Civil/Military ATM Cooperation and Flexible Use of Airspace Webinar

Online

20th-21st Nov 2024

This event is jointly organised with

EU-CHINA APP · EU-ROK APP · APP EU-Japan · EU-SOUTH ASIA APP · EU-ASEAN SCOPE APP · Funded by the European Union · EASA European Union Aviation Safety Agency · EUROCONTROL · PANSA

EU - Asia Aviation Partnership Projects (APP)

Advanced FUA at European Level

- EUROCONTROL
  - Network Manager – Airspace & Capacity Division

Overview

About EUROCONTROL

European needs for FUA

Status of Implementation

Main features and procedures

Further evolution

ICAO

ABOUT EUROCONTROL

EUROCONTROL in numbers

41

European Member States

2

Comprehensive agreement States outside Europe

4

Sites spread over Belgium, France, Luxembourg and the Netherlands

1,800 +

Officials

1963

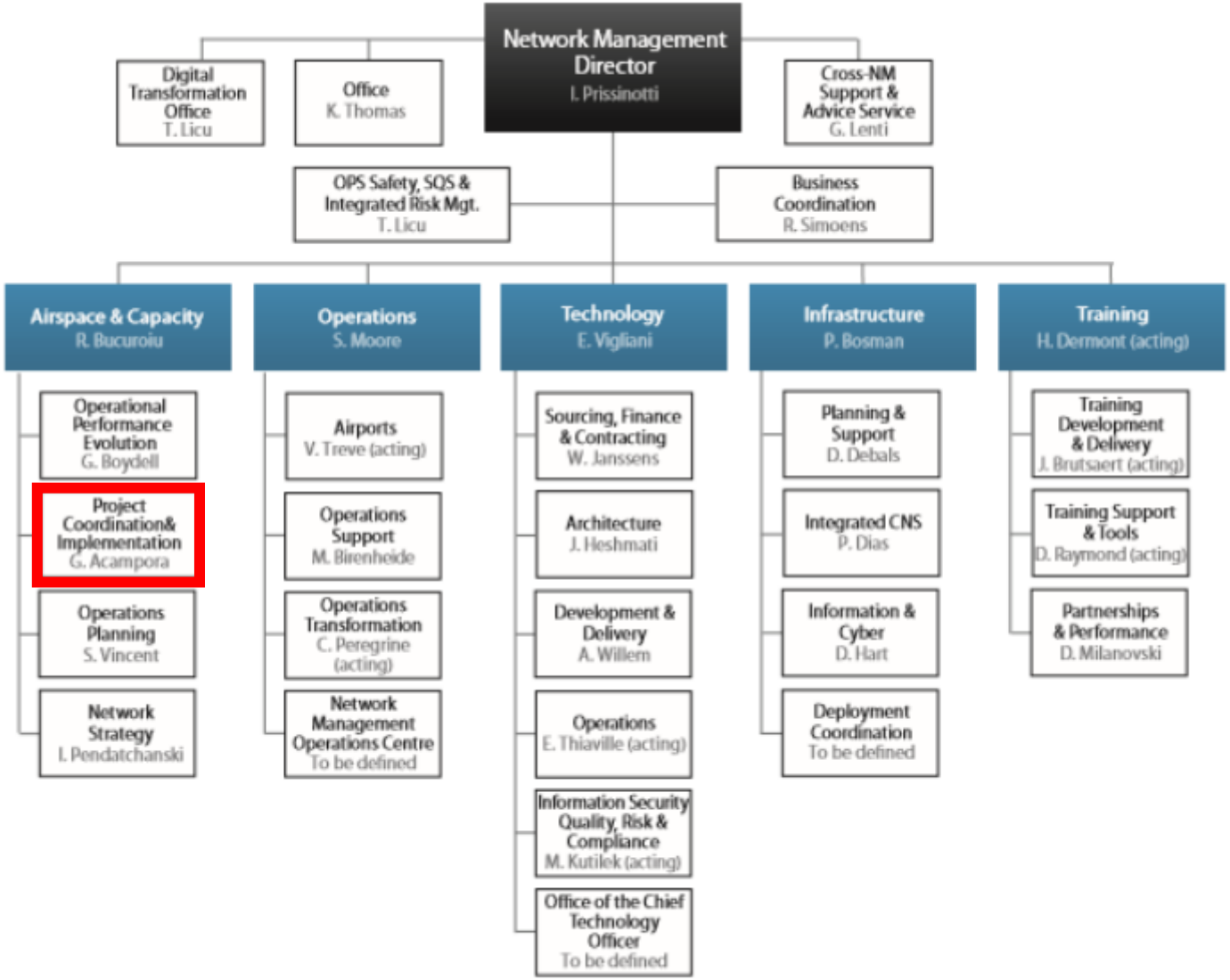
Founded

€ 865 million

Budget

EUROCONTROL Agency organisation

NMD Organisation



EUROCONTROL

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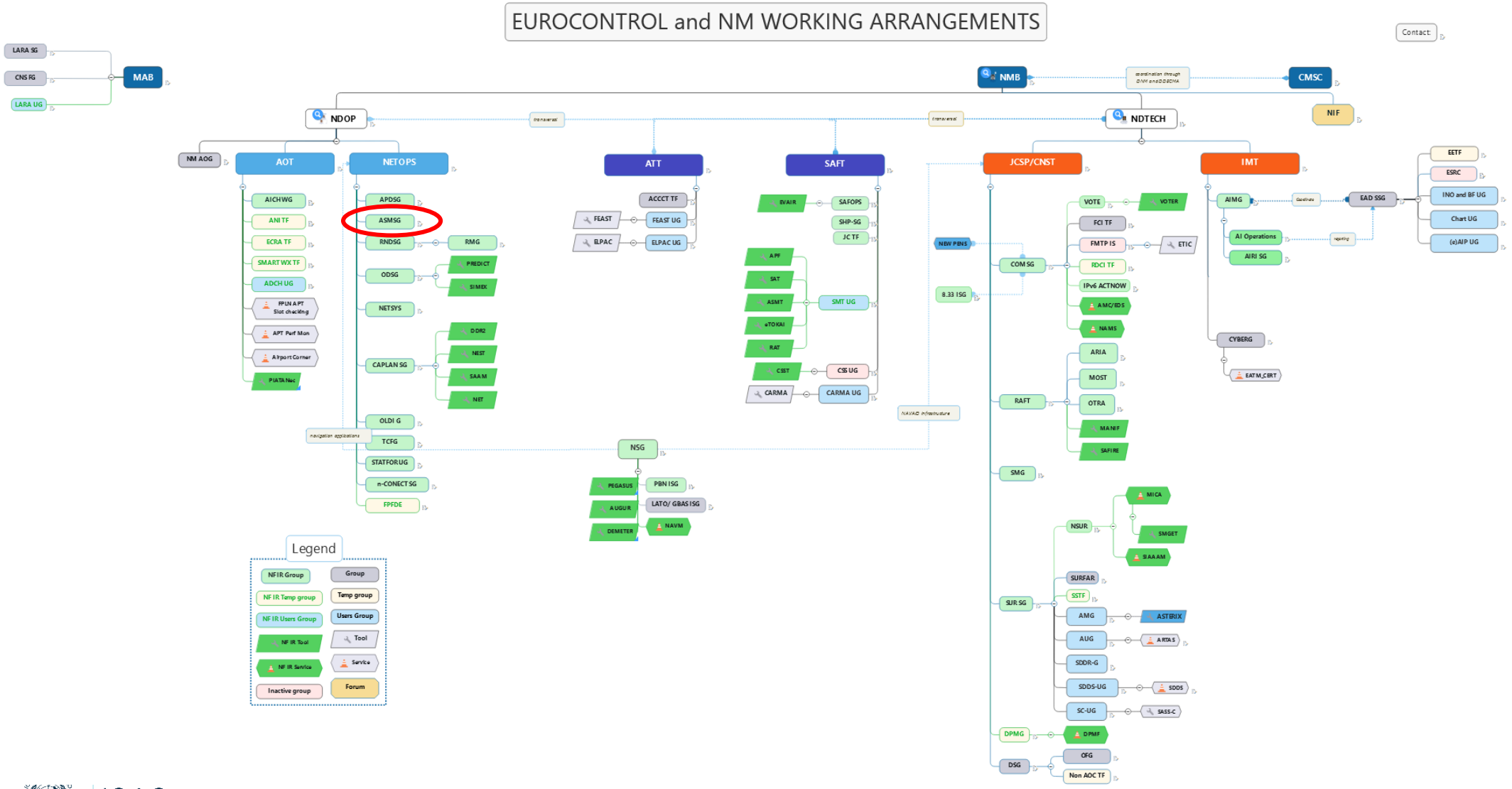
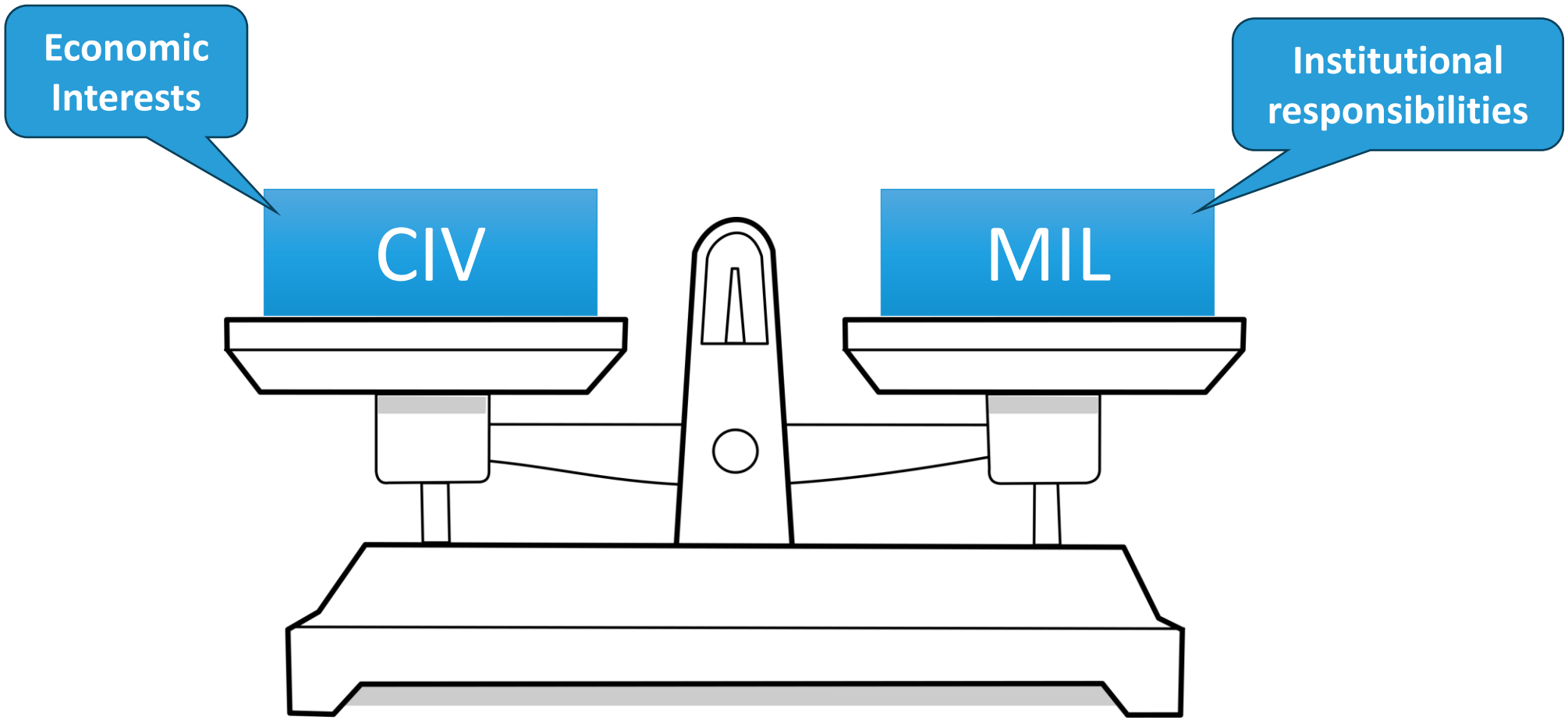
NM Working Arrangements



European Needs for FUA

Balance civil & military needs



Balance civil & military needs - Solution

EUROCONTROL

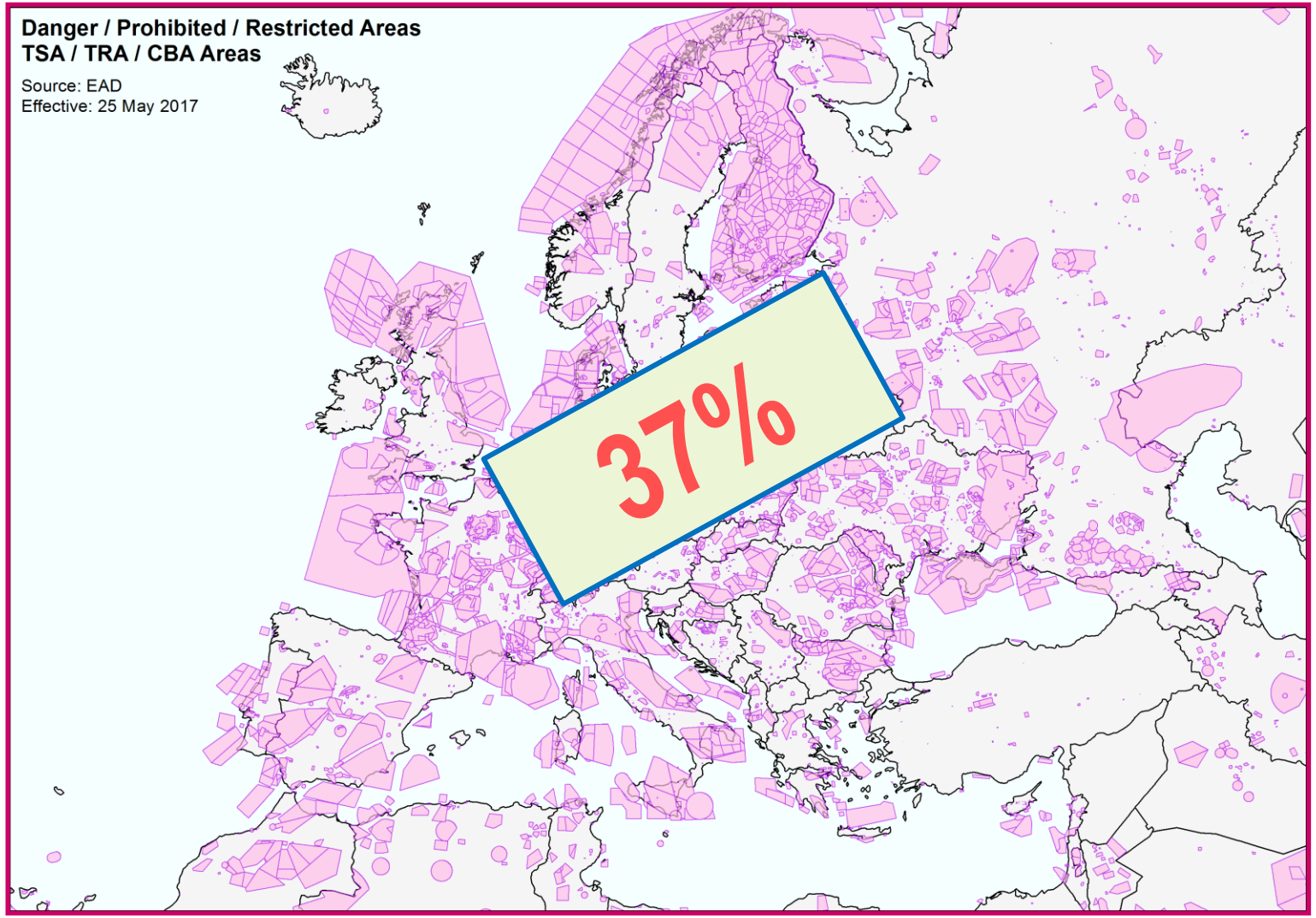
Since 1996 through …

FLEXIBLE USE OF AIRSPACE

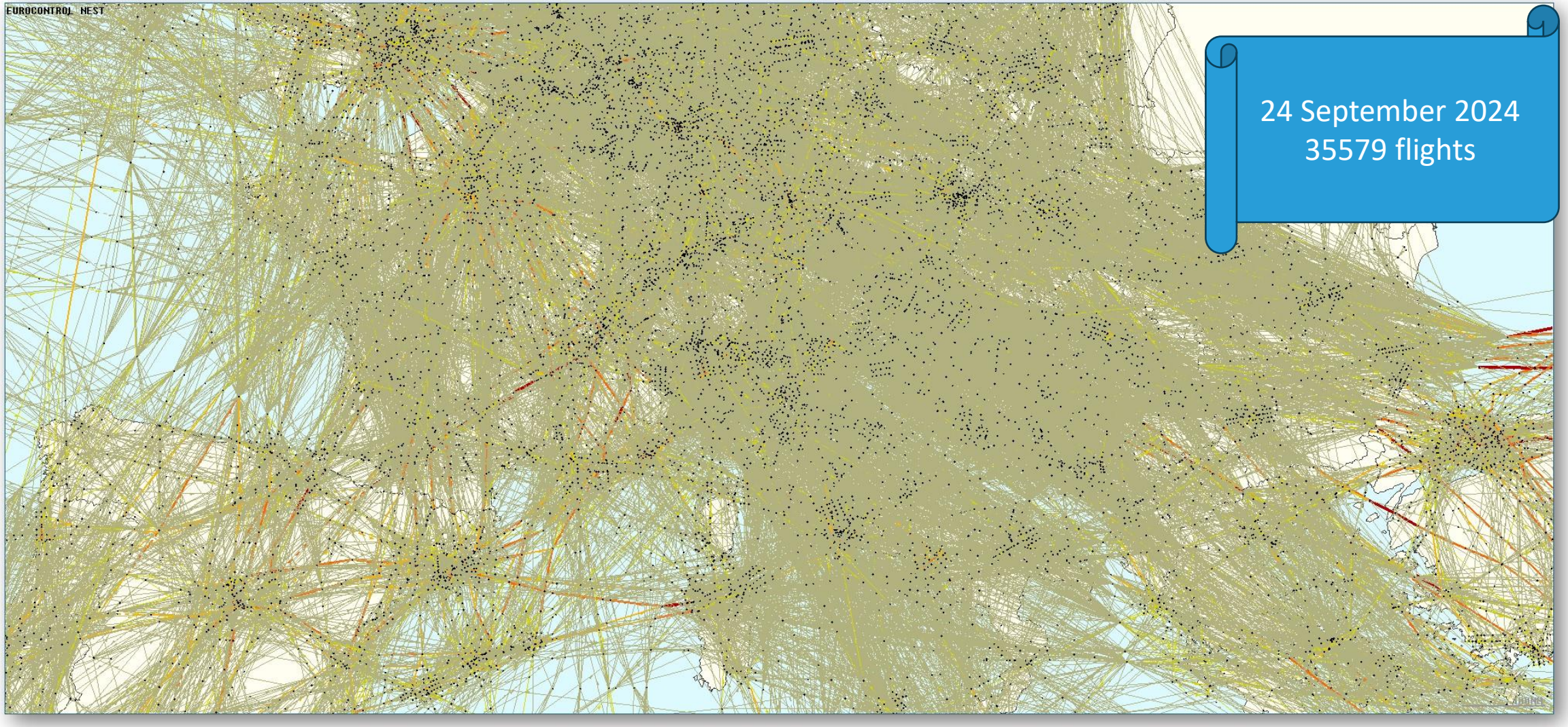
…and since 2005 backed up legally by EC

WHY Advance FUA

Around 4000 areas
Average of 1500 daily allocation of areas

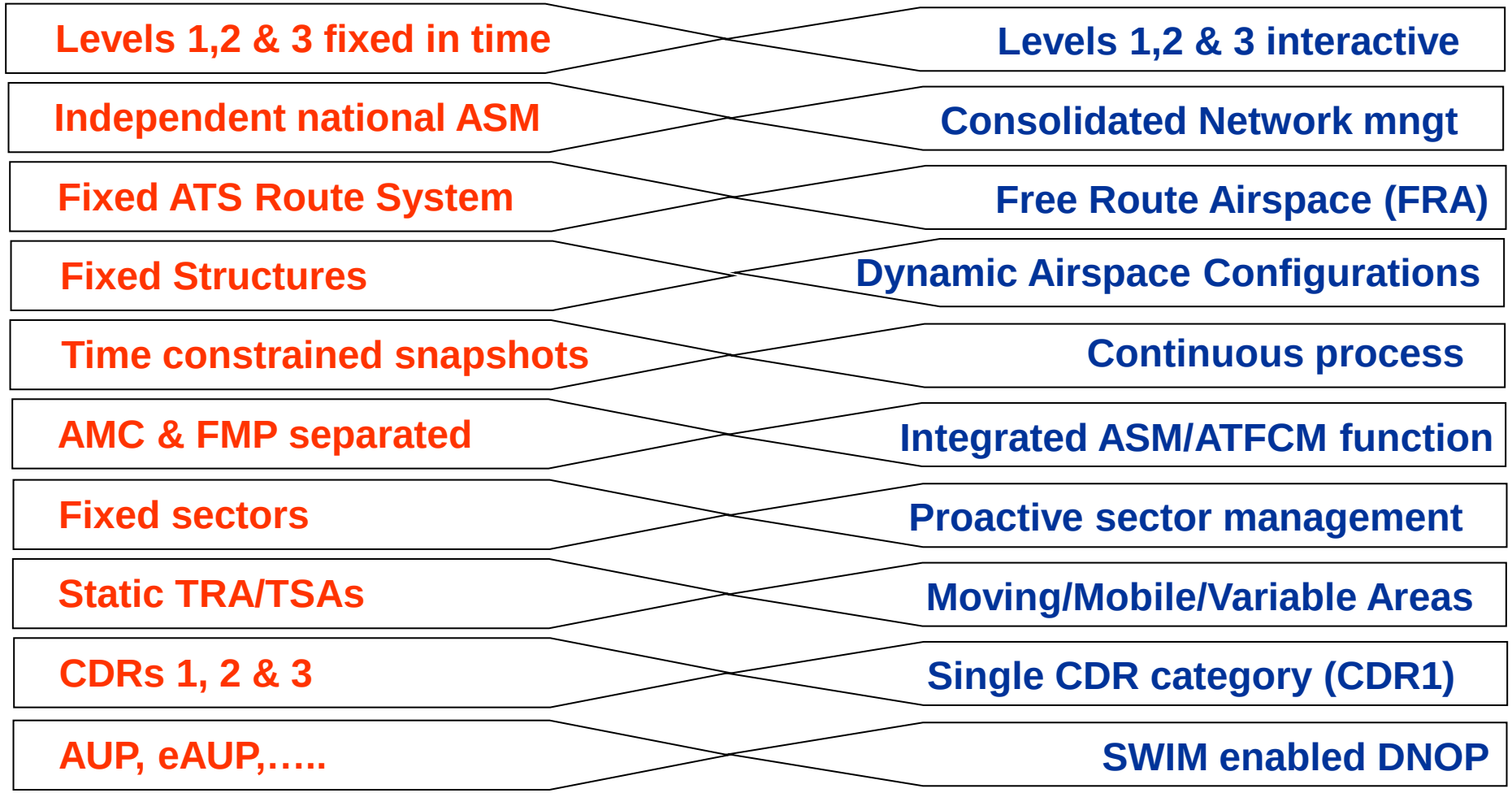


WHY Advance FUA



AFUA - Differences

EUROCONTROL



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From Strategy to implementation

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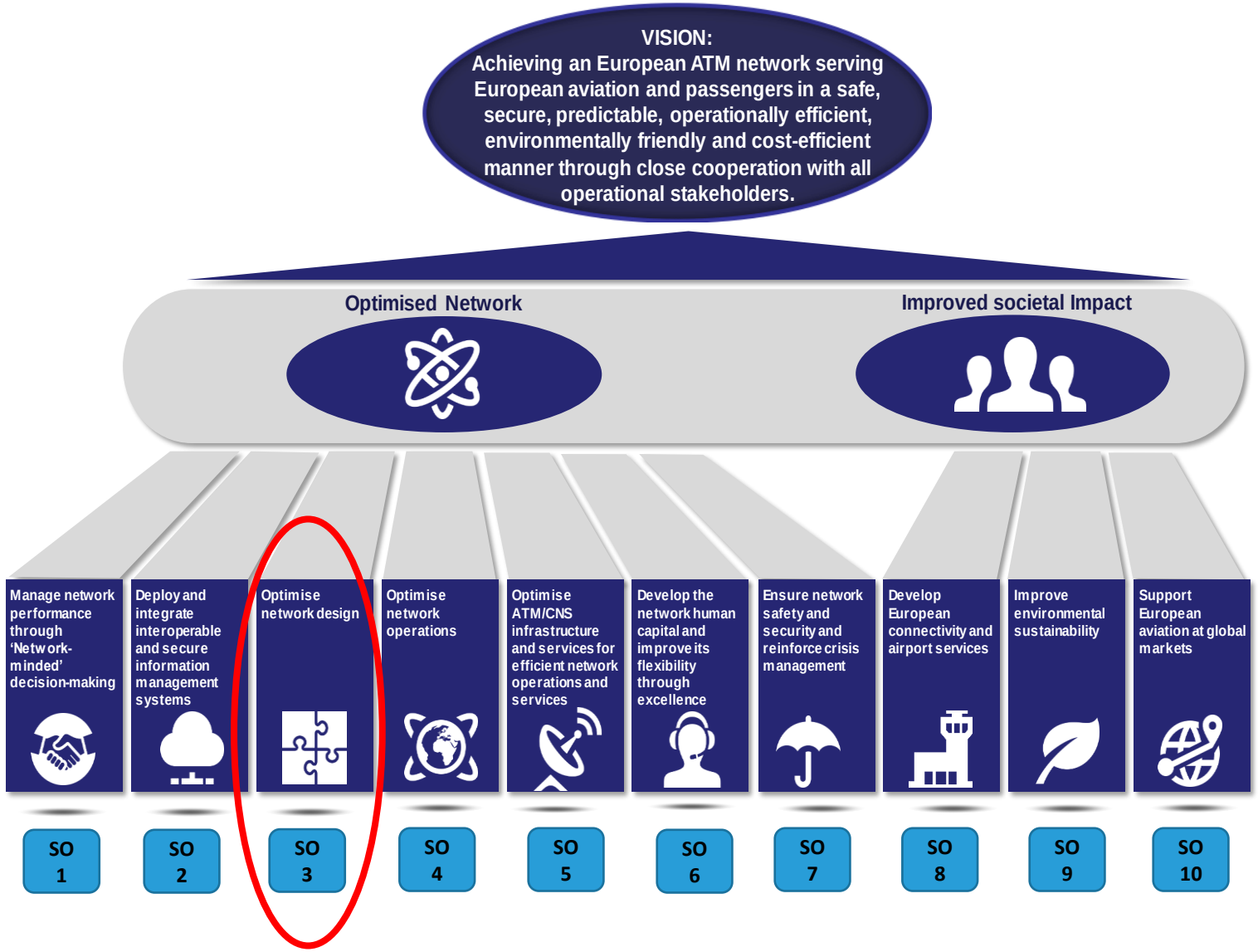
Network Strategic Plan

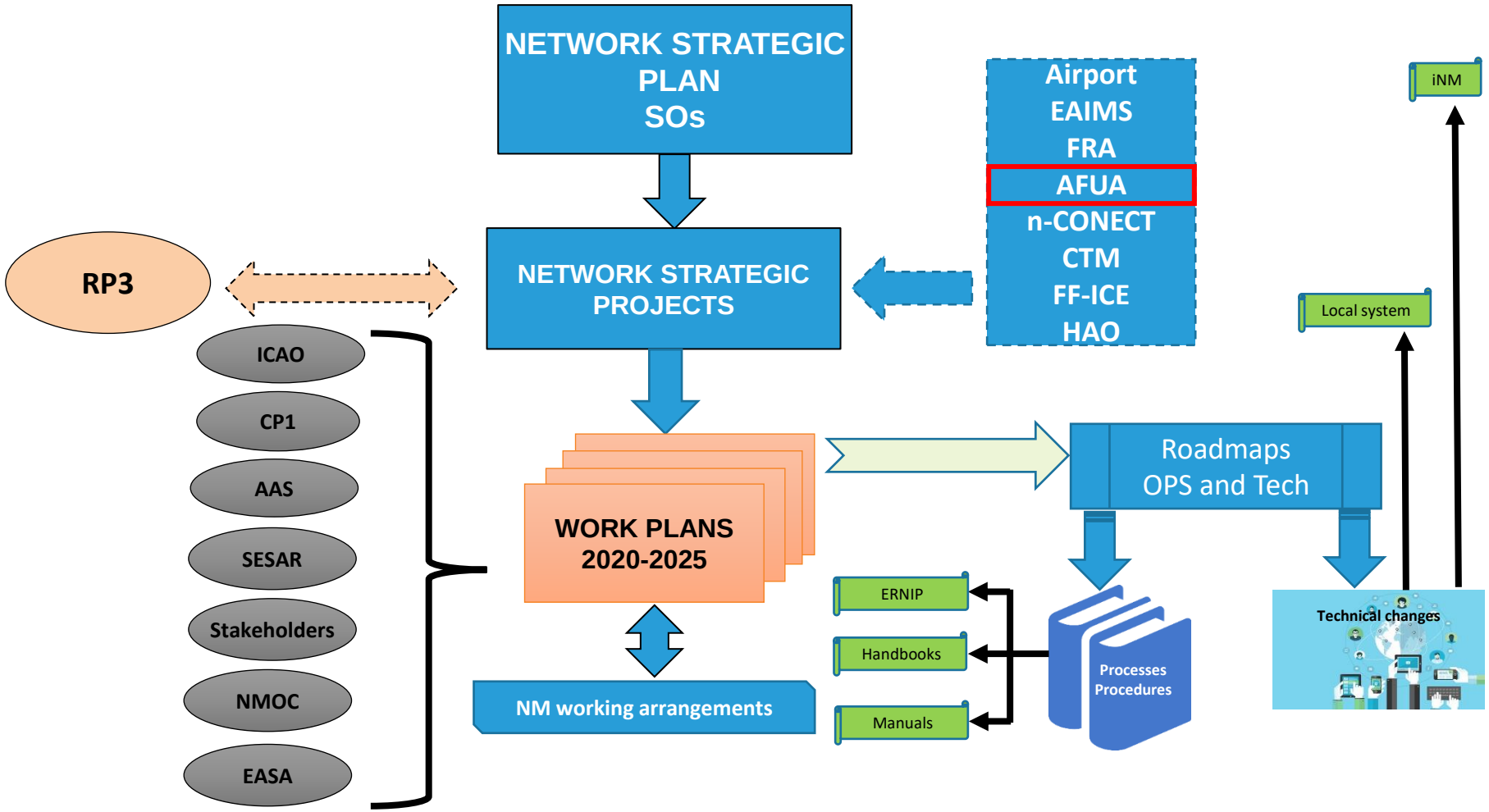


AFUA Strategic Objective

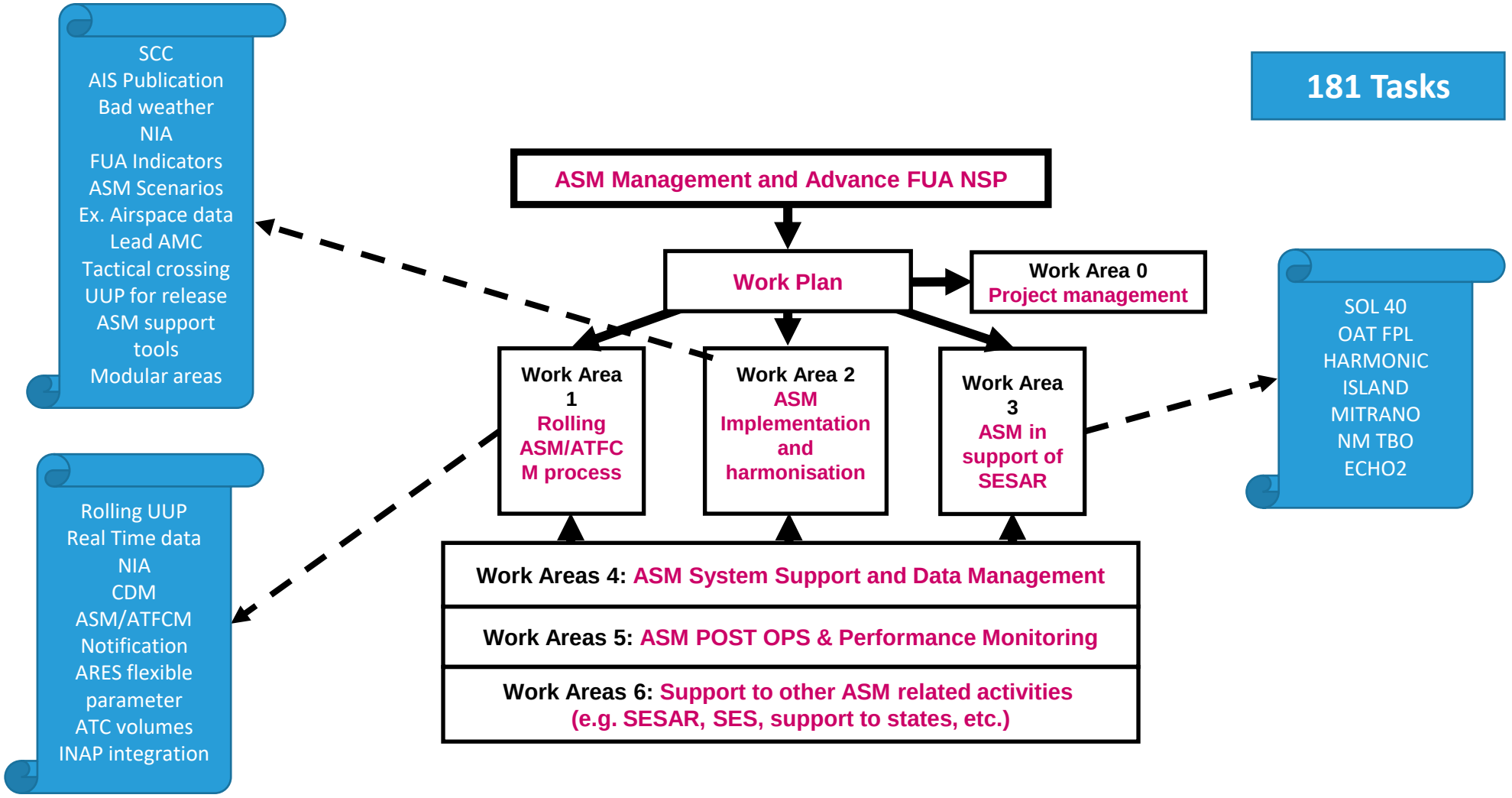
High Priority 	**Further Advanced FUA implementation (with implementation of rolling AUP/UUP, dynamic airspace configuration, real-time ASM data exchanges, enhanced Network impact assessment & ASM performance reporting to facilitate efficient and harmonised FUA coordination between all ATM actors (local / 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**

AFUA Strategic Project



AFUA Work Plan



Status of FUA implementation

AFUA implementation - Where we are today?

EUROCONTROL

HOW?

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FUA Organisation

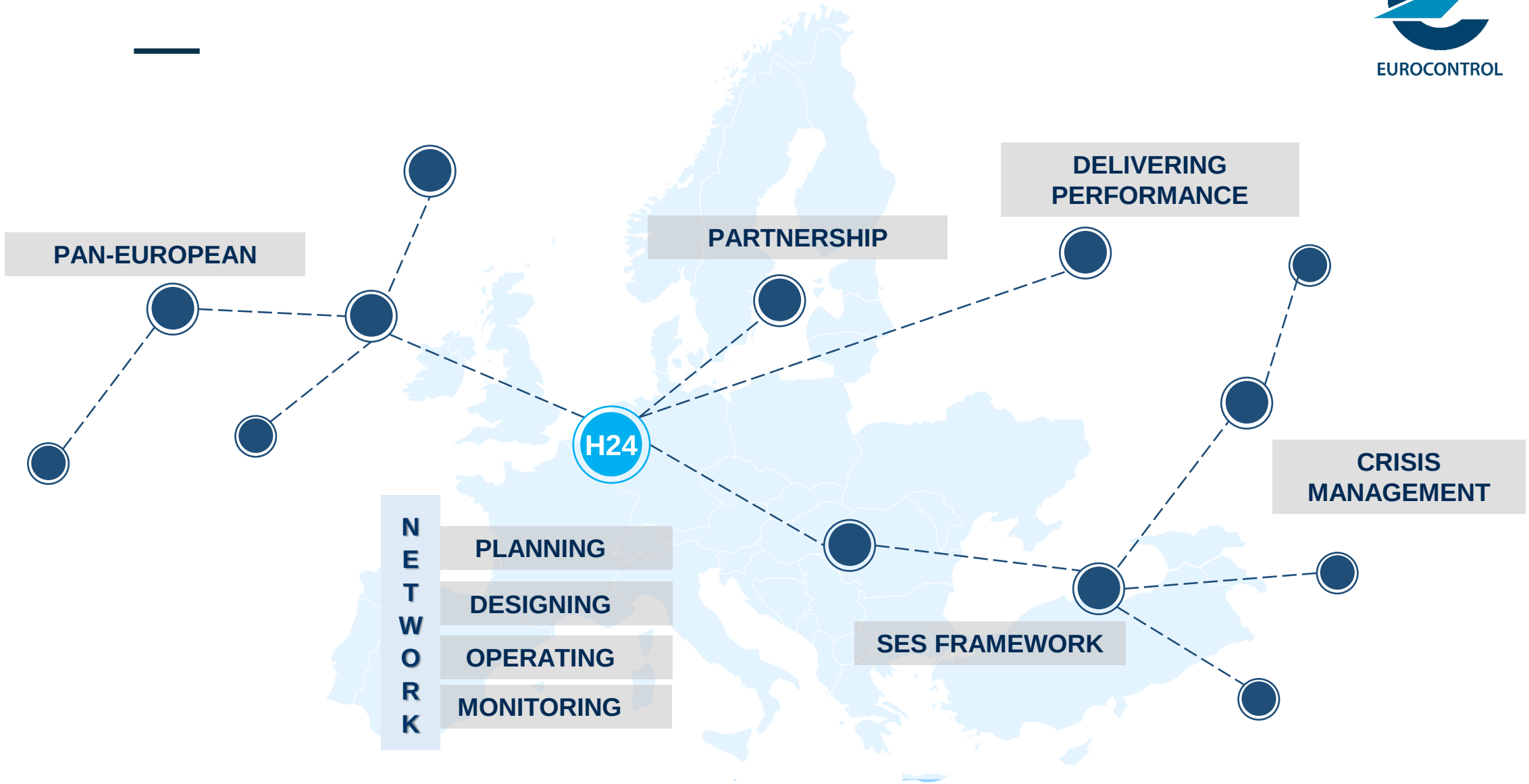
Level 1
MOT
MOD
Others…..

Committee
ANSP
AIR FORCE
Others…

Level 2
Civil military
Co-located
Separated

Level 3
Civil military ATM
Integrated (Civil)
Colocated
Separated

Network Manager role



Key Actor at European level – Network Manager services

- Airspace Management (ASM)
- Airspace Pre-validation
- Airspace Data Management (ADM)
- Flight Plan Filing and Management
- Call Sign Similarity (CSS) Service
- Safety and security alert service
- Network Manager Business-to-Business (B2B) Web

The airspace management service applies and enhances the Flexible Use of Airspace (FUA) concept by developing the European airspace into one continuum that is flexible and reactive to changes in airspace users' needs, with the ultimate objective of optimising the European Network capacity and performance. The service is based on a seamless and collaborative management of airspace configurations and a continuous sharing of information among all operational stakeholders.

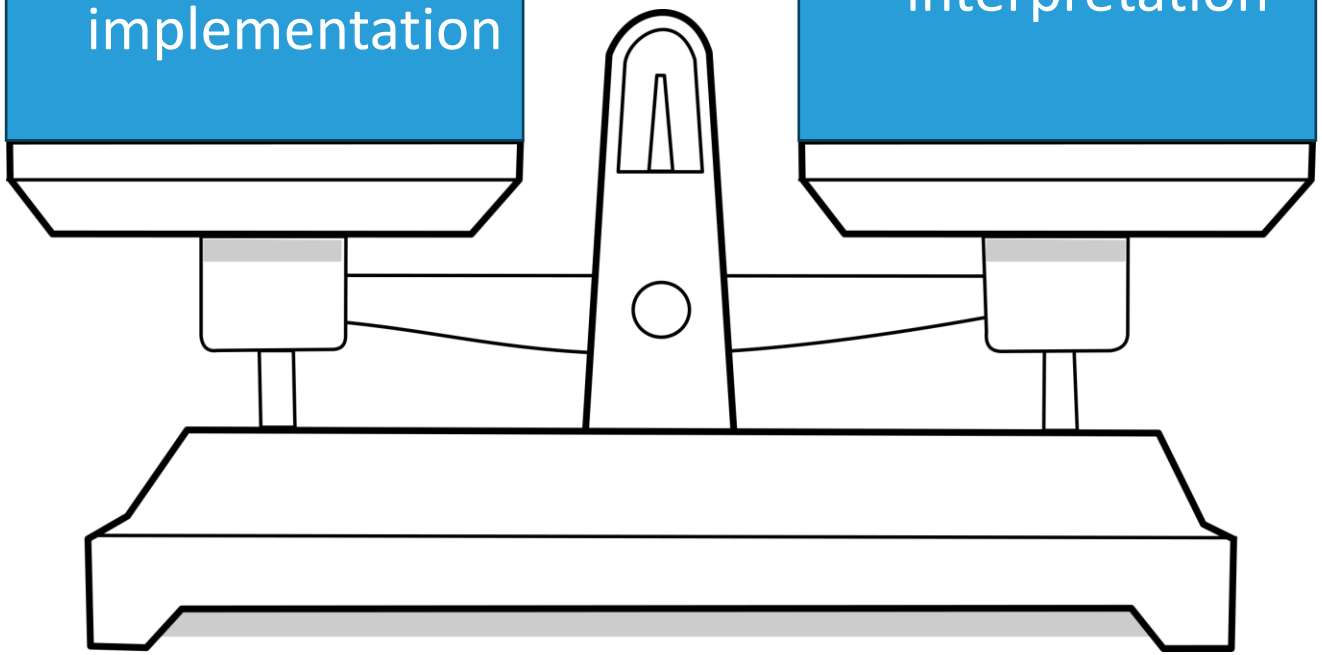
National implementation - AFUA Tool Box

- Agreed Improvements result of CDM process through NM working Arrangement
- Defined procedures in ERNIP Part 3
- Technical Implementation driven by NM system evolution
- Automatic Interoperability via B2B services
- Utilisation of features according to local need
  - Compatible with the overall process

AFUA Tool Box – PRO and CONS

- Flexibility
- Fine-tuned to local needs
- Facilitating implementation

- Lack of harmonisation
- Different interpretation



Mitigations

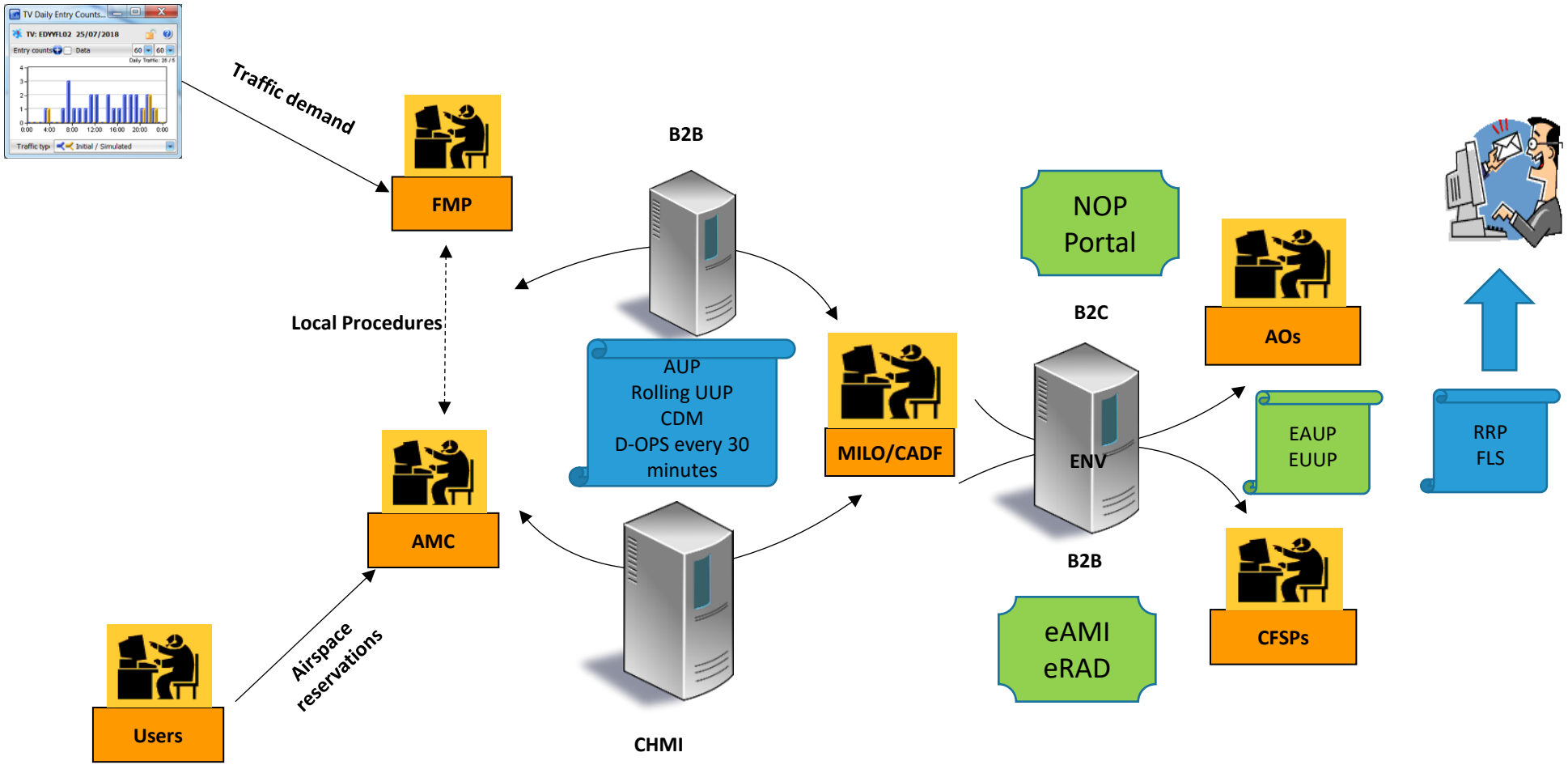
- Promoting Best practices
- Define minimum set of “mandatory” procedures to ensure consistency

Main Features and procedures

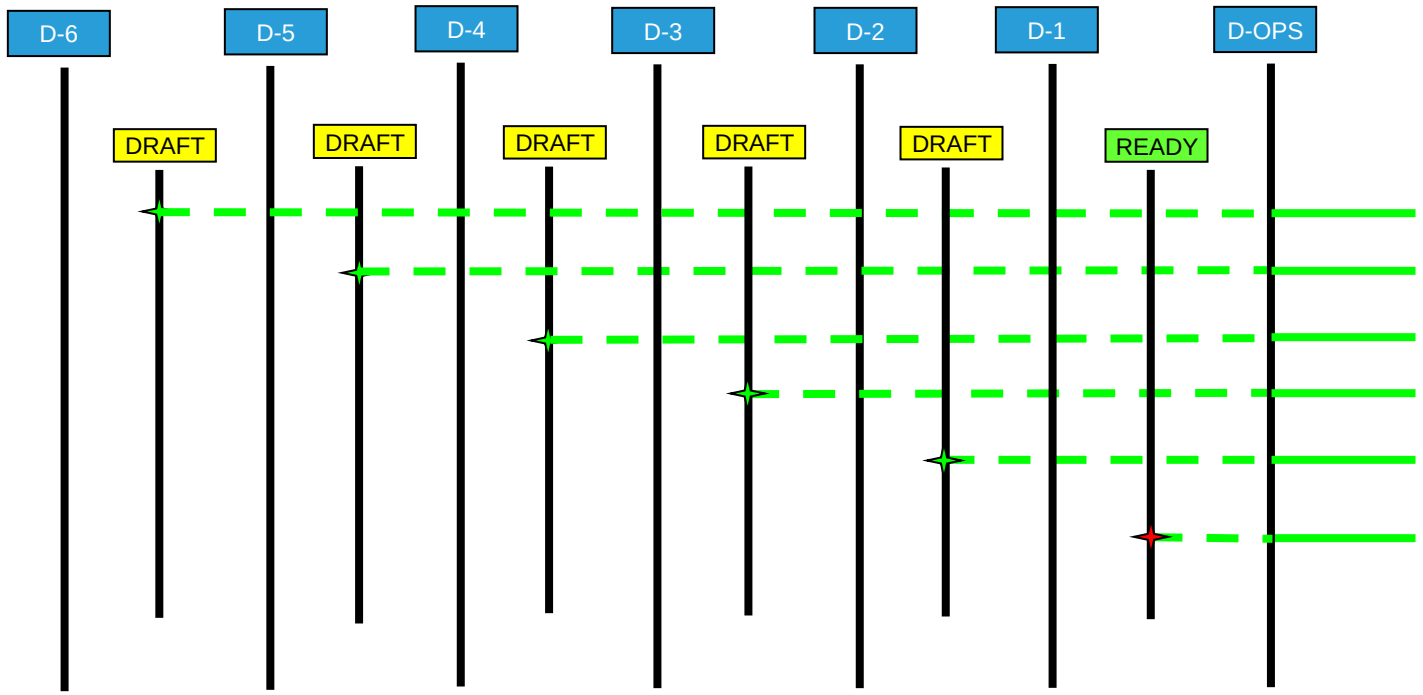
AFUA main goals

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

Rolling Process

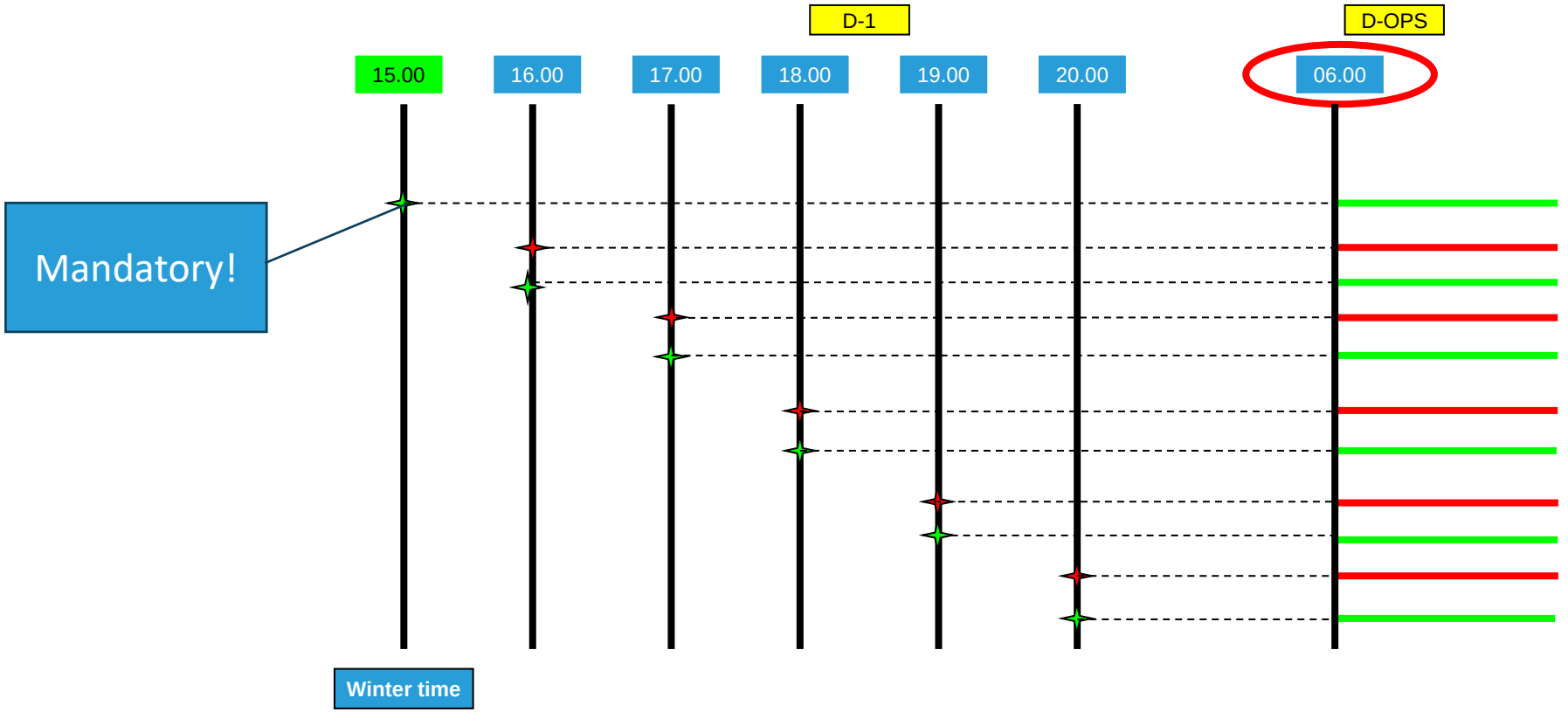


Draft Rolling AUP



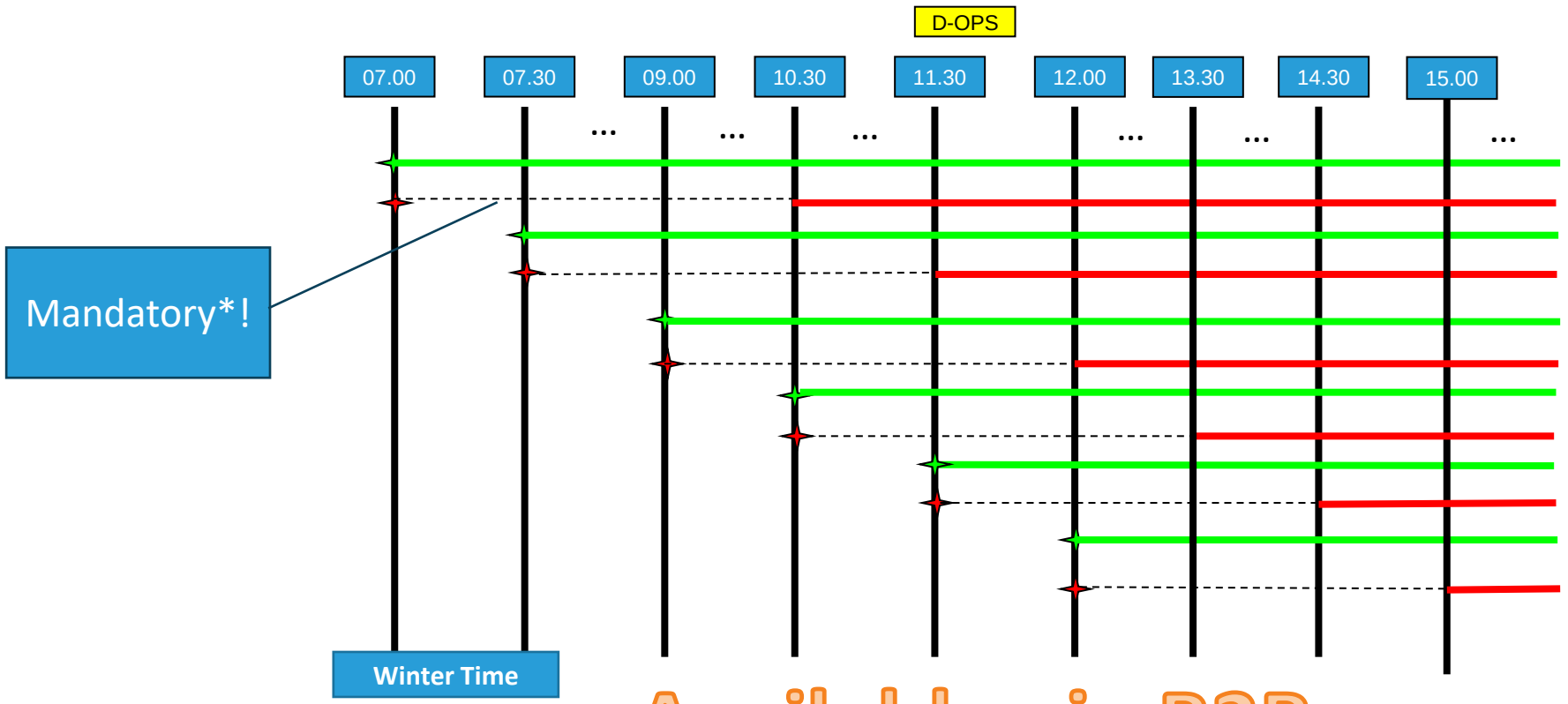
Available via B2B

AUP/UUP at D-1



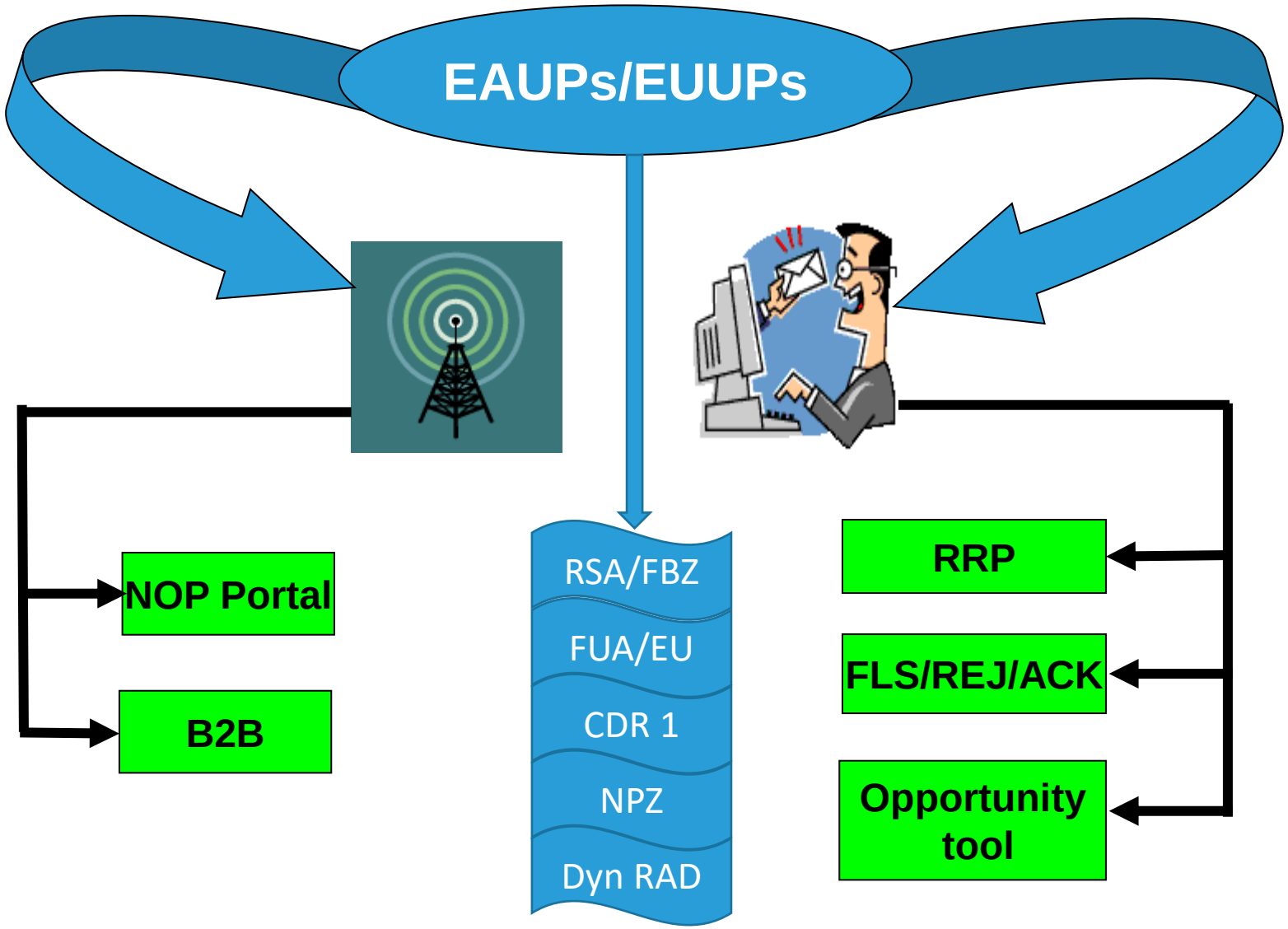
Available via B2B

UUP at D-OPS



Available via B2B

EAUP/EUUP Daily Notification to AUs

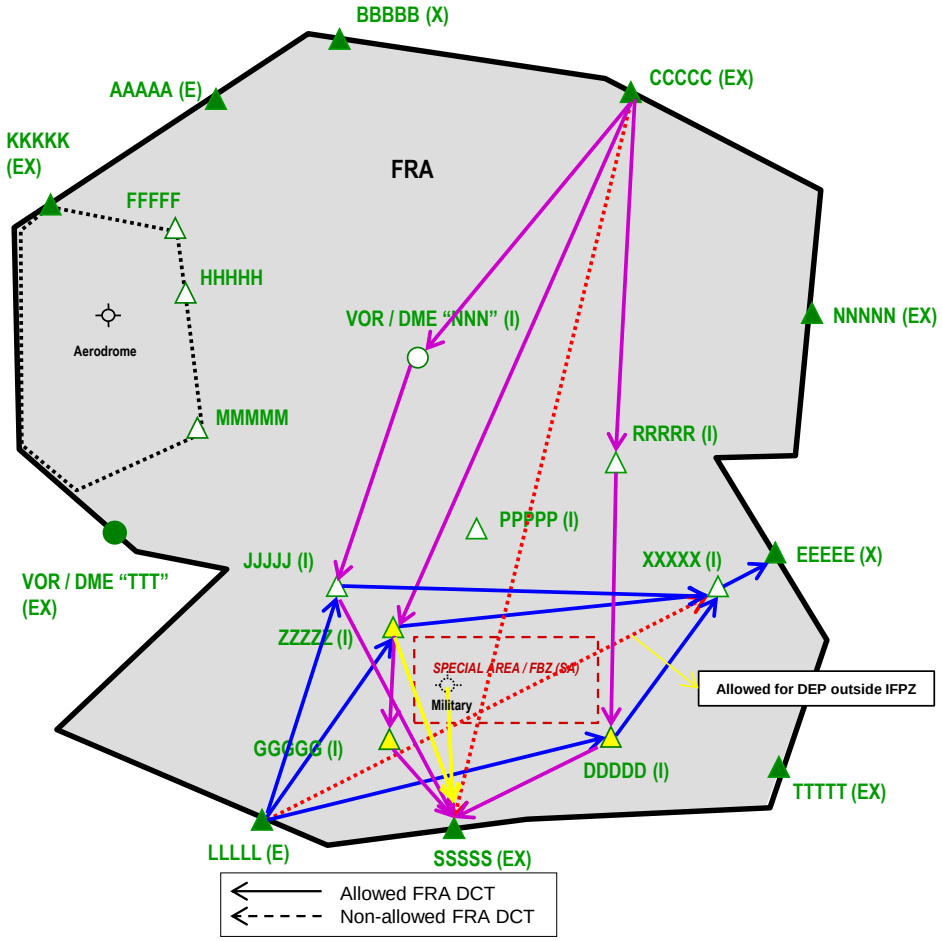


AFUA vs FRA

(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.



AFUA in FRA – Promoting Planning

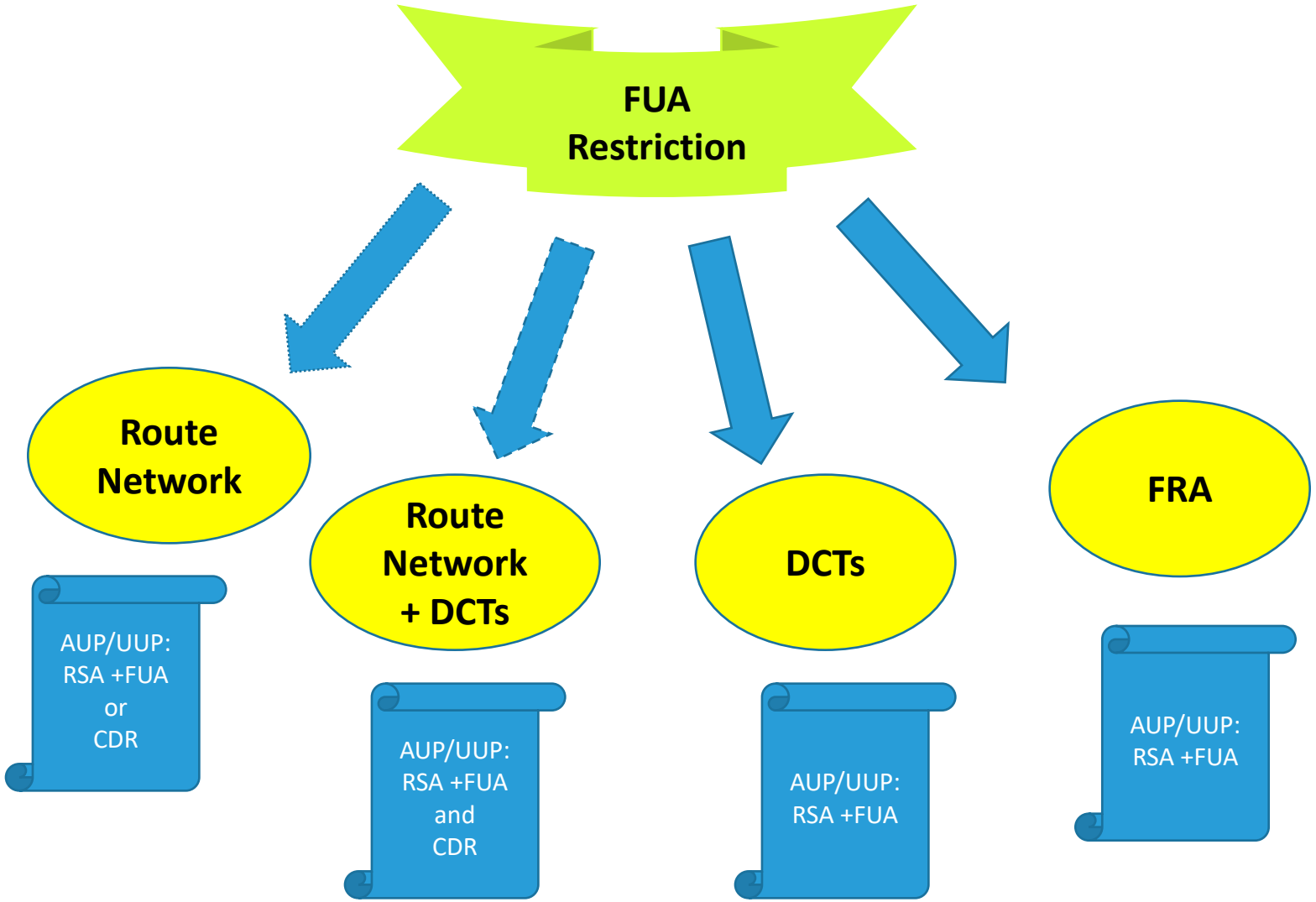
Managing Volumes!

NO MORE CDRs ONLY AREAS

ASM in FRA – Managing volumes

FUA restrictions **Flight Buffer Zones**

FUA Restrictions



FUA Restrictions – How work

“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).

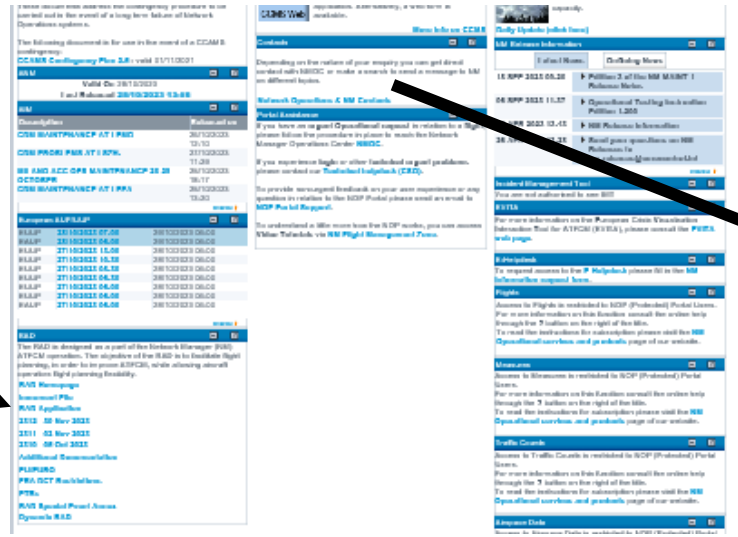
More FUA restrictions can be defined for each area

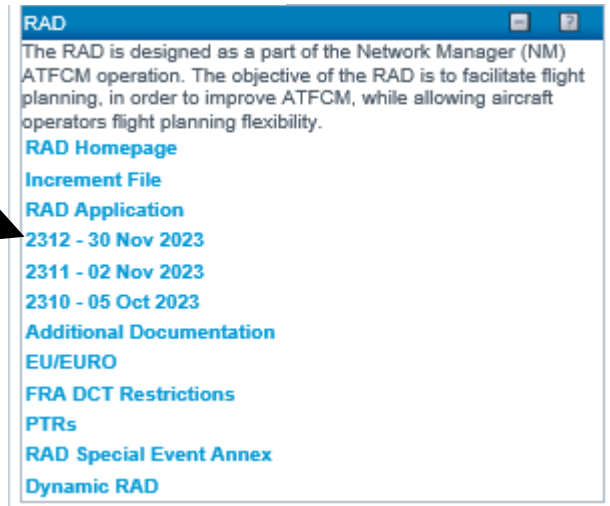
Daily Allocation of areas

FUA Restrictions - Publication

Red = **content changed compared to 02nd Nov 2023**

RAD Consolidated Version	
Checklist	
RAD General Description	
Annex 1: Area definitions	
Annex 2A: Flight Level Capping Rules	
Annex 2B: Local and Cross-border Capacity and Structural Rules	
Annex 2C: FUA Traffic Flow Rules	
Annex 3A: Aerodrome Connectivity Options	
Annex 3B: Enroute DCT Options	
Annex 3B: DCTs MAP - see note below	https://ext.eurocontrol.int/nm_dct2/
Annex 4: Special Events and Crisis (see main menu)	





Flight Buffer Zone (FBZ)

Provide a transparent process for FPL and acceptance by IFPS;

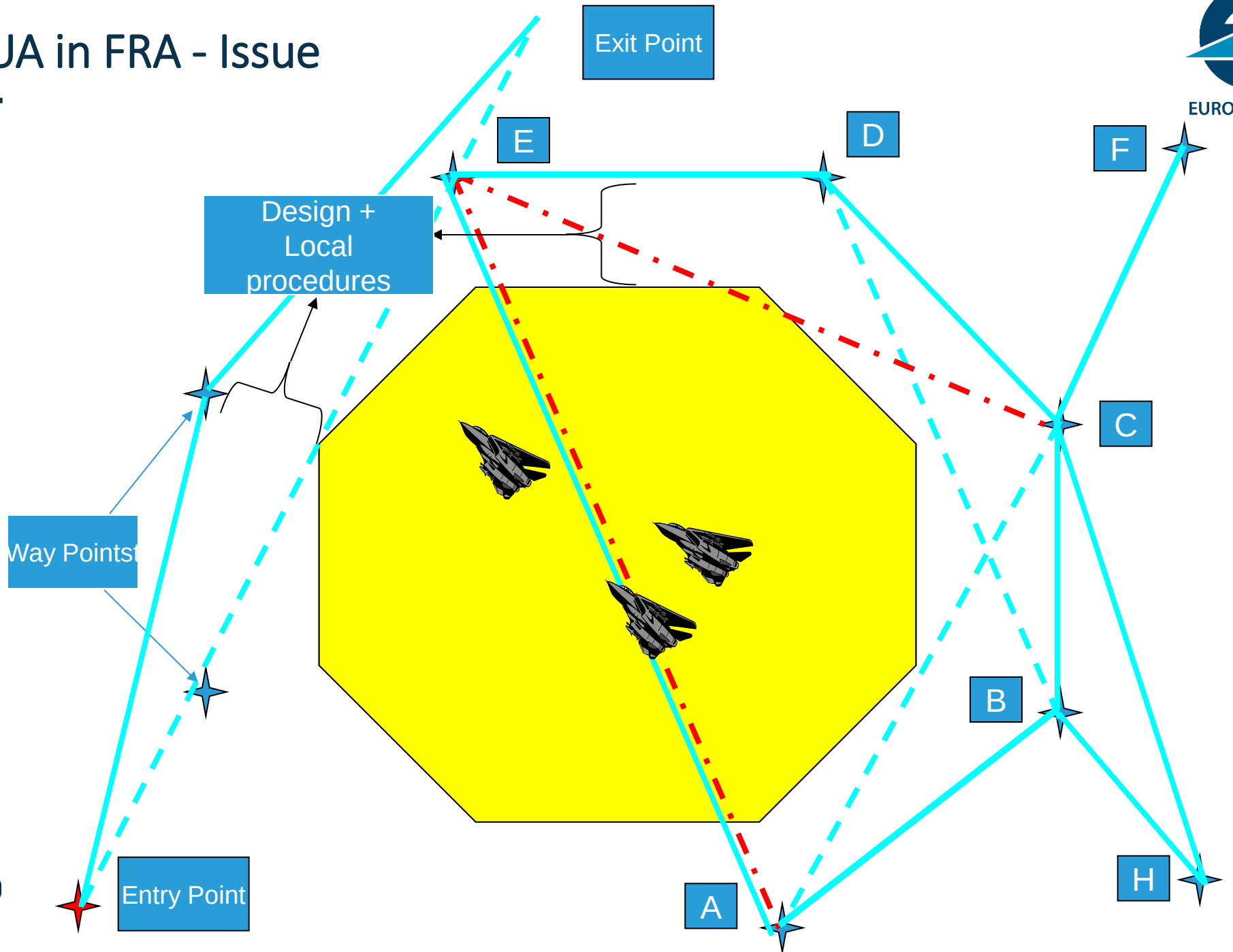
Fix and Free route environment;

Based on NM system FPL validation rules

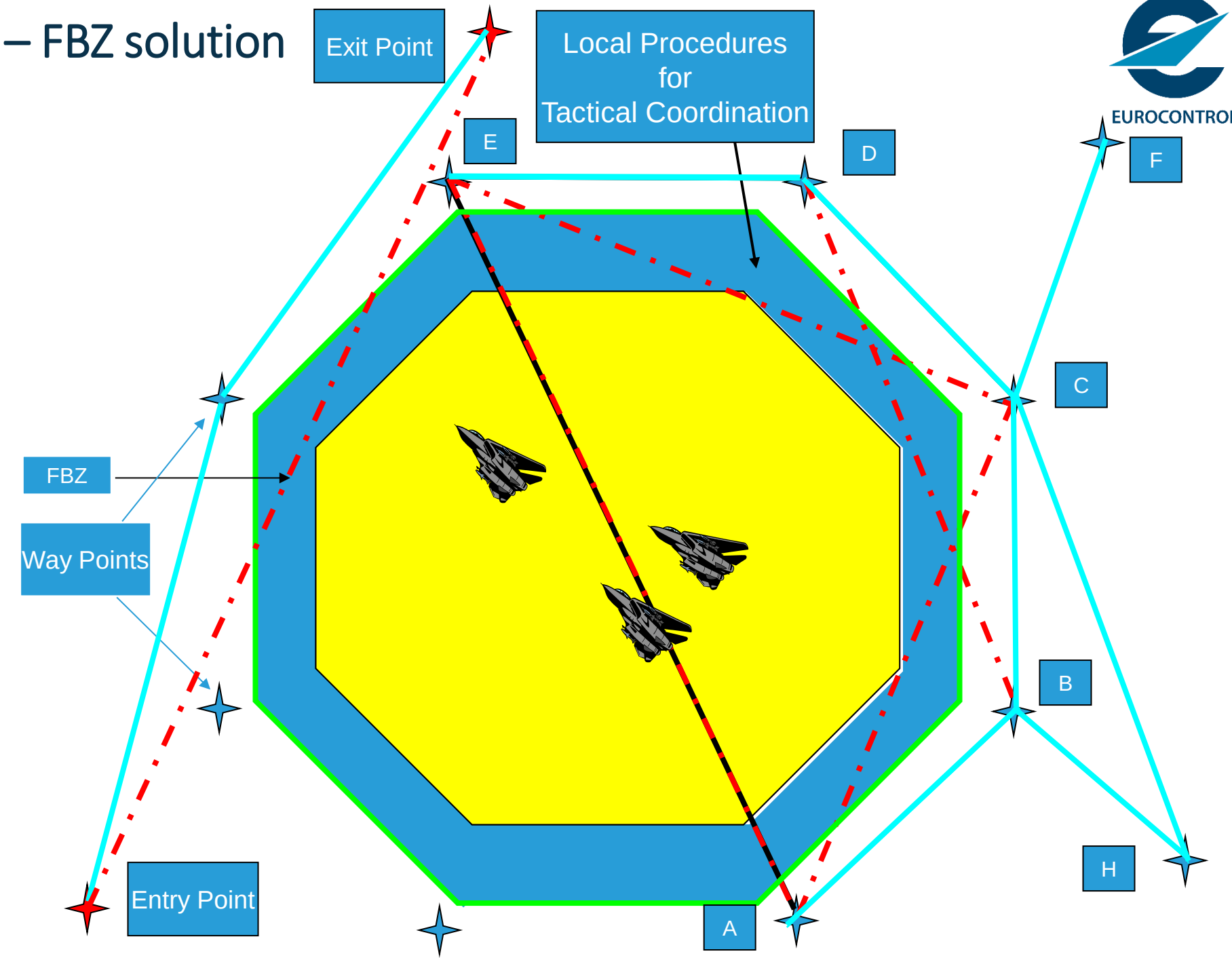
IFPS Validation procedures

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

AFUA in FRA - Issue



AFUA in FRA – FBZ solution



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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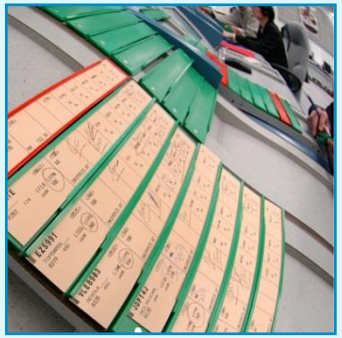
Further evolutions

ICAO

SESAR – path for future

Past



Procedural Control

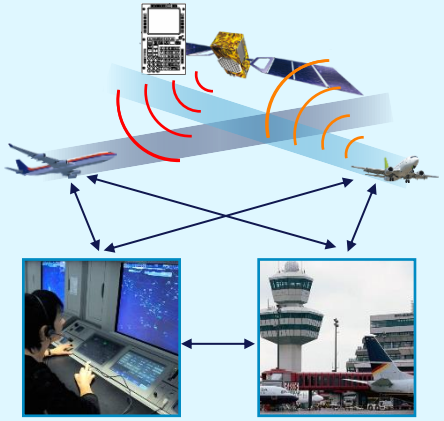
the current and planned a/c positions

Today

Radar Control

Know the current and **estimate** planned a/c positions

Future

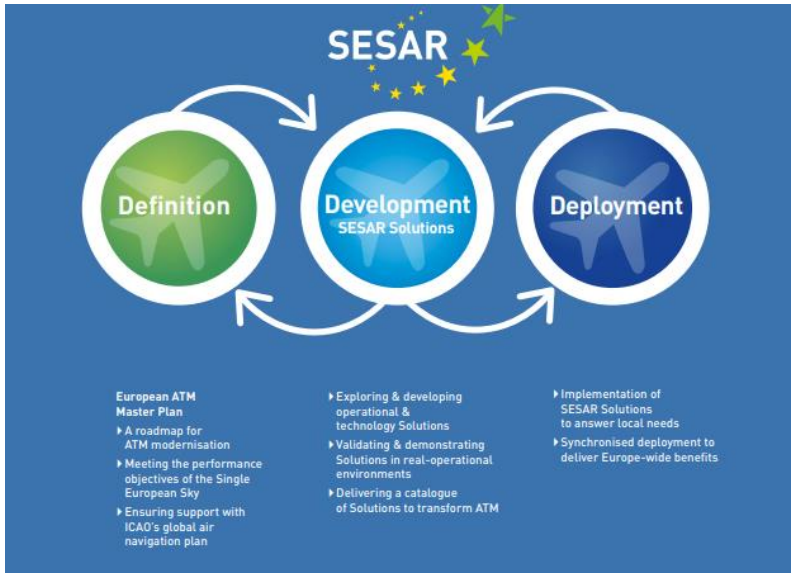


Trajectory Management

Know & share the current & planned a/c positions

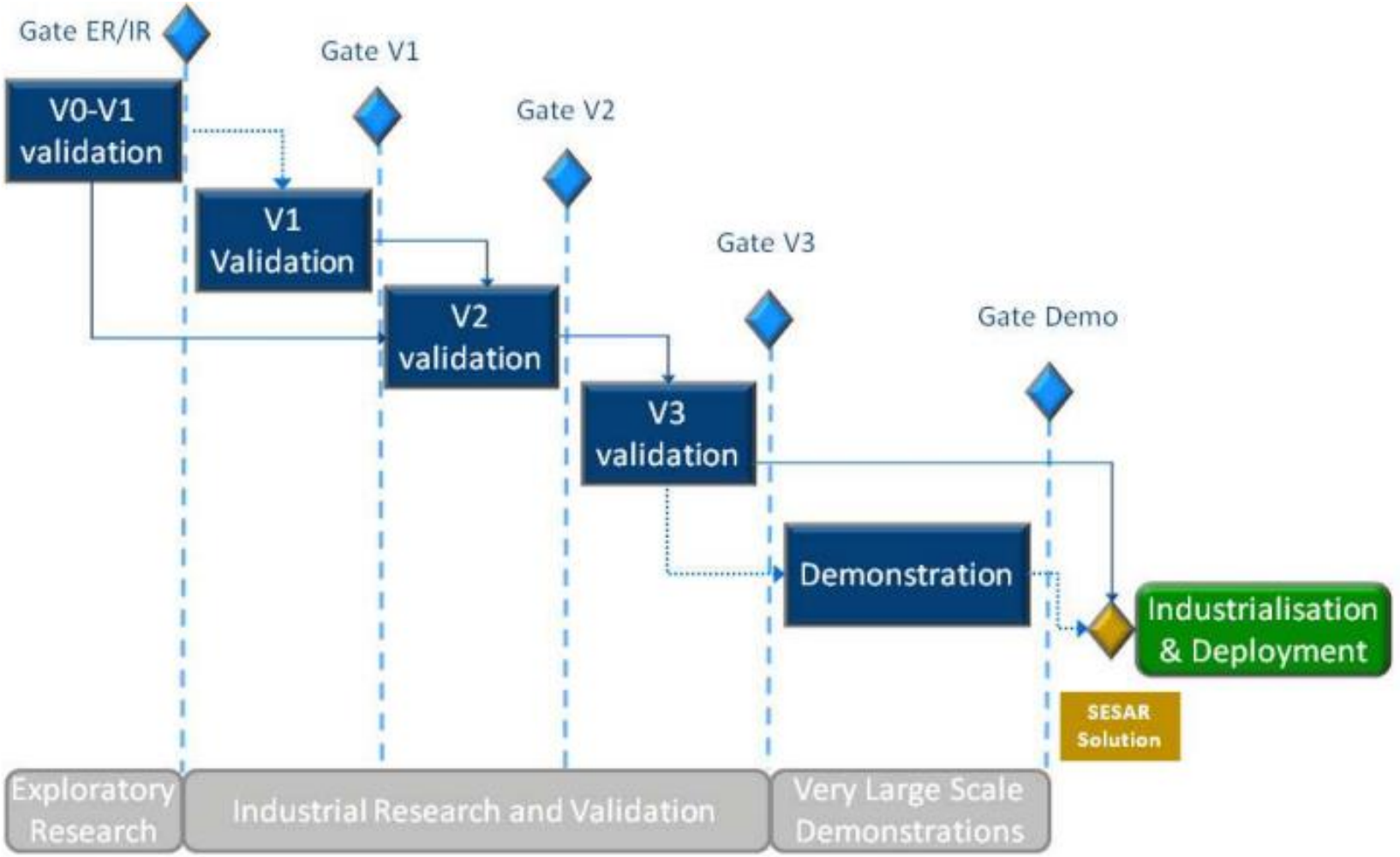
SESAR – needs for future

SESAR is the technological pillar of the EU's Single European Sky policy and a key enabler of the European Commission's Sustainable and Smart Mobility Strategy. SESAR defines, develops and deploys technologies to transform air traffic management in Europe.

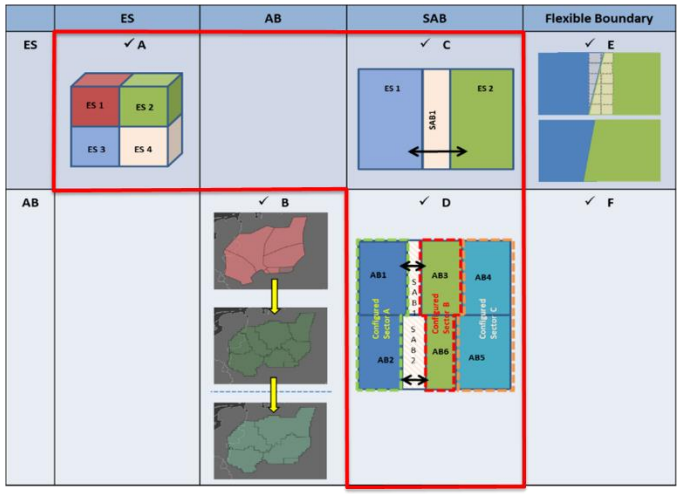


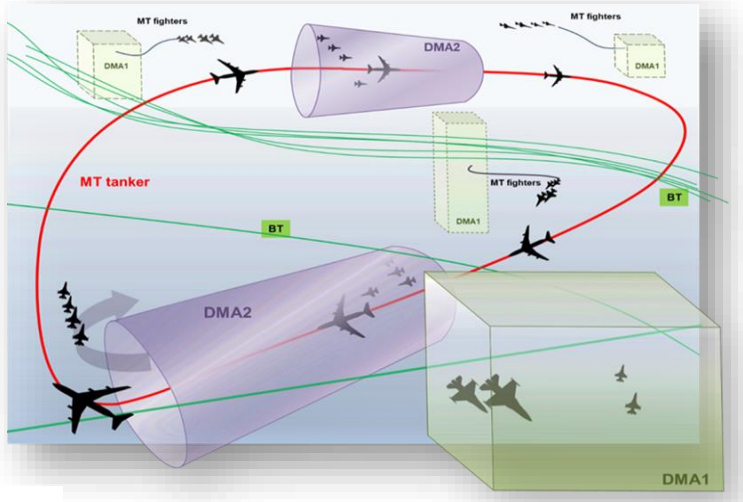
The publication contains 101 delivered solutions (reaching required level of maturity for industrialisation) addressing key areas of the ATM value chain, notably airport operations, air traffic services, network operations and the enabling infrastructure. Over half of the delivered solutions are now part of deployment plans at local and European levels proving tangible benefits in terms of cost efficiency, capacity, safety and the environment.

SESAR European Operational Concept Validation Methodology (E-OCVM)



SESAR Validation activities – Main ASM related activities





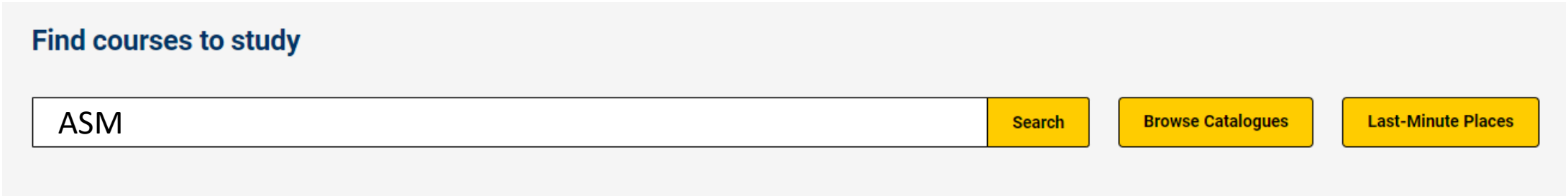
Dynamic Airspace Configuration DAC

Demand Capacity Balance DCB

Eurocontrol Aviation Learning Centre (EALC) – ASM Course

The European Airspace Strategy

LZ - My Home (eurocontrol.int)



Thank You

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