPACE POLICY

Document Identification:
Effective:

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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		

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DOCUMENT CHANGE RECORD

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

EDITION AMENDEMENT	DATE	REASON FOR CHANGE	PAGES AFFECTED

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CHECKLIST

Page	Date	Page	Date
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iii		Appendix B	
v		Appendix C	
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ABBREVIATIONS

(List and define all abbreviations used in the Charter)

AA	Approved Agency
AIRAC	Aeronautical Information, Regulation and Control
AIS	Aeronautical Information Service
AMC	Airspace Management Cell
AO	Aircraft Operator
ASM	Airspace Management
ATC	Air Traffic Control
ATS	Air Traffic Services
CADF	ECAC Centralised Airspace Data Function
CBA	Cross-Border Area
CDR	Conditional Route
CFMU	Central Flow Management Unit
DAM	Dynamic Airspace Management
DOC	Document
ECAC	European Civil Aviation Conference
FUA	Flexible Use of Airspace
IA	Impact Assessment
ICAO	International Civil Aviation Organisation
LoA	Letter of Agreement
NASMAC	National Airspace Management Advisory Committee
NATO	North Atlantic Treaty Organisation
PCA	Prior Coordination Airspace
RCA	Reduced Coordination Airspace
TRA	Temporary Reserved Area
TSA	Temporary Segregated Area

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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 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. ROLE OF THE NATIONAL HIGH LEVEL POLICY BODY

- 2.1 The role of the national HLAPB is to ensure a safe and efficient use of the national 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.
- 2.2 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.

3. STRATEGIC OBJECTIVES

- 3.1 **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;
- g) conduct regular monitoring of compliance to the FUA concept at each level.

4. RESPONSIBILITIES

4.1 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 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 be 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 CDRs, 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 a list of days covering extended holiday periods when military operations are likely to be reduced, allowing the temporary conversion of some CDRs2 as CDRs1 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.

5. PRINCIPLES

5.1 General

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

5.2 Safety

- 5.2.1 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.
- 5.2.2 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.
- 5.2.3 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.

5.3 Consultation

- 5.3.1 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.
- 5.3.2 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.

5.4 Cooperation

5.4.1 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.

5.5 Notification

5.5.1 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.

5.6 Environment

5.6.1 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.

5.6.2 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. WORKING ORGANISATION

6.1 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.]*

6.2 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.

6.3 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.

6.4 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.

6.5 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.

6.6 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.

6.7 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.

7. AIRSPACE POLICY FORMULATION AND REVIEW PROCESS

- 7.1 This procedure defines the process which ensures that airspace policies are formulated and reviewed in accordance with the principles laid down in this Charter.
- 7.2 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."
- 7.3 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.
- 7.4 The flowchart presented at Appendix D illustrates the activities, considerations and requirements of the Airspace Policy Formulation and Review Process.
- 7.5 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.
- 7.6 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.
- 7.7 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.

8. AIRSPACE CHANGE PROCESS

- 8.1 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.
- 8.2 In the context of the Airspace Change Process, "*Clients*" refers to: "those allowed requesting changes to airspace" (e.g. airspace users, ATS providers etc.).
- 8.3 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.
- 8.4 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.

- 8.5 On completion of the informal consultation, the Client will submit a formal proposal with full details of the change.
- 8.6 The HLAPB will be responsible, where necessary, for conducting the case study, formal consultation, proposal refinement, approval and establishment phases of the process.
- 8.7 The flowchart presented at Appendix E illustrates the phases and activities of the Common Airspace Change Process.
- 8.8 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.
- 8.9 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.
- 8.10 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.

9. DYNAMIC AIRSPACE MANAGEMENT

- 9.1 In order to comply with the Dynamic Airspace Management, the HLAPB delegates its responsibility of conducting the planning of airspace and related arrangements to the ASM Level 2 and/or ASM Level 3.
- 9.2 ASM Level 2 and/or ASM Level 3 are allowed to delineate daily ad hoc areas to better match the military requirements, and to allocate daily ad hoc routing scenarios to better accommodate traffic flow requirements.
- 9.3 *[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.]*

10. CROSS-BORDER OPERATIONS

10.1 Cross-Border Area

- 10.1.1 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.

10.1.2 *[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.]*

10.2 Cross-Border CDRs

10.2.1 In order to optimise traffic flow and to maintain flight consistency in the area around the boundary, Cross-Border CDRs are established across the border allowing GAT operations without any boundary constraints.

10.2.2 *[The State has to define the criteria and process regarding to Cross-Border CDRs activities]*

10.3 Lead AMC

10.3.1 In order to have a single point of contact for the CFMU/CADF for each single CDR 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 CDR on a route by route basis and for the coordination of CBA allocation to AMC *[insert the State]* acting as Lead AMC.

10.3.2 *[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.]*

11. AIRSPACE DELINEATION

11.1 In order to ensure more transparency and predictability of airspace management measures and to reconcile contrary requirements in airspace utilisation between commercial aviation and military aviation, it is necessary to establish objective criteria for the design of airspace.

11.2 The present Charter is based on the guidelines and criteria for an uniform airspace design and change process established in the “EUROCONTROL Manual for Airspace Planning”.

11.3 In addition to the EUROCONTROL Manual for Airspace Planning and in order to take into consideration specific national airspace structures and ATS procedures, the Charter also refers to the “Title of the National Document(s)” defining national airspace guidance material. *(paragraph to be inserted only if the EUROCONTROL Manual for Airspace Planning is not used stricto sensus).*

12. PUBLICATION

12.1 *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.*

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REFERENCE DOCUMENT 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

2. EUROCONTROL DOCUMENTS

EUROCONTROL Handbook for Airspace Management
(EUROCONTROL Document ASM.ET1.ST08.5000-HBK-02-00 – 22 October 2003)

Guidance Document for the Implementation of the Flexible Use of Airspace Concept.
(EUROCONTROL Document ASM.ET1.ST08.5000-GUI-02-00 – 18 August 2003)

EUROCONTROL Airspace Strategy for the ECAC States
(EUROCONTROL Document ASM.ET1.ST03.4000-EAS-01-00 – 18 January 2001)

Transition Plan for the Implementation of the EUROCONTROL Airspace Strategy for the ECAC States
(EUROCONTROL Document ASM.ET1.ST03.4000-TPIAS-01-00 – 10 January 2001)

EUROCONTROL Manual for Airspace Planning
(EUROCONTROL Document ASM.ET1.ST03.4000.EAPM. 02-02 – 22 October 2003)

3. NATIONAL DOCUMENTS

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)]

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)]

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)]

AIRSPACE CHANGE PROCESS

[Insert the flowchart illustrating the State's Airspace Change Process]

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DESCRIPTION OF THE AIRSPACE USE PLAN

1. The AUP

- 1.1 The "Airspace Use Plan" (AUP) is the official medium for the daily notification by an AMC of the national airspace allocation for the following day. An AMC shall release only **ONE** AUP per day.
- 1.2 Changes to the airspace allocation could be effected by the AMC through an "Updated Airspace Use Plan" (UUP) [see Annex 6].
- 1.3 As AUPs are not sent individually to AOs, the information provided by AMCs on the CDR availability in the ECAC area shall be disseminated by the CFMU/CADF by means of the "Conditional Route Availability Message" (CRAM) and the eAUP via the NOP, to operators for flight planning purposes [see Annex 7].

2. Preparation, Publication & Distribution of the AUP

- 2.1 The AUP shall be prepared by the AMC and distributed to the CFMU via CIAM.
- 2.2 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 "Airspace Use Plan" form will be decided by the AMC itself at D-1 1400 UTC at the very latest or if none, automatically by the CFMU system one hour before the associated CRAM release, unless the AMC informed the CFMU of a late release of the AUP.
- 2.3 The CFMU collects, consolidates the AUP and UUP, and disseminates the CDR information provided by AMCs. The CFMU extracts from AUP/UUPs the list of available CDRs for incorporation into a single coherent CDR Availability Message (CRAM) and eAMI.

3. Description of the AUP

- 3.1 The elements included in the AUP are described below and summarised in table form in the next pages.

3.2 Header

- First Line: **Identification of the Type of Message**
[e.g. Airspace Use Plan or Draft AUP]
- Second Line: **Identification of the Sending Unit**
[e.g. AMC: EDDAZAMC - GERMANY -]
- Third Line: **Definition of the Validity Period of the Message**
[e.g. 06/06/2008 06:00 - 07/06/2008 06:00]
The validity period shall cover the 24 hours time period between **0600 UTC** the next day to **0600 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.
- 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.

3.3 Lists ALPHA to ECHO

For each allocated airspace structure listed in the AUP in the following sequence, the different columns will contain:

- ALPHA** List of Available CDRs2;
- BRAVO** List of Temporary Closed Permanent ATS Routes and CDRs1;
- CHARLIE** List of Active TRAs/TSAs and AMC-manageable R and D areas (AMA);
- DELTA** List of Non AMC-manageable areas (NAM) for which changed use has been notified to AMC;
- ECHO** List of RCAs, as appropriate.

- 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 ECHO, 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 ECHO 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 Lists ALPHA & BRAVO, 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 ATS route concerned;
For Lists CHARLIE & DELTA, with the AIP ENR 5 designator followed, if needed, by the name of the airspace or portion thereof concerned;
For List ECHO, with the LoA designator of the RCA concerned.
- Third Column: **Flight Level Block**
[e.g. F110 - F240 or F250 - 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 or portion thereof available inclusive of the IFR flight levels given;
For List BRAVO, with the upper and lower limits of the ATS route or portion thereof closed inclusive of the IFR flight levels given;
For Lists CHARLIE to ECHO, with the upper and lower limits of the affected airspace expressed either in flight levels, altitudes or heights inclusive of the figures given.
- Fourth Column: **Validity Period**
[e.g. 12:05 - 06:00]

FORMAT & CONTENTS FOR THE AIRSPACE USE PLAN

MESSAGE TYPE	“Airspace Use Plan” or “Draft AUP”
---------------------	---------------------------------------------------

SENDING UNIT – REFERENCE-	AMC NAME
----------------------------------	-----------------

VALIDITY PERIOD	D/ 0600 D+1/ 0600
------------------------	--------------------------

DATE/TIME OF TRANSMISSION	(D-1/ 1400 at the very latest)
----------------------------------	---------------------------------------

ALPHA :

LIST OF AVAILABLE CATEGORY 2 CDRs

Number	Designator	Flight Block	Level	Validity Period	Remarks
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers</i>	<i><u>Upper and lower limits inclusive of the IFR flight levels given.</u></i>		<i>Date/time groups indicating the start and the end of the <u>period of use</u></i>	<i>Any additional information in plain language.</i>

BRAVO:

LIST OF CLOSED ATS ROUTES AND CATEGORY 1 CDRs

Number	Designator	Flight Block	Level	Validity Period	Remarks
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers</i>	<i><u>Upper and lower limits inclusive of the IFR flight levels given.</u></i>		<i>Date/time groups indicating the start and the end of the <u>period of closure</u></i>	<i>Any additional information in plain language.</i>

FORMAT & CONTENTS FOR THE AIRSPACE USE PLAN**CHARLIE :****LIST OF TRAs/TSAs AND “AMC-MANAGEABLE” R AND D AREAS (AMA)**

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP ENR 5 designator and name of the airspace or portion thereof concerned.</i>	<i>Affected airspace described vertically between the two flight levels concerned.</i>	<i>Date/time groups indicating the start and the end of the <u>period of use</u></i>	<i>Unit responsible for the airspace concerned during the time indicated by the Validity Period.</i>	<i>Any additional information in plain language.</i>

DELTA :**LIST OF NON AMC-MANAGEABLE AREAS (NAM)**

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
<i>Sequence number starting with [1] for the first item.</i>	<i>AIP ENR 5 designator and name of the airspace or portion thereof concerned.</i>	<i>Affected airspace described vertically between the two flight levels concerned.</i>	<i>Date/time groups indicating the start and the end of the <u>period of changed use</u></i>	<i>Unit responsible for the airspace concerned during the time indicated by the Validity Period.</i>	<i>Any additional information in plain language.</i>

ECHO :**LIST OF REDUCED COORDINATION AIRSPACE (RCA)**

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
<i>Sequence Number starting with [1] for the first item.</i>	<i>LoA designator and name of the airspace concerned.</i>	<i>Affected airspace described vertically between the two Flight Levels concerned.</i>	<i>Date/time groups indicating the start and the end of the <u>period of use</u></i>	<i>Unit responsible for the concerned the airspace during the time indicated by the Validity Period.</i>	<i>Any additional information in plain language.</i>

FOX-TROT:**ADDITIONAL INFORMATION**

Any additional information in plain language, if not “NIL”.

FICTITIOUS 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) Available Category 2 CDRs:**

Nr	Route	Portion	FL Min	FL Max	From	Until	Remark
1	UL851	LUVAL EPL	F215	F285	06:00	09:15	
2	UL851	LUVAL EPL	F215	F285	12:30	16:00	
.....							
8	UZ706	CTL ARDEN	F300	F460	15:30	22:00	
9	UZ707	FAMEN BSM	F270	F460	06:00	08:00	

B) Closed ATS Routes and Category 1 CDRs:

Nr	Route	Portion	FL Min	FL Max	From	Until	Remark
1	UN858	ABRIX CGC	F195	F460	10:00	12:30	NOTAM A2238

C) TRA/TSA Manageable Areas (AMA):

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	CBA1A	F115	UNL	07:15	08:15	LFYA	LFFFFIR
2	CBA1A	F115	UNL	08:30	09:30	LFYA	LFFFFIR
3.	CBA1B	F225	UNL	07:15	0815	LFYA	
4	LFTSA10A	F195	F300	07:15	10:00	LFXO	SIMONE REFUELLING
5.	LFTSA10B1	F195	F300	07:15	10:00	LFXO	SIMONE REFUELLING
6	LFTSA20A	F195	UNL	07:15	07:45	LFYA	
.....							
41	TSA9B	F285	UNL	06:00	10:00	LFXO	

D) Non AMC-manageable areas (NAM):

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	CER BORD	F200	F450	08:00	17:30	LFFAZAMC	
2.....							

E) Reduced Co-ordination Airspace (RCA):

Nihil

EBURUIR**C) TRA/TSA Manageable Areas (AMA):**

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	CBA16B	F065	UNL	06:30	10:00	EBBRZAMC	LFFFUIR

EBURFIR**C) TRA/TSA Manageable Areas (AMA):**

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	CBA16B	F065	F195	10:00	15:30	EBBRZAMC	LFFFFIR

LFBBFIR**C) TRA/TSA Manageable Areas (AMA):**

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	R68D	F085	F195	07:00	08:30	LFXV	

LFEEFIR

C) TRA/TSA Manageable Areas (AMA):

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	R122	F115	F195	07:45	08:15	LFYA	
2.	R122	F115	F195	10:00	10:30	LFYA	
3.	R123	F145	F195	10:00	10:00	LFYA	

LFFFFIR

D) Non AMC-manageable areas (NAM):

Nr	Area	FL Min	FL Max	From	Until	Resp. Unit	Remark
1	LFR9B	F000	F200	06:30	10:30	LFFAZAMC	
2.	LFR9B	F000	F200	11:30	16:30	LFFAZAMC	

FICTITIOUS EXAMPLE OF A “DRAFT AUP”

In Printed Form

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) Available Category 2 CDRs :

Nr	Route	Portion		FL Min	FL Max	From	Until	Remark
1	UG29	PTV	ADEKA	F210	F460	06:00	23:00	
2	UG52	AGN	TBO	F195	F460	21:45	23:00	
3	UL851	LUVAL	EPL	F215	F285	06:00	10:30	

B) Closed ATS Routes and Category 1 CDRs:

NIL

C) TRA/TSA Manageable Areas (AMA):

NIL

D) Non AMC-manageable areas (NAM):

NIL

E) Reduced Co-ordination Airspace (RCA):

NIL

DESCRIPTION OF THE UPDATED AIRSPACE USE PLAN

1. The UUP

- 1.1 After the AMC has completed the allocation process and published accordingly the "Airspace Use Plan" (AUP) [see Annex 5], modifications to 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 promulgated by the AMC through an "Updated Airspace Use Plan" (UUP).
- 1.2 Unlike the AUPs, the UUPs will not be subject to a compilation by the CFMU/CADF into an updated CRAM. The CDRs2, made available through the UUPs, will be published via the eUUP and the CACD database will be updated accordingly.
- 1.3 UUPs shall consist of alterations to the current AUP with the aim of improving ATC capacity and reducing GAT delays through the more efficient use of airspace. In particular, UUPs will contain details of:
- the cancellation of TRAs/TSAs allocated in the current AUP;
 - new CDRs2 or RCAs made available as a result of TRA/TSA cancellation;
 - modifications made to CDRs2 or RCAs already listed in the current AUP;
 - alterations to, or cancellations of, closed ATS routes or CDRs1, AMC-Manageable R and D areas and Non AMC-Manageable areas listed in the current AUP.

2. Preparation, Publication & Distribution of the UUP

- 2.1 The UUP shall be prepared by the AMC in the same common format as the AUP and distributed to the CFMU.
- 2.2 The UUPs information will be used by CFMU/CADF to produce eAMI messages as well as available on the NOP portal.
- 2.3 The UUPs shall be prepared by means of the CIAM software set up in CFMU terminals.

3. Description of the UUP

- 3.1 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.
- 3.2 The elements included in the UUP are described below and summarised in table form in the next pages.

3.3 Header

- First Line: **Identification of the Type of Message**
[e.g. Updated Airspace Use Plan]
- Second Line: **Identification of the Sending Unit**
[e.g. AMC: EDDAZAMC - GERMANY]
- 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.

- Fourth Line: **Date and Time of Transmission of the UUP**
[e.g. 08/06/2008 08:53]

In addition to the type of message defined in the first line, it is important to identify the day and time of transmission of the UUP to ensure that the one being used is the latest.

3.4 Lists ALPHA to ECHO

The UUP shall contain lists in the same following sequence as for the AUP:

ALPHA	Amended List of CDR2 Availability;
BRAVO	Amended List of Temporary Closed Permanent ATS routes and CDRs1;
CHARLIE	Amended List of Active TRAs/TSAs and AMC-manageable R and D areas (AMA's);
DELTA	Amended List of Non AMC-Manageable areas (other R and D areas not suitable for AMC management, but for which reduced use has been notified to AMC) (NAM's);
ECHO	Amended List of RCAs, as appropriate.

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 so as 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 ECHO 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 & BRAVO, 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 ATS route concerned;

For Lists CHARLIE & DELTA, with the AIP ENR 5 designator followed, if needed, by the name of the airspace or portion thereof concerned;

For List ECHO, with the LoA designator of the RCA concerned.

- Third Column: **Flight Level Block**

[e.g. F110 - F240 or F250 - 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 or portion thereof available inclusive of the IFR flight levels given;

For List BRAVO, with the upper and lower limits of the ATS route or portion thereof closed inclusive of the IFR flight levels given;

For Lists CHARLIE to ECHO, with the upper and lower limits of the affected airspace expressed either in flight levels, altitudes or heights.

If an AUP element is cancelled, the Remarks field of the corresponding item shall contain the word "deleted" and the third column "flight level block" shall not be completed in the UUP.

- 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 Use";
For List BRAVO,	the "Period of Closure";
For List CHARLIE,	the "Period of Use";
For List DELTA,	the "Period of Changed Use";
For List ECHO,	the "Period of Use".

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.

If an AUP element is cancelled, the Remarks field of the corresponding item shall contain the word "deleted" and the fourth column "Validity Period" shall not be completed in the UUP.

- Fifth/Sixth Columns: **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.

For Lists ALPHA & BRAVO, when continuation of the ATS route has been coordinated with (a) neighbouring State(s) in (an) adjacent FIR/UIR(s), *[the following information shall be given "For continuation see AUP + country name + FIR designator"]* or *[the information on the consolidated CDR2 portion commonly accessible shall be given only once in the AUP of the designated Lead AMC];*

For Lists CHARLIE & DELTA, 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 the type of activity and the number and type of aircraft concerned.

If an AUP element is cancelled, the Remarks field of the corresponding item shall contain the word "deleted" and the column "Responsible Unit" shall not be completed in the UUP.

3.5 Additional Information

Finally, any additional information may be added in plain language at the end of the message. The size and place of these General Remarks prescribed in the ACA software has to respond to AMC needs.

FORMAT & CONTENTS FOR THE UPDATED AIRSPACE USE PLAN

MESSAGE TYPE	“Updated Airspace Use Plan”
---------------------	------------------------------------

SENDING UNIT - REFERENCE-	AMC NAME -
----------------------------------	-------------------

VALIDITY PERIOD	D/ xx D+1/ 0600
------------------------	------------------------

DATE/TIME OF TRANSMISSION	Day Time (At least 1 hour before D/ xx)
----------------------------------	-----------------------------------------------------------

ALPHA :

LIST OF AVAILABLE CATEGORY 2 CDRs

Number	Designator	Flight Block	Level	Validity Period	Remarks
<p>Same number element to which the item is referring in the AUP. For new Available CDR 2, sequence number following the last one listed in the AUP.</p>	<p>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers</p>	<p><u>Upper and lower limits inclusive of the IFR flight levels given.</u></p>		<p>Date/time groups indicating the start and the end of the <u>period of use</u></p>	<p>Any additional information in plain language.</p> <p>When two or more items in the AUP are being replaced by one in the UUP, the second and following ones must appear in the UUP with the word “Deleted”.</p>
		<p>If an AUP element is cancelled, these Fields shall not be completed.</p>			

BRAVO:

LIST OF CLOSED ATS ROUTES AND CATEGORY 1 CDRs

Number	Designator	Flight Block	Level	Validity Period	Remarks
<p>Same number element to which the item is referring in the AUP.</p>	<p>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers</p>	<p><u>Upper and lower limits inclusive of the IFR flight levels given.</u></p>		<p>Date/time groups indicating the start and the end of the <u>period of closure</u></p>	<p>Any additional information in plain language.</p> <p>If an AUP element is cancelled, this Field shall contain the word “Deleted”.</p>
		<p>If an AUP element is cancelled, these Fields shall not be completed.</p>			

FORMAT & CONTENTS FOR THE UPDATED AIRSPACE USE PLAN

CHARLIE :

LIST OF TSAs/TRAs AND "AMC-MANAGEABLE" R AND D AREAS (AMA)

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
Same number element to which the item is referring in the AUP.	AIP ENR 5 designator and name of the airspace or portion thereof concerned.	Affected airspace described vertically between the two flight levels concerned.	Date/time groups indicating the start and the end of the <u>period of use</u>	Unit responsible for the airspace concerned during the time indicated by the Validity Period.	If an AUP element is cancelled, this Field shall contain the word "Deleted".
		If an AUP element is cancelled, these Fields shall not be completed.			

DELTA :

LIST OF NON AMC-MANAGEABLE AREAS (NAM)

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
Same number element to which the item is referring in the AUP. For new element, sequence number following the last one listed in the AUP.	AIP ENR 5 designator and name of the airspace or portion thereof concerned.	Affected airspace described vertically between the two flight levels concerned.	Date/time groups indicating the start and the end of the <u>period of changed use</u>	Unit responsible for the airspace concerned during the time indicated by the Validity Period.	Any additional information in plain language.

ECHO :

LIST OF REDUCED COORDINATION AIRSPACE (RCA)

Number	Designator	Flight Level Block	Validity Period	Responsible Unit	Remarks
Same number element to which the item is referring in the AUP. For new element, sequence number following the last one listed in the AUP.	LoA designator and name of the airspace concerned.	Affected airspace described vertically between the two flight levels concerned.	Date/time groups indicating the start and the end of the <u>period of use</u>	Unit responsible for the airspace concerned during the time indicated by the Validity Period.	Any additional information in plain language.

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) Available Category 2 CDRs:

Nr	Route	Portion	FL Min	FL Max	From	Until	Remark
2	UL851	LUVAL EPL	F215	F285	14:30	20:00	IN STEAD OF 1230/1600
9	UZ707	FAMEN BSM	F270	F460	14:30	20:00	

B) Closed ATS Routes and Category 1 CDRs:

NIL

C) TRA/TSA Manageable Areas (AMA):

Nr	Route	Portion	FL Min	FL Max	From	Until	Remark
9	LFTSA20A		F195	UNL	14:30	15:00	LFFAZAMC CNL
10	LFTSA20B		F195	UNL	14:30	15:00	LFFAZAMC CNL

D) Non AMC-manageable areas (NAM):

NIL

E) Reduced Coordination Airspace (RCA):

NIL

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DESCRIPTION OF THE CDR AVAILABILITY MESSAGE

1. The CRAM

- 1.1 As the national "Airspace Use Plans" (AUPs) [see *Annex 5*] are not sent individually to AOs, the information provided by AMCs on the CDR availability in the ECAC area for the following day are disseminated by the CFMU/CADF on behalf of the States by means of the "Conditional Route Availability Message" (CRAM), the official medium for the daily notification on the CDR availability to operators for flight planning purposes.
- 1.2 The CRAM shall contain mainly the list of CDRs² made available in the AUPs. . Additionally, the CRAM will repeat information on CDR1 closures, for safety reason, of the decision already published with appropriate advance AIS notice, as well as any other closures of permanent ATS routes.

2. Preparation, Publication & Distribution of the CRAM

- 2.1 The CRAM shall be prepared by the CFMU/CADF by means of the "ATM Messages Exchange" (AME) application set up in the CFMU Terminal of the CADF. The necessary guidance for CADF staff to enable an efficient use of the AME is provided in a separate document issued by the CFMU. The AME system provides two CRAM formats for distribution, one in a "Human Readable Text Format" for manual processing and the other, on request, in "ADEXP Format" for automated processing in flight planning systems.
- 2.2 In order to allow an immediate checking by AMCs, the AME system compiles a "Draft CRAM" from information provided by the different released AUPs as soon as they are transmitted. After a formal approval by all AMCs concerned, the "Final CRAM" shall be transmitted in the required format to selected AOs and AROs, ACCs/FMPs concerned and to all AMCs via AFTN or SITA.
- 2.3 The CRAM is also available in the "Human Readable Text Format" as the two other ATM messages (ANM & AIM) provided by the AME on any CFMU Terminals and on the EUROCONTROL CFMU NOP Portal. In addition, the daily CRAM situation can be visualized on an ASM electronic map available on the EUROCONTROL web site (CRAM Viewer Application).

3. Description of the CRAM

- 3.1 The elements included in the CRAM are described below and summarised in table form in the next pages for both the "Human Readable Text Format" and the "ADEXP Format".

3.2 Header

- First and Second Lines: **Partition and Identification of the Type of Message, Date and Time of Transmission**
Definition of the Validity Period of the Message
[e.g. PART 1 OF 7

CRAM Valid from: 29/01/2008 0600

To: 30/01/2008 0600 Released: 281353]

In addition to the type of message, the CRAM is identified by the day and time of its transmission.

The validity period of the message shall cover the 24 hours time period between 0600_UTC the next day to 0600 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.

3.3 Lists ALPHA and BRAVO

For each ATS route listed per block in the CRAM in the following sequence, the different lines and columns will contain:

- ALPHA** CDR2 Availability with the consolidated list of available CDRs2;
- BRAVO** ATS Route & CDR1 Closed by NOTAM with the list of Temporary Closed Permanent ATS routes and CDRs1, as repetition for safety reason, of the information already published by NOTAM.

As for AUP and UUP, each line shall contain only **one** "Validity Period" and **one** "flight level block" per number element of an ATS route portion. However, for the visibility of the "Human Readable Text Format", the designator, route portion and FIR/UIR concerned will only be filled in once for the first line of a specific ATS route portion.

→ First Line

- Second Column: **Designator**
[e.g. UA 44]
Each ATS route shall be identified with the AIP ENR 3-2 route designator followed by....
- Third/Fourth Columns: **Route Portion**
[e.g. UA 44 SVL LE(*) ROSAL LP(*)]
...the two ICAO identifiers of the first and last points of the portion of the ATS route concerned, each of them followed by the ICAO Country Code(*).
- Fifth Column: **FIR/UIR concerned**
[e.g. UA44 SVL LE(*)ROSAL LP(*) (LECMUIR, LPPCUIR^(@))]
In order to meet requirements of various readers of the CRAM, the different FIR/UIR concerned by the ATS route portion shall be listed^(@) between brackets.

→ Second and Following Lines

- First Column: **Sequence Number**
[e.g. 1]
As for AUP and UUP, each ATS route portion 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 & BRAVO, 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.

(*) **Not** in the "Human Readable Format"

- Third Column: ^(@) **Not** in "ADEXP Format",
Flight Level Block
[e.g. F110-240 or F250-UNL]
Each ATS route portion shall be described vertically as follows:
For List ALPHA, with the upper and lower limits of the ATS route portion available inclusive of the IFR flight levels given;
For List BRAVO, with the upper and lower limits of the ATS route portion closed inclusive of the IFR flight levels given.

- *Fifth Column:* **Validity Period**
[e.g. 12:05 06:00]
For each allocated airspace structure listed in ALPHA & BRAVO, the “Validity Period” shall not exceed the 24 hours period of the CRAM. The CRAM 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 Use”;
For List BRAVO, the “Period of Closure”;
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.

3.4 Additional Information

Finally, any additional information related to a specific CRAM may be disseminated in plain language by means of an ATFCM Information Message (AIM).

FORMAT & CONTENTS FOR THE CDR AVAILABILITY MESSAGE

MESSAGE PARTITION (part num lastnum [®])	PART OF
MESSAGE TYPE (title [®])	C R A M
DATE/TIME OF TRANSMISSION (filitim [®])	D-1/ 1500 (At the very latest)
MESSAGE VALIDITY PERIOD (mesvalperiod [®])	FROM: D/ 0600 TO: D+1/ 0600

ALPHA :

LIST OF AVAILABLE CDRs2 IN THE ECAC AREA

CDR2 AVAILABILITY (lacdr[®])

Number	Designator	FIR/UIR Concerned	Flight Level Block	Validity Period
<i>Sequence number starting with [1] for the first item of the list in alphabetic order; upper and lower routes having the same generic name being placed one above the other.</i> (airroute num [®])	<i>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers.</i> (each of them followed by the ICAO country code in ADEXP format refatsrte [®])	<i>When two or more CDRs portions in the AUPs of adjacent States can be joined with the same flight level block and Validity Period, they shall be replaced by one continuous CDR in the CRAM with FIR/UIRs concerned listed immediately after the designation of the route portion</i> (NOT in ADEXP format)	<i>Upper and lower limits inclusive of the IFR flight levels given.</i> (flblock [®])	<i>Date/time groups indicating the start and the end of the period of use with, for continuity purposes, the first limit included and the last one not.</i> (valperiod [®] in full date time)

[[®] : field name used in ADEXP format]

FORMAT & CONTENTS FOR THE CDR AVAILABILITY MESSAGE

BRAVO :

LIST OF CLOSED ATS ROUTES AND CDRs1 IN THE ECAC AREA

ATS ROUTE & CDR1 CLOSED BY NOTAM (lcatsrte[®])

Any closure of CDRs1 or permanent ATS routes requesting action to refile the flight plan and already published by NOTAM should be listed in a similar way as CDR2 availability, but with the "validity period" block containing the period of closure.

Number	Designator	FIR/UIR Concerned	Flight Block	Level	Validity Period
<p>Sequence number starting with [1] for the first item of the list in <u>alphabetic order</u>; <u>upper and lower routes having the same generic name being placed one above the other.</u> (airroute num[®])</p>	<p>AIP ENR 3-2 route designator and identifiers of first and last points of the portion of route concerned with ICAO identifiers. (each of them followed by the ICAO country code in ADEXP format refatsrte[®])</p>	<p>When two or more CDRs <u>portions</u> in the AUPs of adjacent States can be joined with the same flight level block and Validity Period, they shall be replaced by one continuous CDR in the CRAM with FIR/UIRs concerned listed immediately after the designation of the route portion (NOT in ADEXP format)</p>	<p>Upper and Lower limits inclusive of the IFR flight levels given. (flblock[®])</p>		<p>Date/time groups indicating the start and the end of the <u>period of closure</u> with, for continuity purposes, the first limit included and the last one not. (valperiod[®] in full date time)</p>

[[®]: field name used in ADEXP format]

FICTITIOUS EXAMPLE OF THE CDR AVAILABILITY MESSAGE

in "Human Readable Text Format"

PART 001 OF 007

CRAM VALID FROM: 11/07/2008 0600 TO: 12/07/2008 0600 RELEASED: 101424

CDR2 AVAILABILITY

	UA31	CJN	ASTRO	(LECMFIR)
1		F250-460		0600-0630
2		F250-460		1630-2300
	UB623	LIMAL	GOV	(GCCCFIR)
3		F250-280		0800-0000
	UB700	BAZAS	AMR	(LECMFIR)
4		F250-460		1230-1500
	UG100	DIK	KRH	(EDUUUIR, EBURUIR)
5		F310-660		0600-0730
6		F270-660		1440 -2200

END OF PART 001

.....

PART 007 OF 007

CRAM VALID FROM: 11/07/2008 0600 TO: 12/07/2008 0600 RELEASED: 101424

ATS ROUTE & CDR1 CLOSED BY NOTAM

	UM733	BULOL	LAULY	
1		F195-460		1030-1230
	UG21	ATN	DJL	
3		F300-460		1400-1530

END OF PART 007

FICTITIOUS EXAMPLE OF THE CDR AVAILABILITY MESSAGE

in "ADEXP Format"

-TITLE CRAM -PART -NUM 001 -LASTNUM 006
-FILTIM 101424 -MESVALPERIOD 200807110600 200807120600
-BEGIN LACDR
-AIRROUTE -NUM 001 -REFATSRTE UA31 CJN LE ASTRO LE
-FLBLOCK -FL F250 -FL F460 -VALPERIOD 200207110600 200207110630
-AIRROUTE -NUM 002 -REFATSRTE UA41 CJN LE ASTRO LE
-FLBLOCK -FL F250 -FL F460 -VALPERIOD 200207111630 2002071223000
-AIRROUTE -NUM 003 -REFATSRTE UB623 LIMAL GC GOV GC
-FLBLOCK -FL F250 -FL F280 -VALPERIOD 200207110800 200207112400
-AIRROUTE -NUM 004 -REFATSRTE UB700 BAZAS LE AMR LE
-FLBLOCK -FL F250 -FL F460 -VALPERIOD 200207111230 200207111500
-AIRROUTE -NUM 005 -REFATSRTE UG100 DIK EB KRH ED
-FLBLOCK -FL F310 -FL F660 -VALPERIOD 200207110600 200207110730
-AIRROUTE -NUM 006 -REFATSRTE UG100 DIK EB KRH ED
-FLBLOCK -FL F310 -FL F660 -VALPERIOD 200207111440 200207112200
-END LACDR

.....

-TITLE CRAM -PART -NUM 007 -LASTNUM 007
-FILTIM 101424-MESVALPERIOD 200807110600 200807120600
-BEGIN LCATSRTE
-AIRROUTE -NUM 001 -REFATSRTE UM733 BULOL LAULY
-FLBLOCK -FL F195 -FL F460 -VALPERIOD 200207111030 200207111230
-AIRROUTE -NUM 002 -REFATSRTE UG21 ATN DJL
-FLBLOCK -FL F350 -FL F460 -VALPERIOD 200207111400 200207111115
-END LCATSRTE

FICTITIOUS EXAMPLE OF A CRAM CORRECTION MESSAGE

in "Human Readable Text Format"

-TITLE CRAM CORRECTION

.
CRAM CORRECTION VALID FROM: 0005310600 UNTIL: 0006010600

.
A) CDR TYPE 2 OPENING:

.
NIL

.
B) CDR TYPE 1 CLOSURE:

.
UN857 SVL-KORNO (LECMFIR) NOTAM A2297/C2245
F250-F390 1300-1800

.
CADF BRUSSELS

ILLUSTRATIVE EXAMPLE OF AN AIP COVER PAGE FOR EARLY ACCESS TO WEEKEND ROUTES PROCESS

(to be inserted by States having not yet published such information)

ENR 3.X

Early Access to Weekend Routes Process – Agreed Procedures

1. Preamble.....
(to be inserted by each State).
2. Following the consensus agreed upon at international level (see paragraph 3.3.1.1) that the early access to Weekend/Conditional Routes is granted during the summer for the minimum of 26 Busy Fridays, the following are applicable:

Early access to Weekend/Conditional Routes (CDRs1) is granted from the first Friday in May to the last Friday in October inclusive, from 1000 UTC on Friday until 0600 UTC on Monday.
3. Aircraft Operators are invited to take advantage of this extra availability of Weekend/Conditional routes provided and are to refer to AIP Supplements, NOTAMs and the daily CRAM for details of any changes, and to flight plan accordingly.
4. The Weekend/Conditional routes involved in these annual international agreements are listed on the following page(s).
(Each State should insert the list of routes concerned by Early Access agreement together with their definition, - e.g. as CDR1 during the weekend and night and as CDR2 the rest of the week).

EXAMPLE OF AIP PUBLICATION OF ROUTES AFFECTED BY EARLY ACCESS ARRANGEMENTS

ENR 3.x

Effective: xx March 20xx

AIP (Country)

Identification Significant Points	Mag Track	Dist (NM)	<u>Maximum</u> <u>Minimum</u>	Directions Odd Even	Remarks <i>Controlling Unit</i>	
UJ 158 _ Barmen DVORTAC (BAM) N 51 19 40 E 007 10 38 AGENI (UIR BDRY) N 50 45 E 006 02 Olno DVOR/DME (LNO) N 50 35 09 E 005 42 36					1. Not available for DEP EDLL except EDDG.	
	<u>203</u> 023	6	<u>FL 660</u> <u>FL 250</u>	↓ ↑	2. CDR1 - Every weekend Fri 1700 (1600) – Mon 0600 (0500)	
		20			- Every night 2300 (2200) – 0600 (0500)	
					3. CDR2 - Every day Mon – Thu 0600 (0500) – 2300 (2200) Fri 0600 (0500) – 1700 (1600) <i>Maastricht UAC</i>	
L 620 ARNEM N 52 05 47 E 006 04 36 SONEB (FIR BDRY) N 52 01 25 E 006 45 51 _ SUVOX N 51 58 09 E 007 06 29 _ Hamm DVOR/DME (HMM) N 51 51 25 E 007 42 30 _ EXOBA N 51 46 02 E 008 19 37 _ NOMKA N 51 26 52 E 010 30 07 _ SULED N 51 09 43 E 012 13 48 _ EKPEK N 50 57 52 E 013 19 17 _ BESIP N 50 56 07 E 013 29 07 _ OMELO N 50 50 16 E 014 00 03	099.5	25.8			1. Between SUVOX and EXOBA only for DEP EHAA to continue after EXOBA on UL620.	
	104.2	13.2			2. Below FL180 only available for DEST ETUO, EDLP and EDDG	
	106.6	23.3		↓	<i>Langen ACC</i>	
	103.0	23.7				
				<u>FL 240</u> 5000 ft MSL		3. At BESIP transition to T203 and Q240 not possible.
	104.1	137.3			↓	4. Between SULED and BESIP FL 100 – FL 240 CDR1 Every weekend Fri 1100 (1000) – Mon 0700 (0600) Every night 2300 (2200) – 0600 (0500) CDR2 Other times ALTN route: Z21
					5. After LISBA not available for DEST LKPR, LKKB, LKVO. These flights shall file T620. <i>München ACC</i>	

ILLUSTRATIVE EXAMPLE OF A COMMON AIP SUPPLEMENT FOR ANNUAL NOTIFICATION OF NATIONAL DIFFERENCES

Preamble.....(to be inserted by each State).

In accordance with agreed procedures in the EUROCONTROL Handbook for Airspace Planning if EAW routes are not applicable in participating State(s) for one or more of the 26 Busy Fridays published in national AIP (ENR), or the list of CDRs concerned needs to be amended, national differences shall be notified early in the March preceding the summer season to Aircraft Operators and Air Traffic Services units by a common AIP Supplement published by each State concerned.

Having performed the necessary coordination process between the affected States, the EAW routes are not applicable on the following Busy Fridays in the 2008 summer season:

Friday 04/05/08	France – France UIR Belgium – Brussels UIR
Friday 11/05/08	France – France UIR Belgium – Brussels UIR Switzerland – Switzerland UIR
Friday 15/06/08	Denmark – Copenhagen FIR Great Britain – London UIR The Netherlands – Amsterdam FIR
Friday 24/08/08	Czech Republic – Praha FIR Poland – Warszawa FIR

The routes concerned are listed in the Annex attached (*each State should insert at the Annex to their AIP Supplement a list of the routes affected*).

In case of exceptional circumstances amendment to this agreement shall be made known to Aircraft Operators and Air Traffic Services units with appropriate prior notice.

ILLUSTRATIVE EXAMPLE OF LIST OF ROUTES AFFECTED BY ANNUAL NOTIFICATION OF NATIONAL DIFFERENCES

Phone:
Telefax:
AFS

AERONAUTICAL INFORMATION SERVICE
.....

AIP
Supplement
06/08
6 March 2008

List of ATS routes affected by Annual Notification of National Differences in Summer 2008

(Each State concerned shall insert here the list of routes affected by notification of national differences concerning the exemption(s) from Busy Fridays in the forthcoming summer to which the Early Access to Weekend/Conditional Routes is not applicable).

ILLUSTRATIVE EXAMPLE OF ROUTES NOT AVAILABLE AS CDR1 ON FRIDAY 04/05/08

State	Route Ident.	Between	And	Min-FL	Max-FL	Status: Closed
Belgium	UG109	KOK	PITES	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UJ158	AGENI	LNO	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UL610	RINTA	BATTY	FL195	FL300	<u>CDR1</u> : FRI 1000 - MON 0600
	UN852	LUTOM	TERLA	FL195	FL660	<u>CDR1</u> : FRI 1000 - MON 0600
	UR15	LNO	KUDIN	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UY131	NIK	NILEM	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UBY157	DIK	RAMEK	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UZ703	BABIX	CIV	FL300	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UZ706	ARDEN	LENDO	FL245	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UZ707	ULPEN	FAMEN	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UZ709	RUPIN	CIV	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600
	UZ714	SPI	MATUG	FL195	FL460	<u>CDR1</u> : FRI 1000 - MON 0600

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 military⁴ 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 Airspace and Navigation Team (ANT) and [tbd].

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 EUROCONTROL Guidelines - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace Edition 3.0.

This Model Framework Agreement is a part of the EUROCONTROL Guidelines - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace Edition 3.0, Annex 9.

⁴ 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.

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Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;">PREAMBLE</p> <p>The Government of.....(State) and the Government of.....(State) (hereinafter: “the Contracting States”)</p> <p>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 ‘European Commission (EC) laying down common rules for the Flexible Use of Airspace’, which, in its Article 3 (d) [Principles] stipulates that the EU 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 EUROCONTROL <i>Guidelines - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace Edition 3.0</i> in its Section 3, Paragraph 3.3.3.2;</p> <p>Supporting the ‘EUROCONTROL Airspace Strategy for the ECAC States’, which in Direction for Change ‘B’ [DfC B] relates to Enhancing Airspace Management and Civil/Military Coordination;</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>

* 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.

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 1</u></p> <p style="text-align: center;">Cross Border / FIR Boundary Operations</p> <p>(1) The Contracting States authorise each other to conduct cross border / FIR boundary operations in the airspace under their respective jurisdiction.</p> <p>(2) The cross border/FIR boundary operations may – as necessary – involve:</p> <ul style="list-style-type: none"> a) The allocation and shared use of common cross border areas (CBAs) established across their national border/FIR boundary; 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; c) Delegation of responsibility for the provision of air traffic services in designated airspace from one to the other Contracting State(s). <p>(3) The Contracting States agree that the cross border / FIR boundary operations shall be executed in accordance with the terms of this Agreement.</p>	<p><i>Based on the guidelines of the EUROCONTROL Handbook for Airspace Management, paragraph 3.3.3.2.</i></p>
<p style="text-align: center;"><u>Article 2</u></p> <p style="text-align: center;">Sovereignty</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>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 3</u></p> <p style="text-align: center;">Security and Defence</p> <p>(1) The provisions of this Agreement shall be without prejudice to the Contracting States' requirements related to security and defence policy needs.</p> <p>(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.</p>	<p>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>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>

<p style="text-align: center;"><u>Article 4</u></p> <p style="text-align: center;">Authorisation to Competent Authorities (AA / AMC / ATS Unit/Authority)</p> <p>(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.</p> <p>(2) The Letter(s) of Agreement(s) shall, <i>inter alia</i>, contain the following:</p> <ul style="list-style-type: none"> a) Definition of applicable CBAs, TRA/TSAs and D and R areas; b) Definition of the responsibility for allocation of the areas concerned based on the principle of delegation of responsibility to a “Lead AMC”; c) Air defence coordination and notification procedures d) Priority allocation rules, time based parameters and booking assurance instruments; 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; f) Certification for the provision of Air Traffic Services if deemed necessary; g) Contingency procedures, and h) Other operational issues pertinent to cross border / FIR boundary operations as appropriate. 	<p><i>The ‘Lead AMC’ concept is described in the EUROCONTROL Handbook for Airspace Management, Paragraph 4.5.3</i></p> <p><i>The factors affecting delegation of responsibility for provision of ATS as well as other operational issues related to CBO are described in the EUROCONTROL Handbook for Airspace Management, Paragraph 3.3.3.2.</i></p> <p><i>The templates Coordination Letters of Agreement (LoA) are available at Annexes 10 and 11 (TBD) of EUROCONTROL Handbook for Airspace Management, in particular:</i></p> <p><i>AMC Coordination Letter of Agreement;</i></p> <p><i>and</i></p> <p><i>Coordination for Cross Border / FIR Boundary TRA/TSA, D and R Areas Sharing Letter of Agreement, will serve as a guideline for States.</i></p> <p><i>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).</i></p>
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Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 5</u></p> <p style="text-align: center;">Application of Rules and Procedures</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><i>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.</i></p>
<p style="text-align: center;"><u>Article 6</u></p> <p style="text-align: center;">Financial Arrangements</p> <p>(1) Each Contracting State shall bear the costs of any activity performed by it under this Agreement, unless otherwise agreed by the Contracting States.</p> <p>(2) The introduction of financial arrangements requires prior written agreement between the appropriate representatives of the Contracting States.</p> <p>(3) To that effect, the financial arrangements agreed between the Contracting States shall be listed at Annex (x) to this agreement.</p>	<p><i>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.</i></p>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 7</u></p> <p style="text-align: center;">Liability</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p>	<p><i>Provisions of this article are only applicable in the relationship between the Contracting States and do not constitute rights or obligations for third parties.</i></p> <p><i>This article is equivalent to the Article 16 of the Model State Level FAB Agreement.</i></p> <p><i>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.</i></p>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 8</u></p> <p style="text-align: center;">Environmental Issues</p> <p>(1) The Contracting States agree that the environmental issues shall be respected when determining the extent of cross border / FIR boundary operations.</p> <p>(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.</p> <p>(3) To that effect, the restrictions arising from the law of the Providing State shall be listed at Appendix (x) to this agreement.</p>	<p>In case there are no environmental restrictions pertinent to environmental law, paragraph (3) should be deleted.</p>
<p style="text-align: center;"><u>Article 9</u></p> <p style="text-align: center;">Diplomatic Clearance</p> <p>(1) The Contracting States agree to simplify diplomatic clearance issuing in order to facilitate seamless execution of the cross border / FIR boundary operations.</p> <p>(2) To that effect, the diplomatic clearance issuance procedure shall be defined at Appendix (x) to this Agreement.</p>	<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>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 10</u></p> <p style="text-align: center;">Contingency Procedures</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><i>The contingency procedures could include the following items:</i></p> <ul style="list-style-type: none"> • <i>alerting service</i> • <i>service to aircraft in the event of an emergency</i> • <i>steps to be taken regarding in-flight contingencies</i> • <i>steps to be taken to assist strayed aircraft</i> • <i>steps to be taken concerning interception of (civil) aircraft / unlawful use of the airspace</i> • <i>coordination between military authorities and air traffic services</i> • <i>coordination of activities potentially hazardous to civil aircraft</i> • <i>information exchange between the appropriate civil and military authorities / units</i> • <i>additional items as appropriate.</i>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 11</u></p> <p style="text-align: center;">Investigation of Accidents or Serious Incidents</p> <p>(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.</p> <p>(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.</p> <p>(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).</p> <p>(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.</p>	
<p style="text-align: center;"><u>Article 12</u></p> <p style="text-align: center;">Search and Rescue</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><i>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).</i></p>

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 13</u></p> <p style="text-align: center;">Dispute Resolution</p> <p>(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.</p> <p>(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.</p> <p>(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.</p>	<p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>
<p style="text-align: center;"><u>Article 14</u></p> <p style="text-align: center;">Termination</p> <p>(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.</p> <p>(2) The termination shall be effected 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).</p> <p>(3) The contracting Parties shall jointly determine and allocate the cost resulting from the termination.</p>	

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 15</u></p> <p style="text-align: center;">Suspension</p> <p>(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.</p> <p>(2) The Contracting State shall endeavour to terminate the suspension as soon as practicable.</p> <p>(3) The Contracting State that suspends the application of the Agreement or parts thereof shall bear the costs resulting from the suspension.</p>	<p><i>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.</i></p>
<p><u>Article 16</u></p> <p>Entry into Force and Duration</p> <p>(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.</p> <p>(2) The date on which cross-border/FIR boundary operations become operational shall be agreed by exchange of letters between the Contracting States.</p>	
<p style="text-align: center;"><u>Article 17</u></p> <p style="text-align: center;">Amendment</p> <p>(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).</p> <p>(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.</p> <p>(3) The Appendices to the Agreement may be modified by exchange of letters between the duly authorised representatives of the Contracting States.</p>	

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Article 18</u></p> <p style="text-align: center;">Transitional Measures for Agreements Already in Operation</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..... this.....day of 20xx in the English and () languages. 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>	

Proposed Text	EXPLANATORY NOTES
<p style="text-align: center;"><u>Appendix 1</u></p> <p style="text-align: center;">Definitions</p> <p>For the purpose of this Agreement, unless otherwise stated, the term:</p> <ol style="list-style-type: none"> 1. <i>“Agreement”</i> means this Agreement, its Appendices and any amendments thereto. 2. <i>“Airspace Management (ASM)”</i> 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) <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> 3. <i>“Airspace Management Cell (AMC)”</i> 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). 4. <i>“Airspace Reservation”</i> 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). 5. <i>“Air Traffic Control Service (ATC)”</i> is a service provided for the purpose of: <ol style="list-style-type: none"> a) preventing collisions; <ol style="list-style-type: none"> 1) between aircraft, and 2) on the manoeuvring area between aircraft and obstructions, and b) expediting and maintaining an orderly flow of air traffic. (ICAO) 6. <i>“Air Traffic Service (ATS)”</i> is a generic term meaning variously, Flight Information Service, Alerting Service, Air Traffic Advisory Service, Air Traffic Control Service” (ICAO) 	<p><i>The definitions are in conformity with:</i></p> <p><i>EUROCONTROL Handbook for Airspace Management – Edition 3;</i></p> <p><i>EUROPEAN COMMISSION Regulation laying down common rules for the flexible use of airspace; marked (EC);</i></p> <p><i>ICAO Annex 11 of the Chicago Convention; marked (ICAO),</i></p> <p>and are to be used to the extent relevant to national legislation.</p>

7. “*Air Traffic Services Unit (ATSU)*” is a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office. (ICAO)
8. “*AMC-Manageable Area*” 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.
9. “*(Appropriate) ATS authority*” means the relevant authority designated by the State responsible for providing air traffic services in the airspace concerned. (ICAO)
10. “*Approved Agencies (AAs)*” are units, which are authorised by a State to deal with an Airspace Management Cell for airspace allocation and utilisation matters.
11. “*Area Control Centre (ACC)*” is a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction. (ICAO)
12. “*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.
13. “*Conditional Route (CDR)*” is an ATS route or a portion thereof which can be planned and used under certain specified conditions. CDRs can be divided into different categories according to their foreseen availability, flight planning possibilities and the expected level of activity of the possible associated TRA/TSAs. A CDR can be established in one or more of the three following categories:
 - a) Category One – Permanently Plannable CDR;
 - b) Category Two – Non-Permanently Plannable CDR, and
 - c) Category Three – Not Plannable CDR.

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

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.

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.

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.

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.

19. “*Flight Information Region (FIR)*” is an airspace of defined dimensions within which flight information service and alerting service are provided. (ICAO)

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.

GAT can include military flights for which ICAO rules and procedures satisfy entirely their operational requirements.(HBK)

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)

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)

23. “*ASM 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 controllers, as appropriate. This coordination can take place either in active or passive mode with or without action by the controller. (HBK)

24. “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. (HBK)

25. “Originating State” means the State from where the cross border / FIR boundary operations have been originated.

26. “Providing State” means the State that is accommodating cross border / FIR boundary operations.

27. “Restricted Area (R)” 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)*

28. “Temporary Airspace Allocation (TAA) Process” 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)

29. “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. (HBK)

30. “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 TRAs and TSAs are airspace reservations subject to management and allocation at ASM Level 2. (HBK)*

31. “Territory” in relation to a State, has the meaning specified in Article 2 of the Chicago Convention.

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.”

LETTER OF AGREEMENT
on
**Coordination Procedures between Airspace Management Cells
(AMCs)**
in regard to
Allocation and Shared Use of Common Cross Border Areas (CBAs)
between
[Approving Authority State A] [Approving Authority State B]
and
[AMC 1/ACC 1] [AMC 2/ACC 2]

Effective:

1. General

1.1 Purpose

1.1.1 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:

- the airspace allocation of different parts of Cross-Border Areas (CBAs) defined in the AIPs of States concerned;
- the availability of specific Conditional Routes (CDRs), including, where appropriate, weekend procedures.

These coordination procedures shall take place prior to the publication of the relevant Airspace Use Plans (AUPs).

1.1.2 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

1.2.1 [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

- 2.1 The Areas of Responsibility of [AMC 1/ACC 1] and [AMC2/ACC2] are described in Appendix B to this Letter of Agreement.
- 2.2 [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 area by area basis the responsibility for coordinating and publishing the harmonised availability of Cross-Border CDRs and CBAs as described in Appendix B to this Letter of Agreement.
- 2.3 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 CFMU/CADF.

3. Routes and/or CBAs to be Coordinated prior to publication of the respective Airspace Use Plans

- 3.1 The Cross-Border Areas 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

- 4.1 Each AMC (a Lead AMC or another AMC) creates its national AUP for its relevant portion of the Cross-Border Area and/or Cross-Border CDR according to the provisions of the present Letter of Agreement.

or

- 4.1 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.
- 4.2 The current procedures for promulgation and distribution of information on availability of CDRs and TRAs/TSAs other than Cross-Border structures remain unaffected.

5. Coordination Procedures

- 5.1 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 and Conditional Routes to be Coordinated.
- Appendix D: Procedures for the Coordination of Cross-Border Areas 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

- 6.1.1 Revisions to this Letter of Agreement, excluding Appendices, require the mutual consent of the signatory authorities.
- 6.1.2 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

- 6.2.1 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

- 6.3.1 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

- 7.1 Cancellation of this Letter of Agreement by mutual agreement of the respective Approving Authorities may take place at any time.
- 7.2 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

- 8.1 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.
- 8.2 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]
[Approving Civil Authority State A]

[name]
[Approving Civil Authority State B]

[Place], date:

[Place], date:

[name]
[Approving Military Authority State A]

[name]
[Approving Military Authority State B]

[Place], date:

[Place], date:

[name of civil representative of AMC
1/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]

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) and/or the availability of specific Cross-Border CDRs.

A.2 Abbreviations

Note: Abbreviations marked with an * are non-ICAO abbreviations.

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]

B.1.1 Details of the Area of Responsibility of AMC 1/ACC 1.

B.2 Area of Responsibility of the [AMC2/ACC2]

B.2.1 Details of the Area of Responsibility of AMC 2/ACC 2.

B.3 Delegation of Responsibility to the Lead AMC 1

B.3.1 Details of the responsibility of/to AMC 1/ACC 1.

B.4 Delegation of Responsibility to the Lead AMC 2

B.4.1 Details of the Responsibility of/to AMC 2/ACC 2.

Cross-Border Areas and Conditional Routes to be Coordinated

Effective:

Revised:

C.1 Cross-Border Areas (CBAs) to be Coordinated.

Including details of sub-divided portions, boundary positions, relevant flight levels and delegations.

C.2 Conditional Routes to be Coordinated.

Including details of route portions, boundary positions, relevant flight levels and delegations.

**Procedures for the Coordination of
Cross-Border Areas and/or Conditional Route Availability
Prior to AUP Publication**

Effective:

Revised:

D.1 General Provisions.

D.1.1

D.2 Coordination Procedures.

D.2.1 [AMC 1/ACC 1] is responsible for the Lead-AMC coordination of the following CBAs and/or CDRs:

-
-
-

D.2.2 [AMC 2/ACC 2] is responsible for the Lead-AMC coordination of the following CBAs and/or CDRs:

-
-
-

D.3 Allocation Procedures

D.3.1 The following priority allocation rules, time based parameters and booking assurance instruments apply:

-
-
-

D.3 Air Defence Coordination and Notification Procedures

(if applicable)

Communications Facilities

Effective:
Revised:

E.1 Means of Communications and their Use

E.1.1 Equipment

The following lines are available between [AMC 1/ACC 1] and [AMC2/ACC2]:

- [X] data line *[s]*
- [X] telephone line *[s]*
- [X] fax line *[s]*

E.2 Telephone Co-ordination

E.2.1 All telephone communications should be terminated with the initials of the staff parties concerned.

Hours of Operation of [AMC1/ACC1/AMC 2/ACC2].and Fall-Back Procedures

Effective:

Revised:

F.1 Hours of Operation of the ACCs/AMCs.

F.1.1. The Hours of Operation of [AMC 1/ACC 1] are as follows:

-
-
-

F.1.2 The Hours of Operation of [AMC 2/ACC 2] are as follows:

-
-
-

F.2 Fall-Back Procedures for Coordination

In the event of failure of the direct lines between the coordinating partners, coordination may be effected via:

- a) switchboard, or
- b) [other common coordination partner], or
- c) public telephone:

[AMC 1/ACC 1]: [additional listing of available public telephone numbers to the operations room and the relevant working positions, if available]

In the event of the closure of [AMC1/ACC1] the fall-back coordination point is [detail]:

[AMC 2/ACC2]: [additional listing of available public telephone numbers to the operations room and the relevant working positions, if available]

In the event of the closure of [AMC2/ACC2] the fall-back coordination point is [detail]:

F.3 Declared National Holidays

By the end of every year, [AMC1/ACC1] and [AMC2/ACC2] shall provide the other AMC/ACC and the CFMU/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.

LETTER OF AGREEMENT
on
Coordination Procedures
in regard to
Cross-Border Operations in Shared AMC-Manageable Areas

between
[Approving Authority Originating State] [Approving Authority Host State]
and
[Originating AMC & ACC] [Host AMC & ACC]

Effective:

1 General

1.1 Purpose

- 1.1.1 *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.*
- 1.1.2 *The coordination procedures between [Originating AMC] and [Host AMC] shall take place prior to the publication of the relevant Airspace Use Plans (AUPs).*
- 1.1.3 *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.*
- 1.1.4 *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

- 1.2.1 *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

- 2.1 The area(s) that are subject to cross-border sharing between [Originating State] and [Host State] are defined in Appendix B.

3 Jurisdiction

- 3.1 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.
- 3.2 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

- 4.1.1 *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

- 4.2.1 The [Originating AMC] initialises airspace sharing in the [Host State] by sending appropriate written request to the [Host AMC].
- 4.2.2 The [Host AMC] notifies daily the [Originating AMC] of the potential vacancy slots within the area(s) subject to sharing.
- 4.2.3 The exchange of request and/or vacancy notification is supplemented by verbal coordination between the two AMCs as appropriate.
- 4.2.4 The content of the request and notification, together with notification means are described in the Appendix C.

4.3 Booking, Allocation and Allocation Notification

- 4.3.1 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:
 - (1) Periods of activity taking into consideration the national holidays of the States concerned;
 - (2) Subdivision of the area(s) subject to sharing;
 - (3) Booking method(s) (e.g. ASM tool, fax, other);
 - (4) Booking assurance instruments;
 - (5) Maximum number of participating aircraft;
 - (6) Priority allocation rules;
 - (7) Time based parameters;
 - (8) Allocation notification method (e.g. ASM tool, fax, other);
 - (9) Communication with the parent unit;
 - (10) *(Additional items as appropriate)*

4.4 ATS Related Procedures

4.4.1 The ATS related procedures are specified in Appendix E, in particular:

- (1) Responsibility and liability for the provision of ATS to the aircraft transiting to and operating in the area(s) subject to sharing;
- (2) Airspace classification relevant to the aircraft transiting to and operating in the area(s) subject to sharing;
- (3) Minimum ATS facilities (e.g. primary radar, secondary radar, operating frequencies, telephone lines etc.)
- (4) Language used in the provision of ATS;
- (5) Flight plan data exchange, revision to previously provided and/or coordinated flight plan data;
- (6) ATC sectorisation;
- (7) ATC procedures, in particular:
 - Transfer of identity;
 - Transfer of control;
 - Transfer of communication;
 - SSR code assignment;
 - 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;
- (8) ATS occurrence reporting;
- (9) (Additional items as appropriate.)

5 Contingency Procedure

5.1 The contingency procedures are specified in Appendix F, in particular

- (1) Alerting Service;
- (2) Service to the aircraft in the event of an emergency;
- (3) Steps to be taken in case of in-flight contingencies;
- (4) Steps to be taken in case of interception of (civil) aircraft and/or unlawful use of the airspace;
- (5) Information exchange between appropriate civil and military authorities / units;
- (6) Failure of ground-ground communication;
- (7) Failure of air-ground communication;
- (8) (Additional items as appropriate).

6 Revisions, Deviations and Cancellation

6.1 Revision of the Letter of Agreement

- 6.1.1 Revision of this Letter of Agreement, excluding Appendices, requires the mutual consent of the signatory authorities.
- 6.1.2 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

- 6.2.1 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

- 6.3.1 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

- 6.4.1 Cancellation of this Letter of Agreement may take place at any time by mutual agreement of the respective Approving Authorities.
- 6.4.2 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

- 7.1 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.
- 7.2 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

8.1 This Letter of Agreement becomes effective [date]

[Place], date:

[Place], date:

[name]
[Approving Civil Authority State A]

[name]
[Approving Civil Authority State B]

[Place], date:

[Place], date:

[name]
[Approving Military Authority State A]

[name]
[Approving Military Authority State B]

[Place], date:

[Place], date:

[name of civil representative of the
Originating AMC and ACC]

[name of civil representative of the
Host AMC and ACC]

[Place], date:

[Place], date:

[name of military representative of the
Originating AMC and ACC]

[name military representative the Host
AMC and ACC]

Definitions and Abbreviations.

Effective:

Revised:

A.1 Definitions

A.1.1 Area Subject to Cross-Border Sharing

An airspace of defined dimensions where aircraft from another State may operate.

A.1.2 Host ACC

An ACC responsible for ATS provision in the Host State.

A.1.3 Host AMC

An AMC responsible for airspace planning and allocation in the Host State.

A.1.4 Originating ACC

An ACC responsible for ATS provision in the Originating State.

A.1.5 Originating AMC

An AMC responsible for airspace planning and allocation in the Originating State.

A.1.5 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.

List of Areas Subject to Cross-Border Sharing

Effective:

Revised:

B.1 List of Areas Applicable

B.1.1 **TRA or TSA or D or R area [x]** (Details describing position, coordinates, sub-divided portions, applicable flight levels and other relevant information as appropriate).

B.1.2 ...

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.).

Booking, Allocation and Allocation Notification

Effective:

Revised:

D.1 General Provisions.

D.1.1 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

D.2.1 (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

D.3.1 (Details of subdivision to be specified if applicable).

D.4 Booking Method(s)

D.4.1 (Details of agreed methods to be specified, e.g. responsibilities, procedures, means, etc.)

D.5 Booking Assurance Instruments

D.5.1 (Details of agreed booking assurance instruments to be specified).

D.6 Maximum Number of Participating Aircraft

D.6.1 (Maximum agreed number of participating aircraft in the area(s) subject to cross-border sharing to be specified).

D.7 Priority Allocation Rules

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

D.8.1 (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

D.9.1 (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

D.10.1 (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)

ATS Procedures

Effective:
Revised:

E.1 Responsibility and Liability for Provision of ATS

- E.1.1 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).
- 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).
- E.1.3 (Additional details relevant to responsibility and liability to be specified).

E.2 Airspace Classification

- E.2.1 (Details of airspace classification relevant to the aircraft transiting to the area(s) subject to cross-border sharing if applicable).
- E.2.2 (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):

- E.3.1 (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).
- E.3.2 (Operating frequencies, e.g. frequencies relevant for each phase of a flight).
- E.3.3 (Ground-ground communication facilities).
- E.3.4 (Other applicable facilities).

E.4 Language Used in ATS Provision

- E.4.1 In communication with aircraft transiting to or operating within the area(s) subject to cross-border sharing [language] and/or [language] is used.
- E.4.2 (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

- E.5.1 (Specify flight plan data exchange requirements, formats and means).
- E.5.2 (Specify methods, timing, format and means of revision to previously provided and/or coordinated flight data).

E.6 ATC Sectorisation

- E.6.1 (Specify ATC sectorisation relevant for transiting to or operating within the area(s) subject to cross-border sharing).

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

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)

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).

LETTER OF AGREEMENT

between

Airspace Management Cell of [State A] (AMC)

and

EUROCONTROL Central Flow and Management Unit (CFMU)

on

FUA Level 2 Coordination Procedures

Effective:

1. PURPOSE

The purpose of this Letter of Agreement is to set out the coordination procedures to be applied between AMC and CFMU as required for the implementation of the Flexible Use of Airspace (FUA) concept.

2. SCOPE

This LoA shall be the sole instrument governing the relationship between AMC State A and CFMU as regards FUA.

The roles and responsibilities of the AMC and CFMU in FUA as well as the applicable procedures are described in the EUROCONTROL ASM Handbook and the CFMU FUA-AMC/CADF Operation Manual, in their respective latest versions, which are therefore referenced below. If necessary, this LoA sets out complementary procedures.

3. PROCEDURES

AMC State A and CFMU shall apply the co-ordination procedures set out in the following documents:

- EUROCONTROL Specification for the application of the Flexible Use of the Airspace (FUA) [Edition 1.1, dated 10.01.2010, EUROCONTROL-SPEC-0112, Chapter 4];
- EUROCONTROL Guidelines - Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace Edition 3.0, [Section 2, paragraph 2.2.3; 2.3; 2.6.3; Section 4; Section 6]; and
- CFMU FUA-AMC/CADF Operations Manual.

The reference parts of the documents and the specific procedures set out at Annex to this LoA form an integral part of this LoA.

The latest version of the documents can be found on the dedicated Airspace (<http://www.eurocontrol.int/airspace>) and CFMU (<http://www.eurocontrol.int/cfmu>) library sections of the EUROCONTROL web site.

4. PUBLICATION OF AUP/UUPs DATA

In addition to the information related to the CDRs status, CFMU is authorised to provide public access through NOP portal to the following information related to the manageable areas published in the AUP/UUPs:

- AIP areas designator;
- Flight level block;
- Validity period.

Any other information related to the areas published in AUP/UUPs has to be considered as “restricted”, with access limited to national civil and military units.

5. AMENDMENTS AND DEVIATIONS

5.1 AMENDMENTS

Amendments of this LoA require the mutual consent of the Parties at the level of the signatories of the LoA in writing.

Revision of the Annexes to this Letter of Agreement requires the mutual consent of the Head of AMC and Head of Operations of CFMU.

5.2 TEMPORARY DEVIATIONS

If necessary, the AMC may introduce temporary deviations from the procedures laid down in this Letter of Agreement, subject to prior approval by CFMU. *The AMC responsible person will trigger the co-ordination by e-mail, fax or telephone providing identification number.*

5.3 INCIDENTAL DEVIATIONS

In situations where urgency requires incidental deviation from the procedures specified in this Letter of Agreement without following the formalities set out in paragraphs 5.1 and 5.2 above, AMC and CFMU staff is expected to exercise their joint best judgment to ensure efficient co-ordination.

6. TERMINATION

This LoA may be terminated by either Party at any time, subject to [time period] notice by the terminating Party.

7. DISPUTE SETTLEMENT

Any dispute regarding this LoA, the parties shall endeavour to reach a solution acceptable to both of them. Should no solution be found, each of the parties shall refer to its superior authority and/or bodies, to which the dispute shall be submitted for final and binding settlement.

8. VALIDITY

This Letter of Agreement becomes effective [date]

[Place], date: [Place], date:

9. POINTS OF CONTACT

[Name(s)]

10. SIGNATURES

[National signature as required]

[Name]

[CFMU]

[Name]

ANNEX A: DEFINITIONS AND ABBREVIATIONS.

ANNEX B: CONTINGENCY PROCEDURES.

DEFINITIONS AND ABBREVIATIONS

A.1 Definitions

The terms used in this LoA and reference documents have the following meanings. The ICAO definitions are identified with an **(I)** at the end of the text.

Ad-hoc Structures refer to airspace structures, whether routes or areas, required to meet operational needs at shorter notice than Level 1 process. The establishment of such ad-hoc structure at Level 2 or Level 3 should follow the general design and safety management criteria.

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 normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for exclusive use by another aviation authority. **(I)**

In the context of the FUA Concept, airspace reservation include "Temporary Reserved Area" (TRA) and "Temporary Segregated Area" (TSA).

Airspace Structures are specific portions of airspace designed to accommodate the safe operation of aircraft.

In the context of the FUA Concept, "Airspace Structures" include Controlled Airspace, ATS Route, ATC Sectors, Danger Area (D), Restricted Area (R), Prohibited Area (P), Temporary Segregated Area (TSA), Temporary Reserved Area (TRA), Cross-Border Area (CBA)...

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 Flow Management (ATFM) 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. **(I)**

AMC-Manageable Area is an area subject to management and allocation by an AMC at Level 2. *Under the TAA Process, these manageable areas are either formal structures entitled "TSAs or TRAs" or R and D Areas that are manageable at Level 2 in the same way as TSA/TRAs.*

Approved Agencies (AAs) are units, which are authorised by a State to deal with an Airspace Management Cell for airspace allocation and utilisation matters.

Area Control Centre (ACC) is a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction. **(I)**

Central Flow Management Unit (CFMU) is an EUROCONTROL Directorate established in accordance with the ICAO Centralised ATFM Organisation to provide the ATFM Service, on behalf of the participant States, in a specified part of the EUR Region. The CFMU comprises the Flow Management Division (FMD) and the Flight Data Operations Division with the Integrated Initial Flight Plan Processing System (IFPS). For ASM purposes, the CFMU is also entrusted with the Centralised Airspace Data Function (CADF).

Centralised Airspace Data Function (CADF) is an ASM function entrusted to the CFMU by the ECAC States for extracting Conditional Route (CDR) information contained in the various national AUPs. The CADF compiles it into a single coherent list, the Conditional Route Availability Message (CRAM).

Conditional Route (CDR) is an ATS route that is only available for flight planning and use under specified conditions.

A Conditional Route may have more than one category, and those categories may change at specified times:

d) *Category One - Permanently Plannable CDR:*

CDR1 routes are available for flight planning during times published in the relevant national Aeronautical Information Publication (AIP).

e) *Category Two - Non-Permanently Plannable CDR:*

CDR2 routes may be available for flight planning. Flights may only be planned on a CDR2 in accordance with conditions published daily in the CRAM, and

f) *Category Three - Not Plannable CDR:*

CDR3 routes are not available for flight planning; however, ATC Units may issue tactical clearances on such route segments.

Conditional Route Availability Message (CRAM) is a special consolidated ASM message issued daily by the CADF to promulgate in one message, on behalf of ECAC States, the AMC decisions on Conditional Routes (CDRs) availability notified by the AUPs for all the ECAC area. The CRAM is used by Aircraft Operators for flight planning purposes.

Cross-Border Area (CBA) is a Temporary Segregated Area established over international boundaries for specific operational requirements.

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 Level 2 are established at Level 1 as "AMC-manageable areas" and identified as such in AIP.

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 Plan contains 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 CEU on matters concerning the provision of the ATFM Service and the interface with national AMCs on matters concerning the ASM Service.

FUA Temporary Instruction (FTI) is a temporary instruction published by the CFMU and agreed/applied by appropriate AMCs and the CFMU/CADF for all or for a part, of the FUA area.

Integrated Initial Flight Plan Processing System (IFPS) is the CFMU system in charge of 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) and the CEU (West) without further intervention. The IFPS is installed in two geographical sites.

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 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, de-activating or real-time reallocating of airspace allocated in 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 co-ordination can take place either in active or passive mode with or without action by the controller.

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)**

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 specific conditions. **(I)**

In the context of the FUA Concept, some Restricted Areas are subject to management and allocation at Level 2 are established at Level 1 as "AMC-manageable areas" and identified as such in AIP.

Temporary Airspace Allocation Process consists in the allocation process of airspace of defined dimensions assigned for the temporary reservation (TRA/TSA) or restriction (D/R) and identified more generally as an "AMC-manageable" area. (See EUROCONTROL MANUAL FOR AIRSPACE PLANNING Vol.2 - Section 3).

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.

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 TRAs and TSAs are airspace reservations subject to management and allocation at Level 2.

A.2 ABBREVIATIONS

AA Approved Agency
ACA AUP/UUP Composition Application (software)
AFTN Aeronautical Fixed Telecommunications Network
AIP Aeronautical Information Publication
AIS Aeronautical Information Service
AMC Airspace Management Cell
ASM Airspace Management
ATFM Air Traffic Flow Management
AUP Airspace Use Plan

CADF ECAC Centralised Airspace Data Function
CBA Cross-Border Area
CDR Conditional Route
CIAM CFMU Interface Airspace Management
CFMU EUROCONTROL Central Flow Management Unit
CRAM Conditional Route Availability Message

D Danger Area
DOC Document

FMP Flow Management Position
FTI FUA Temporary Instruction
FUA Flexible Use of Airspace

IFPS Integrated Initial Flight Plan Processing System

LoA Letter of Agreement

MOD Ministry of Defence
MOT Ministry of Transport

NOTAM Notice to Airmen

R Restricted Area
RAD Route Availability Document

SUP Supplement

TAA Temporary Airspace Allocation Process
TRA Temporary Reserved Area
TSA Temporary Segregated Area

UTC Co-ordinated Universal Time
UUP Updated Airspace Use Plan

CONTINGENCY PROCEDURES

1. Scope

The purpose of this document is to provide AMC/CADF Staff guidance in case of contingency procedures.

Additional specific AMC contingency requirements will be added in the FUA_ AMC/CADF Operations manual.

2. CADF Contingency procedure (ENV and/or CIAM system not available)

2.1 AMC OPS / CFMU out less than 1 day and the unavailability of the ENV/CIAM system does not impact the AIRAC ENV Database preparation but only the dynamic updates and CRAM preparation/distribution.

- Inform AMCs by any communication available (send out AIM).
- Back in Operations before 1400 UTC (1300 UTC Summer). Minor impact in CRAM distribution. Small delay expected in CRAM Distribution. AMCs to prepare/validate AUP.
- Back in operations after 1400 UTC (1300 UTC Summer): Minor impact in CRAM distribution, Delay expected in CRAM distribution. AMCs to prepare/validate AUP.

AMCs not present anymore between 1400 UTC and 1900 UTC provides hard copy of AUP to CADF Staff.

Still out of operations (send out AIM)

- Back in operations before 1900 UTC (1800 UTC Summer). Back in Operations: CRAM distribution, late CRAM expected. AMCs still present prepare/validate AUP.

CADF Staff implements received AUP Hard copy of AMC or implements AMC contingency template AUP.

Still out of operations (ENV and CIAM): (send out AIM). No CRAM will be distributed.

If only CIAM out and ENV available. Received AMC Template of route closures or received route closures NOTAMs will be implemented in the ENV system. (send out AIM)

- If, for any reason, we have a discrepancy (one or more routes) in the AUP and no contact at all with the AMC (neither the backup facility, FMP) following actions will be taken by CADF:
 - Involved CDR2 routes will be taken out of the AUP. (Routes remain as published in the AIP)
 - CDR1 closures will be implemented as published in the AIP/NOTAM.

2.2 CFMU out more than 1 day

- Depending on the CFMU Crisis Management Board decision start up of the CFMU Disaster Recovery Plan can be activated.
- NO CRAM distribution for at least two day's. AIMS will send out ASAP.

3. AMC Contingency procedures, as from 1400 UTC (1300 UTC Summer)

In the FUA AMC/CADF OPS Manual detailed (if required) local AMC contingency procedures will be added together with the contingency AUP template (if existing). The content of the contingency AUP template is under the full responsibility of the AMC. The AMC has to notify CADF about any changes.

3.1 AMC can prepare/validate AUP via CIAM but CADF can not process the AUPs in READY status.

- AMC provides a “READY” Hard copy AUP to CADF via email, fax or email (AUP file in AUP format).
- CADF Staff implements Hard copies manually in AME system (CFMU system distributing the CRAM)

3.2 CIAM not available for AMCs but communication with CADF is possible and CIAM is available for CADF.

- AMC provides CADF via mail, fax or email (AUP file in AUP format) with pre-prepared AUP scripts or request CADF to implement the AMC contingency template (FUA AMC/CADF OPS manual)
- If none of above exists (scripts/template), CADF will create a NIL AUP on behalf of AMC.
- If only phone, AMC request CADF to implement the contingency template (FUA AMC/CADF OPS manual) or CADF will create a NIL AUP on behalf of AMC.

3.3 AMC outage

- Main AMC decides/contacts the alternate facility to take over all AMC tasks
- If no alternate facility exists, CADF will implement the contingency template (FUA AMC/CADF OPS manual) or CADF will create a NIL AUP on behalf of AMC.
- CFMU/CADF issue template NOTAM (created by AMC) on behalf of AMC, if no other official instance of ANSP can issue NOTAMs (FUA AMC/CADF OPS Manual).

Specific National Measures

To be defined between CFMU and the relevant State.



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