ICAO APAC & EUR/NAT CMAC/FUA WORKSHOP

One-step forward

Bangkok, Thailand
19 – 23 January 2026

Giuseppe Acampora

EUROCONTROL/Network Manager

Head of Project Coordination and Implementation Unit

Presenter Biography

- **EUROCONTROL, Network Manager, Head of Network Strategic Projects Coordination and Implementation Unit. (2020 – on-going)**
- **Manager of ASM/STRAT course (2022 – on-going)**
- **ASMSG Chairman (2013 – 2025)**
- **EUROCONTROL, Network Manager, Head of ASM/ATFCM processes/procedures Section. (20013 – 2020)**
- **EUROCONTROL, Network Manager, Senior ASM/ATFCM processes/procedures expert. (2008 – 2013)**
- **EUROCONTROL, CEATS Project, Senior ASM/ATFCM processes/procedures expert. (2003 – 2008)**
- **EUROCONTROL, Italian Military Liaison Officer as ASM/ATFCM processes/procedures expert. (1999 – 2003)**
- **Italian Air Force, Head of ASM and Instrumental procedures design Section. (1997 – 1999)**
- **Italian Air Force, ASM and Instrumental procedures design Expert. (1995 – 1997)**
- **Italian Air Force, Head of ATS service in Rimini. (1990-1995)**
- **Italian Air Force, military ATCO TWR, APP, TMA, CGA. (1982 – 1990)**

Giuseppe
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Head of PCI Unit

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Eurocontrol Organisation

NM working arrangement

EU Legislation vs ICAO

AFUA example

AFUA evolution

ASM/ATFCM integration

FUA in Europe

Balanced Airspace Users needs

AFUA Application in Europe

NM role and major improvements

Eurocontrol Organisation

Network Manager Working arrangement

EUROCONTROL MEMBERS

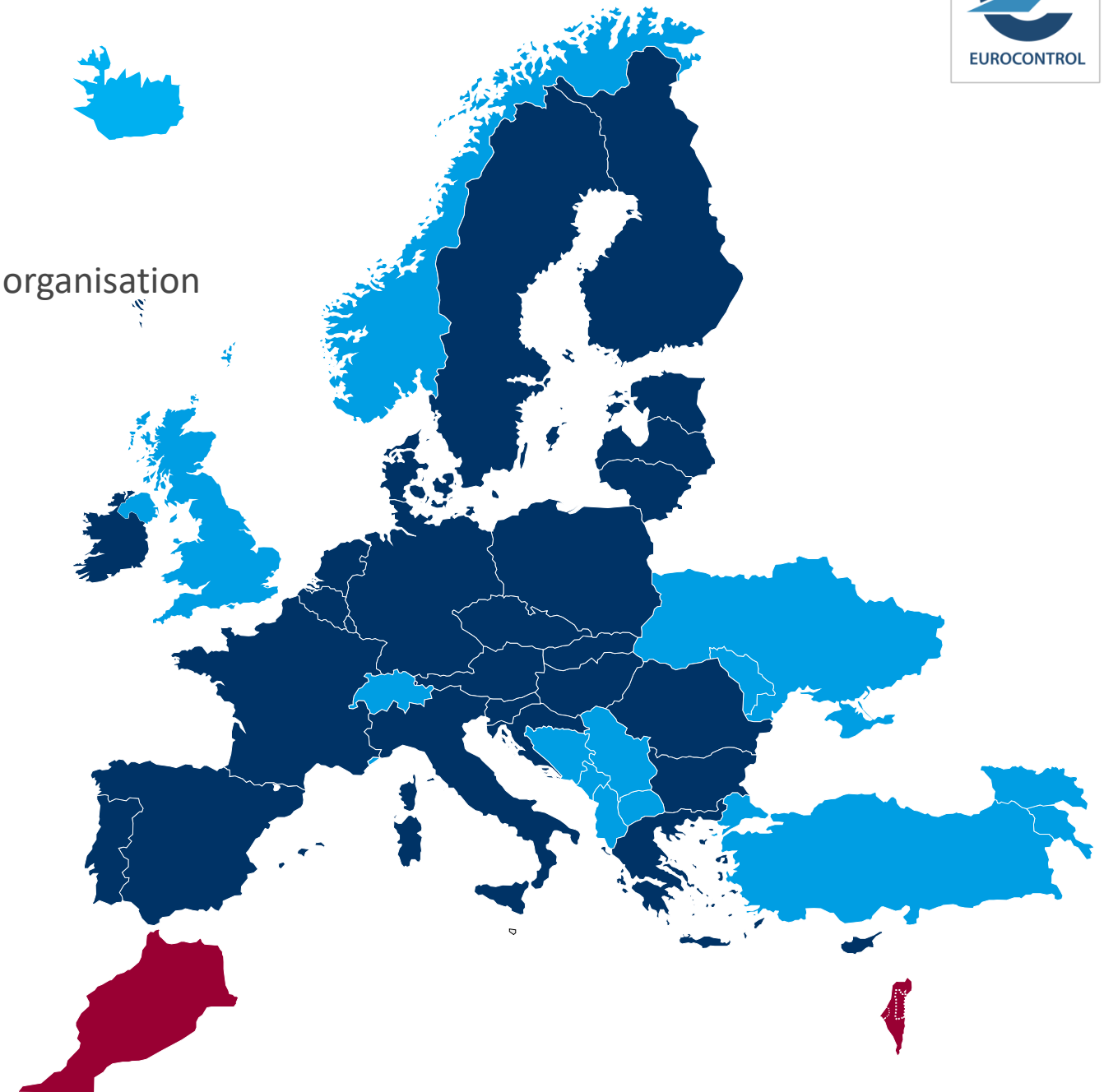
42 Member States
& **2** Comprehensive Agreement States

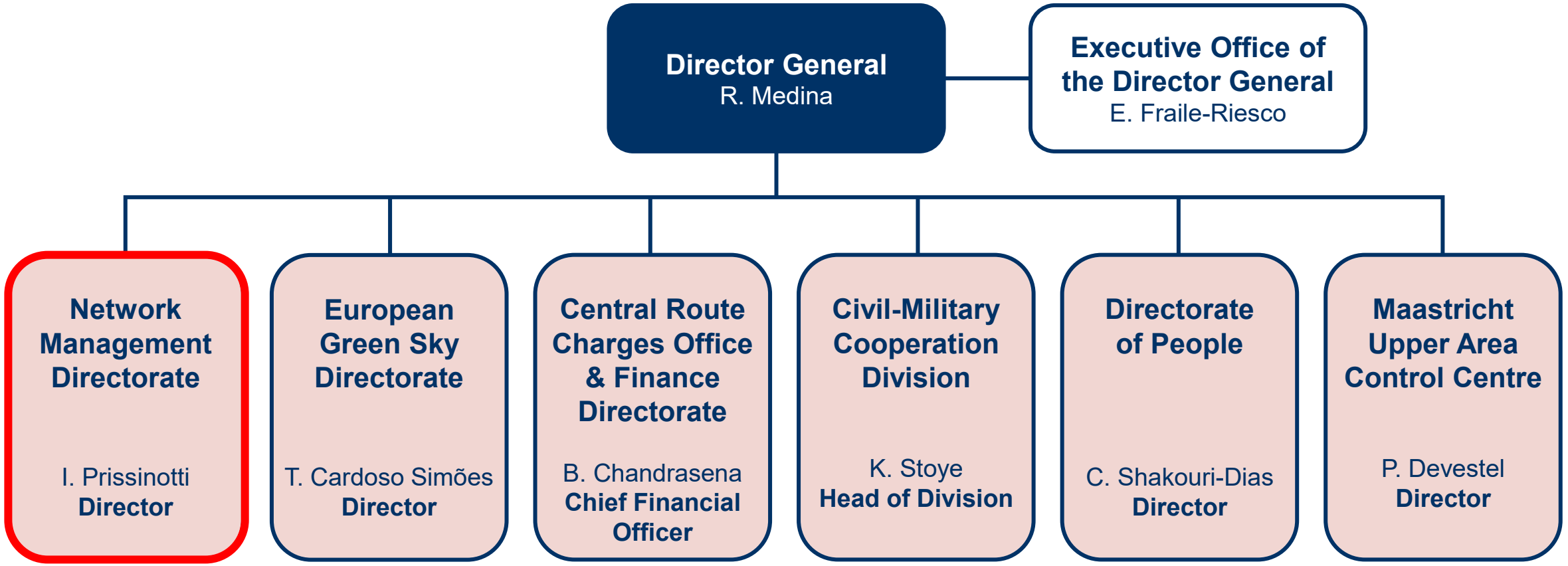
EUROCONTROL is a pan-European, civil-military organisation dedicated to **supporting European aviation**.

EUROCONTROL and EU

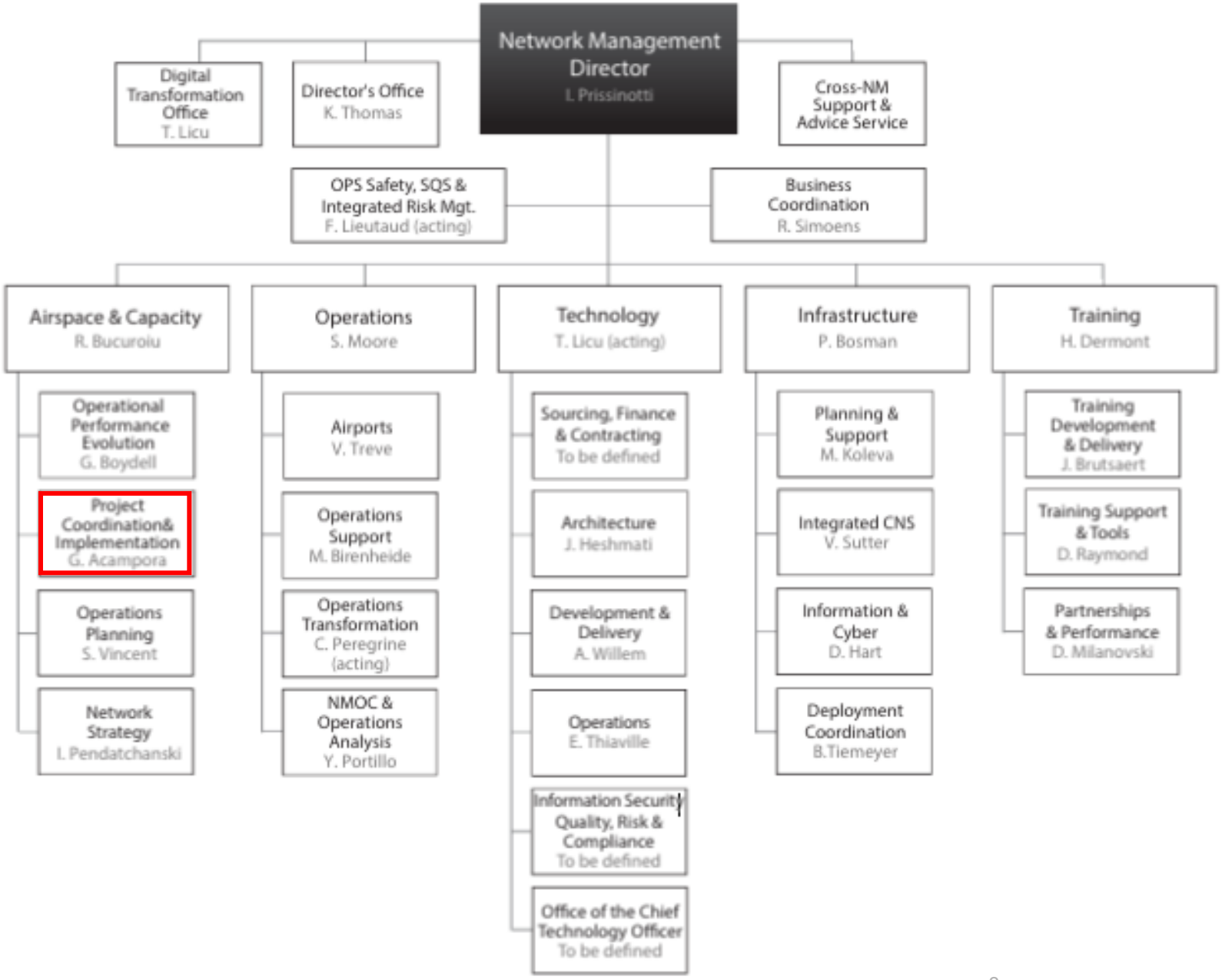
EUROCONTROL but not EU

Two Comprehensive Agreement States: Israel & Morocco

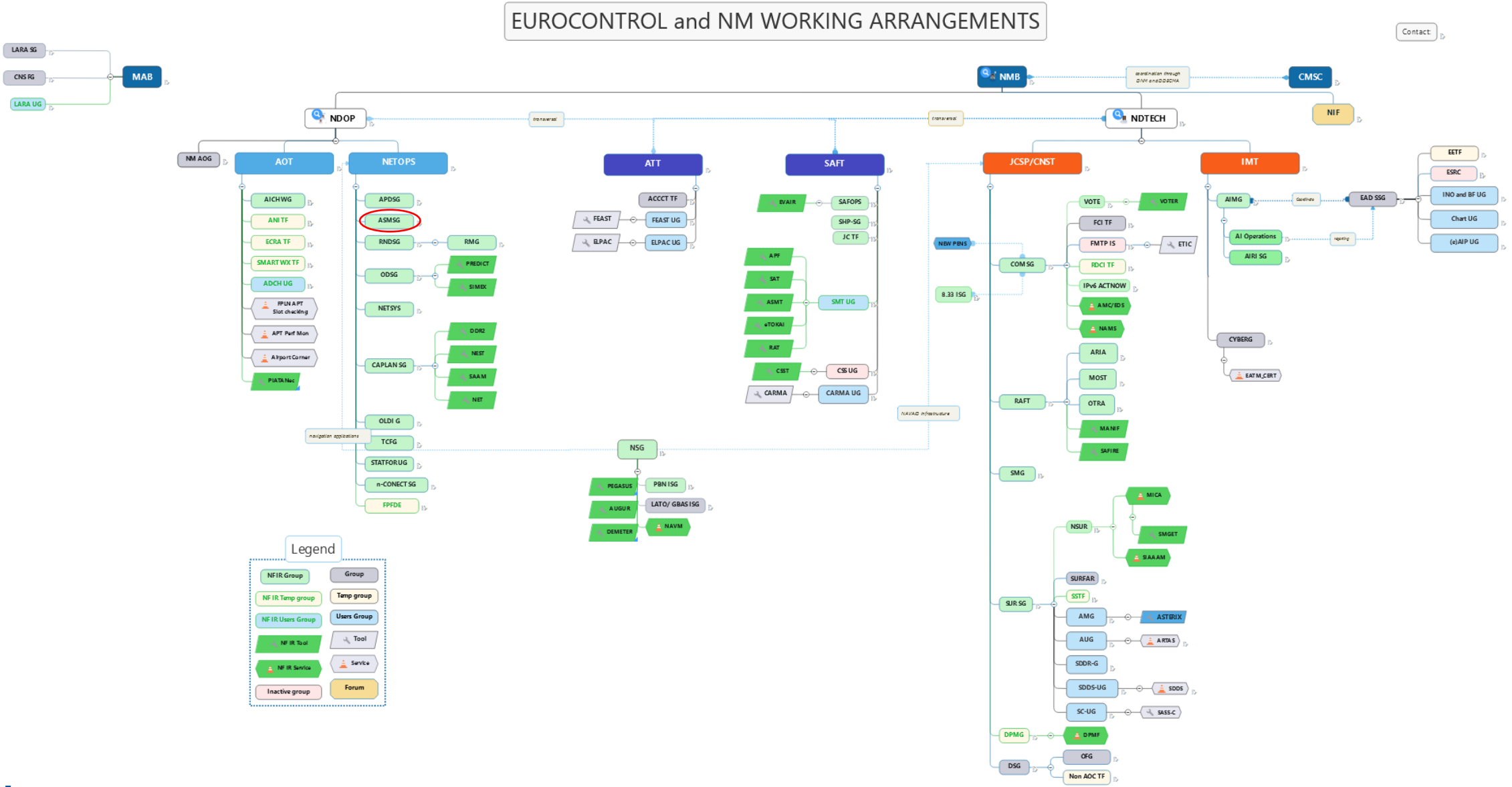



Director General
R. Medina
Executive Office of the Director General
E. Fraile-Riesco
Network Management Directorate
I. Prissinotti
Director
European Green Sky Directorate
T. Cardoso Simões
Director
Central Route Charges Office & Finance Directorate
B. Chandrasena
Chief Financial Officer
Civil-Military Cooperation Division
K. Stoye
Head of Division
Directorate of People
C. Shakouri-Dias
Director
Maastricht Upper Area Control Centre
P. Devestel
Director

NMD organisation



NM working arrangement

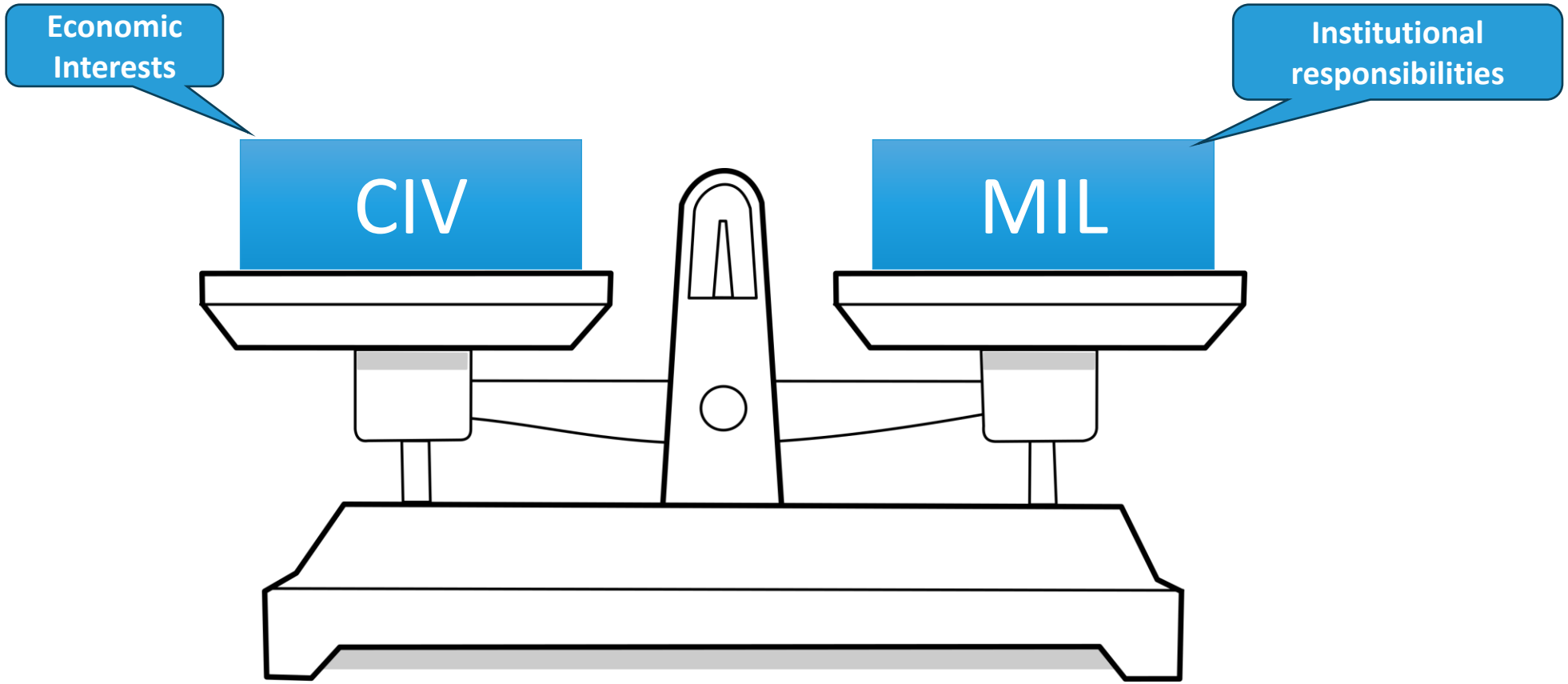


02

FUA in Europe

Balanced airspace users needs

Airspace Usage
Balance different interests/needs



How to satisfy all the stakeholders' requirements ?

Since 1996 through …

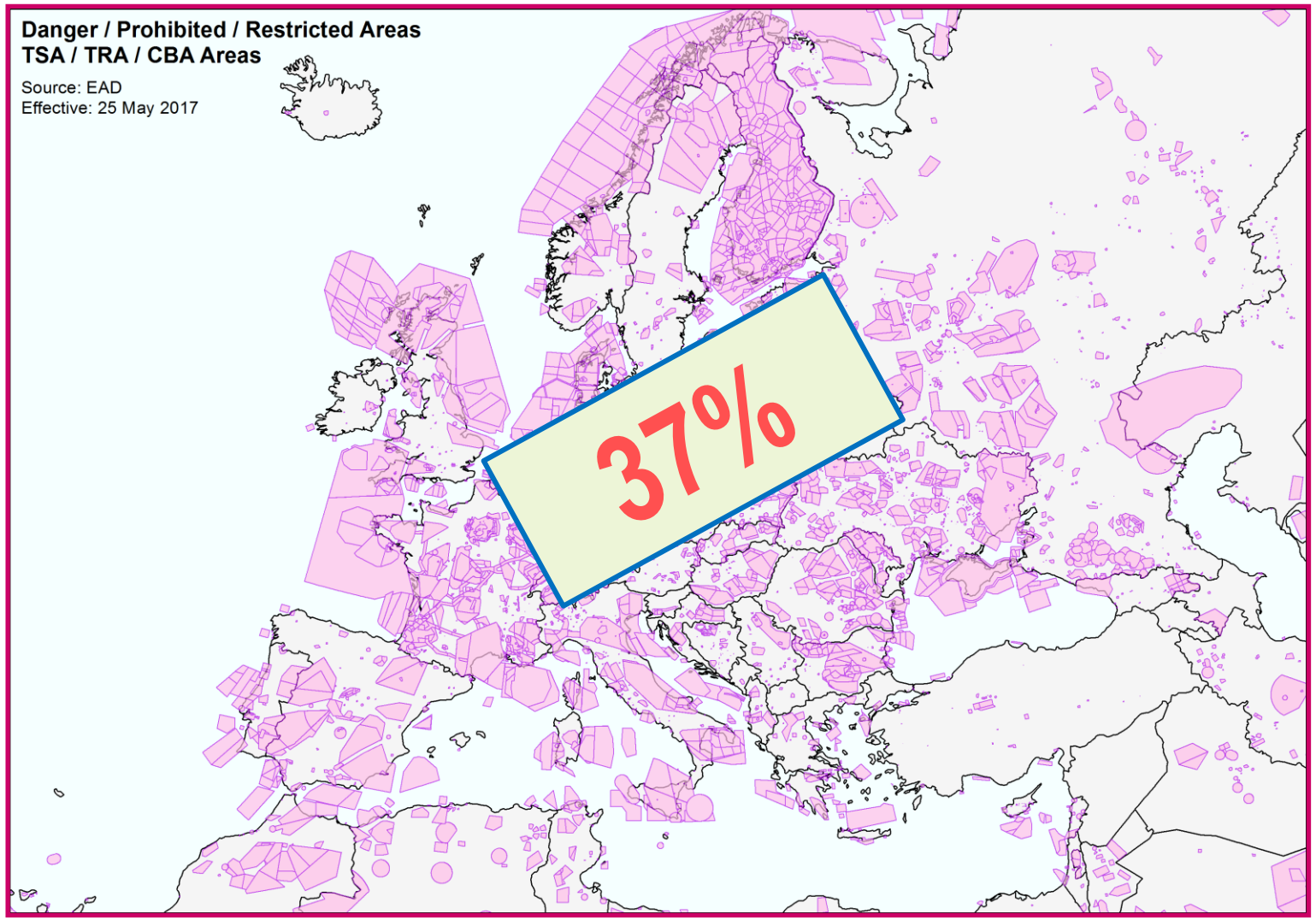
FLEXIBLE USE OF AIRSPACE

…and since 2005 backed up legally by EC

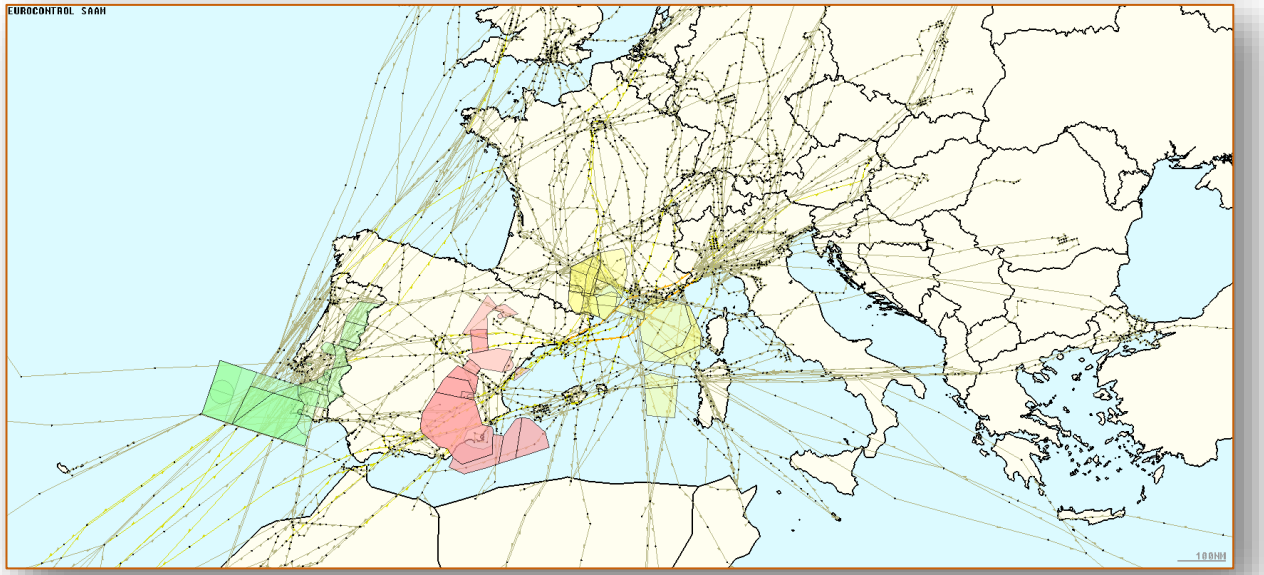
Still relevant?

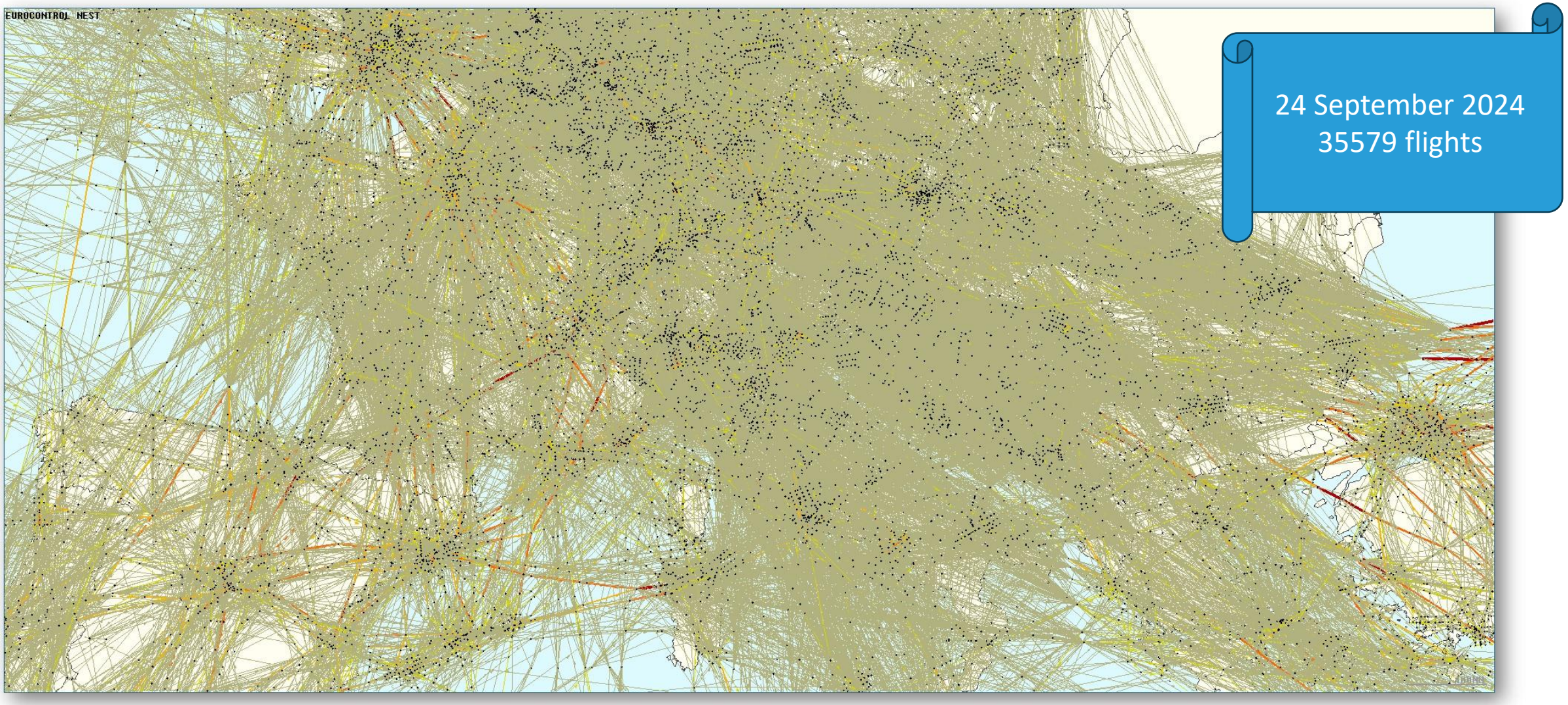
Restricted/Reserved areas

Around 4000 areas
Average of 1500 daily allocation of areas



Military Exercises




EUROCONTROL NEST
24 September 2024
35579 flights

St 

t?

03

EU legislation vs ICAO

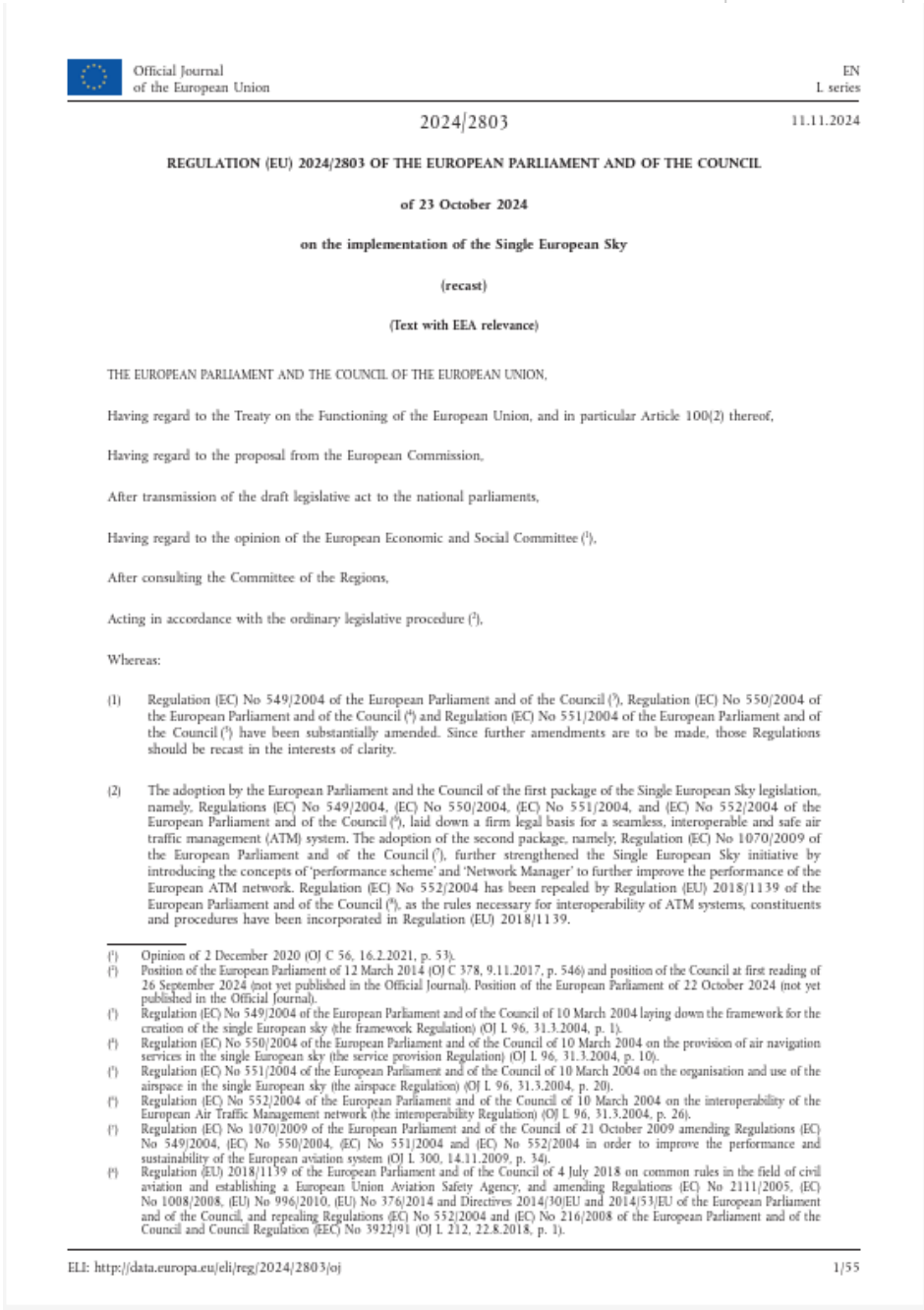
AFUA example

SES2+: December 2024!

- After a SES2+ text had been discussed since 2009 and finally adopted at the beginning of March 2024 by the 'trilogue' (EC-Parliament-Council) under the Belgian Presidency, the SES2+ regulation was published in November 2024 under the reference:

- **Regulation (EU) 2024/2803 of the European Parliament and of the Council of 23 October 2024 on the implementation of the Single European Sky**

- Applicable since 1st December 2024
- except for some articles postponed



Official Journal of the European Union — EN L series

2024/2803 — 11.11.2024

REGULATION (EU) 2024/2803 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 October 2024

on the implementation of the Single European Sky

(recast)

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 100(2) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee [1],

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure [2],

Whereas:

(1) Regulation (EC) No 549/2004 of the European Parliament and of the Council [3], Regulation (EC) No 550/2004 of the European Parliament and of the Council [4] and Regulation (EC) No 551/2004 of the European Parliament and of the Council [5] have been substantially amended. Since further amendments are to be made, those Regulations should be recast in the interests of clarity.

(2) The adoption by the European Parliament and the Council of the first package of the Single European Sky legislation, namely, Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004, and (EC) No 552/2004 of the European Parliament and of the Council [6], laid down a firm legal basis for a seamless, interoperable and safe air traffic management (ATM) system. The adoption of the second package, namely, Regulation (EC) No 1070/2009 of the European Parliament and of the Council [7], further strengthened the Single European Sky initiative by introducing the concepts of 'performance scheme' and 'Network Manager' to further improve the performance of the European ATM network. Regulation (EC) No 552/2004 has been repealed by Regulation (EU) 2018/1139 of the European Parliament and of the Council [8], as the rules necessary for interoperability of ATM systems, constituents and procedures have been incorporated in Regulation (EU) 2018/1139.

[1] Opinion of 2 December 2020 (OJ C 56, 16.2.2021, p. 53).
[2] Position of the European Parliament of 12 March 2014 (OJ C 378, 9.11.2017, p. 546) and position of the Council at first reading of 26 September 2024 (not yet published in the Official Journal). Position of the European Parliament of 22 October 2024 (not yet published in the Official Journal).
[3] Regulation (EC) No 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) (OJ L 96, 31.3.2004, p. 1).
[4] Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) (OJ L 96, 31.3.2004, p. 10).
[5] Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation) (OJ L 96, 31.3.2004, p. 20).
[6] Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation) (OJ L 96, 31.3.2004, p. 26).
[7] Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system (OJ L 300, 14.11.2009, p. 34).
[8] Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1).

ELI: http://data.europa.eu/eli/reg/2024/2803/oj — 1/55

Regulation (EU) 2024/2803 - Article 45 Flexible use of airspace

1....., **Member States shall ensure the application within the Single European Sky of the concept of the flexible use of airspace**, in order to facilitate airspace management and air traffic management in the context of the common transport policy and, where appropriate, in consistency with the European ATM Master Plan.

2.**Member States shall report annually** to the Commission on the application,.

3.Where, in particular in the light of the reports submitted by Member States, **uniform conditions for the application of the concept of the flexible use of airspace within the Single European Sky are needed**, the Commission shall, within the limits of the common transport policy and without prejudice to Article 1(2), **adopt implementing acts** laying down such uniform conditions.

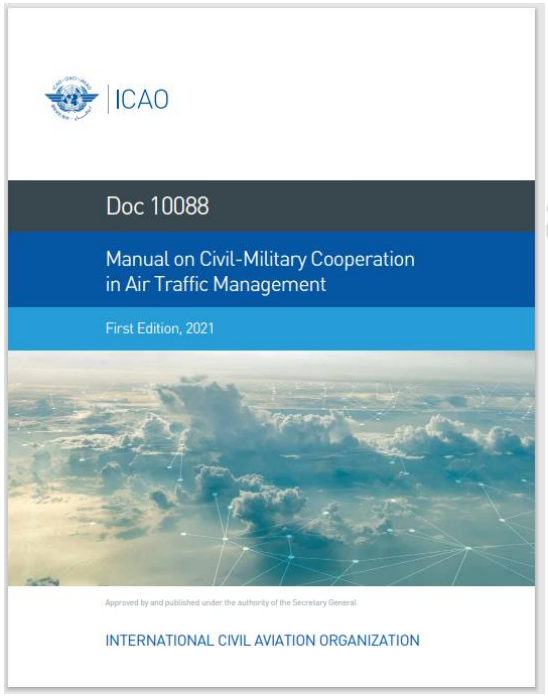
4.**In cases of significant operational difficulties** in the application of this Article impairing the safeguard of essential security or defence policy interests, **Member States may temporarily suspend** such application on condition that they **inform without delay the Commission and the other Member States thereof**. ……. The temporary suspension and any such adjustments shall be lifted when those operational difficulties cease.

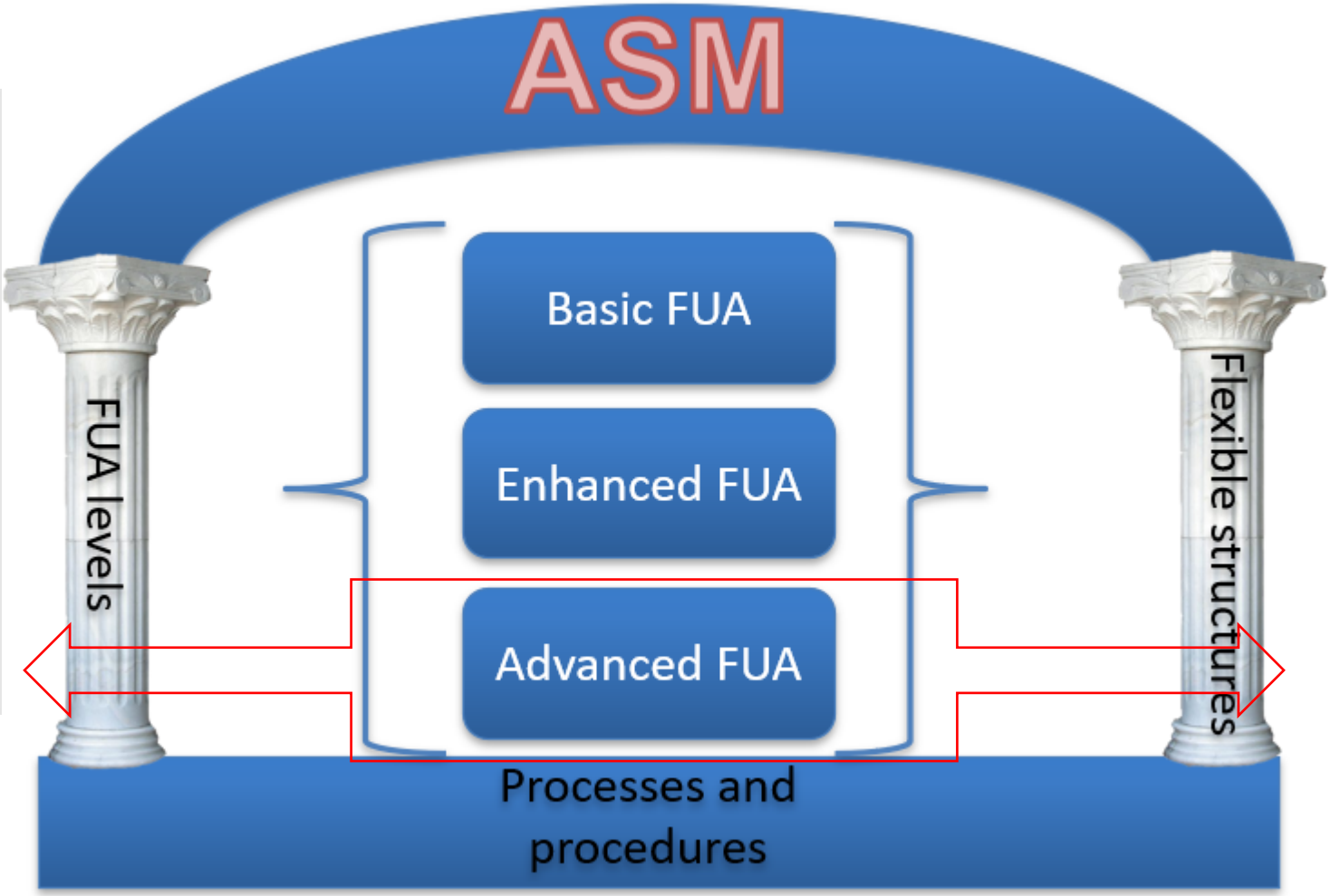
SES2+ content
Definitions

‘airspace management’ means a planning and monitoring function with the primary objective of optimising the utilisation of available airspace by dynamic time-sharing and, at times, the segregation of airspace among various categories of airspace users on the basis of short-term needs;

‘**flexible use of airspace**’ means an airspace management concept, as described by ICAO, based on the fundamental principle that airspace should not be designated as either pure civil or military airspace, but should rather be considered as a continuum in which all user requirements have to be accommodated to the extent possible;

FUA vs ASM


ICAO
Doc 10088
Manual on Civil-Military Cooperation in Air Traffic Management
First Edition, 2021
INTERNATIONAL CIVIL AVIATION ORGANIZATION


ASM
Basic FUA
Enhanced FUA
Advanced FUA
FUA levels
Flexible structures
Processes and procedures


EUROCONTROL
European Route Network Improvement Plan – Part 3
Airspace Management Handbook
Procedures for Airspace Management
Edition 5.7
18 November 2020
SUPPORTING EUROPEAN AVIATION

ICAO DOC 10088 – Appendix B – Advanced FUA (European example)

CONCEPT

1.1 ……enhanced CDM and the optimization of airspace configurations, using new types of airspace structures.
1.2 …….achieve performance at national, and regional levels with extended multinational cooperation, but it should not affect the sovereign responsibility of national authorities regarding final decisions on airspace allocation.
1.3 …….builds on advanced tools and procedures to make FUA more dynamic and efficient to support an ASM performance approach.
1.4 ……..dynamic trajectory operations will differ from that using fixed ATS routes; but still need to know about airspace availability. For the transit period of a given flight through such airspace, airspace users will need to know the activity of all pertinent airspace affected by civil-military activities to select a flight path avoiding these operations. …….

ICAO DOC 10088 – Appendix B – Advanced FUA (European example)

Objectives

……..

c) continuous, seamless and reiterative planning, allocation and utilization of different airspace configurations resulting from any airspace change in any time period initiated by both pre-tactical and tactical phases (not limited to the current pre-tactical phase timeframe);

d) evolution from the current system of regulating the network to precise demand and capacity balancing (DCB) through cooperative airspace planning and usage, including proactive management of all airspace structures activation and shifting air traffic flows as appropriate;

e) collection of available FUA and ATFM information made available to all parties, at various planning stages, through network services;

……

A-FUA Implementation

EUROCONTROL

EUROPEAN ORGANISATION

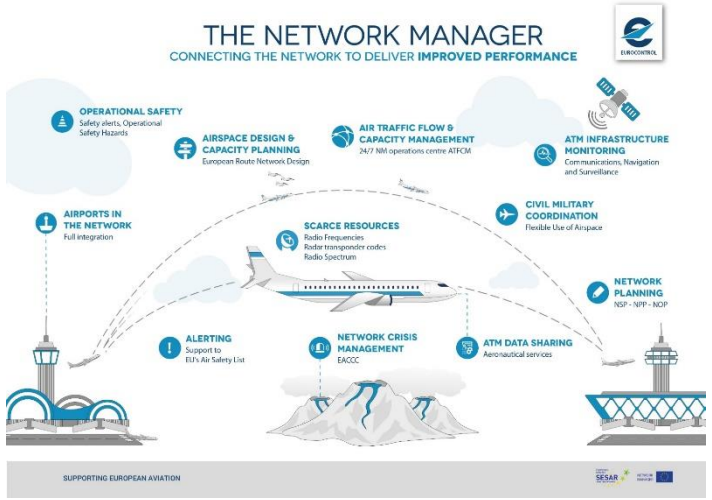
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

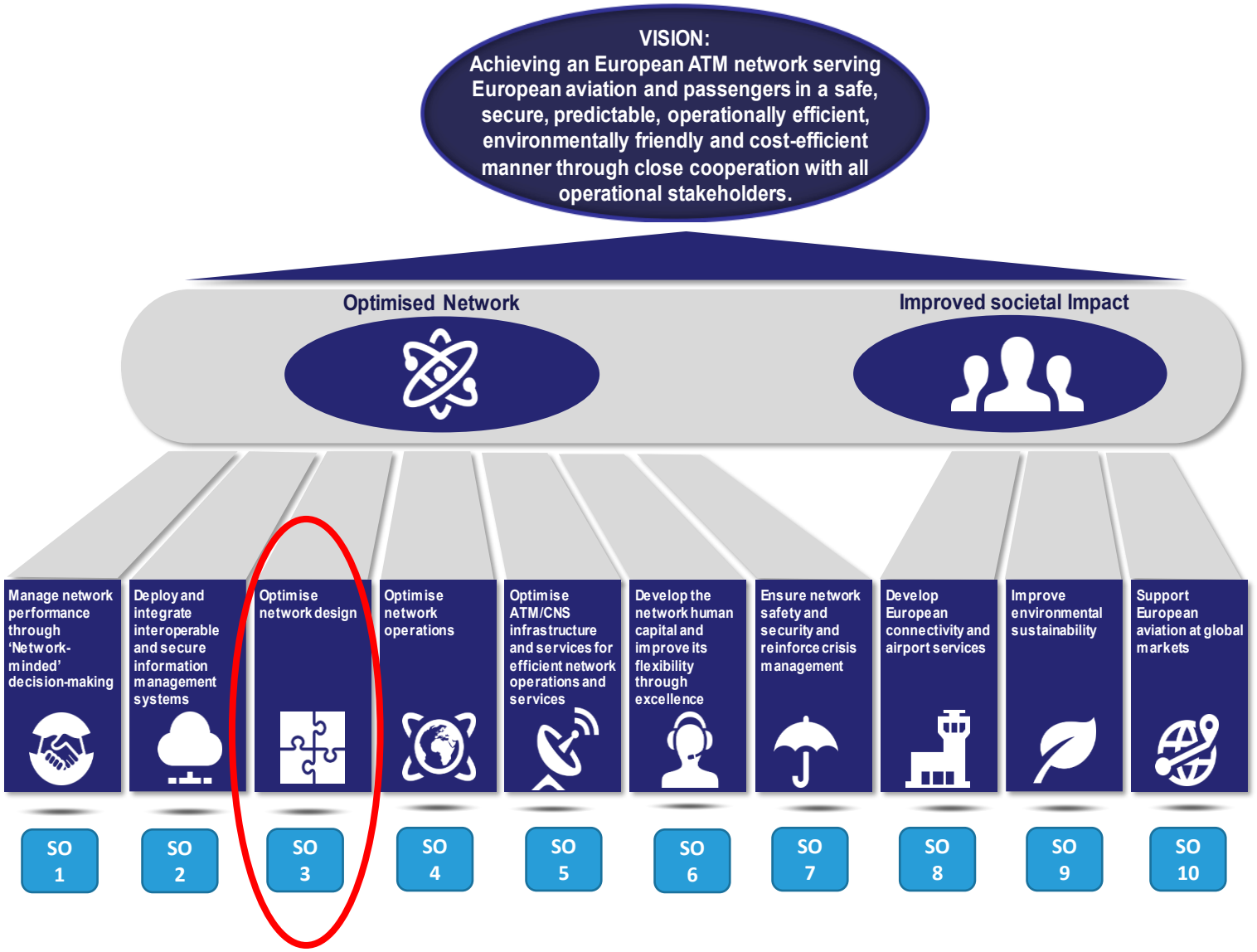
- ADVANCED FUA CONCEPT -

Edition	:	1.0
Edition Date	:	24/07/2015
Status	:	Proposed issue
Distribution	:	ATM Stakeholders

HOW?



Network Strategic Plan



NSP - AFUA Strategic objectives

High Priority 	**Further Advanced FUA implementation (with implementation of rolling AUP/UUP, dynamic airspace configuration, real-time ASM data exchanges, enhanced Network impact assessment & ASM performance reporting to facilitate efficient and harmonised FUA coordination between all ATM actors (local / regional), integration of new generation fighters and deliver the flight efficiency benefits to airspace users**	**All** **2025-2029**

High Priority 	**Implementation of Advanced Dynamic Airspace Configurations**	**All** **2030-2032**

04

AFUA Application in Europe

NM role and Major improvements

Network Manager Roles

NETWORK

- PLANNING
- DESIGNING
- OPERATING
- MONITORING

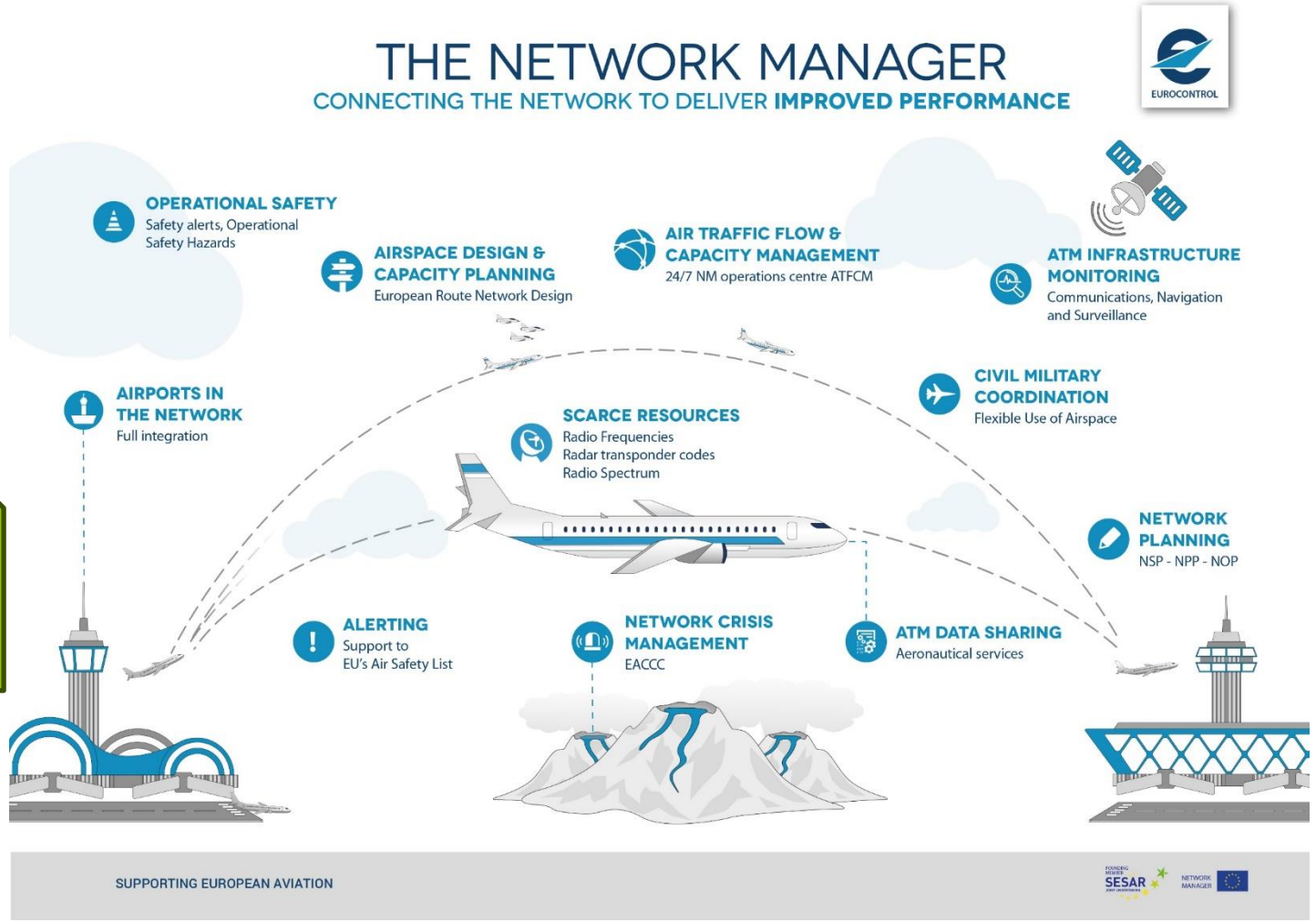
NM involvement in the 3 FUA levels

National decision!

Centralised services:

- FPL management
- ATFCM management
- ASM coordination

Centralised ATM data!



FUA Levels – NM involvement

Level 1

- Consultation for airspace design changes
- Coordination at network level
- Proposal for airspace design
- Coordination of common ASM procedures at European level
- Supporting preparation of large-scale events
- Validation of data

Level 2

- Collection of national daily plans (AUP/UUP)
- Evaluation of possible network effects
- Coordination for possible adaptation
- Publication of consolidated European plan (EAUP/EUUP)
- Update centralised ATM data with EAUP/EUUP information
- Validate FPLs
- Coordinated possible ATFM measures

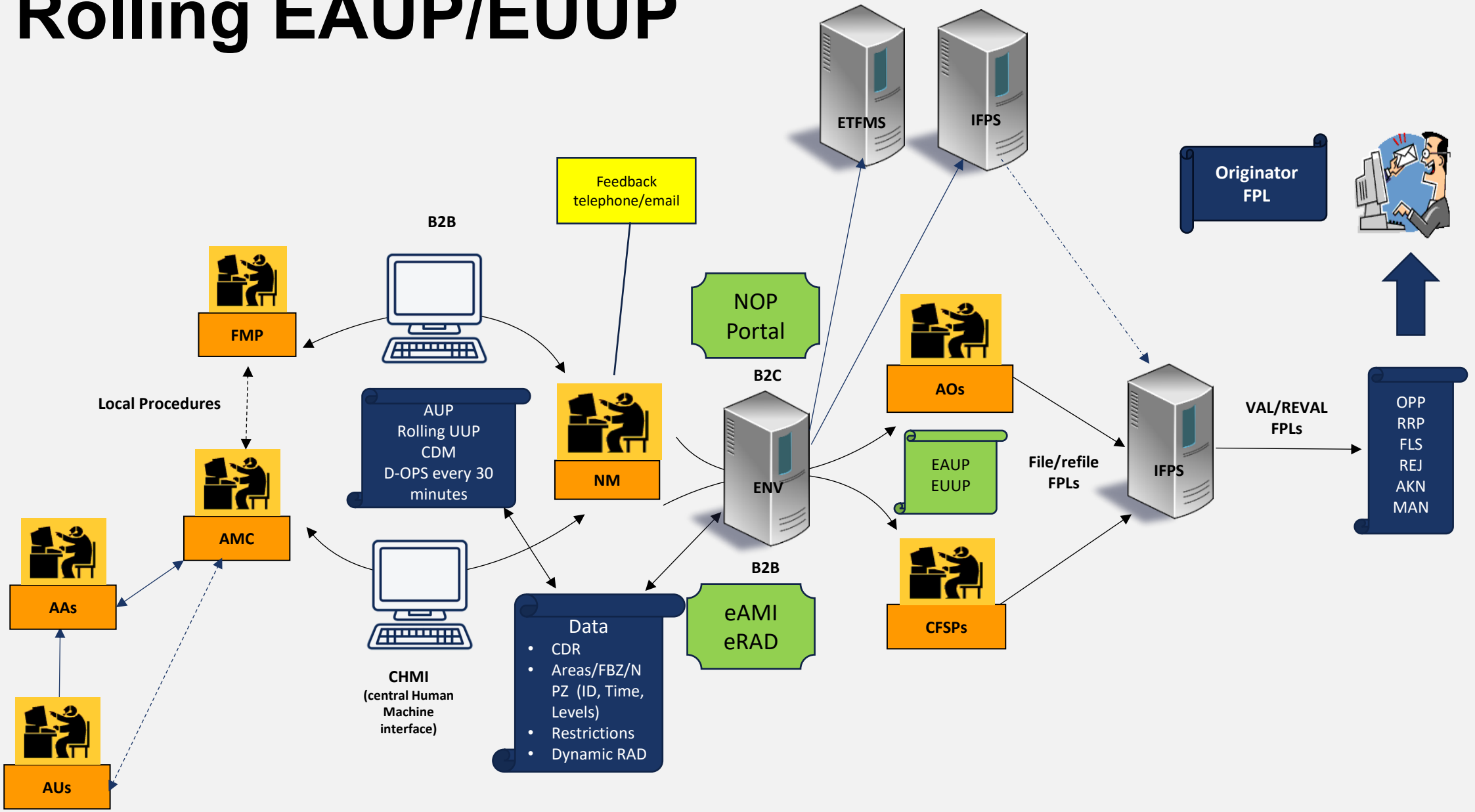
Level 3

- Continuous update of airspace status (UUPs)
- Process of trajectory changes
- Implementation of ATFM measures
- Introduction of ad hod restrictions

Major Improvements

- Improve Planning Process
- Promote dynamicity
- Support Free Route (FRA) implementation
- Enhance ASM/ATFCM integration
- Ensure Network approach
- Enhance automation

Rolling EAUP/EUUP

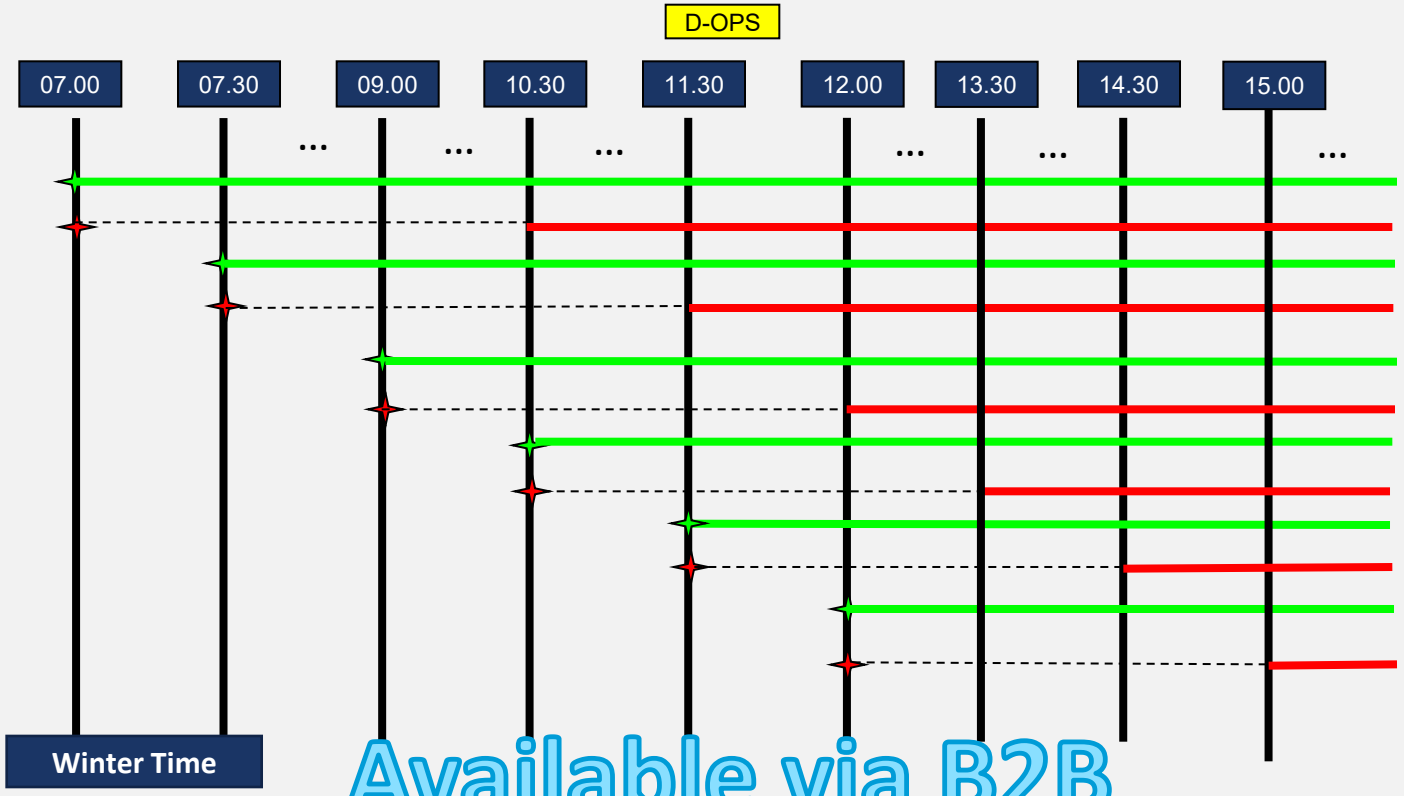


EUROCONTROL

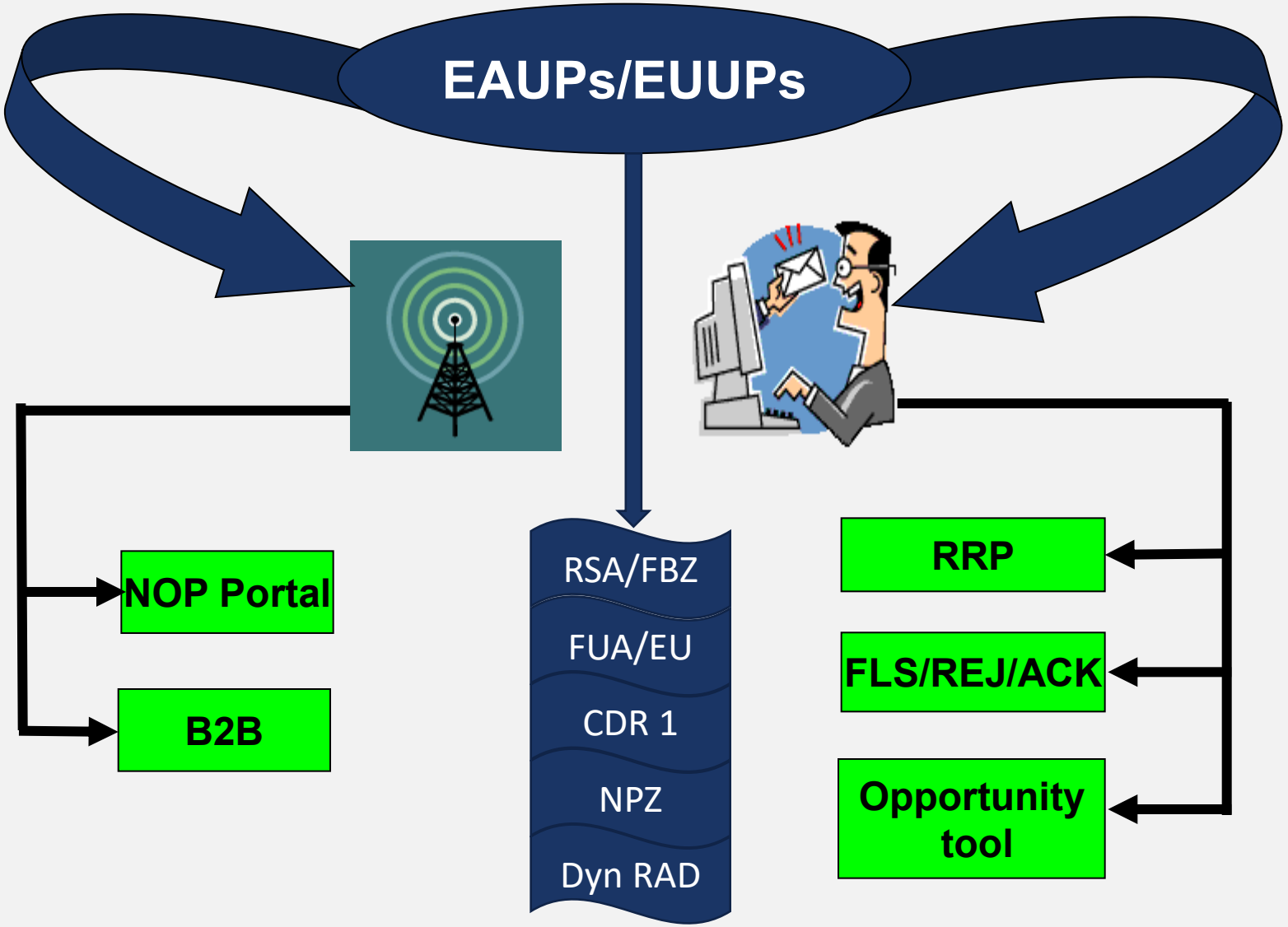
AUP/UUP PUBLICATION
D-1

EUROCONTROL

Rolling UUP D-OPS

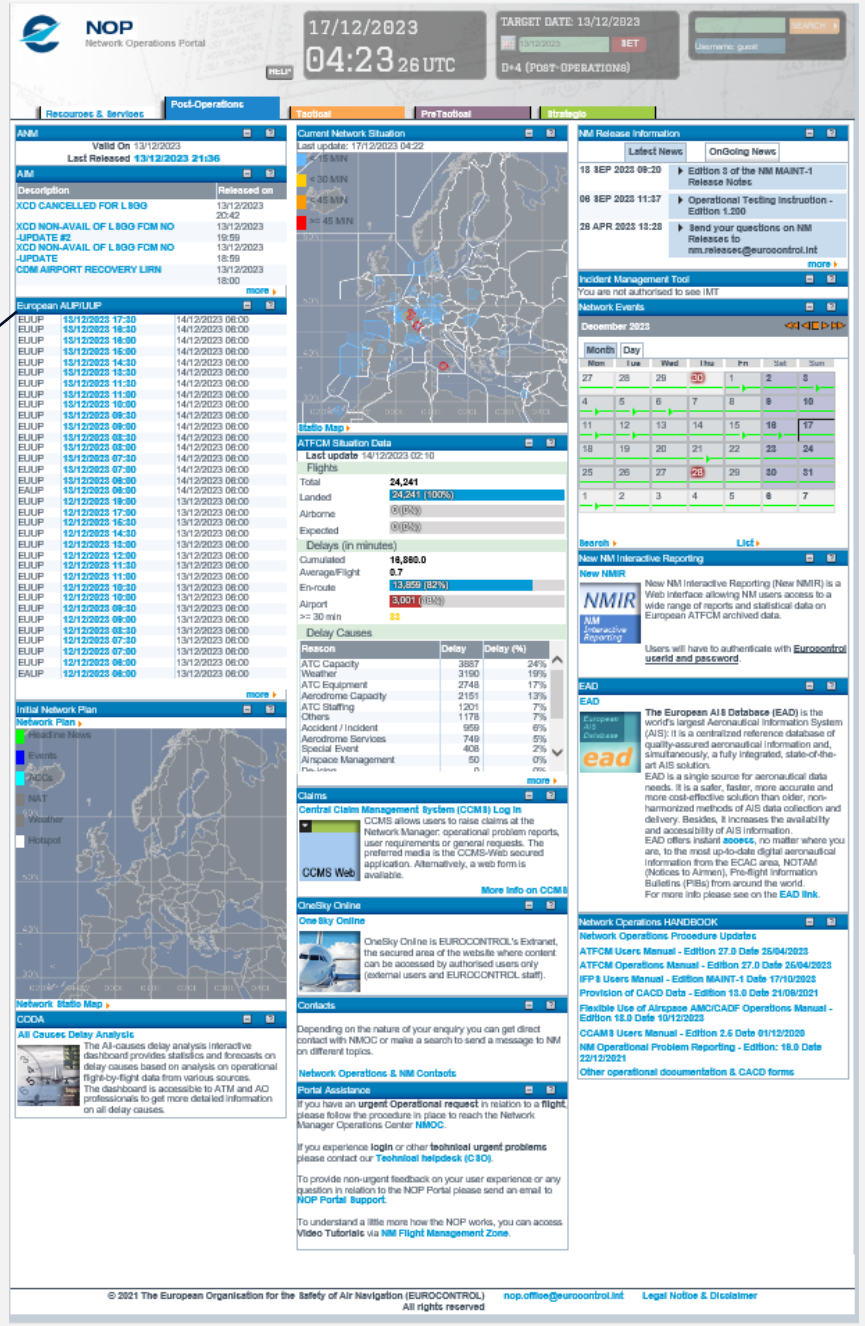


EAUPs/EUUPs Notification



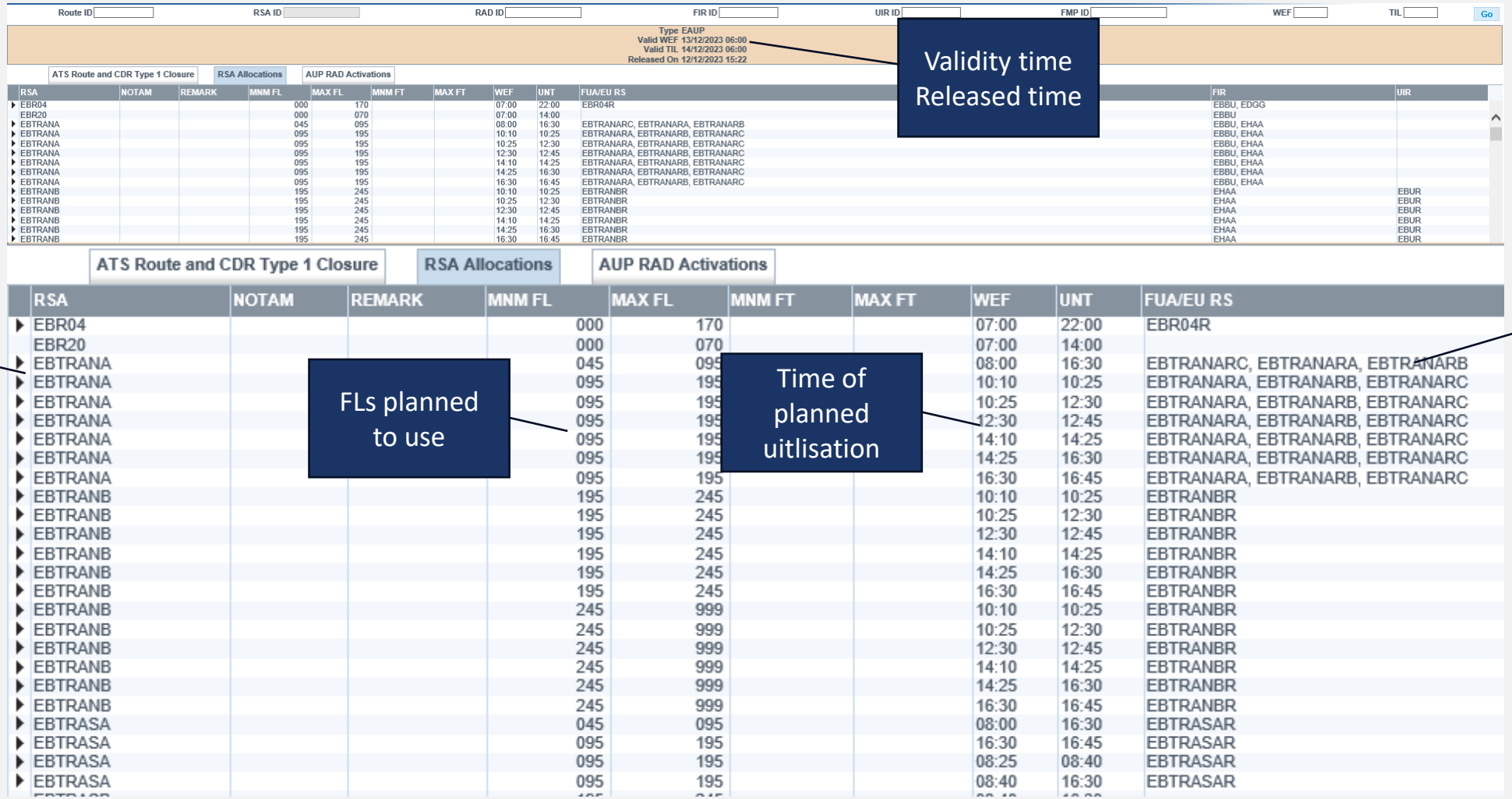
EAUP/EUUP on NOP Portal

Daily Publication



EUROCONTROL

EAUP/EUUP Example - RSA



RSA	NOTAM	REMARK	MNM FL	MAX FL	MNM FT	MAX FT	WEF	UNT	FUA/EU RS	FIR	UIR
EBR04			000	170			07:00	22:00	EBR04R	EBBU, EDGG	
EBR20			000	070			07:00	14:00		EBBU	
EBTRANA			045	095			08:00	16:30	EBTRANARC, EBTRANARA, EBTRANARB	EBBU, EHAA	
EBTRANA			095	195			10:10	10:25	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			10:25	12:30	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			12:30	12:45	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			14:10	14:25	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			14:25	16:30	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			16:30	16:45	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANB			195	245			10:10	10:25	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			10:25	12:30	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			12:30	12:45	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			14:10	14:25	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			14:25	16:30	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			16:30	16:45	EBTRANBR	EHAA	EBUR

ATS Route and CDR Type 1 Closure | RSA Allocations | AUP RAD Activations

RSA	NOTAM	REMARK	MNM FL	MAX FL	MNM FT	MAX FT	WEF	UNT	FUA/EU RS
EBR04			000	170			07:00	22:00	EBR04R
EBR20			000	070			07:00	14:00	
EBTRANA			045	095			08:00	16:30	EBTRANARC, EBTRANARA, EBTRANARB
EBTRANA			095	195			10:10	10:25	EBTRANARA, EBTRANARB, EBTRANARC
EBTRANA			095	195			10:25	12:30	EBTRANARA, EBTRANARB, EBTRANARC
EBTRANA			095	195			12:30	12:45	EBTRANARA, EBTRANARB, EBTRANARC
EBTRANA			095	195			14:10	14:25	EBTRANARA, EBTRANARB, EBTRANARC
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EBTRANB			195	245			10:25	12:30	EBTRANBR
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EBTRASA			045	095			08:00	16:30	EBTRASAR
EBTRASA			095	195			16:30	16:45	EBTRASAR
EBTRASA			095	195			08:25	08:40	EBTRASAR
EBTRASA			095	195			08:40	16:30	EBTRASAR

EUROCONTROL

EAUP/EUUP Example - Routes

Route ID | RSA ID | RAD ID | FIR ID | UIR ID | FMP ID | WEF | TIL | Go

Type EUUP
Valid WEF 13/12/2023 14:30
Valid TIL 14/12/2023 06:00
Released On 13/12/2023 14:29

ATS Route and CDR Type 1 Closure | RSA Allocations | AUP RAD Activations

RSA	NOTAM	REMARK	MNM FL	MAX FL	MNM FT	MAX FT	WEF	UNT	FUA/EU RS	FIR	UIR
EBR04			000	170			14:30	22:00	EBR04R	EBBU, EDGG	
EBTRANA			045	095			14:30	16:30	EBTRANARC, EBTRANARA, EBTRANARB	EBBU, EHAA	
EBTRANA			095	195			14:30	16:30	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANA			095	195			16:30	16:45	EBTRANARA, EBTRANARB, EBTRANARC	EBBU, EHAA	
EBTRANB			195	245			14:30	16:30	EBTRANBR	EHAA	EBUR
EBTRANB			195	245			16:30	16:45	EBTRANBR	EHAA	EBUR
EBTRANB			245	999			14:30	16:30	EBTRANBR	EHAA	EBUR
EBTRANB			245	999			16:30	16:45	EBTRANBR	EHAA	EBUR
EBTRASA			045	095			14:30	16:30	EBTRASAR	EBBU, LFFF	
EBTRASA			095	195			16:30	16:45	EBTRASAR	EBBU, LFFF	
EBTRASA			095	195			14:30	16:30	EBTRASAR	EBBU, LFFF	
EBTRASB			195	245			14:30	16:30			EBUR, LFFF
EBTRASB			245	999			14:30	16:30			EBUR, LFFF
EBTRASBZ			195	245			14:30	16:45	EBTRASBZR		EBUR, LFFF
EBTRASBZ			245	999			14:30	16:45	EBTRASBZR		EBUR, LFFF
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ECNPZ6			245	660			00:00	06:00	ECNPZ6RB, ECNPZ6RA, ECNPZ6RC		
ECNPZ7			095	660			14:30	00:00	ECNPZ7R		
ECNPZ7			095	660			00:00	06:00	ECNPZ7R		
ECNPZ8			095	660			14:30	00:00	ECNPZ8R		
ECNPZ8			095	660			00:00	06:00	ECNPZ8R		

Type EUUP
Valid WEF 13/12/2023 14:30
Valid TIL 14/12/2023 06:00
Released On 13/12/2023 14:29

ATS Route and CDR Type 1 Closure | RSA Allocations | AUP RAD Activations

Route ID	Between	And	MNM FL	MAX FL	WEF	TIL	FIR
A10	SIT		145		14:30	15:00	LGGG
A14	SOTEG		095		16:00	18:00	LGGG
A14	TRL		095		14:30	15:00	LGGG
A14	TRL		095		05:00	06:00	LGGG
A14	SIT		145		14:30	15:00	LGGG
A869	ZAR		095		18:00	23:00	LECM
B1	VELOP		085		14:30	15:00	LGGG
B1	VELOP		085		05:00	06:00	LGGG
B1	EKTOS		085		14:30	15:00	LGGG
B1	EKTOS	IXIMA	105	155	15:00	15:30	LGGG
B1	EKTOS	PLH	105	155	18:00	20:00	LGGG
B1	IXIMA	PLH	105	155	14:30	15:30	LGGG
	MONUV	PLH	105	125	20:00	06:00	LGGG
	ALSUS	BALMA	055	285	14:30	15:00	LCCC
	ALSUS	BALMA	225	285	15:00	05:00	LCCC
	ALSUS	BALMA	055	285	05:00	06:00	LCCC
	RESTU	ALT	105	125	14:30	16:55	LECB
	NVS	RIVRO	115	145	14:30	17:00	LECM
	YNN	TSL	115	145	14:50	21:00	LGGG
	YNN	TSL	115	145	05:10	05:30	LGGG
	YNN	TSL	115	245	05:30	06:00	LGGG
G12	IDILO	GOLDO	075	105	14:30	06:00	LGGG
G18	MOCNA	MES	105	135	14:30	18:00	LGGG

Route ID (AIP Publication)

Published points (AIP Publication)

FLs Affected

Time of closure

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B2B service - retrieveEAUPRSAs Operation

- Used to retrieve **RSA allocations** within a given EAUP/EUUP.
- Requires <eaupId> obtained from **retrieveEAUPChain**.
- Returns details of Restricted Airspace Allocations (RSAs).
- The response provides information on active RSAs and their restrictions.


```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Body>
    <airspace:DraftEAUPRSAReply xmlns:airspace="eurocontrol/cfmu/b2b/AirspaceServices">
      <requestReceptionTime>2025-02-24 03:15:16</requestReceptionTime>
      <requestId>B2B_CUR:116410819</requestId>
      <sendTime>2025-02-24 03:15:16</sendTime>
      <status>OK</status>
      <data>
        <rsaAllocations xmlns:gml="http://www.opengis.net/gml/3.2" gml:id="ID_96456_1740366916723_167">
          <adrmsg:hasMember xmlns:adrmsg="http://www.eurocontrol.int/cfmu/b2b/ADRMessage">
            <aixm:Airspace xmlns:aixm="http://www.aixm.aero/schema/5.1.1" gml:id="ID_96456_1740366916723_1">
              <aixm:timeSlice>
                <aixm:AirspaceTimeSlice gml:id="ID_96456_1740366916723_168">
                  <gml:validTime>
                    <gml:TimeInstant gml:id="ID_96456_1740366916723_169">
                      <gml:timePosition>2025-02-17T10:55:00</gml:timePosition>
                    </gml:TimeInstant>
                  </gml:validTime>
                  <aixm:interpretation>SNAPSHOT</aixm:interpretation>
                  <aixm:designator>LST301Z</aixm:designator>
                  <aixm:designatorICAO>YES</aixm:designatorICAO>
                  <aixm:extension>
                    <adrext:AirspaceExtension xmlns:adrext="http://www.aixm.aero/schema/5.1.1/extensions/EUR/ADR" gml:id="ID_96456_1740366916723_170">
                      <adrext:level1>YES</adrext:level1>
                      <adrext:level2>YES</adrext:level2>
                    </adrext:AirspaceExtension>
                  </aixm:extension>
                </aixm:AirspaceTimeSlice>
              </aixm:timeSlice>
              <aixm:timeSlice>
                <aixm:AirspaceTimeSlice gml:id="ID_96456_1740366916723_171">
                  <gml:validTime>
                    <gml:TimePeriod gml:id="ID_96456_1740366916723_172">
                      <gml:beginPosition>2025-02-25T07:15:00</gml:beginPosition>
                      <gml:endPosition>2025-02-25T10:55:00</gml:endPosition>
                    </gml:TimePeriod>
                  </gml:validTime>
                  <aixm:interpretation>TEMPDELTA</aixm:interpretation>
                  <aixm:activation>
                    <aixm:AirspaceActivation gml:id="ID_96456_1740366916723_173">
                      <aixm:status>ACTIVE</aixm:status>
                      <aixm:levels>
                        <aixm:AirspaceLayer gml:id="ID_96456_1740366916723_174">
                          <aixm:upperLimit uom="FL">660</aixm:upperLimit>
                          <aixm:upperLimitReference>STD</aixm:upperLimitReference>
                          <aixm:lowerLimit uom="FL">285</aixm:lowerLimit>
                          <aixm:lowerLimitReference>STD</aixm:lowerLimitReference>
                        </aixm:AirspaceLayer>
                      </aixm:levels>
```


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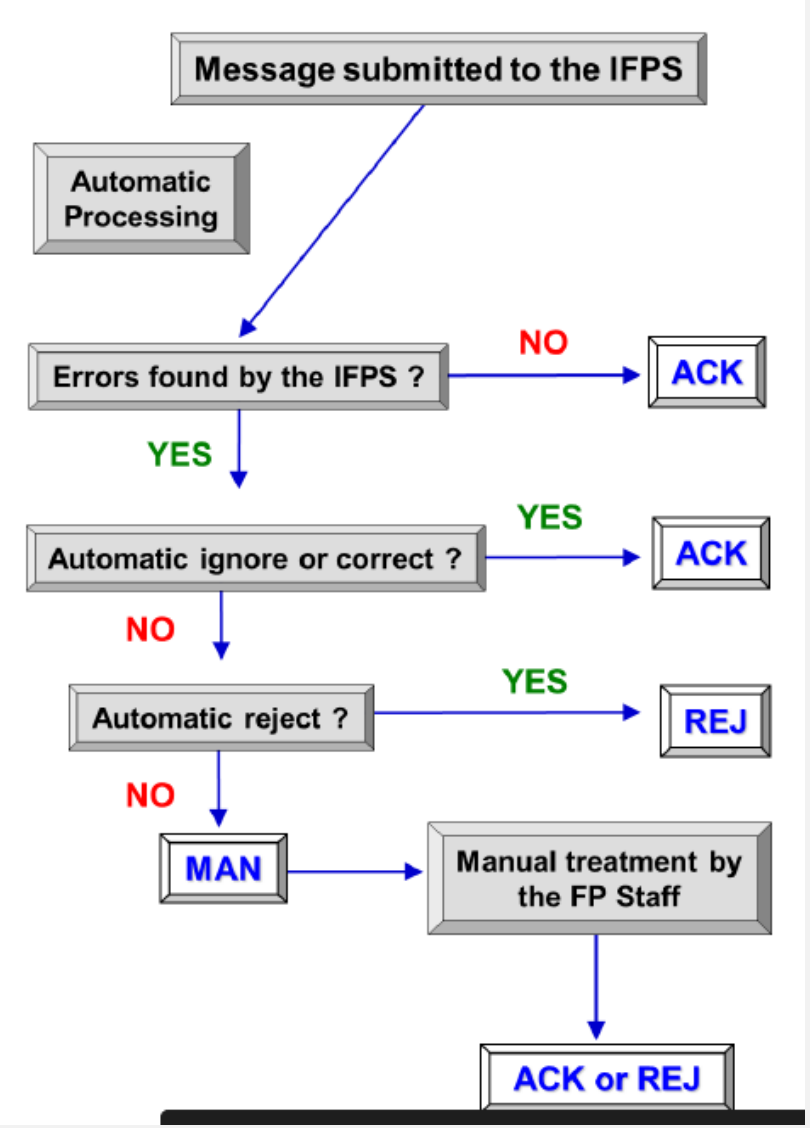
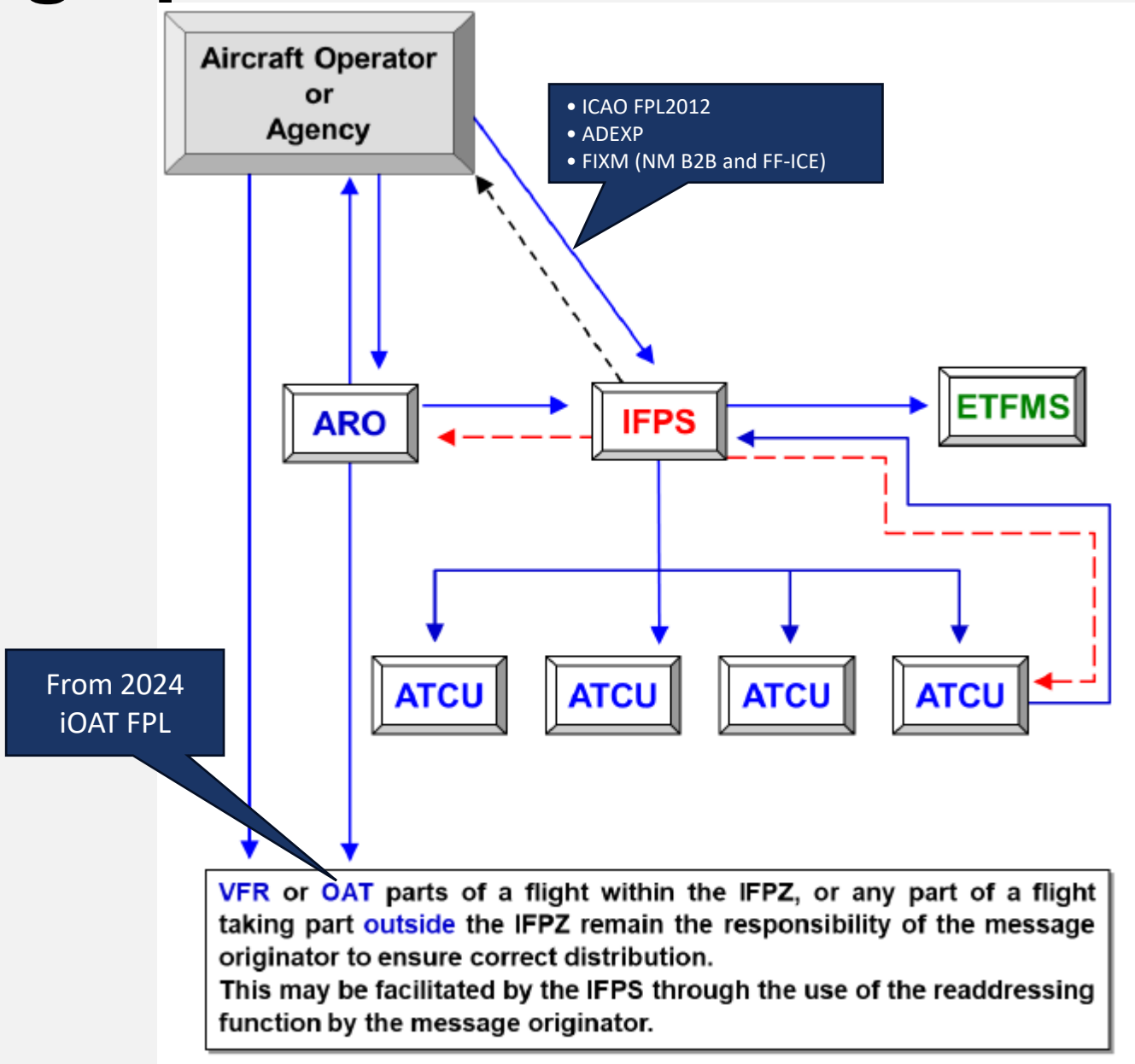
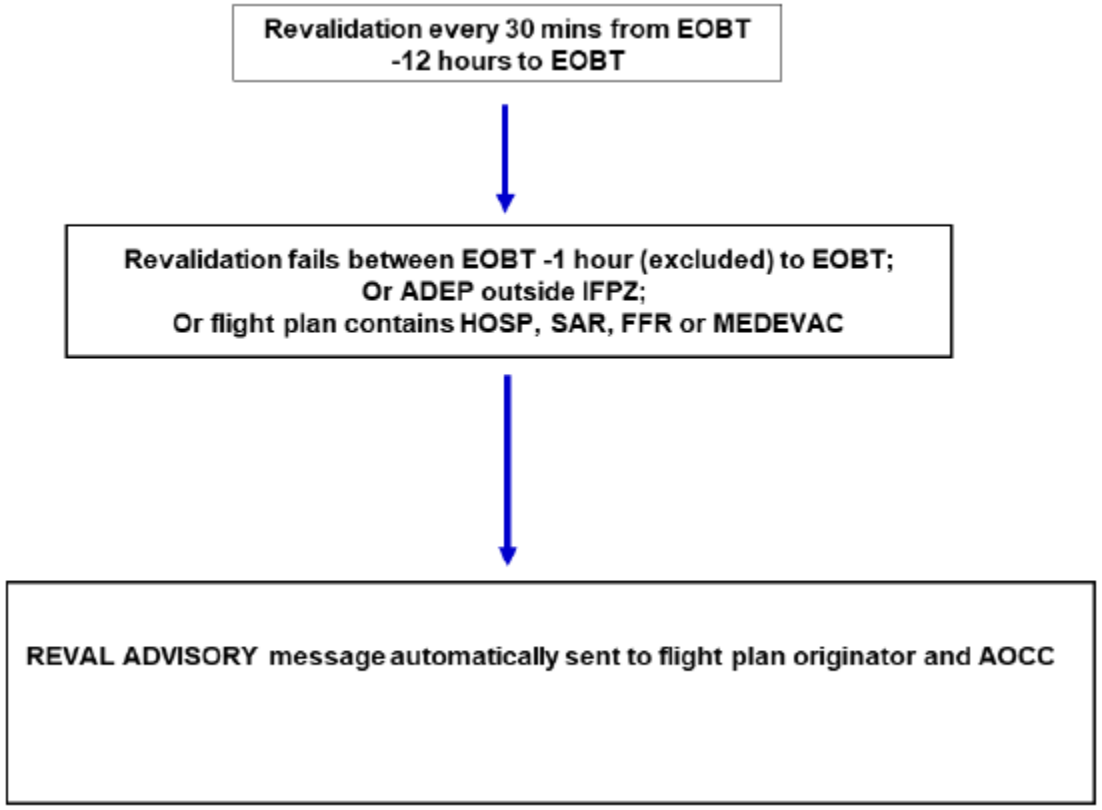
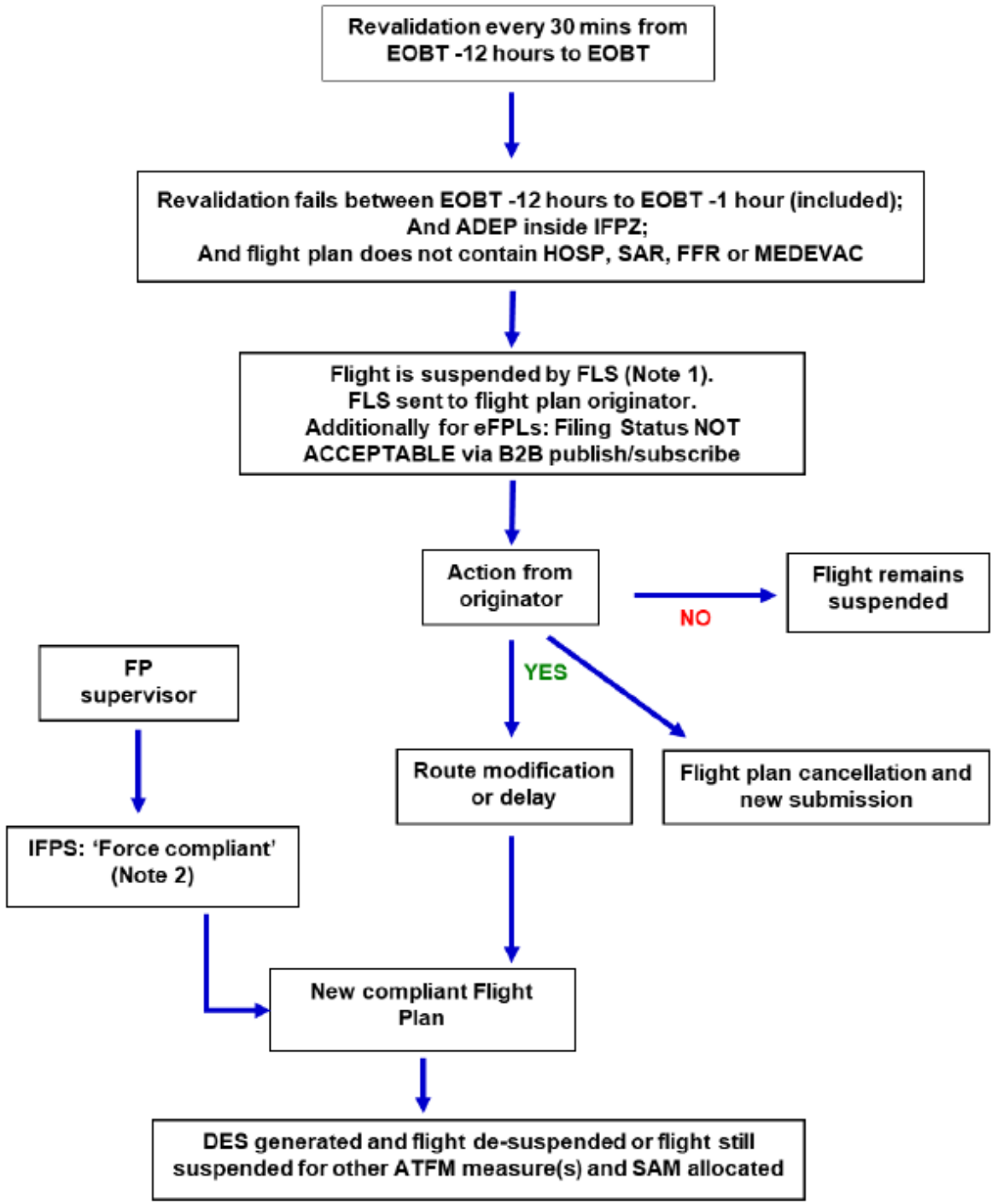
Flight data message process





FPLs Revalidation Process





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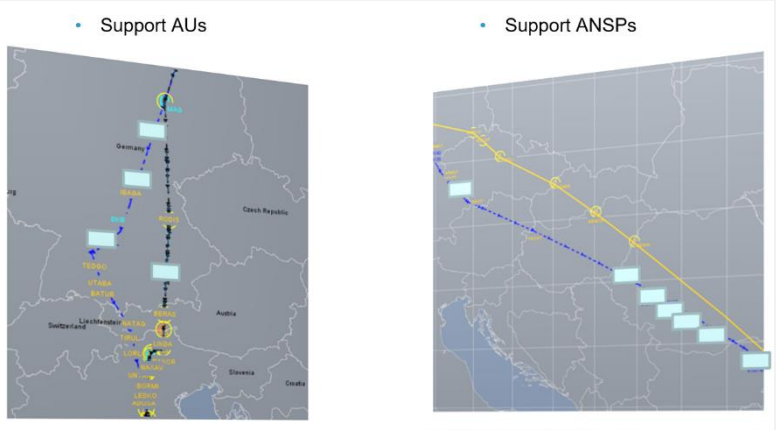
Automated GRRT – group rerouting tool (Opportunity tool)

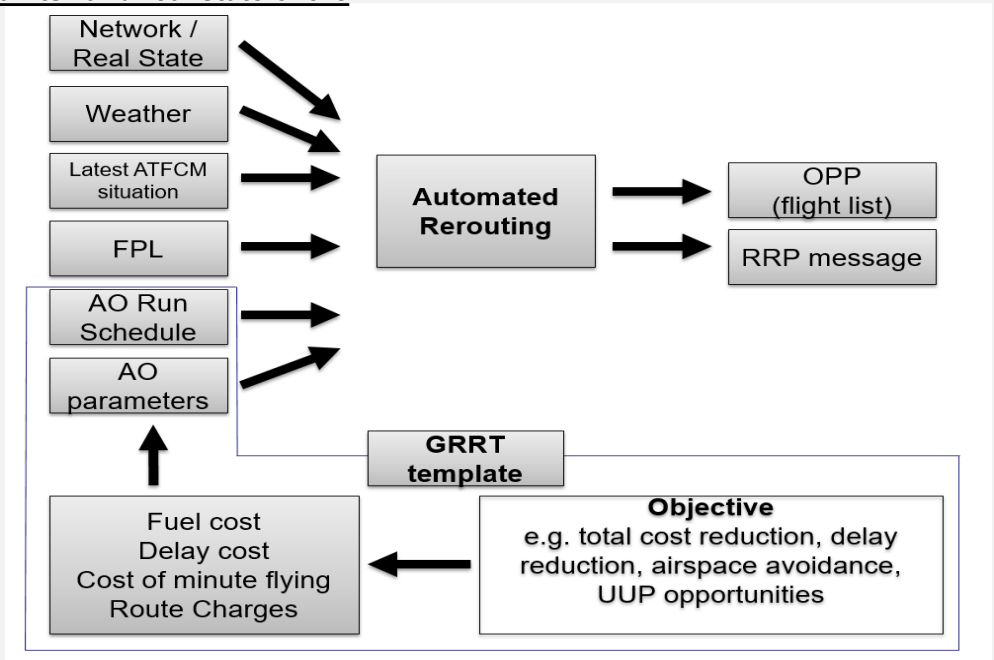
- NM system automated tool used to enhance the visibility for aircraft operators on possible other options in network.

65 GRRT templates

  - Proposals are displayed back on the FPL originator
  - Further analysis is done **considering "users constraints" and real state of the network**

- Last choice of using it remains to the FPL originator.





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OPP – GRRT results in the Flight list

Flight list

Total Cost / *Delay* saved by alternative

OPLOG

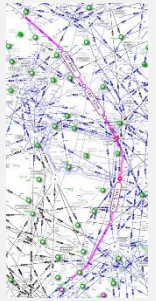
TIME STAMP	OPSLOG TYPE
21-04:14	HI REROUTE
21-04:16	HI REROUTE
21-04:40	IM DPI
21-04:40	HI SID_INFO_CHANGE
21-04:41	HI REROUTE
21-05:00	IM CHG

OPLOG HI REROUTE details

Flight affected by rerouting 21049060, outcome: EHAMLSGG5016 INTERESTING OBT Validity
Period: 2022/04/21 07:40:00..2022/04/21 11:40:00

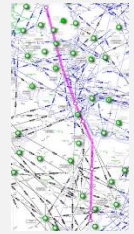
Current route:
Field_15: N0436F350 EDUPO3X EDUPO Z739 MISGO DCT ASBON DCT TUSUK DCT RIDSU L607 ABUKA/N0432F340 DCT KRH DCT NATOR/N0429F330 N869 BENOT BENOT1N
Original Estimates: EET/EDVV0013 EDUU0025 LSAS0053
DEPARTURE_DELAY Not regulated
FLYING_TIME 0080m22s
ROUTE_LENGTH 510
SUSPENSION FALSE
FUEL 3152 kg
ROUTE_CHARGES 649

Filed Route



Route_Id: EHAMLSGG5016
Field_15: N0436F350 ROVEN3X LOPIK N852 DIK DCT SUTAL/N0432F340 UN852 POGOL/N0429F330 UN852 MOROK Z24 AKITO AKITO2N
FLYING_TIME 0069m09s (-0011m13s)
ROUTE_LENGTH 436 (-74)
FUEL 2729 kg (-423 kg)
ROUTE_CHARGES 695 (+46)

Alternative Route



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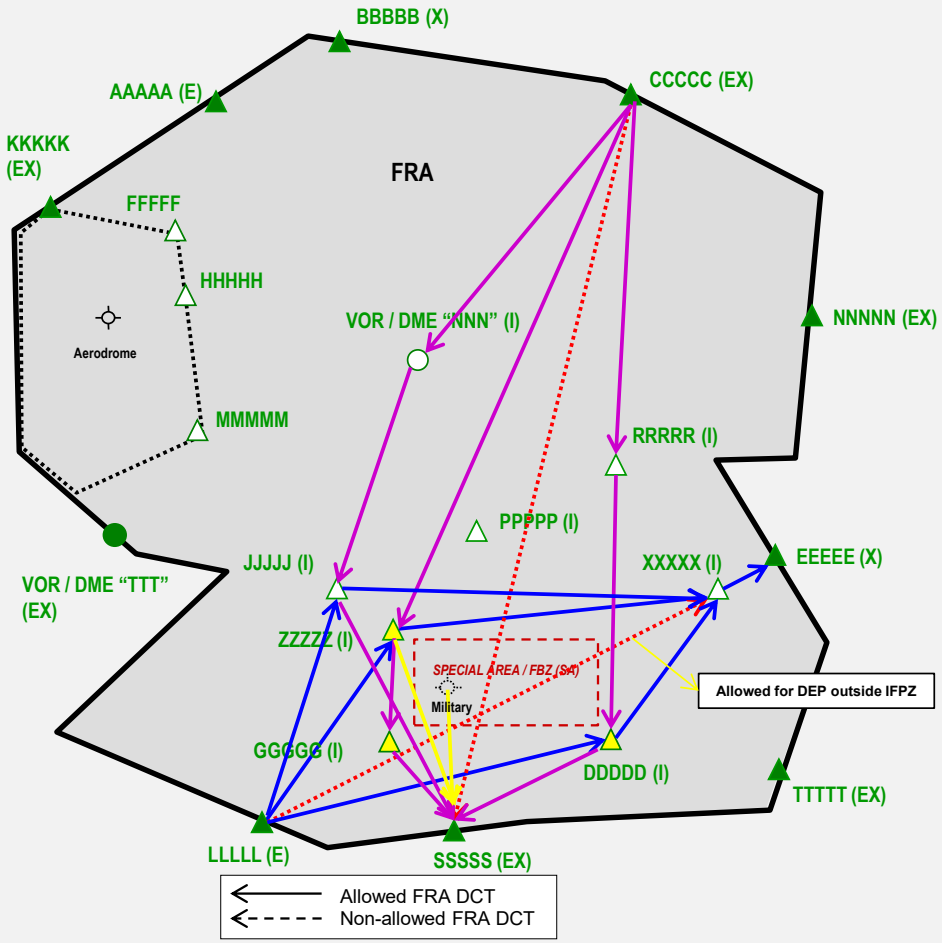
AFUA vs FRA

(1) The ERNIP Part 1 contains the provisions for the FRA implementation.

(2) In FRA, there is no requirement for dedicated procedures for avoidance of special area. In either FRA or ATS route network environment, when a special area is unavailable during the times and within the vertical limits allocated in the EAUP/EUUP, traffic is either not allowed (full avoidance) or allowed with certain exceptions (partial avoidance).

(3) States/FABs/ANSPs may describe specific conditions for the utilisation of FRA significant points. The use of FRA (I) points for avoidance of a relevant special area may be included as information. The usage of such FRA (I) points in the flight plan is not mandatory.



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AFUA in FRA – promoting planning

Managing Volumes!

NO MORE CDRs ONLY AREAS

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ASM in FRA – managing volumes

FUA restrictions Flight Buffer Zones

FUA restrictions – How it works

“FUA” restrictions are Hard Traffic Flow restrictions implemented in CACD (same as RAD restrictions).

FPL’s violating a FUA restriction will become invalid and the IFPO or FPL originator must correct the error.

“FUA” restrictions are only implemented in CACD after a request/ coordination with involved State(s)/ANSP(s).

More FUA restrictions can be defined for each area

Daily Allocation of areas

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Rolling RAD publication

RAD 2502 V1.0 (Rolling RAD Document)

Valid From 20/02/2025

This document represents a consolidated version of all RAD Annexes. As such, all relevant RAD is incorporated as separate Sheets within this document.

Contents

Annex	Description	CHG
Annex 1	Area Definitions	NO
Annex 2A	Flight Level Capping Rules	YES
Annex 2B	Local and Cross-border Capacity and Structural Rules	YES
Annex 2C	FUA Traffic Flow Rules	YES
Annex 3A Conditions	Aerodrome Connectivity Options	NO
Annex 3A ARR	Aerodrome Connectivity Options	YES
Annex 3A DEP	Aerodrome Connectivity Options	YES
Annex 3B DCT	En-route DCT Options	YES
Annex 3B FRA LIM	En-route DCT Options	NO

Special Events

Annex	Description	CHG
Annex 1		NO
Annex 2A		NO
Annex 2B	LFFF_4F_TRANSITION, WEF_DAVOS_2025	YES
Annex 2C	EY_MIL_BLOCK	NO
Annex 3A Conditions		NO
Annex 3A ARR		NO
Annex 3A DEP		NO
Annex 3B DCT		NO
Annex 3B FRA LIM		NO

Useful links

- ERNIP Part 4 RAD User Manual
- ERNIP Part 1
- RAD Application
- RAD Home Page
- NM Flight Planning
- RMG Sharepoint

Change Record Indication	
RED BOLD	Presents changed data before the RAD publication date versus the previous RAD baseline version.
BLACK BOLD ON GREY BACKGROUND	Presents changed data in between two consecutive AIRACs. Users that are following the Daily Rolling RAD publications may disregard these changes.

Reference to changes

Flight Buffer Zone (FBZ)

Provide a transparent process for FPL and acceptance by IFPS;

Fix and Free route environment;

Based on NM system FPL validation rules

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IFPS Validation Process

- Nominal track;
- Great circle shortest distance;
- Boundaries of areas limit for non-acceptance of FPL;

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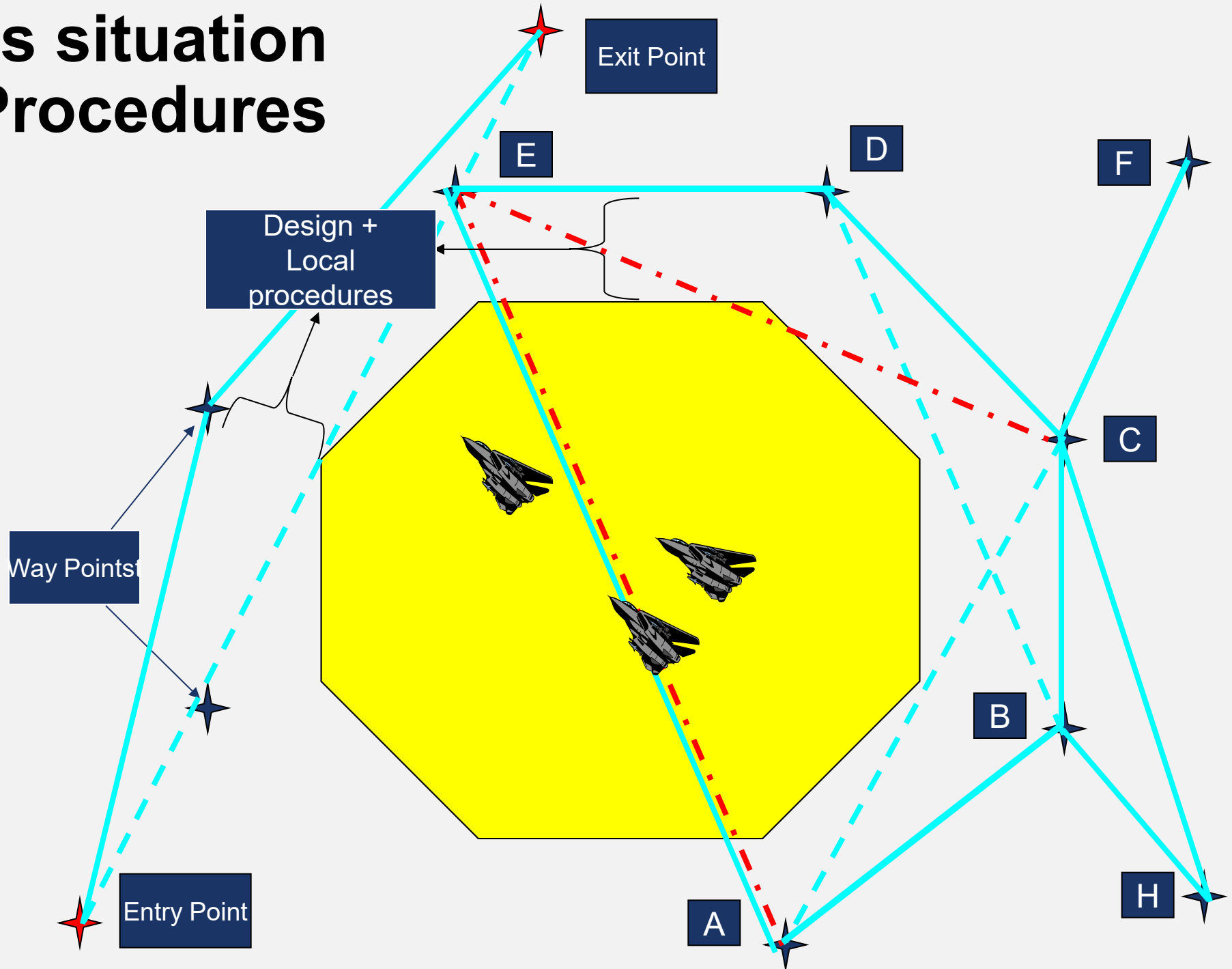
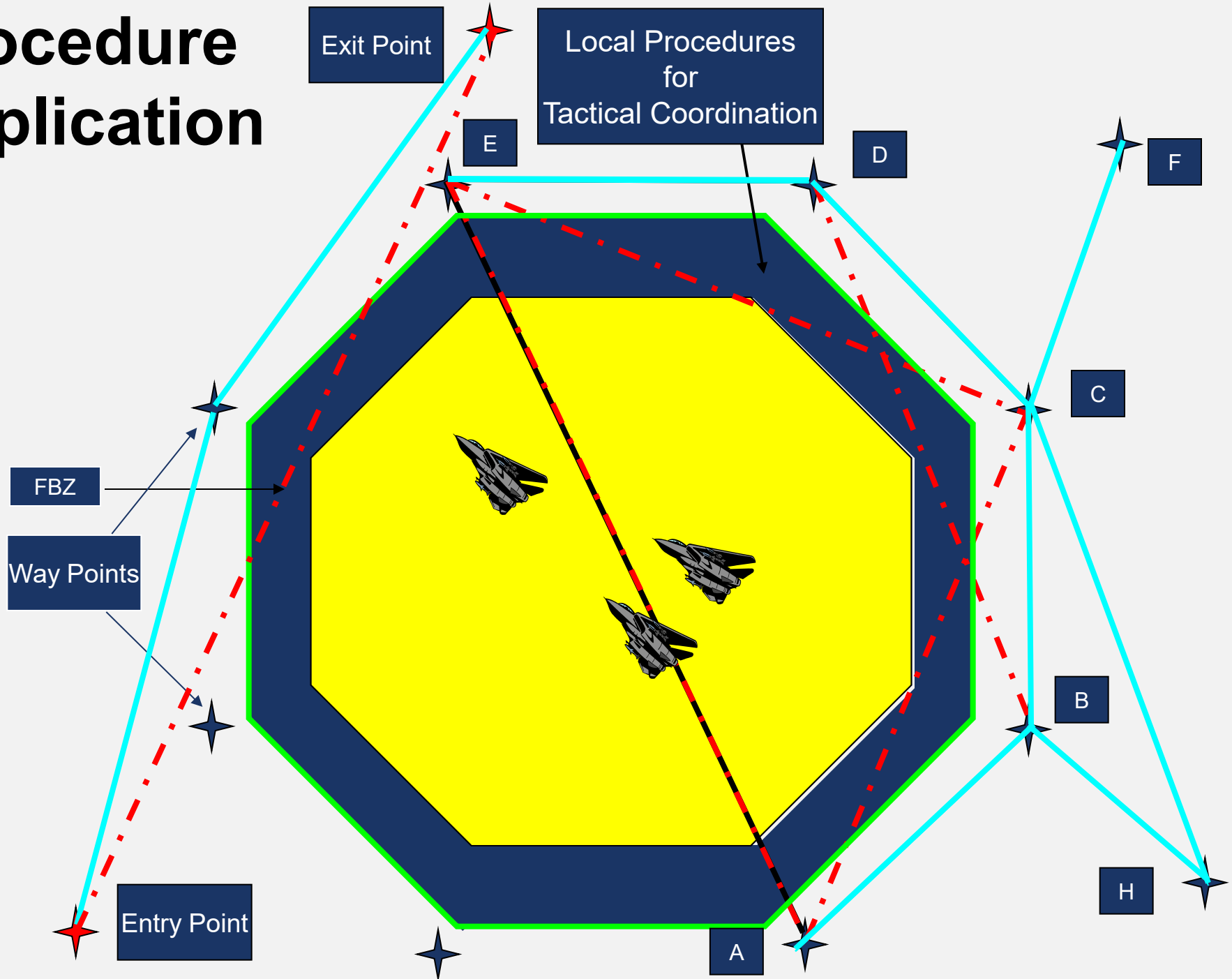
Today's situation
IFPS Procedures



New procedure
FBZ Application



FBZ Definition and Usage

- **FPL Buffer Zone (FBZ) is a volume of defined dimensions for capture and validation of IFR flight plans, based on the status of an associated airspace reservation or airspace structure published in EAUP/EUUP.**
- **State Decision**
- **Published in AIP**
- **Daily Notification via EAUP/EUUP**

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05

AFUA evolution

ASM/ATFCM integration

ASM/ATFCM Integration

Concept of Operations

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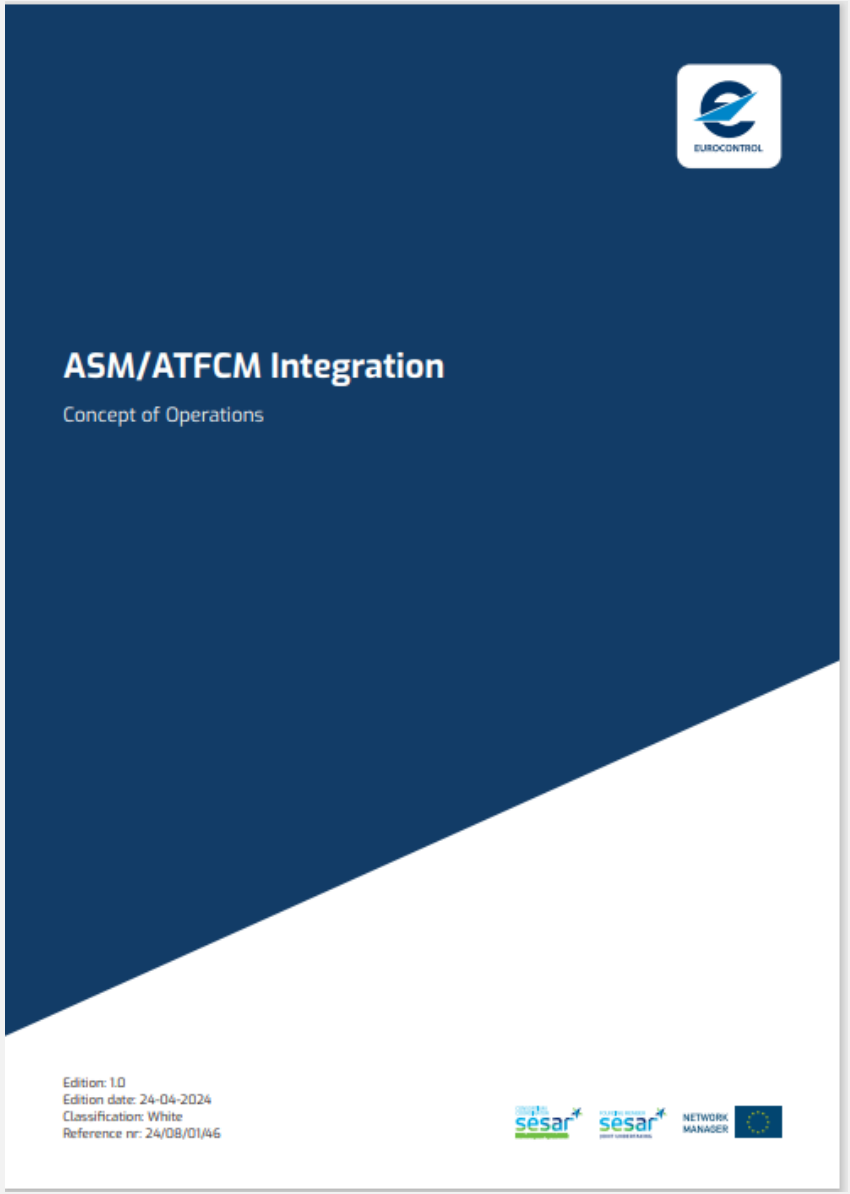
ASM/ATFCM Integration CONOPS



- INTRODUCTION
- AS IS
- MAIN DRIVERS OF CHANGE
- TO BE 2025
- TO BE 2029
- ROLES & RESPONSIBILITIES
- SYSTEM CHANGES
- CONTINGENCY
- ROADMAP
- REFERENCES, ACRONYMS, DEFINITIONS
- ANNEXES

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ASM/ATFCM CONOPS - Objectives

- Satisfy military requirements
- Contribute to improve and/or exploit ATM capacity to accommodate civil traffic demand/requests
- Contribute to improve environmental ATM footprint

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ASM/ATFCM CONOPS – Scope

- Cooperation for large-scale events and more extensive airspace reservations.
- Short term requests for airspace utilisation.
- Definition and management of ASM/ATFCM scenarios where applicable.
- Daily coordination of ASM/ATFCM solutions satisfying airspace reservation requests and minimising impact on traffic flows in terms of:
    - Optimised allocation and flexible usage of airspace reservations.
    - Optimised organisation of ATC sectors' configurations.
    - Optimised ATFM measures (in broad terms) to apply to balance excessive traffic demand.

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ASM/ATFCM CONOPS - Enablers

- Enablers applicable across all operational phases:
  - Enhanced NIA and simulation capabilities (including “what-if” and/or “what-else” solutions) at local and European level.
  - More efficient load and capacity monitoring, including complexity measurement capabilities.
  - Enhanced notification to Airspace Users.
  - Enhanced capabilities of flight planning systems to automatically re-assess filed flight plans and update them whenever required or beneficial.

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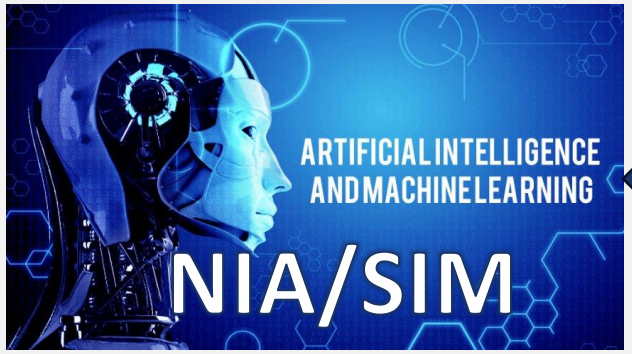
ASM/ATFCM CONOPS – NIA/SIM for 2029 – Initial Considerations

Dynamic
Sector configurations
Scenarios
Modularity & DMA



ATFM scenarios
Multi constraints
Target CASA

DAC

DCB

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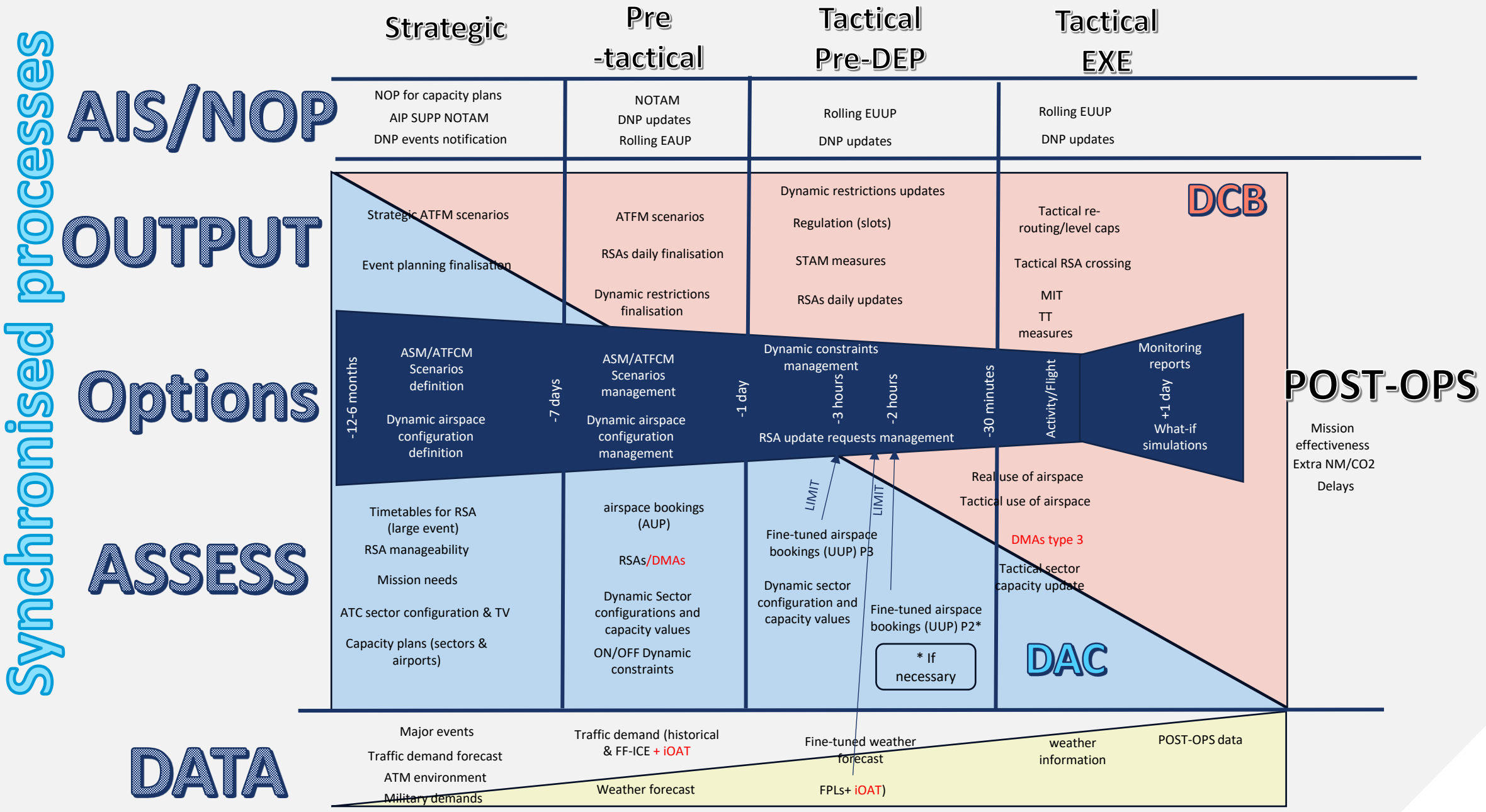
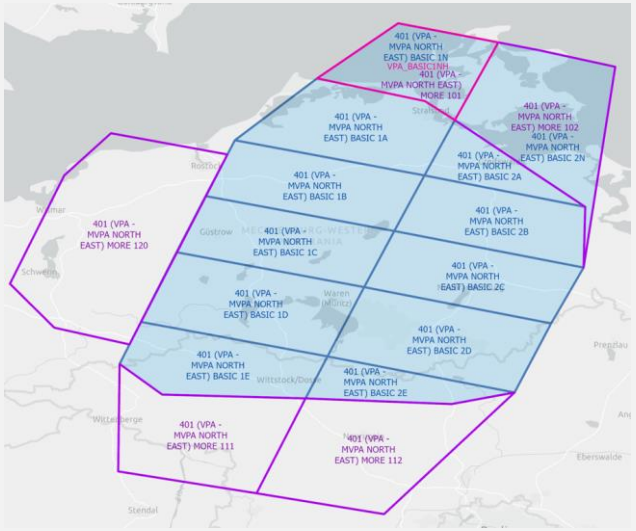
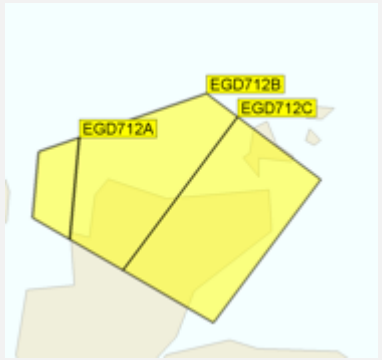
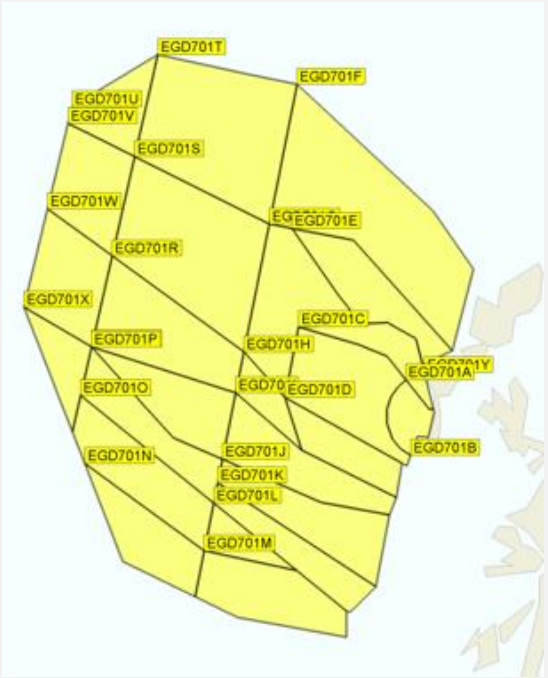
NIA/SIM vs DAC/DCB process

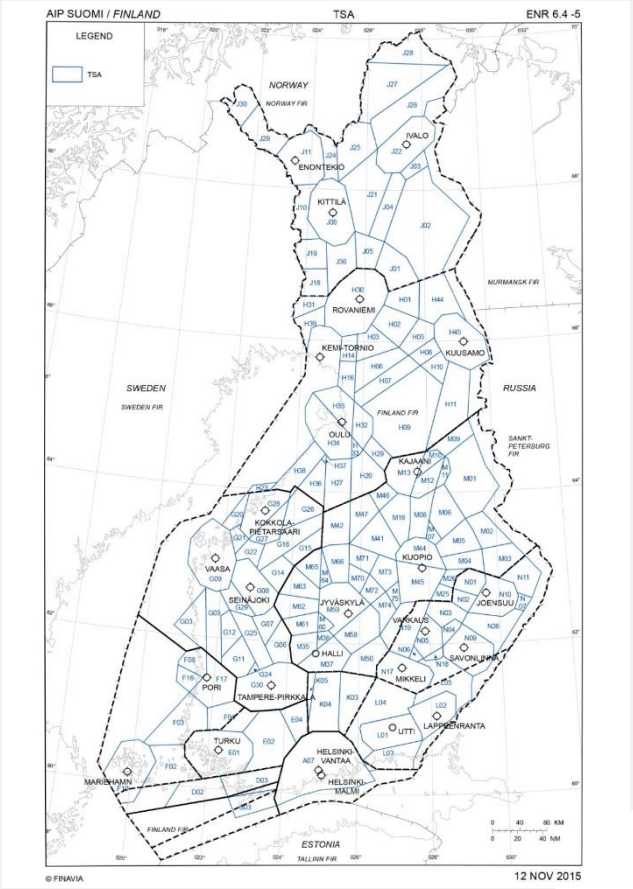


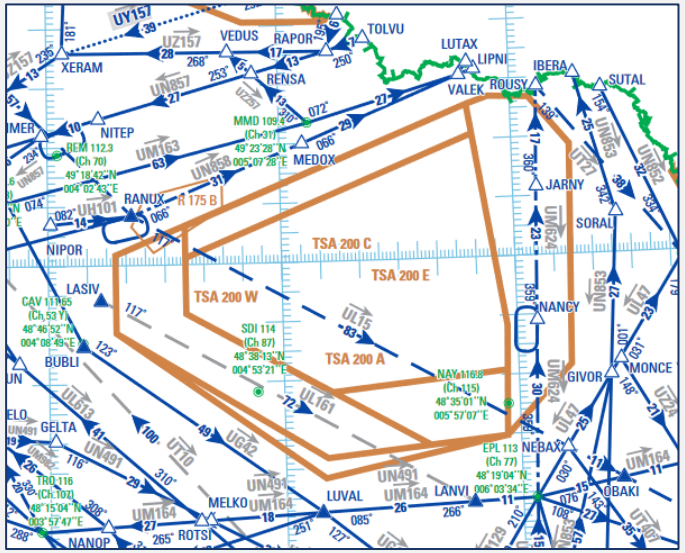
Modularity examples

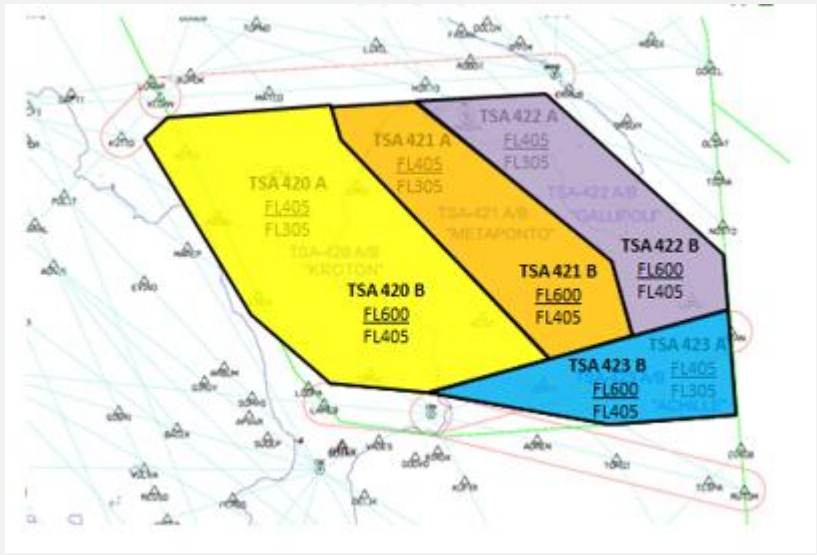




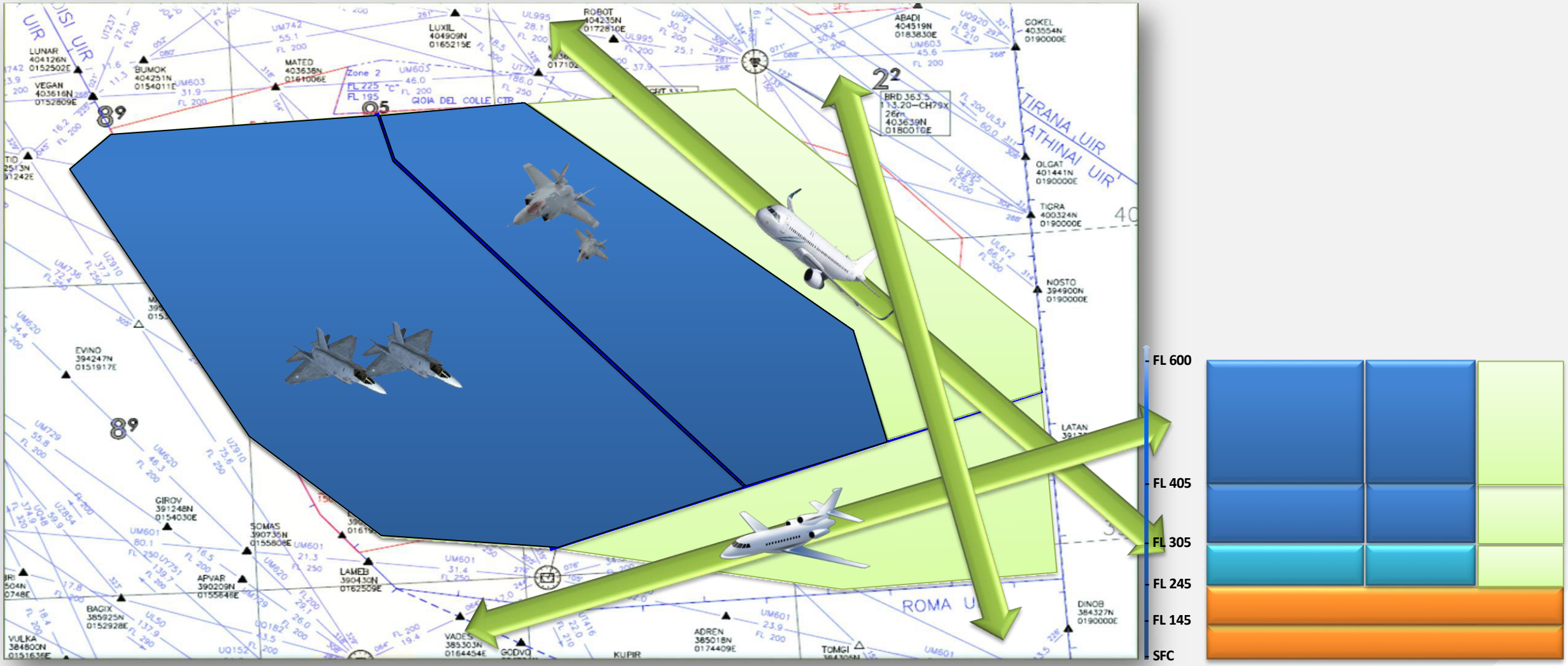








IONIO – Scenario 1



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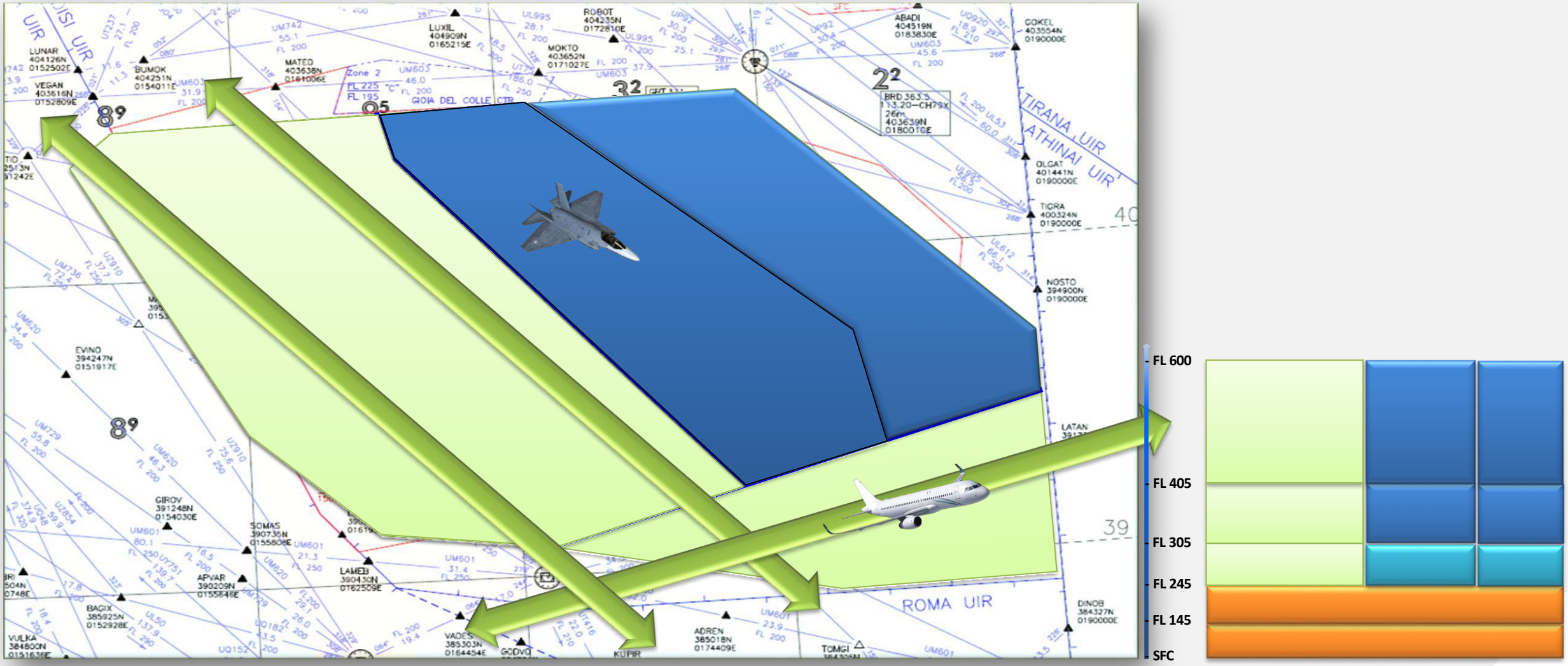
IONIO – Scenario 2



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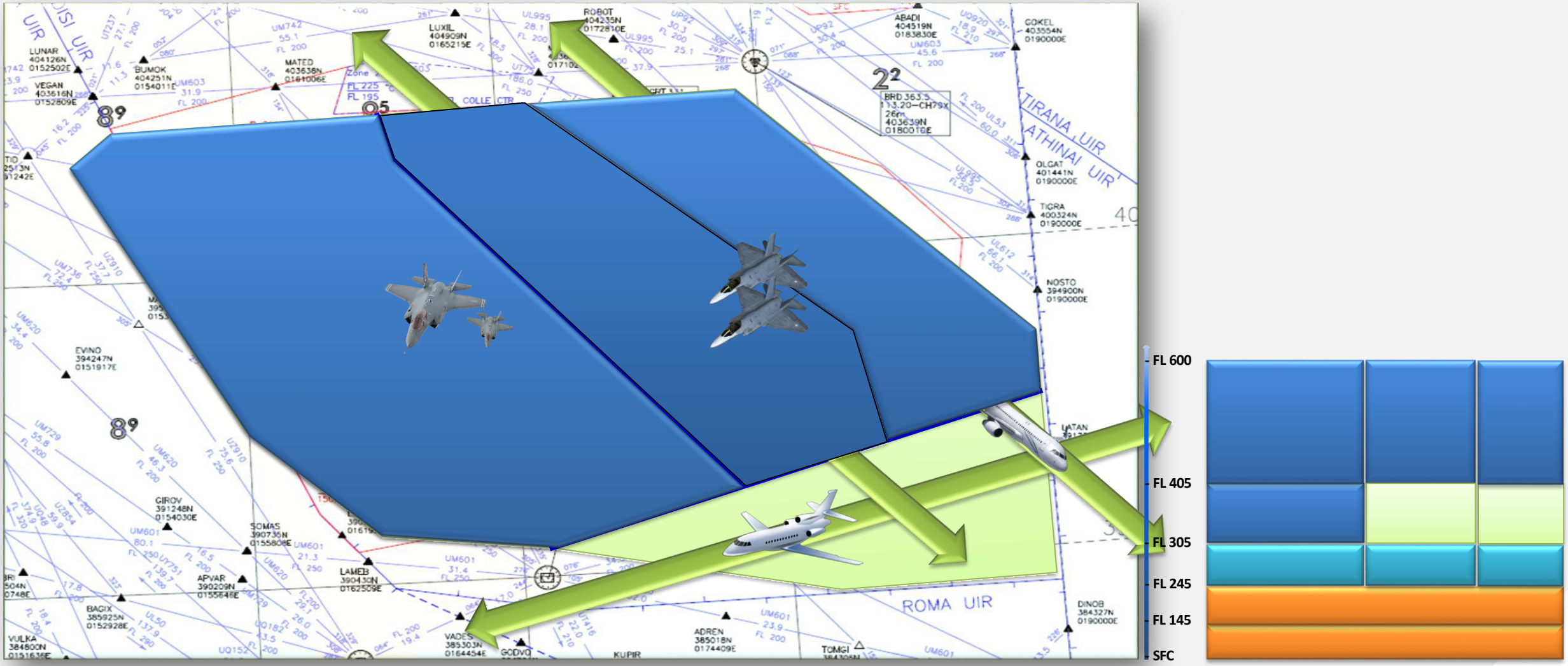
IONIO – Scenario 3



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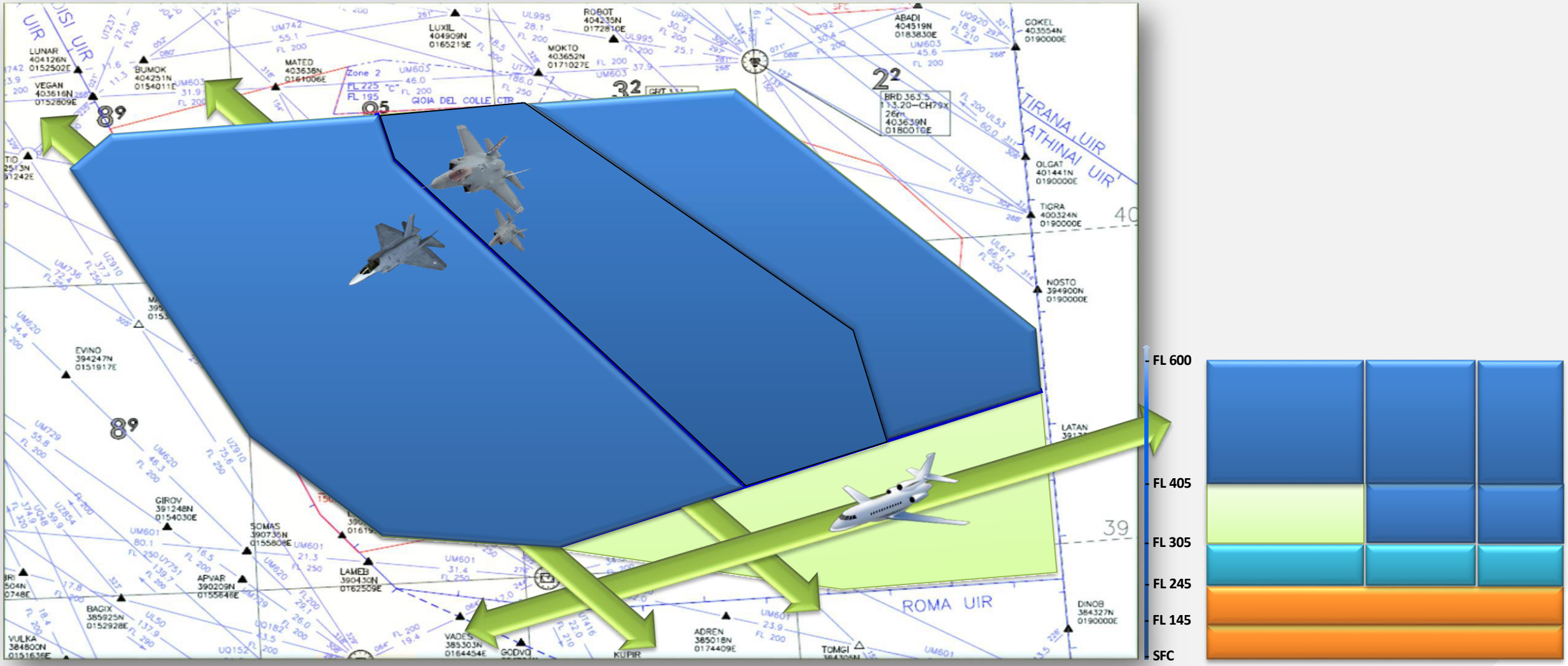
IONIO – Scenario 4



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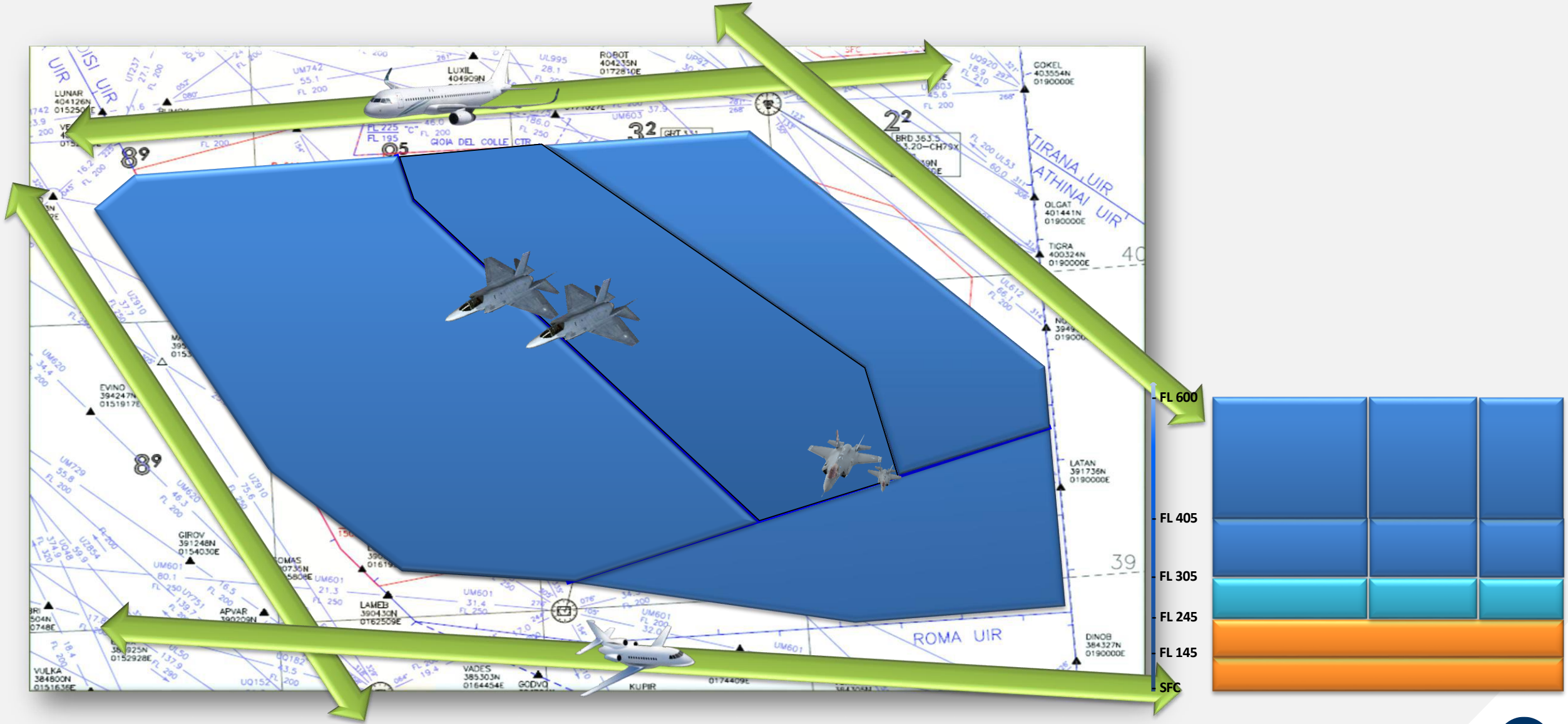
IONIO – Scenario 5



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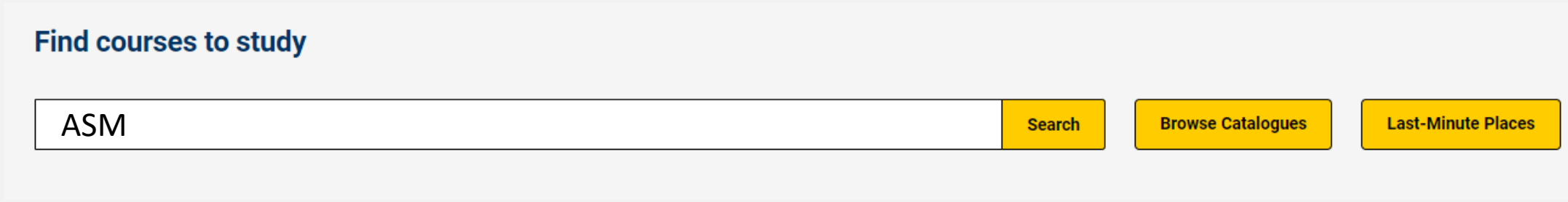
Eurocontrol Aviation Learning Centre (EALC) – ASM Course

The European Airspace Strategy

LZ - My Home (eurocontrol.int)



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Thank You

ICAO