



AOP12.1 — Airport Safety Nets

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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 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.

Edition	2022
Stakeholders	Air Navigation Service Provider / Airport Operator
Type	CP1
Scope	Airport

Context

Related Elements



Applicability Area(s) and Timescales

Applicability Area 1:	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 (non-CP1 Airports)
Full Operational Capability / Target Date	-	31-12-2025	Applicability Area 1 + Applicability Area 2 (non-CP1 Airports)

Links to ATM Master Plan Level 2

OI Operational Improvement Steps

Code	Title	IOC	FOC	Related Elements
AO-0104-A	Airport Safety Nets for Controllers at A-SMGCS Airports	31-12-2019	31-12-2023	SOL OI EN OBJ DS PCP ICAO A

SOL Links to SESAR Solutions

Code	Title	Program	Related Elements
No record found			

PCP Links to PCP ATM Sub-Functionalities

Code	Title	Related Elements
No record found		

ICAO ICAO Block Modules: No associated data

References

Applicable legislation

Regulation (EU) No 2021/116 on the establishment of the Common Project One

Applicable ICAO Annexes and other references

None

Deployment Programme 2022

Family 2.3.1 - Airport Safety Nets

Operating Environments

-

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	-

Stakeholder Lines of Action

Code	Title	From	By	Related Enablers
ASP01	Supporting RMCA systems implemented	01-01-2021	31-12-2025	
ASP02	Supporting CATC and CMAC systems implemented	01-01-2021	31-12-2025	
ASP03	Operational procedures developed	01-01-2021	31-12-2025	
ASP04	Safety Assessment	01-01-2021	31-12-2025	
ASP05	Training	01-01-2021	31-12-2025	
ASP06	Operational use	01-01-2021	31-12-2025	
APO01	Supporting RMCA systems implemented	01-01-2021	31-05-2025	
APO02	Supporting CATC and CMAC systems implemented	01-01-2021	31-12-2025	
APO03	Develop operational procedures	01-01-2021	31-12-2025	
APO04	Safety assessment	01-01-2021	31-12-2025	
APO05	Training	01-01-2021	31-12-2025	
APO06	Operational use	01-01-2021	31-12-2025	

Supporting Material

Title	Related SLoAs
SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 https://www.sesardeploymentmanager.eu/publications/deployment-programme	APO01, APO02, APO03, APO04, APO05, ASP01, ASP02, ASP03, ASP04, ASP05

Consultation & Approval

Working Arrangement in charge	-
Outline description approved in	-
Latest objective review at expert level	-
Commitment Decision Body	-
Objective approved/endorsed in	-
Latest change to objective approved/endorsed in	-