ICAO APAC & EUR/NAT CMAC/FUA WORKSHOP

One-step forward

Bangkok, Thailand
19 – 23 January 2026

Summary

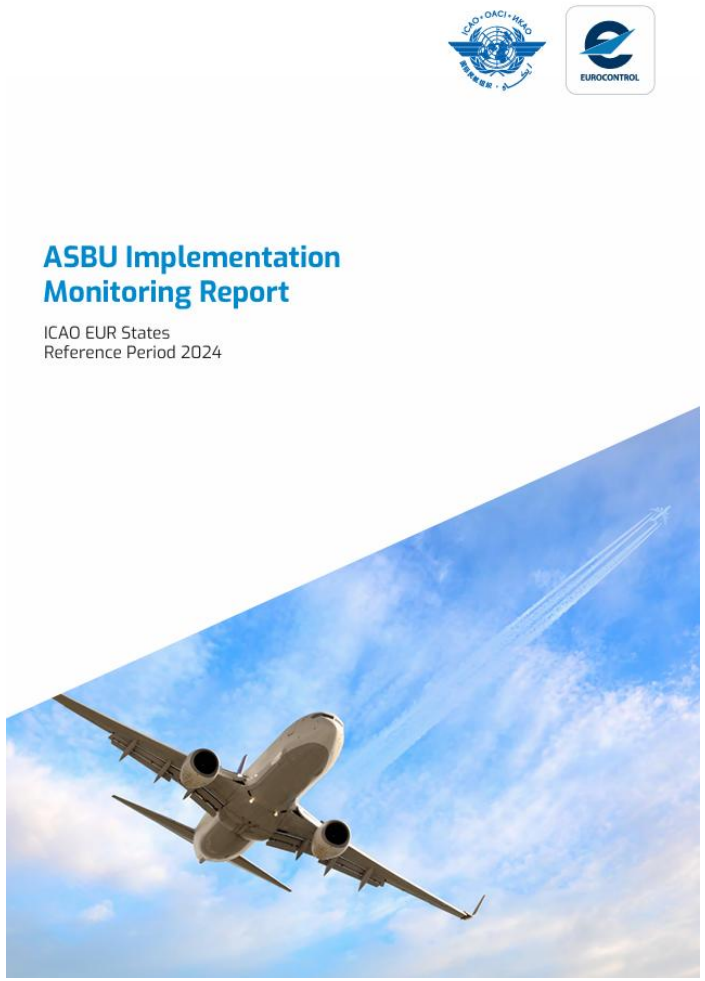
Five days to cover:

- **ICAO updates** on key documents and guidance material that shape global and regional best practices
- **Implementation experiences sharing** from States and international organizations, learning from successes, discussing challenges, exploring innovative solutions
- **First-hand exposure to practical operations** via the on-site visit to the joint civil-military Airspace Management Cell (AMC) of AEROTHAI
- **Interactive group exercises** by EUROCONTROL on critical topics such as airspace structure design, the three phases of airspace management, civil military coordination etc.

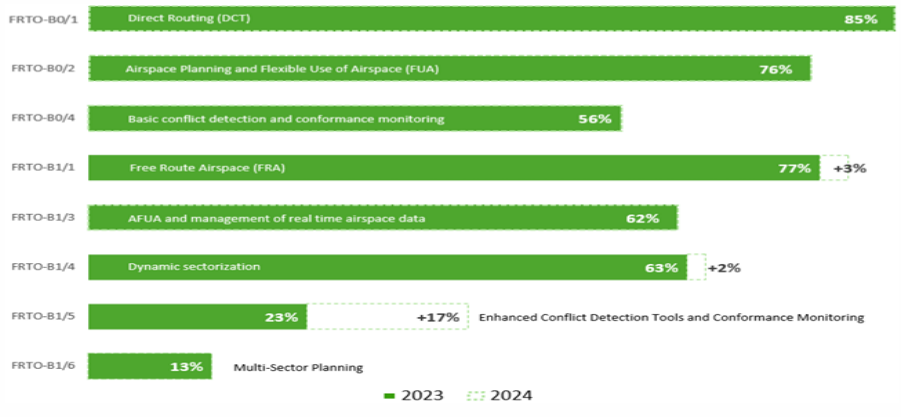
Participants: 110+

- CAA, ANSP and Military Partners from Asia Pacific and European Regions
- International Organizations, and Aircraft Operators

EUR/NAT FUA implementation as part of FRTO



FRTO	FRTO-B0/1	Direct routing (DCT)	AOM21.1	LSSIP + questionnaire
	FRTO-B0/2	Airspace planning and Flexible Use of Airspace (FUA)	AOM19.5-ASP01 AOM19.5-ASP02	LSSIP + questionnaire
	FRTO-B0/4	Basic conflict detection and conformance monitoring	ATC12.1.1 ATC12.1.4	LSSIP + questionnaire
	FRTO-B1/1	Free Route Airspace (FRA)	AOM21.2	LSSIP + questionnaire
	FRTO-B1/3	Advanced Flexible Use of Airspace (FUA) and management of real time airspace data	AOM19.5-ASP09	LSSIP + questionnaire
	FRTO-B1/4	Dynamic sectorization	AOM19.4	LSSIP + questionnaire
	FRTO-B1/5	Enhanced Conflict Detection Tools and Conformance Monitoring	ATC12.1.1 ATC12.1.2 ATC12.1.3 ATC12.1.4	LSSIP + questionnaire
	FRTO-B1/6	Multi-Sector Planning	ATC18	LSSIP + questionnaire



EUR/NAT FUA implementation

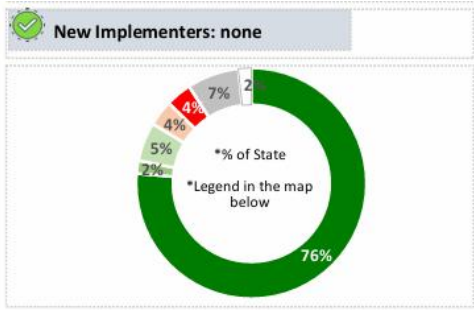
FRTO-B0/2	Airspace planning and Flexible Use of Airspace (FUA)

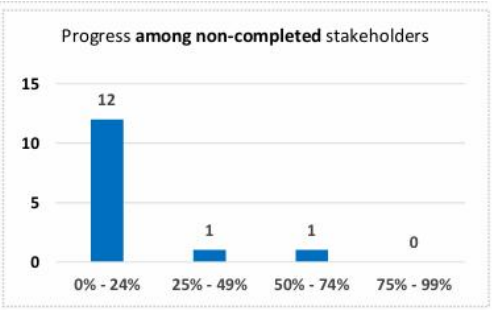
Description:

This Element addresses strategic/long term airspace management, pre-tactical planning and tactical operations. Automated ASM support systems improve airspace management processes and flexible airspace planning including time horizon specifications in all flight phases (strategic, pre-tactical and tactical time horizon) by providing mutual visibility on civil and military requirements. They also support flexible airspace planning according to civil and military ANSPs and airspace user requirements, including permit cross border and use of segregated areas operations regardless of national boundaries.

Implementation Summary (end 2024):

- The Element has already been implemented by 42 States with no implementers during the reporting cycle.
- Among the implementers, 26 States have implemented both a local tool (e.g., EUROCONTROL's LARA, Local and sub-regional airspace management support system, or equivalent) as well as a centrally provided system (e.g., CIAM also provided by the EUROCONTROL Network Manager), one system in backup of the other.
- Outside the LSSIP area, the Element is already deployed by RU and TJ while DZ, KG and UZ have implementation plans for 2026, to be followed by BY and KZ in 2027.
- Note: for improved granularity, for the LSSIP area, the analysis is conducted by tracking the progress of Stakeholder Lines of Action AOM19.5-ASP01, "Deployment of automated ASM support systems (LARA or its equivalent)," or AOM19.5-ASP02, "Adoption of the NM system (CIAM) for ASM capabilities".





EUR/NAT Advanced FUA implementation

FRTO-B1/3	Advanced Flexible Use of Airspace (FUA) and management of real time airspace data

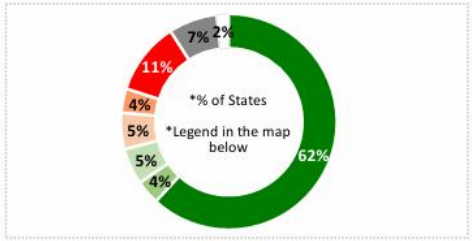
Description:

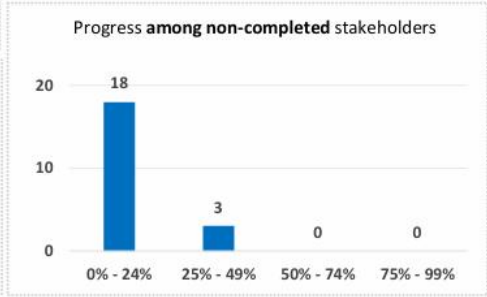
This Element enhances Airspace Management (ASM) by automated data exchange services during the pre-tactical and tactical execution phases continuously in real time. ASM information is shared between ASM systems and ATS units/systems and communicated to the ATM network function in the tactical and execution phases.
Such data, consisting of pre-notification of activation, notification of activation, de-activation, modification and release are collected, saved and processed. Furthermore, data needs to be exchanged between ASM stakeholders and made available to other actors and relevant airspace users not involved in ASM processes.

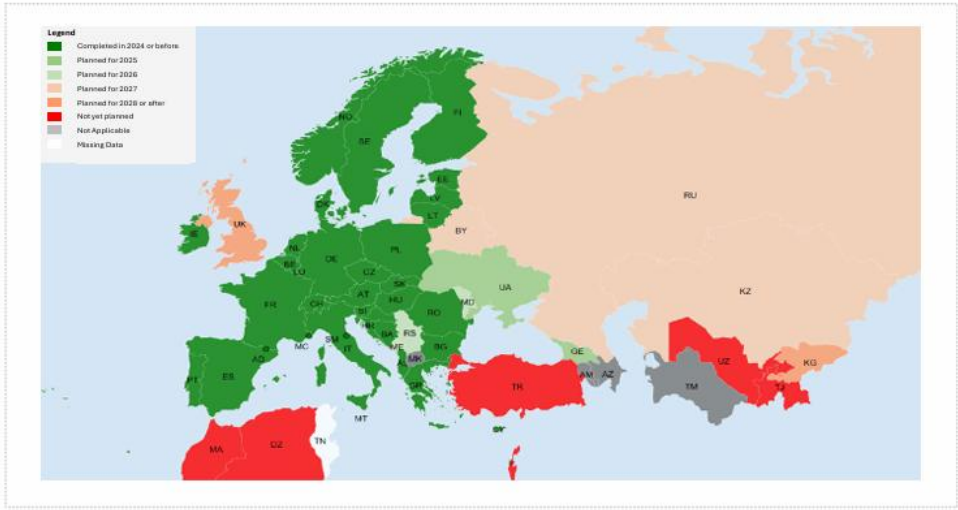
Implementation Summary (end 2024):

- The Element is reported as completed by 34 States, mainly driven by the obligations imposed by the CP1 Regulation (EU 116/2021 -Sub-AF 3.1 on ASM and Advanced FUA) on the EU Member States.
- Among the non-LSSIP States, implementations are expected in 2027 (BY, KZ, RU) and 2028 (KG) with the other States not having deployment plans yet, in particular due to the lack of operational needs.
- For BE, LU and NL the Element has also been deployed in the airspace where the service is provided by the Maastricht Upper Area Centre.
- Note: for improved granularity, for the LSSIP area, the analysis is conducted based on the Stakeholder Line of Action AOM19.5-ASP09 " Adapt ASM and ATC systems for automatic ASM data exchanges".

New Implementers: none







EUR/NAT Free Route Airspace implementation

FRTO-B1/1	Free Route Airspace (FRA)

Description:

The Free Route Airspace (FRA) is a specified volume of airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) waypoints, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

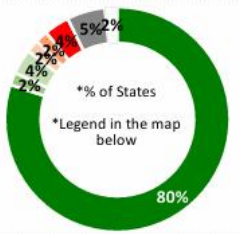
FRA implementation can be customized for instance: laterally and vertically; during specific periods; with a set of entry/exit conditions; with initial system upgrades. The extension of FRA within and across the FIR boundaries also requires upgrades of the ATM network function system and the ANSPs ground system for airspace management and flight data processing.

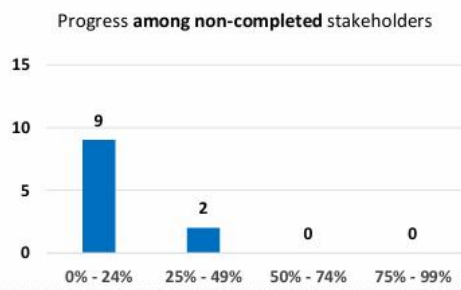
FRA concept brings significant flight efficiency benefits and a choice of user preferred routes to airspace users.

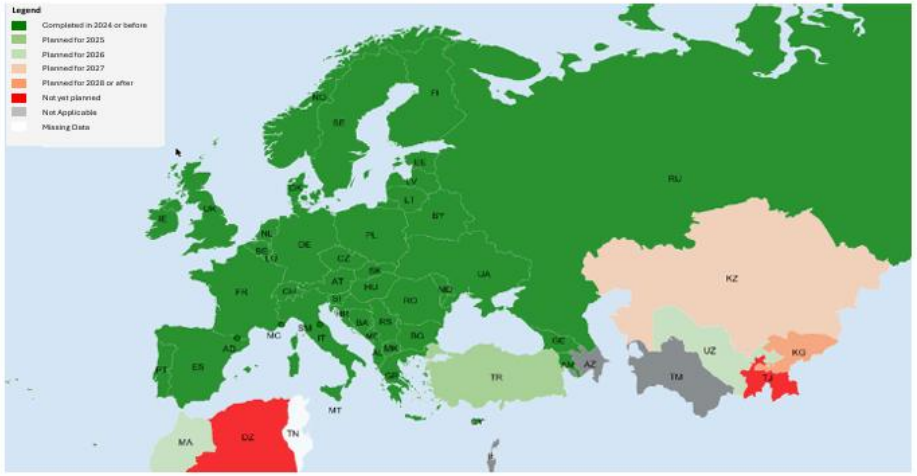
Implementation Summary (end 2024):

- Overall, at EUR Region level, the Element is deployed in 44 States, 1 other (TR) expecting completion by end 2025.
- In very many instances the implementation goes beyond the national FIRs as FRA is deployed more and more cross-border which is a very positive development from the perspective of maximising the FRA benefits.
- Among non-LSSIP States, the Element is already deployed in BY and RU, to be followed by UZ (2026), KZ (2027) and KG (2028).

New Implementers: none

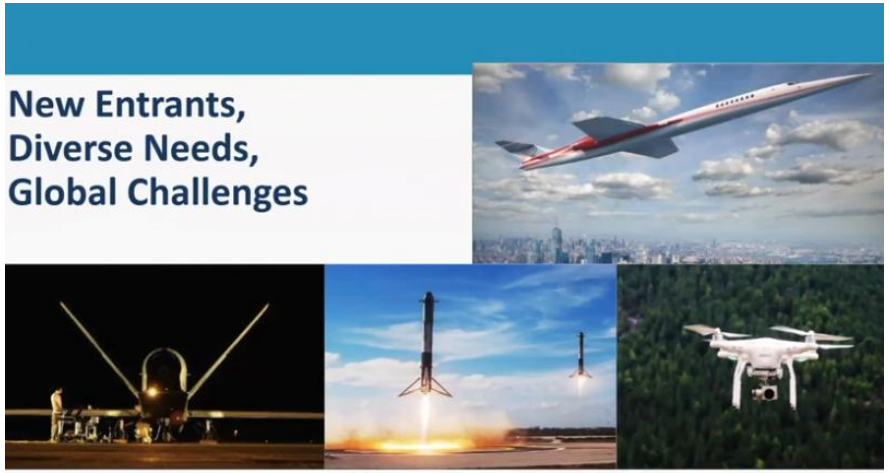






Same ASM concept …… different airspace users

- LARGE scale military exercises involving multiple FIRs
- Flights of UAS (State aircraft) in sovereign airspaces and/or the High Seas
- Space Transport Operations
- New entrants including HAO



ICAO

Takeaways

- High-level commitment to civil-military cooperation in air traffic management (CMAC) is fundamental for the effective implementation of flexible use of airspace (FUA).
- The national civil-military regulatory cooperation framework lays a solid foundation for effective implementation and paves the way for collaborative decision making (CDM).
- FUA implementation in all three levels is scalable (Basic FUA and Enhanced FUA) and linked to the operational environment and complexity.

ICAO

Takeaways

- The implementation of FUA supports safety and efficiency enhancements and is a continuous improvement cycle based on the experience gained and lessons learned to be considered as part of the post-operations analysis phase.
- Efficient data sharing is strongly recommended for effective airspace management (ASM) and the safety of flight operations.
- There is no “one-size-fits-all” framework for every State.

ICAO

A special thank to CAAT, AEROTHAI and EUROCONTROL for the exposure to first-hand practices

ICAO

Recommendations (Part A)

Recommendations to be presented to APANPIRG ATM/SG and EASPG ANSISG for onward presentation to upcoming APANPIRG and EASPG meetings for appropriate actions:

A. <u>ICAO APAC ATM/SG and/or ANSISG, where applicable, to:</u>

A1. develop an APAC regional template for airspace use plan (AUP) and updated airspace use plan (UUP) for FUA with reference to the EUROCONTROL ASM Handbook.

A2. review the APAC document on NOTAM Templates for FUA in accordance with the relevant ICAO provisions and the guidance of ICAO Doc 10088;

A3. develop regional and national procedures to support efficient and effective promulgation of airspace use information, including machine readable output format;

A4. promote the distribution of ASM information in accordance with ICAO Doc 10088;

A5. review/develop regional KPIs to measure FUA effectiveness, such as airspace utilization, efficiency gains, and flight predictability;

Recommendations (Part A Cont.)

A. <u>ICAO APAC ATM/SG and/or ANSISG, where applicable, to:</u>

A6. withdraw the APAC Flexible Use of Airspace (FUA) Manual Template developed based on the framework of ICAO Cir 330, as a new template is already provided in ICAO Doc 10088;

A7. withdraw the Interim Guidance Material on Civil/Military Cooperation in Air Traffic Management in the APAC eDocuments webpage, considering that ICAO Doc 10088 provides guidance for global application;

A8. encourage the regular review of airspace structure including special use airspace to ensure its establishment, size, activation and operation are appropriate in terms of optimal for civil and military operations;

A9. encourage systems' interoperability to support the exchange of real-time flight plans and surveillance data between civil and military ATS units; and

A10. encourage sharing of experience with other States concerning FUA implementation and the use of supporting tools.

Recommendations (Part B)

B. <u>Based on the PIRGs review of the recommendations, States be invited to:</u>

B1. establish National Civil-Military Aviation Cooperation Policy Board (CMAB), if not yet done so, to provide the necessary high-level commitment and legal foundation for FUA;

B2. establish joint civil-military Airspace Management Cells (AMC), if not yet done so, to effectively coordinate day-to-day operations, manage airspace allocation and publish ASM information;

B3. adopt a scalable approach to FUA, moving beyond simple segregation to the full three-phased ASM framework (Strategic, Pre-tactical, Tactical) to enhance safety and efficiency and maximize airspace capacity;

B4. implement relevant Assembly Resolutions, in particular those related to civil-military cooperation, conflict zones, GNSS RFI, and cyber-attacks;

B5. utilize strategic FUA at Level 1 planning, where applicable, to pre-define contingency routes that bypass potential or active conflict zones, for immediate activation when risk escalates;

Recommendations (Part B Cont.)

B. <u>Based on the PIRGs review of the recommendations, States be invited to:</u>

B6. ensure effective coordination between civil and military during contingency events, especially those managed by the ICAO contingency coordination teams (CCTs);

B7. ensure military radio frequency interference testing or activities are coordinated by the appropriate authorities and promulgated via aeronautical information publication well in advance;

B8. comply with the ICAO provisions for the establishment and publication of Prohibited, Danger, Restricted areas, and

B9. engage with the relevant ICAO Regional Office for CMAC/FUA assistance activities.

ICAO

Recommendations (Part C)

C. <u>Invite ICAO to:</u>

C1. continue raising awareness and engaging civil-military stakeholders with due consideration for inter-regional events;

C2. provide implementation support to States with dedicated activities involving all civil and military stakeholders from the State, to foster FUA implementation that would support achieving the regional implementation targets as agreed by APANPIRG and EASPG; and.

Note. EUR Region 13 States have not fully implemented FUA (level 1 and 2)

C3. Engage with Algeria, Kyrgyzstan, Uzbekistan to further support (with individual activities involving all required civil and military stakeholders from the States) the current FUA implementation activities planned by the end of 2026

C4. Engage with Belarus and Kazakhstan to further support (with individual activities involving all required civil and military stakeholders from the States) the current FUA implementation activities planned by the end of 2027

ICAO

Recommendations (Part C Cont.)

C. <u>Invite ICAO to:</u>

C5. As a joint initiative together with EUROCONTROL approach Armenia, Azerbaijan, Georgia, Israel, North Macedonia and Türkiye to address the FUA implementation, which had not been planned or was in an early stage of implementation

C6. Contact Tunisia and Turkmenistan in order to get implementation status/data on FUA and CMAC

C7. Develop a minimum data set (based on the ERNIP ASM Handbook and in compliance with ICAO Doc 1008) for AUP and UUP which should be used by all non-EUROCONTROL States and propose appropriate dissemination mechanisms

ICAO

A big thank to all participants for the very interactive engagements

ICAO

Thank You

apac-rso@icao.int

ICAO