SESAR	Active		LOC/APT

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers

REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

Enhanced Situational Awareness and Airport Safety Nets for the vehicle drivers should be used by those vehicle drivers who are allowed to operate in the manoeuvring area of an aerodrome.

The system consists of the following improvements for the vehicle drivers:

1. Provision of an Airport Moving Map in the vehicle, together with the display of the surrounding traffic, to enhance the driver's situation awareness: The Airport Moving Map function indicates the position of the vehicle on the airfield and the Ground Traffic Display function displays other traffic operating on the movement area of the airport. The   other traffic to be displayed includes both aircraft and vehicles.

2. Provision of alerts to vehicle drivers to warn them of situations that if not corrected could end up in hazardous situations. Two types of alerts are considered:
   a) Traffic alerts to warn the vehicle driver of a potential or actual conflict with an aircraft. Traffic alerts are not triggered with another vehicle but only with an aircraft.
   b) Area infringement alerts to warn the vehicle driver when the vehicle is in a closed or restricted area while the vehicle is operating on the manoeuvring area.

The alerts are provided to the vehicle drivers in the form of an aural and/or visual alert with two levels of alert severity depending on the severity of situations:

• Caution alert for the less critical situations; and
• Warning alert for the most critical situations.

Two implementations have been considered for the generation of alerts:

1. Alerts may be generated by an on-board system; or
2. Alerts may be generated by a centralised server (connected to the A-SMGCS) with an uplink to the vehicle.

In implementation of this functionality, the frequency load of 1030/1090 MHz should be considered.

Increased situational awareness is essential for operations at airports especially in adverse weather conditions or other similar operating situations. Situational Awareness is important for vehicle drivers as they need to operate within the manoeuvring area regardless of weather conditions.

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 (Subject to local needs)	

Timescales:	From:	By:	Applicable to:
IOC used for Analytics functioning only - not for implementation planning	31/05/2019		Applicability Area
FOC used for Analytics functioning only - not for implementation planning		01/01/2030	Applicability Area

References

European ATM Master Plan

OI step -	[AO-0105]-Airport Safety Net for Vehicle Drivers						
	Enablers -	AIRPORT-45	AIRPORT-46				
OI step -	[AO-0204]-Airport Vehicle Driver's Traffic Situational Awareness						
	Enablers -	AIRPORT-30	AIRPORT-47	CTE-S03			

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

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers

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Applicable legislation

-none-

Essential Operational Changes

Airport and TMA performance

SESAR Solution

#04 - Enhanced Traffic Situational Awareness and Airport Safety Nets for the vehicle drivers

ICAO GANP - ASBUs

SURF-B2/2	Comprehensive vehicle driver situational awareness on the airport surface

Deployment Programme

- none -	

European Plan for Aviation Safety

MST.029	Implementation of SESAR Runway safety solutions

Operating Environments

Airport

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	By
AOP15-REG01	Promulgate the procedures for use of Enhanced Situational Awareness and Airport Safety Nets for vehicle drivers	01/04/2019	
AOP15-APO01	Install "Onboard Ground Vehicle System" to process and display the own position and surrounding traffic		
AOP15-APO02	Install SNET function in "Onboard Ground Vehicle System", to provide alerts to vehicle drivers		
AOP15-APO03	Develop the procedures for use of "Onboard Ground Vehicle System" and SNET		
AOP15-APO04	Develop safety assessment of the changes imposed by "Onboard Ground Vehicle System" and SNET		
AOP15-APO05	Train all relevant staff in the use of "Onboard Ground Vehicle System" and SNET		
AOP15-INT01	Develop standard for interface between A-SMGCS and On Board Ground Vehicle System		

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

Expected Performance Benefits

Safety:	This improved situational awareness combined with an alerting/warning system in case potential hazardous situations are detected, will not only improve safety for the vehicles operating in the manoeuvring area but also provide a safety enhancement for the aircraft operations, both on taxiways and runways, at the airport.
Capacity:	-
Operational Efficiency:	-
Cost Efficiency:	-
Environment:	-
Security:	-

Detailed SLoA Descriptions

AOP15-REG01	Promulgate the procedures for use of Enhanced Situational Awareness and Airport Safety Nets for vehicle drivers	From: 01/04/2019	By: -
Action by:	Regulatory Authorities		

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers

Description & purpose:	Establish and promulgate the procedures for use Enhanced Situational Awareness and Airport Safety Nets for the vehicle drivers at an aerodrome.
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 : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers
Finalisation criteria:	1 - The procedures for use Enhanced Situational Awareness and Airport Safety Nets for the vehicle drivers, have been promulgated.

AOP15-APO01	Install "Onboard Ground Vehicle System" to process and display the own position and surrounding traffic	From:	By:
		-	-

Action by:	Airport Operators
Description & purpose:	Install the system for Surface Traffic Situational Awareness to process and display in an "On-board Vehicle System" the own position and surrounding traffic. The processing and display in an "On-board Vehicle System" of the own position and surrounding traffic may be provided by the central server making use A-SMGCS system or autonomously by Onboard Ground Vehicle system. The system should be used by those vehicle drivers who are allowed to operate in the manoeuvring area of an aerodrome. In implementation of this functionality, the frequency load of 1030/1090 MHz should be considered.
Supporting material(s):	SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers
ATM Master Plan relationship:	[AIRPORT-30]-Use of airport wireless communication infrastructure for mobile data' [AIRPORT-47]-Surface Traffic Situational Awareness to process and display in an 'On-board Vehicle System' the own position and surrounding traffic.
Finalisation criteria:	1 - "On-board Vehicle System" displaying the own position and surrounding traffic has been installed and functioning at the vehicles operating on the manoeuvring area.

AOP15-APO02	Install SNET function in "Onboard Ground Vehicle System", to provide alerts to vehicle drivers	From:	By:
		-	-

Action by:	Airport Operators
Description & purpose:	Install the function for SNET alerts generation and display to the vehicle drivers in Onboard Ground Vehicle System. SNET alerts may be generated and displayed by the central server making use A-ASMGCS system or autonomously by Onboard Ground Vehicle system. The system should be used by those vehicle drivers who are allowed to operate in the manoeuvring area of an aerodrome.
Supporting material(s):	SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers
ATM Master Plan relationship:	[AIRPORT-30]-Use of airport wireless communication infrastructure for mobile data' [AIRPORT-45]-On-board vehicle system to provide safety net alerts to vehicle drivers [AIRPORT-46]-On-board vehicle safety net alerts generation [AIRPORT-47]-Surface Traffic Situational Awareness to process and display in an 'On-board Vehicle System' the own position and surrounding traffic.
Finalisation criteria:	1 - "On-board Vehicle System" generating SNET alerts to the drivers has been installed and functioning at the vehicles operating on the manoeuvring area.

AOP15-APO03	Develop the procedures for use of "Onboard Ground Vehicle System" and SNET	From:	By:
		-	-

Action by:	Airport Operators
Description & purpose:	Develop the procedures for the vehicle drivers, which specify roles, tasks and responsibilities for use of Enhanced Situational Awareness system and SNET alerts at an aerodrome.
Supporting material(s):	SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers
Finalisation criteria:	1 - Operations Manual applicable to the vehicle drivers has been updated to contain the procedures concerned.

AOP15-APO04	Develop safety assessment of the changes imposed by "Onboard Ground Vehicle System" and SNET	From:	By:
		-	-

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers

Action by:	Airport Operators
Description & purpose:	Develop safety assessment of the changes, notably installation of "On-board Vehicle System" displaying the own position, surrounding traffic and SNET alerts to the vehicle drivers. The tasks to be done are as follows: - Conduct hazard identification, risk assessment in order to define safety objectives and safety requirements mitigating the risks; - Develop safety assessment; - Deliver safety assessment to the NSA, if new standards are applicable or if the severity class of identified risks is 1 or 2. This safety assessment shall be based on fully validated/recognised method. In implementation of this functionality, the frequency load of 1030/1090 MHz should be considered.
Supporting material(s):	SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers
Finalisation criteria:	1 - The safety argument for all changes, generated by the deployment of this functionality, has been delivered by the Airport Operator to the NSA.

AOP15-APO05	Train all relevant staff in the use of "Onboard Ground Vehicle System" and SNET	From: -	By: -

Action by:	Airport Operators		
Description & purpose:	Train airport vehicle drivers operating at the manoeuvring area, in the responsibilities and actions that should be taken in relation to use of "On-board Vehicle System" displaying the own position, surrounding traffic and SNET alerts to the driver.		
Supporting material(s):	SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers		
Finalisation criteria:	1 - Vehicle drivers training in accordance with agreed training requirements and programme has been completed.		

AOP15-INT01	Develop standard for interface between A-SMGCS and On Board Ground Vehicle System	From: -	By: -

Action by:			
Description & purpose:	Develop and publish the standard for interface between A-SMGCS and On Board Vehicle System.		
	Note :This is action for European Standardisation Organisations		
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 : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 04: Data Pack for Enhanced traffic situational awareness and airport safety nets for the vehicle drivers Url : https://www.sesarju.eu/sesar-solutions/enhanced-traffic-situational-awareness-and-airport-safety-nets-vehicle-drivers		
Finalisation criteria:	1 - The standard for interface between A-SMGCS and On Board Vehicle System, have been published.		