

CP1		Active							APT	
AOP12.1		Airport Safety Nets								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

Airport safety nets refers to the Airport Safety Support Service as defined in the EUROCONTROL Specification for Advanced-Surface Movement, Guidance and Control System (A-SMGCS) Services Edition: 2.0 dated: 22 April 2020 and EUROCAE Standard ED87-D: Minimum Aviation System Performance Specification (MASPS) for A-SMGCS, June 2019.

The scope of this Objective covers the Aerodrome Movement Area as defined by the ICAO documents (ICAO Annex 14 Aerodrome Design and Operations, Volume I, Edition 7, 2016).

The A-SMGCS Airport Safety Support Service contributes to airside operations as a safety improvement, enabling Controllers to prevent hazards/incidents/accidents resulting from Controller, Flight Crew or Vehicle Driver operational errors or deviations. This Service depends on the Surveillance Service being in operation.

The Airport Safety Support Service supports Controllers by:

- Anticipating potential conflicts (e.g. hazardous situations between aircraft or aircraft and vehicles).
- Detecting conflicts and incursions.
- Detecting mobiles that are not following given Clearances.
- Providing alerts.

The Airport Safety Support Service is designed on the basis of one or more of the following three functions. These functions may be partially introduced depending on local requirements e.g. not all CATC or CMAC alerts may be suitable depending on the aerodrome layout:

- Runway Monitoring and Conflict Alerting (RMCA)
- Conflicting ATC Clearances (CATC).
- Conformance Monitoring Alerts for Controllers (CMAC).

The RMCA function acts as a short-term alerting tool, whereas the CATC and CMAC serve to be more predictive tools that aim at preventing situations where an RMCA alert may be triggered.

For the CATC and CMAC alerts to function correctly it is important that the system receives the Controller's Clearances, therefore, the Controller shall be provided with an Electronic Clearance Input (ECI) means e.g. Electronic Flight Strips (EFS).

Some of the CMAC alerts work on the assumption that every mobile entering the Runway Protected Area (RPA) or Restricted Area shall have received a Clearance from the Controller.

The clearances to be addressed by the Air Traffic Controllers in the context of the Airport Safety Nets service, are described in the EUROCONTROL A-SMGCS Specification Ed. 2.0. This EUROCONTROL reference document also covers the issues linked to potential local limitations that may arise.

Depending on the local implementation strategy, this Objective could also affect other stakeholders subject to using vehicles on the movement area, such as but not limited to Handling Companies, De-Icing Agents, often operating under the coordination of the airport operator that is responsible for the safeguard of all the stakeholders involved.

System requirements:

The detection of Conflicting ATC Clearances (CATC), the Conformance Monitoring of Alerts for Controllers (CMAC) shall be performed by the ATC system based on the knowledge of:

- Data related to the aircraft or vehicle e.g. identity, type, flight plan, SSR code, stand, Clearances, planned route, cleared route, assigned runway, timing information, de-icing information, aircraft status (e.g. assumed, pending, transferred),
- Airport Operations data e.g. aerodrome maps, reference points (runway thresholds, holding points, stop bars etc...), operational use of runways, ATC procedures, activation/de-activation of LVP etc...

The detection of CMAC alerts requires in some cases the ATC system to know the aircraft route e.g. Route deviation.

The air traffic controller shall input all clearances given to mobiles into the ATC system using an Electronic Clearance Input (ECI) means.

The Airport Safety Support Service may be partially introduced depending on local limitations due to airport specificities, e.g. not all CATC or CMAC alerts may be suitable depending on the aerodrome layout. In these cases, some systems requirements contained in the two documents referred to above (the EUROCONTROL Specification and the EUROCAE document) may have to be adapted to meet the local needs.

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

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review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

NOTE: The SLoAs listed in this document should be addressed to air navigation service providers as well as to airport operators. This is due to the fact that some airports operate their own ground control units for specific areas of responsibility at the airport. Airport operators providing air traffic control services qualify as ANSPs and are therefore covered by the ASP SLoAs. It is up to each implementer to check and select what is relevant to them, depending on local areas of responsibilities.

Applicability Area(s) & Timescale(s)

Applicability Area 1 (CP1 Airports)	See list of airports in MP Level 3 Implementation Plan - Annexes		
Applicability Area 2 (Non-CP1 Airports)	See list of airports in MP Level 3 Implementation Plan - Annexes		
Timescales:	From:	By:	Applicable to:
Initial Operational Capability	01/01/2021		Applicability Area 1 + Applicability Area 2
Full Operational Capability / Target Date		31/12/2025	Applicability Area 1 + Applicability Area 2

References

European ATM Master Plan

Ol step -	[AO-0104-A]-Airport Safety Nets for Controllers at A-SMGCS Airports					
Enablers -	AERODROME -ATC-06	AERODROME -ATC-07	AERODROME -ATC-12 AOP13	AERODROME -ATC-50 AOP13, AOP16, ATC19		
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 (EU) No 2021/116 on the establishment of the Common Project One
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Essential Operational Changes

Airport and TMA performance

SESAR Solution

#02 - Airport Safety Nets for controllers: conformance monitoring alerts and detection of conflicting ATC clearances
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ICAO GANP - ASBUs

SURF-B1/3	Enhanced ATCO alerting service for surface operations
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Deployment Programme

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European Plan for Aviation Safety

- none -

Operating Environments

Airport

Stakeholder Lines of Action (SLoAs)

SLoA ref.	Title	From	By
AOP12.1-ASP01	Supporting RMCA systems implemented	01/01/2021	31/12/2025
AOP12.1-ASP02	Supporting CATC and CMAC systems implemented	01/01/2021	31/12/2025
AOP12.1-ASP03	Operational procedures developed	01/01/2021	31/12/2025

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AOP12.1-ASP04	Safety Assessment	01/01/2021	31/12/2025
AOP12.1-ASP05	Training	01/01/2021	31/12/2025
AOP12.1-ASP06	Operational use	01/01/2021	31/12/2025
AOP12.1-APO01	Supporting RMCA systems implemented	01/01/2021	31/05/2025
AOP12.1-APO02	Supporting CATC and CMAC systems implemented	01/01/2021	31/12/2025
AOP12.1-APO03	Develop operational procedures	01/01/2021	31/12/2025
AOP12.1-APO04	Safety assessment	01/01/2021	31/12/2025
AOP12.1-APO05	Training	01/01/2021	31/12/2025
AOP12.1-APO06	Operational use	01/01/2021	31/12/2025

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 safety in airport operations.
Capacity:	Increased situational awareness.
Operational Efficiency:	Increased situational awareness.
Cost Efficiency:	-
Environment:	Increased situational awareness.
Security:	-

Detailed SLoA Descriptions

AOP12.1-ASP01	Supporting RMCA systems implemented	From: 01/01/2021	By: 31/12/2025
Action by:	ANS Providers		
Description & purpose:	Active RMCA alerts must be triggered according to the alert's parameters tailored for the local environment and displayed on Controller CWP with a distinction of colours between alarms alerts and information alerts, alarm alerts must trigger audio warning. RMCA alarm alerts must have the highest priority when displayed on Controller CWP. Installed RMCA System must demonstrate the compliance to the EUROCAE ED87-D performance requirements and pass the tests described in paragraph 5.5		
	Note : This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		
Finalisation criteria:	1 - RMCA supporting systems have been installed and tested.		
AOP12.1-ASP02	Supporting CATC and CMAC systems implemented	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	Implement appropriate systems allowing the detection of CATC and CMAC, integrated with A-SMGCS surveillance data and ECI (Electronic Clearance Input)		
	Note : This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		
Finalisation criteria:	1 - CATC and CMAC supporting systems have been installed and tested.		
AOP12.1-ASP03	Operational procedures developed	From: 01/01/2021	By: 31/12/2025
Action by:	ANS Providers		
Description & purpose:	The Airport Safety Support Service Operational Procedures must be elaborated.		
	Note : This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		

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ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		
Finalisation criteria:	1 - Operational Procedures have been developed, tested and approved.		
AOP12.1-ASP04	Safety Assessment	From: 01/01/2021	By: 31/12/2025
Action by:	ANS Providers		
Description & purpose:	The safety assessment of the changes must be developed in coordination and synchronisation with all concerned stakeholders. This safety assessment must be delivered to the competent authority. Note :This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
Finalisation criteria:	1 - Safety assessment has been developed and delivered to the competent authority.		
AOP12.1-ASP05	Training	From: 01/01/2021	By: 31/12/2025
Action by:	ANS Providers		
Description & purpose:	All relevant staff must be duly trained Note :This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
Finalisation criteria:	1 - Training has been completed.		
AOP12.1-ASP06	Operational use	From: 01/01/2021	By: 31/12/2025
Action by:	ANS Providers		
Description & purpose:	Airport Safety Nets are in operational use once the procedures are in place, systems have been implemented, the safety assessment has been delivered and approved, and the training has been completed.		
Finalisation criteria:	1 - Airport Safety Nets (CATC and CMAC) are put into service		
AOP12.1-APO01	Supporting RMCA systems implemented	From: 01/01/2021	By: 31/05/2025
Action by:	Airport Operators		
Description & purpose:	Active RMCA alerts must be triggered according to the alert's parameters tailored for the local environment and displayed on Controller CWP with a distinction of colours between alarms alerts and information alerts, alarm alerts must trigger audio warnings. RMCA alarm alerts must have the highest priority when displayed on Controller CWP. Installed RMCA System must demonstrate the compliance to the EUROCAE ED87-D performance requirements and pass the tests described in paragraph 5.5 Note :This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		
Finalisation criteria:	1 - RMCA supporting systems have been installed and tested.		
AOP12.1-APO02	Supporting CATC and CMAC systems implemented	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	Implement appropriate systems allowing the detection of CATC and CMAC, integrated with A-SMGCS surveillance data and ECI (Electronic Clearance Input) Note :This SLoA needs to be synchronised between ANSPs and AOs.		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		

AOP12.1	Airport Safety Nets		
Finalisation criteria:	1 - CATC and CMAC supporting systems have been installed and tested.		
AOP12.1-APO03	Develop operational procedures	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	The Airport Safety Support Service Operational Procedures must be elaborated. <i>Note :This SLoA needs to be synchronised between ANSPs and AOs.</i>		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
ATM Master Plan relationship:	[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations [AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area		
Finalisation criteria:	1 - Operational Procedures have been developed, tested, and approved.		
AOP12.1-APO04	Safety assessment	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	The safety assessment of the changes must be developed in coordination and synchronisation with all concerned stakeholders. This safety assessment must be delivered to the competent authority. <i>Note :This SLoA needs to be synchronised between ANSPs and AOs.</i>		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
Finalisation criteria:	1 - Safety assessment has been developed and delivered to the competent authority.		
AOP12.1-APO05	Training	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	All relevant staff must be duly trained <i>Note :This SLoA needs to be synchronised between ANSPs and AOs.</i>		
Supporting material(s):	SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 Url : https://www.sesardeploymentmanager.eu/publications/deployment-programme		
Finalisation criteria:	1 - Training has been completed.		
AOP12.1-APO06	Operational use	From: 01/01/2021	By: 31/12/2025
Action by:	Airport Operators		
Description & purpose:	Airport Safety Nets are in operational use once the procedures are in place, systems have been implemented, the safety assessment has been delivered and approved, and the training has been completed.		
Finalisation criteria:	1 - Airport Safety Nets (CATC and CMAC) are put into service		

