P	CP		Removed			EC	CAC+			
AON	119.2	ASM Management of Real-Time Airspace Data								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

Implement enhanced Airspace Management (ASM) by automated exchange services of ASM data during the tactical phase continuously in real time. ASM information (real-time Airspace Reservation (ARES) status) is shared between ASM systems, civil and military ATS units/systems and needs to be communicated to NM in the tactical phase. The data shared with NM is mostly related to the early airspace release pertinent to the possibility that the released airspace could be plannable by IFPS. These data, consisting of pre-notification of activation, notification of activation, de-activation, modification and release of airspace are collected, saved and processed in order to be exchanged between ASM stakeholders and be made available to ATM actors; while some airspace users are not directly involved in ASM process, they will be notified by the Network Manager.

The scope of this objective encompasses:

- Procedural and system upgrades (ASM, ATM, NM and AU systems (Computer Flight Plan Software Providers (CFSP)) for exchange of real time airspace status data;
- Integration and management of ASM real-time data into ANSPs' ATM systems and into AUs' (CFSPs) flight planning systems;
- Full sharing of real-time airspace status updates in order to take early advantage of possible opportunities and/or to achieve real-time awareness of airspace situation;
- Network impact assessment of the changes resulting of the application of the above processes.

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:	Ву:	Applicable to:
Initial operational capability	01/01/2017		Applicability Area
Full operational capability		01/01/2022	Applicability Area

References

European ATM Master Plan

OI step -	[AOM-0202-	[AOM-0202-A]-Automated Support for strategic, pre-tactical and tactical Civil-Military Coordination in Airspace Management (ASM).							
	Enablers -	AAMS-06b AOM19.5	AAMS-09a AOM19.5	AAMS-11	AIMS-06	ER APP ATC 77	MIL-0502	NIMS-42	PRO-011
		PRO-024	SWIM-APS- 02a	SWIM-APS- 03a	SWIM-INFR- 05a	SWIM-NET- 01a			
OI step -	[AOM-0206-	A]-Flexible and	modular ARES						
	Enablers -	AAMS-06b AOM19.5	AAMS-06c	AAMS-09a AOM19.5	AOC-ATM-15	ER APP ATC 77	SWIM-APS- 03a	SWIM-APS- 04a	SWIM-INFR- 05a
		SWIM-NET- 01a							

Lanandi	WWW7 004	Covered by SLoA(s) in	WXYZ-002	Covered by SLoA(s) in another objective	WXYZ-	Not covered in the
Legend:	WXYZ-001	this objective	zzz	Objective covering the enabler	003	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

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

ICAO GANP - ASBUs

Implementation Plan Edition 2022

	·		
- none -			

ASM Management of Real-Time Airspace Data

Deployment Programme

AOM19.2

- none -

European Plan for Aviation Safety

- none -

Operating Environments

En-Route Network

Terminal Airspace

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	Ву
AOM19.2-ASP01	Adapt ATM systems for real-time ASM data exchanges	01/01/2017	01/01/2022
AOM19.2-ASP02	Adapt local ASM support system for real-time ASM data exchanges with NM systems	01/01/2017	01/01/2022
AOM19.2-ASP03	Implement procedures related to real-time (tactical) ASM level III information exchange	01/01/2017	01/01/2022
AOM19.2-USE01	Adapt airspace users systems for real-time ASM data exchanges with NM	01/01/2017	01/01/2022
AOM19.2-NM01	Adapt NM systems for real-time ASM data exchanges	01/01/2017	01/01/2022
AOM19.2-NM02	Implement procedures related to real-time (tactical) ASM level III information exchange	01/01/2017	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. Potential gains through more efficient airspace allocation and better knowledge of traffic environment, common situational

awareness, and some enhancement through reduction in controller workload.

Capacity: Increased through better utilization of airspace resources within and across airspace boundaries leading to reduction of

flight delays.

Operational Efficiency:

Cost Efficiency:

Environment:

Increased through the availability of more optimum routes/trajectories allowing lower fuel burn.

Emissions reduced through the use of more optimum routes/trajectories.

Security:

Detailed SLoA Descriptions

AOM19.2-ASP01	Adapt ATM systems for real-time ASM data exchanges	From: 01/01/2017	By: 01/01/2022		
Action by:	ANS Providers				
Description & purpose:	Adapt ATM systems to exchange airspace reservation (ARES) messages containing real time (tactical) activation status of predefined airspace structures with local ASM support systems and to display airspace status data at the CWP.				

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/advance						
	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 Airsp Requirements supporting the ASM processes at local and FAB level Pa Requirements - 1.0 / 01/2020						
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-airs	space-management-asr	n-support-system-				
	SJU - SESAR Solution 31: Data Pack for variable profile military reserve collaboration	ed areas and enhanced	civil-military				
	Url: https://www.sesarju.eu/sesar-solutions/variable-profile-military-resecollaboration	erved-areas-and-enhand	ed-civil-military-				
	EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airsp Requirements supporting the ASM processes at local and FAB level Pa 09/2017						
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-airs	space-management-asr	n-support-system-				
TM Master Plan elationship:	[ER APP ATC 77]-ATC Systems enhanced to exchange real-time (tactical) airspace status data with ASM support system						
nalisation criteria:	1 - ATM systems have been adapted to enable real-time ASM data excl	nanges with local ASM s	support systems.				
AOM19.2-ASP02	Adapt local ASM support system for real-time ASM data exchanges with NM systems	From: 01/01/2017	By: 01/01/2022				
ction by:	ANS Providers	l .					
escription & purpose:	Adapt local ASM support system to provide NM systems real time airsp: ASM data. These data consist of pre-notification of activation, notificatio release of airspace.						
	ASM data. These data consist of pre-notification of activation, notification release of airspace. EUROCONTROL - European Route Network Improvement Plan (ERNIF Guidelines for Airspace Management - 5.5 / 11/2017	n of activation, de-activation	ation, modification and agement Handbook -				
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ASM Management of Real-Time Airspace Data

AOM19.2

AOM19.2	ASM Management of Real-Time	Airspace Data				
Action by:	ANS Providers					
Description & purpose:	Develop and implement the ASM/ATFCM and ATC procedures for ASM and systems (NM, Military authorities, AMC, ATC).	real time data exchang	es with different actors			
supporting material(s):	EUROCONTROL - NOP Portal User Guide - Edition 21.5-119					
	Url : https://www.eurocontrol.int/sites/default/files/content/documents/nm/network-operations/user-guides/nop-portal-user-guide-current.pdf					
	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 - 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					
	SJU - SESAR Solution 31: Data Pack for variable profile military reserved areas and enhanced civil-military collaboration					
	Url: https://www.sesarju.eu/sesar-solutions/variable-profile-military-reserved-areas-and-enhanced-civil-military-collaboration					
	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					
TM Master Plan elationship:	[PRO-011]-ASM Procedures to ensure that the change in airspace availareflected in the NOP	ability is promulgated th	rough SWIM and			
	[PRO-024]-ASM Procedures related to real-time (tactical) ASM level III in	nformation exchange				
inalisation criteria:	1 - Procedures related to real-time (tactical) ASM level III information ex	change implemented.				
AOM19.2-USE01	Adapt airspace users systems for real-time ASM data exchanges with NM	From: 01/01/2017	By: 01/01/2022			

	and systems (NM, Military authorities, AMC, ATC).				
Supporting material(s):	EUROCONTROL - NOP Portal User Guide - Edition 21.5-119				
	Url: https://www.eurocontrol.int/sites/default/files/content/documents/nmuser-guide-current.pdf	n/network-operations/us	er-guides/nop-portal-		
	EUROCONTROL - European Route Network Improvement Plan (ERNIF Guidelines for Airspace Management - 5.5 / 11/2017	P) Part 3 - Airspace Man	agement Handbook -		
	Url: https://www.eurocontrol.int/publication/european-route-network-imp	rovement-plan-ernip-pa	<u>urt-3</u>		
	EUROCONTROL - Advanced FUA Concept - Edition 1.0				
	Url: http://www.eurocontrol.int/sites/default/files/publication/files/advanc				
	EUROCONTROL - SPEC-112 - EUROCONTROL Specification for the a - Edition 1.1 / 01/2009	application of the Flexibl	e Use of Airspace (FUA)		
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-app				
	EUROCONTROL - SPEC-179 - EUROCONTROL Specification for Airsp Requirements supporting the ASM processes at local and FAB level Par Requirements - 1.0 / 01/2020				
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-airs requirements	space-management-asn	n-support-system-		
	SJU - SESAR Solution 31: Data Pack for variable profile military reserved areas and enhanced civil-military collaboration Url:				

AOM19.2 ASM Management of Real-Time Airspace Data

		From:	Ву:			
AOM19.2-NM01	Adapt NM systems for real-time ASM data exchanges	01/01/2017	01/01/2022			
Action by:	NM					
Description & purpose:	NM systems should be enhanced to receive and process and display real-time airspace activation, de-activation and modification of ARES using standard format and protocols and include this information in the NOP. NM system should be enhanced to perform the Network impact assessment of the airspace changes resulting of the real-time airspace data exchanges.					
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-impl	rovement-plan-ernip-pa	<u>art-3</u>			
	EUROCONTROL - Advanced FUA Concept - Edition 1.0					
	Url: http://www.eurocontrol.int/sites/default/files/publication/files/advance EUROCONTROL - SPEC-112 - EUROCONTROL Specification for the a - Edition 1.1 / 01/2009					
		lication-flexible-use-air	space-fua			
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-application-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					
	SJU - SESAR Solution 31: Data Pack for variable profile military reserved areas and enhanced civil-military collaboration					
	Url: https://www.sesarju.eu/sesar-solutions/variable-profile-military-reserved-areas-and-enhanced-civil-military-collaboration					
	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-airs	pace-management-asr	m-support-system-			
ATM Master Plan relationship:	[NIMS-42]-NM systems enhanced to receive, process and display real-til information	me tactical (ASM level	III) airspace usage			
Finalisation criteria:	1 - NM systems adapted for real-time ASM data exchanges.					
AOM19.2-NM02	Implement procedures related to real-time (tactical) ASM level III information exchange	From: 01/01/2017	By: 01/01/2022			
Action by:	NM					
Description & purpose:	Develop and implement the ASM/ATFCM procedures for ASM real time systems (NM, Military authorities, CFSPs, ATC, AMC), including a Networesulting of the real-time airspace data exchanges.					
Supporting material(s):	EUROCONTROL - NOP Portal User Guide - Edition 21.5-119					
	Url: https://www.eurocontrol.int/sites/default/files/content/documents/nmuser-guide-current.pdf	/network-operations/us	er-guides/nop-portal-			
	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 - 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 Airsp Requirements supporting the ASM processes at local and FAB level Par Requirements - 1.0 / 01/2020	ace Management (ASM t II ASM to ASM Syster	M) Support System ns Interface			
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-airs	pace-management-asr	m-support-system-			
	requirements SJU - SESAR Solution 31: Data Pack for variable profile military reserved areas and enhanced civil-military collaboration					
	Url: https://www.sesarju.eu/sesar-solutions/variable-profile-military-resercollaboration	ved-areas-and-enhand	ed-civil-military-			
	EUROCONTROL - SPEC 166 - EUROCONTROL Specification for Airsp Requirements supporting the ASM processes at local and FAB level Par 09/2017					
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification-airs	pace-management-asr	n-support-system-			

AOM19.2	ASM Management of Real-Time Airspace Data			
ATM Master Plan relationship:	[PRO-011]-ASM Procedures to ensure that the change in airspace availability is promulgated through SWIM and reflected in the NOP [PRO-024]-ASM Procedures related to real-time (tactical) ASM level III information exchange			
Finalisation criteria:	1 - Procedures related to real-time (tactical) ASM level III information exchange implemented.			