PCP	Removed	ECAC+
AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)	

REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

Deploy Airspace Management (ASM) support systems (LARA or locally developed) and their interoperability with NM systems to manage airspace reservations (ARES) resulting from civil-military co-ordination, more flexibly according to airspace users' needs. The automated ASM support system shall:
- enable the improvement of airspace management processes, including timing dimension by providing mutual visibility on civil and military requirements;
- support a flexible airspace planning taking into account ATS units' airspace management functions and airspace users' requirements, allowing also cross-border and segregated operations with optimized impact;
- support dynamic airspace management;
- address strategic, pre-tactical planning and tactical operations;
- be compatible for the sharing of real-time airspace status requirements and possibly provide data for impact assessment of airspace configurations;
- be interoperable with NM systems using AIXM 5.1 (Aeronautical Information Exchange Model);
- include a verification process for automated data exchange.

This objective is an enabler for its successors AOM19.2, AOM19.3 and AOM19.4 and, in turn, for ATM sub-functionality 3.1 (Airspace Management and Advanced Flexible Use of Airspace) of the PCP Regulation.

NOTE FOR MILITARY AUTHORITIES: It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

Applicability Area(s) & Timescale(s)

Applicability Area			
Timescales:	**From:**	**By:**	**Applicable to:**
Initial operational capability	01/01/2011		Applicability Area
Full operational capability		01/01/2022	Applicability Area

References

European ATM Master Plan

OI step -	[AOM-0202]-Enhanced Real-time Civil-Military Coordination of Airspace Utilisation								
	Enablers -	AAMS-06a	AAMS-08	AAMS-09	AAMS-10a AOM13.1	AAMS-15	AIMS-06	AIMS-21	AIMS-22
		PRO-184 AOM19.5							
OI step -	[AOM-0202-A]-Automated Support for strategic, pre-tactical and tactical Civil-Military Coordination in Airspace Management (ASM).								
	Enablers -	AAMS-06b	AAMS-09a	AAMS-11 AOM19.5	AIMS-06	ER APP ATC 77 AOM19.4, AOM19.5	MIL-0502	NIMS-42 AOM19.5	PRO-011 AOM19.5
		PRO-024 AOM19.5	SWIM-APS-02a	SWIM-APS-03a	SWIM-INFR-05a	SWIM-NET-01a			

Legend:	WXYZ-001	Covered by SLoA(s) in this objective	WXYZ-002 zzz	Covered by SLoA(s) in another objective Objective covering the enabler	WXYZ-003	Not covered in the Implementation Plan

Applicable legislation

- Regulation (EC) No 2150/2005 of 23 December 2005 on Implementation and Application of the Flexible Use of Airspace
- Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project

Essential Operational Changes

- none -

SESAR Solution

AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)

#31 - Variable profile military reserved areas and enhanced (further automated) civil-military collaboration

ICAO GANP - ASBUs

- none -	

Deployment Programme

- none -	

European Plan for Aviation Safety

- none -	

Operating Environments

En-Route
Network
Terminal Airspace

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	By
AOM19.1-ASP01	Deploy automated ASM support systems	01/01/2011	01/01/2022
AOM19.1-ASP02	Implement interoperability of local ASM support system with NM system	01/01/2011	01/01/2022
AOM19.1-ASP03	Improve planning and allocation of airspace booking	01/01/2011	01/01/2022
AOM19.1-NM01	Integrate local ASM support systems with NM system	01/01/2011	01/01/2022

Description of finalised and deleted SLoAs is available on the eATM Portal @ https://www.eatmportal.eu/working/depl/essip_objectives

Expected Performance Benefits

Safety:	Improved through better co-ordination of civil and military airspace needs at the European Network level and through a shared real-time airspace status display and enhanced, common situational awareness of all players.
Capacity:	Increased through better awareness and utilization of airspace resources within and across airspace boundaries leading to reduction of flight delays.
Operational Efficiency:	Increased through the availability of more optimum routes/trajectories allowing lower fuel burn.
Cost Efficiency:	-
Environment:	Emissions reduced through the use of more optimum routes/trajectories.
Security:	-

Detailed SLoA Descriptions

AOM19.1-ASP01	Deploy automated ASM support systems	From: 01/01/2011	By: 01/01/2022
Action by:	**ANS Providers**		
Description & purpose:	Deploy Airspace Management (ASM) support systems (LARA or locally developed ones) to support the local or sub-regional airspace planning and allocation (without AIXM 5.1 interface - covered by ASP02).		

AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)

Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.5 / 11/2017 Url : https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3 EUROCONTROL - LARA (Local and sub-Regional Airspace Management Support System) Url : https://www.eurocontrol.int/software/local-and-sub-regional-airspace-management-support-system EUROCONTROL - Advanced FUA Concept - Edition 1.0 Url : http://www.eurocontrol.int/sites/default/files/publication/files/advanced-fua-concept-v1.0-sept-2015.pdf EUROCONTROL - SPEC-112 - EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA) - Edition 1.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-application-flexible-use-airspace-fua EUROCONTROL - SPEC-179 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II ASM to ASM Systems Interface Requirements - 1.0 / 01/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I - Baseline Requirements - Edition 1.0 / 09/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements		
ATM Master Plan relationship:	[AAMS-08]-Airspace management system enhanced to support improved collaborative airspace planning [AAMS-09]-Airspace management system enhanced to support the integrated European airspace planning process		
Finalisation criteria:	1 - Local ASM systems supporting the airspace planning and allocation have been deployed (without AIXM 5.1 interface).		
AOM19.1-ASP02	**Implement interoperability of local ASM support system with NM system**	From: 01/01/2011	By: 01/01/2022
Action by:	**ANS Providers**		
Description & purpose:	Implement interoperability of local ASM support system with NM system comprising the following: - Adapt local ASM support systems to make them interoperable with NM system (AIXM 5.1 interface); - Conclude the Operational Access Acceptance Activities required to validate the ASM tool interfacing NM system via B2B service; - Update the existing Agreement with NM in order to cover B2B services.		
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.5 / 11/2017 Url : https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3 EUROCONTROL - LARA (Local and sub-Regional Airspace Management Support System) Url : https://www.eurocontrol.int/software/local-and-sub-regional-airspace-management-support-system EUROCONTROL - Advanced FUA Concept - Edition 1.0 Url : http://www.eurocontrol.int/sites/default/files/publication/files/advanced-fua-concept-v1.0-sept-2015.pdf EUROCONTROL - SPEC-112 - EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA) - Edition 1.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-application-flexible-use-airspace-fua EUROCONTROL - SPEC-179 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II ASM to ASM Systems Interface Requirements - 1.0 / 01/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I - Baseline Requirements - Edition 1.0 / 09/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements EUROCONTROL - NM B2B Airspace Services Reference Manual Url : https://www.eurocontrol.int/service/network-manager-business-business-b2b-web-services		
ATM Master Plan relationship:	[AAMS-06b]-ASM support systems enhanced to exchange static data and airspace usage data with NM systems in AIXM format		
Finalisation criteria:	1 - Local ASM support systems have been adapted to be interoperable with NM systems (AIXM5.1). 2 - Positive Access Acceptance Criteria validation report. 3 - Existing Agreement with NM has been updated in order to cover B2B services. 4 - Start exchanging AUP/UUP data with NM via B2B.		
AOM19.1-ASP03	**Improve planning and allocation of airspace booking**	From: 01/01/2011	By: 01/01/2022
Action by:	**ANS Providers**		

AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)

Description & purpose:	Improve planning and allocation of reserved/segregated airspace at pre-tactical ASM level 2 by: - Planning reserved/segregated airspace utilization in accordance with actual need. - Releasing reserved/segregated non used airspace as soon as activity stops. - Utilizing reserved/segregated airspace that has not been planned in AUP (ad-hoc allocation - Procedure 3 as defined in the ERNIP Part 3 - ASM Handbook) This should be enabled by the measurement of FUA Indicators, described in detail in Section 7 of the ERNIP Part 3 ASM Handbook, using PRISMIL (Pan-European Repository of Information Supporting Military) or any other tool providing the required functionality. The measurement of FUA performance is required by Article 4(1)(m-n) of the FUA Regulation (Regulation (EC) No 2150/2005) and by the SES Performance Scheme (Regulation (EU) No 390/2013).
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.5 / 11/2017 Url : https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3 EUROCONTROL - Advanced FUA Concept - Edition 1.0 Url : http://www.eurocontrol.int/sites/default/files/publication/files/advanced-fua-concept-v1.0-sept-2015.pdf EUROCONTROL - Civil-military ATM Performance Framework - V1.0 Url : http://www.eurocontrol.int/publications/civil-military-atm-performance-framework EUROCONTROL - SPEC-112 - EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA) - Edition 1.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-application-flexible-use-airspace-fua EUROCONTROL - SPEC-179 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II ASM to ASM Systems Interface Requirements - 1.0 / 01/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I - Baseline Requirements - Edition 1.0 / 09/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements
Finalisation criteria:	1 - Reserved/segregated airspace has been used in accordance with actual need (measurement of FUA indicators as described in ERNIP Part 3 ASM Handbook).

AOM19.1-NM01	Integrate local ASM support systems with NM system	From:	By:
		01/01/2011	01/01/2022

Action by:	**NM**
Description & purpose:	- Integrate the local automated ASM support systems using AIXM 5.1 B2B services with NM systems. - - Update existing Agreement NM-ANSP in order to cover B2B services.
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.5 / 11/2017 Url : https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3 EUROCONTROL - LARA (Local and sub-Regional Airspace Management Support System) Url : https://www.eurocontrol.int/software/local-and-sub-regional-airspace-management-support-system EUROCONTROL - Advanced FUA Concept - Edition 1.0 Url : http://www.eurocontrol.int/sites/default/files/publication/files/advanced-fua-concept-v1.0-sept-2015.pdf EUROCONTROL - SPEC-179 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II ASM to ASM Systems Interface Requirements - 1.0 / 01/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I - Baseline Requirements - Edition 1.0 / 09/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-airspace-management-asm-support-system-requirements
ATM Master Plan relationship:	[AAMS-09a]-NM systems enhanced to exchange static data and airspace usage data with ASM support systems in AIXM format [AIMS-22]-Airspace management functions enhanced to provide airspace status information
Finalisation criteria:	1 - ASM support system testing with NM has been performed 2 - Local ASM system integrated with NM system using AIXM 5.1 format 3 - Existing Agreement NM-ANSP has been updated in order to cover B2B services