SES	AR	Active AF					APT			
AOI	P13	Automated Assistance to Controller for Surface Movement Planning and Routing								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

The A-SMGCS Routing service provides the generation of taxi routes, with the corresponding estimated taxi time for planning considerations. Taxi routes may be modified by the controller before being assigned to aircraft and vehicles. These routes shall be available in the flight data processing system. Taxi times are continuously updated as the aircraft is operating on the airport surface.

The A-SMGCS Routing shall calculate the most operationally relevant route which permits the aircraft to go from stand to runway, from runway to stand or any other surface movement.

The controller working position shall allow the controller to manage surface route modification and creation if deemed necessary.

The flight data processing system shall be able to receive planned and cleared routes assigned to aircraft and vehicles and manage the status of the route for all concerned aircraft and vehicles.

Traffic will be controlled through the use of appropriate procedures allowing the issuance of information and clearances to traffic.

The A-SMGCS Routing Service should provide to external systems the estimated taxi-out time (EXOT) for aircraft as long as they are before pushback, if benefit provided compared to already existing A-CDM. External systems such as A-CDM might benefit from more accurate taxi times in order to enhance the pre-departure sequencing by providing accurate target take-off times (TTOT).

NOTE: For this objective, there is no requirement for the use of datalink for providing clearances to the pilot or vehicle driver (e.g. D-Taxi).

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	See list of airports in MP Level	3 Implementation F	Plan - Annexes	
Timescales:		Ву:	Applicable to:	
Initial operational capability		16	Applicability Area	
Full operational capability		31/12/2025	Applicability Area	

References

European ATM Master Plan

OI step -	[AO-0205]-Automated Assistance to Controller for Surface Movement Planning and Routing								
	Enablers -	AERODROME -ATC-12	AERODROME -ATC-13	AERODROME -ATC-50	REG-0201 AOP16	REG-0513			
OI step -	[TS-0202]-Pre-Departure Sequencing supported by Route Planning								
	Enablers -	AERODROME -ATC-18	AERODROME -ATC-50	AIRPORT-36	REG-0513	STD-059			
OI step -	- No OI Link -								
	Enablers -	AERODROME -ATC-18	AERODROME -ATC-44a						

1	M/XX7 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

-none-

Essential Operational Changes

Airport and TMA performance

SESAR Solution

Implementation Plan Edition 2022

AOP13

Automated Assistance to Controller for Surface Movement Planning and Routing

#22 - Automated Assistance to Controller for Surface Movement Planning and Routing, #53 - Pre-Departure Sequencing supported by Route Planning

ICAO GANP - ASBUs

SURF-B1/4 Routing service to support ATCO surface operations management

Deployment Programme

- none -

European Plan for Aviation Safety

INDI.023 Implementation of SESAN Number Salety Solution	MST.029	Implementation of SESAR Runway safety solutions
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Operating Environments

Airport

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	Ву
AOP13-REG01	Coordination and final official approval of procedures by the local regulator is required	01/01/2016	31/12/2025
AOP13-ASP01	Upgrade ATS systems to support automated assistance to air traffic controllers for surface movement planning and routing	01/01/2016	31/12/2025
AOP13-ASP02	Ensure the planning and routing function is used to optimise pre-departure sequencing	01/01/2021	31/12/2025
AOP13-ASP03	Implement operational procedures implementing automated assistance to air traffic controllers for surface movement planning and routing	01/01/2016	31/12/2025
AOP13-ASP04	Develop, and deliver as necessary, a safety assessment of the changes imposed by the implementation of automated assistance to air traffic controllers for surface movement planning and routing	01/01/2016	31/12/2025
AOP13-ASP05	Train all operational personnel concerned in the use of automated assistance for surface movement planning and routing	01/01/2016	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 through increased controllers' situational awareness for all ground movements and potential conflicts

resolution.

Capacity: Increased availability of taxiway resources and reduced total taxi time by ground movements. Improved traffic flow on

the aerodrome's manoeuvring area.

Operational Efficiency: Reduced fuel consumption due to reduced taxi time and reduced number of stops while taxiing.

Cost Efficiency:

Environment: Reduced environmental impact by reducing fuel consumption and then CO2 emissions.

Security: -

Detailed SLoA Descriptions

AOP13-REG01	Coordination and final official approval of procedures by the	From: 01/01/2016	Ву:			
AOI 13-NEGUT	local regulator is required		31/12/2025			
Action by:	Regulatory Authorities					
Description & purpose:	Coordinate and discuss the use of new routing & planning functions between all different stakeholders and finally receive the official approval by the local regulator. Note that in some airports, management of ground movement is performed by non ATCO airport personnel.					
Supporting material(s):	SJU - SESAR Solution 22: Data Pack for automated assistance to controller for surface movement planning and routing					
	Url: https://www.sesarju.eu/sesar-solutions/automated-assistance-controller-surface-movement-planning-and-routing					
Finalisation criteria:	1 - All routing and planning functionalities are approved by the regulator for daily operations.					
	Upgrade ATS systems to support automated assistance to air	From:	Ву:			
traffic controllers for surface movement planning and routing		01/01/2016	31/12/2025			
Action by:	ANS Providers					

stand. The flight data processing system shall be able to receive planned and cleared routes assigned to aircraft and vehicle and manage the status of the route for all concerned aircraft and vehicles. Supporting material(s): EUROCONTROL - Integrated Tower Working Position (ITWP) Baseline HMI Description - V1.0 / 10/2020 Uf : https://www.eurocontrol.int/publication/integrated-tower-working-position-itvp-human-machine-interface-hmidescription EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Uf : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 22: Data Pack for automated assistance to controller for surface movement planning and rout unit https://www.sesarju.eu/sear-solutions/automated-assistance-controller-surface-movement-planning-and-routin (AERODROME-ATC-13)-furdex-emovement information processing system enhanced with storage and dissemination automated assistance-controller-surface-movement-planning-and-routin (AERODROME-ATC-13)-surface movement information processing system enhanced with storage and dissemination automated assistance-controller-surface-movement-planning-and-routin (AERODROME-ATC-13)-surface movement information processing system enhanced with storage and dissemination (AERODROME-ATC-13)-furdex-emovement information processing system enhanced with storage and dissemination (AERODROME-ATC-30)-Advanced Airport Tower Controller Working Position (A-CWP) Finalisation criteria: AOP13-ASP02 Ensure the planning and routing function is used to optimise predeparture sequencing (AERODROME-ATC-30)-Advanced Airport Tower Controller Working Position (A-CWP) Finalisation criteria: AOP13-ASP02 Ensure the planning and routing function is used to optimise predeparture sequencing by providing as they are before pushback, if benefit provided compared to already existing A-COM. External systems such a COM might benefit from more accurate taxi times	AOP13	Automated Assistance to Controller for Surface Movement Planning and Routing					
aircraft to go from stand to runway, from runway to stand or any other surface movement. A accurate taxi time is provided to the A-CDM platform for predeparture sequencing depending on local needs. The controller working position shall allow the air traffic controller to visualise surface routes, modify/create surface routes, modify any information that participate to the calculation of a route e.g. aircraft holding point for departure, an stand. The flight data processing system shall be able to receive planned and cleared routes assigned to aircraft and vehicle and manage the status of the route for all concerned aircraft and vehicles. Supporting material(s): EUROCONTROL integrated Tower Working Position (TWP) Baseline HMI Description - V1.0 / 10/2020 Url: https://www.eurocontrol.nt/publication/integrated-lower-working-position-iwp-human-machine-interface-hmidescription EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url: https://www.seurocontrol.nt/publication/eurocontrol-specification-suppos-services SUI - SESAR Solution 2.2 - Data Pack for automated assistance to controller for surface movement planning and rout Url: https://www.sesariu.eu/sesar.solutions/automated-assistance-controller-surface-movement-planning and rout Url: https://www.sesariu.eu/sesar.solutions/automated-assistance-controller-surface-movement-planning and rout Url: https://www.sesariu.eu/sesar.solutions/automated-assistance-controller-surface-movement-planning and routing (AERODROME-ATC-13)-Interfacing between DMAN and Routing module IAERODROME-ATC-131-Surface movement information processing system enhanced with storage and disseminatic surface. IAERODROME-ATC-431-Departure sequence guidated taking into account surface management information IAERODROME-ATC-501-Advanced Alroot Tower Controller Working Position (A-CWP) Finalisation criteria: 1 - Systems have been upgraded. ANS Providers Description & purpose: Cheparture seque	Description & purpose:			s assigned to aircraft and			
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The A-SMGCS Routing Service should provide to external systems the estimated taxi-out time (EXOT) for aircraft as long as they are before pushback, if benefit provided compared to already existing A-CDM. External systems such as CDM might benefit from more accurate taxi times in order to enhance the pre-departure sequencing by providing accurate target take-off times (TTOT). Supporting material(s): EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 53: Data Pack for Pre-Departure-sequencing Supported by Route Planning Url : https://www.sesarju.eu/sesar-solutions/pre-departure-sequencing-supported-route-planning AATM Master Plan relationship: 1 - Interaction of DMAN and planning and routing function is implemented. Implement operational procedures implementing automated assistance to air traffic controllers for surface movement planning and routing. ACTION ANS Providers Description & purpose: Define and implement local procedures for surface movement planning and routing. Note that in some airports, management of ground movement is performed by non ATCO airport personnel. EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 22: Data Pack for automated assistance to controller for surface movement planning and routing in the purpose.	AOP13-ASP02	Ensure the planning and routing function is used to optimise pre-					
The A-SMGCS Routing Service should provide to external systems the estimated taxi-out time (EXOT) for aircraft as long as they are before pushback, if benefit provided compared to already existing A-CDM. External systems such as CDM might benefit from more accurate taxi times in order to enhance the pre-departure sequencing by providing accurate target take-off times (TTOT). Supporting material(s): EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 53: Data Pack for Pre-Departure-sequencing Supported by Route Planning Url : https://www.sesarju.eu/sesar-solutions/pre-departure-sequencing-supported-route-planning ATM Master Plan relationship: Interaction of DMAN and planning and routing function is implemented. Implement operational procedures implementing automated assistance to air traffic controllers for surface movement planning and routing. Action by: Description & purpose: Define and implement local procedures for surface movement planning and routing. Note that in some airports, management of ground movement is performed by non ATCO airport personnel. EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 22: Data Pack for automated assistance to controller-surface-movement planning-and-routing.	Action by:	ANS Providers	ı				
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SJU - SESAR Solution 53: Data Pack for Pre-Departure Sequencing Supported by Route Planning Url : https://www.sesarju.eu/sesar-solutions/pre-departure-sequencing-supported-route-planning [AERODROME-ATC-18]-Interfacing between DMAN and Routing module [A	Supporting material(s):	EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Adva	anced-Surface Moveme	ent Guidance and Control			
SJU - SESAR Solution 53: Data Pack for Pre-Departure Sequencing Supported by Route Planning Url : https://www.sesarju.eu/sesar-solutions/pre-departure-sequencing-supported-route-planning ATM Master Plan relationship: Finalisation criteria: 1 - Interaction of DMAN and planning and routing function is implemented. Implement operational procedures implementing automated assistance to air traffic controllers for surface movement planning and routing Action by: ANS Providers Description & purpose: Define and implement local procedures for surface movement planning and routing. Note that in some airports, management of ground movement is performed by non ATCO airport personnel. Supporting material(s): EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Cor System (A-SMGCS) Services - Edition 2.0 / 04/2020 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services SJU - SESAR Solution 22: Data Pack for automated assistance to controller for surface movement-planning-and-routing.		Url: https://www.eurocontrol.int/publication/eurocontrol-specification-sm	gcs-services				
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- Particular and the second se		Url: https://www.sesarju.eu/sesar-solutions/automated-assistance-contr	oller-surface-movemer	nt-planning-and-routing			
Finalisation criteria: 1 - Local procedures have been developed, implemented, approved/certified and are being used by controllers at airports equipped with planning and routing functions.	Finalisation criteria:		ified and are being use	ed by controllers at			
Develop, and deliver as necessary, a safety assessment of the From: By:		Develop, and deliver as necessary, a safety assessment of the	From:	Ву:			
AOP13-ASP04 changes imposed by the implementation of automated assistance to air traffic controllers for surface movement planning and routing	AOP13-ASP04	changes imposed by the implementation of automated assistance to air traffic controllers for surface movement					
Action by: ANS Providers	Action by:						

			5				
Description & purpose:	Develop safety assessment of the changes, notably upgrades of ATS systems to support automated assistance to air traffic controllers for surface movement planning and routing. 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. 						
	2.						
	This safety assessment shall be based on fully validated/recognised method.						
Supporting material(s):	porting material(s): SJU - SESAR Solution 22: Data Pack for automated assistance to controller for surface movement planning and						
	Url: https://www.sesarju.eu/sesar-solutions/automated-assistance-controller-surface-movement-planning-and-routing						
Finalisation criteria:	1 - The safety argument for all changes, generated by the deployment of this functionality, has been delivered by the ANSP to the NSA.						
	Train all operational personnel concerned in the use of	From:	By:				
AOP13-ASP05	automated assistance for surface movement planning and routing	01/01/2016	31/12/2025				
Action by:	ANS Providers						
Description & purpose:	Train aerodrome controllers in the use of planning and routing systems and procedures (including phraseology) in accordance with agreed training requirements. Note that in some airports, management of ground movement is performed by non ATCO airport personnel.						
Supporting material(s):	EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced-Surface Movement Guidance and Contro System (A-SMGCS) Services - Edition 2.0 / 04/2020						
	Url: https://www.eurocontrol.int/publication/eurocontrol-specification	-smgcs-services					
	SJU - SESAR Solution 22: Data Pack for automated assistance to c	ontroller for surface mov	vement planning and rout				
	Url: https://www.sesarju.eu/sesar-solutions/automated-assistance-o		, ,				

1 - Controllers training in accordance with agreed training requirements and programme has been completed.

Automated Assistance to Controller for Surface Movement Planning and Routing

AOP13

Finalisation criteria: