

PCP		Removed							APT		
AOP12		Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)									
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP	

## Subject matter and scope

Detection and alerting of conflicting ATC clearances (CATC) to mobiles (aircraft and vehicles) and non-conformance to procedures and clearances (CMAC) for traffic on the movement area. These functionalities will improve runway and airfield safety by providing early detection of hazardous situations that may potentially put the vehicles and aircraft at risk of collision.

CMAC and CATC shall be performed by the ATC system based on 'A-SMGCS Surveillance' (former A-SMGCS Level 1), the clearances, given to mobiles by the controller and known constraints such as the assigned runway, holding point, the route of the mobile and the aircraft type.

The controller shall input all clearances given to aircraft or vehicles into the ATC system using an Electronic Clearance Input (ECI) means such as the Electronic Flight Strip (EFS).

Different types of CATC shall be identified (for example Line-Up vs. Take-Off). Some may only be based on the controller input; others may in addition use other data such as 'A-SMGCS Surveillance' data.

CMAC shall alert controllers when aircraft and vehicles deviate from ATC instructions, procedures. The detection of Conflicting ATC Clearances shall aim to provide an early prediction of situations that if not corrected would end up in hazardous situations that would be detected in turn by the Runway Monitoring and Conflict Alerting (RMCA) if in operation.

RMCA (former A-SMGCS Level 2), CATC and CMAC are the three functionalities of the 'A-SMGCS Airport Safety Support' service.

RMCA (covered by Implementation Objective AOP04.2) is seen as a pre-requisite for the deployment of the complete A-SMGCS 'Airport Safety Support' Service.

Note: Safety nets have been defined for and through regulation/specifications for other environments and RWY environment partly. If the term 'Airport safety net' is not consistent with those definitions, it will however be used in this objective for consistency with PCP terminology. Actually, this objective is affecting the safety nets and controller support tools envelopes. RMCA is a RWY safety net and provides alerts on hazardous situations on the RWY regardless of whether the a/c have been cleared or not by ATC, which fits perfectly on the safety nets umbrella.

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)

<b>Applicability Area (PCP Airports)</b> (As in PCP Regulation for S-AF2.5)	See list of airports in MP Level 3 Implementation Plan - Annexes		
<b>Timescales:</b>	<b>From:</b>	<b>By:</b>	<b>Applicable to:</b>
Initial operational capability	01/01/2015		Applicability Area (PCP Airports)
Full operational capability		01/01/2021	Applicability Area (PCP Airports)

## References

### European ATM Master Plan

OI step -	<a href="#">[AO-0104-A]-Airport Safety Nets for Controllers at A-SMGCS Airports</a>									
Enablers -	AERODROME -ATC-06	AERODROME -ATC-07	AERODROME -ATC-12 AOP13	AERODROME -ATC-50 AOP13, AOP16, ATC19						
OI step -	<a href="#">- No OI Link -</a>									
Enablers -	AERODROME -ATC-36									

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
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### Applicable legislation

<b>AOP12</b>	<b>Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)</b>
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Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project

**Essential Operational Changes**

Airport and TMA performance

**SESAR Solution**

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

**ICAO GANP - ASBUs**

- none -

**Deployment Programme**

- none -

**European Plan for Aviation Safety**

MST.029	Implementation of SESAR Runway safety solutions
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**Operating Environments**

Airport

**Stakeholder Lines of Action (SLoAs)**

SLoA ref.	Title	From	By
AOP12-ASP01	Install required 'Airport Safety Nets'	01/01/2015	01/01/2021
AOP12-ASP02	Train aerodrome control staff on the functionality of 'Airport Safety Nets'	01/01/2015	01/01/2021
AOP12-ASP03	Implement digital systems such as electronic flight strips (EFS)	01/01/2015	01/01/2021
AOP12-APO01	Train all relevant staff on the functionality of 'Airport Safety Nets'	01/01/2015	01/01/2021
AOP12-USE01	Train Pilots on the functionality of 'Airport Safety Nets'	01/01/2015	01/01/2021

Description of finalised and deleted SLoAs is available on the eATM Portal @ [https://www.eatmportal.eu/working/depl/essip\\_objectives](https://www.eatmportal.eu/working/depl/essip_objectives)

**Expected Performance Benefits**

<b>Safety:</b>	Improved runway and airfield safety by providing early detection of hazardous situations that may potentially put the vehicles and aircraft at risk of collision. Improved situational awareness of all actors.
<b>Capacity:</b>	-
<b>Operational Efficiency:</b>	-
<b>Cost Efficiency:</b>	-
<b>Environment:</b>	-
<b>Security:</b>	-

**Detailed SLoA Descriptions**

<b>AOP12-ASP01</b>	<b>Install required 'Airport Safety Nets'</b>	<b>From:</b> 01/01/2015	<b>By:</b> 01/01/2021
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	Deploy appropriate systems, constituents and associated procedures allowing the detection of conflicting ATC clearances to mobiles and detection of non-conformance to procedures or clearances for traffic on runways, taxiways and in the apron/stand/gate area. This deployment is considered as an enhancement of the 'A-SMGCS Airport Safety Support' service (former A-SMGCS level 2 - Implementation Objective AOP04.2).		
<b>Supporting material(s):</b>	EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services">https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services</a> SJU - SESAR Solution 02: Data Pack for airport safety nets for controllers Url : <a href="http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance">http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance</a>		

AOP12	Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)		
ATM Master Plan relationship:	<a href="#">[AERODROME-ATC-06]-A-SMGCS incorporating the function that detects Conflicting ATC Clearances (CATC) for runway operations</a> <a href="#">[AERODROME-ATC-07]-A-SMGCS incorporating the function that provides Conformance Monitoring Alerts for Controllers (CMAC) on the movement area</a>		
Finalisation criteria:	1 - 'Airport Safety Nets' functionality has been deployed.		
AOP12-ASP02	Train aerodrome control staff on the functionality of 'Airport Safety Nets'	From: 01/01/2015	By: 01/01/2021
Action by:	ANS Providers		
Description & purpose:	Train aerodrome controllers on the 'Airport Safety Nets' systems and procedures (including phraseology) in accordance with agreed training requirements.		
Supporting material(s):	EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services">https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services</a> SJU - SESAR Solution 02: Data Pack for airport safety nets for controllers Url : <a href="http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance">http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance</a>		
Finalisation criteria:	1 - Controllers training in accordance with agreed training requirements and programme has been completed.		
AOP12-ASP03	Implement digital systems such as electronic flight strips (EFS)	From: 01/01/2015	By: 01/01/2021
Action by:	ANS Providers		
Description & purpose:	Implement an electronic clearance input (ECI) means such as the electronic flight strip (EFS), allowing the air traffic controller to input all clearances given to aircraft or vehicles into the ATC system. This means, such as EFS, shall have the appropriate interfaces allowing the integration of the instructions given by the air traffic controller with other data such as flight plan, surveillance, routing, published routes and procedures.		
Supporting material(s):	EUROCONTROL - Integrated Tower Working Position (ITWP) Baseline HMI Description - V1.0 / 10/2020 Url : <a href="https://www.eurocontrol.int/publication/integrated-tower-working-position-itwp-human-machine-interface-hmi-description">https://www.eurocontrol.int/publication/integrated-tower-working-position-itwp-human-machine-interface-hmi-description</a>		
ATM Master Plan relationship:	<a href="#">[AERODROME-ATC-36]-Airport surveillance data processing and distribution upgraded to store and forward flight plan data</a>		
Finalisation criteria:	1 - Electronic clearance input means such as EFS has been implemented, documented and in operational use.		
AOP12-APO01	Train all relevant staff on the functionality of 'Airport Safety Nets'	From: 01/01/2015	By: 01/01/2021
Action by:	Airport Operators		
Description & purpose:	Train all relevant staff (e.g. vehicle drivers) on the 'Airport Safety Nets' systems and procedures (including phraseology) in accordance with agreed training requirements.		
Supporting material(s):	EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services">https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services</a> SJU - SESAR Solution 02: Data Pack for airport safety nets for controllers Url : <a href="http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance">http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance</a>		
Finalisation criteria:	1 - Staff training in accordance with agreed training requirements and programme has been completed.		
AOP12-USE01	Train Pilots on the functionality of 'Airport Safety Nets'	From: 01/01/2015	By: 01/01/2021
Action by:	Airspace Users		
Description & purpose:	Train pilots on the 'Airport Safety Nets' systems and procedures (including phraseology) in accordance with agreed training requirements.		
Supporting material(s):	SJU - SESAR Solution 02: Data Pack for airport safety nets for controllers Url : <a href="http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance">http://www.sesarju.eu/sesar-solutions/high-performing-airport-operations/airport-safety-nets-controllers-conformance</a>		
Finalisation criteria:	1 - Pilots training in accordance with agreed training requirements and programme has been completed.		

