CP1	Active									APT
AOP11.2	**Extended Airport Operations Plan**									
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

The iAOP and Extended AOP are so interdependent and sharing the same operational "philosophy" that it is relevant to also include information about iAOP.

Airport Operations Plan (AOP) means a single, common and collaboratively agreed rolling plan used by all involved airport stakeholders whose purpose is to provide common situational awareness and to form the basis upon which airport stakeholder decisions relating to process optimisation for operations can be made.

The AOP shall make all the information that is relevant for the network available to the NOP in real time.

The AOP is the principal source of information used and shared by all involved airport stakeholders. It requires individual stakeholders to make changes within their own sphere of operations. These changes shall be synchronised in order to be consistent and provide common situational awareness.

The AOP supports operations at airports with an increased scope and sharing of data between the airport and the Network Manager, building upon the airport collaborative decision making (A-CDM) supporting systems.
The AOP is a rolling plan comprising different phases including Planning, Execution and Monitoring and Post-operations, that interacts with a number of services, systems and stakeholders gathering information from several systems.

Main stakeholders are Airport Operators. Stakeholders also impacted are all the other involved airport stakeholders such as but not limited to:

• Aircraft operators;
• Ground handlers;
• De-icing handlers;
• ANSPs;
• Network Manager;
• MET services providers;
• Support services (police, customs and immigration, etc.).

The AOP can be implemented in two steps: Initial AOP (iAOP) and Extended AOP.

The Extended AOP supports landside and airside operations at airports with an increased scope and sharing of data between the airport and the Network Manager. The extended AOP is the fundamental tool supporting the following four operational services by improving the overall operational efficiency and increasing resilience of the airport and the network to resist disruptions such as but not limited to, adverse weather conditions, closure of a runway, security alerts.

The Extended AOP increases the iAOP scope, beyond the airside operating environment and addresses processes within the landside and terminal infrastructure that have a performance impact on flight predictability and efficiency. In this case the Extended AOP monitors the progress of passengers through the airport from check-in to the gate. Monitoring data is stored in the AOP and allows stakeholders to increase their confidence around TOBT accuracy and stability.

The landside and airside airport stakeholders shall make changes within their own sphere of operations and shall use and share the AOP as the principal source of information for airport operations.

The Extended AOP comprises the following Performance Services:

• Steer Airport Performance Service – it is the service that develops the performance standard (i.e., goals, targets, rules, thresholds, trade-off criteria and priorities) for airport operations and sets an overall strategic direction. Airport stakeholders develop a mutually agreed performance standard in a collaborative manner on the basis of the performance regional and/or national scheme(s) and post operations analysis reports. The Steer Airport Performance service is mainly performed in the long-term and medium planning phase and the post-operations phase.

• Monitor Airport Performance service - it is the service that maintains surveillance over airport operations, airport performance (against KPAs), airport surroundings (e.g. weather monitoring), supervising airport related information and any information that can impact the airport performance, providing observations, forecasts, alerts and warnings against predefined thresholds. It is performed from the medium-term planning phase until the execution phase. This surveillance is based on the performance standard set by the Steer Airport Performance service. The Monitor Airport Performance service compares any new information created or updated in the AOP with the plan and raises warnings or alerts if a deviation is detected. The Monitor Airport Performance service also provides the airport stakeholders with a common situational awareness of the airport operations processes and performance in real time.

AOP11.2	Extended Airport Operations Plan

• Manage Airport Performance service it is the service that instantiates the AOP at the beginning of the medium-term planning phase. It uses the operational data provided by the airport stakeholders and the performance standard defined by the Steer Airport Performance service. In the short-term planning phase and the execution phase, the Manage Airport Performance service also assesses the severity of the deviations from the plan detected by the Monitor Airport Performance service and their impact on the airport processes and on the airport performance. The assessment is not only for searching for reactive solutions but also for forecasting severe disruptions or adverse conditions and, hence, to implement a proactive management. It uses the warnings and alerts and, more generally, the data contained in the AOP to make this impact assessment. It also uses event reports from the stakeholders to perform the impact assessment.

Depending on the magnitude of the deviation and the severity of the impact on the airport processes and on the airport performance, the Manage Airport Performance service triggers the relevant collaborative decision-making processes. In particular, in adverse conditions, these processes take place in the Airport Operations Centre (APOC), where the representatives of the airport stakeholders can use simulation and decision support tools. The decisions are driven by the need to maintain an optimal performance level and to recover from a disruption as quickly and efficiently as possible. These processes result in an update of the AOP, made by the relevant airport stakeholders.

• Perform Post-Operations Analysis service – it is service that records any planned and actual data used in the airport processes during the planning and execution phases. This information is then used to produce post-operations analysis reports in the post-operations phase. These reports allow the airport stakeholders to:
  • Fully understand the airport performance against the performance plan and identify the root causes of any deviation;
  • Assess the continued relevance of the performance plan;
  • Justify the need to improve the way the airport operations are run;
  • Investigate any disruption in the operations;
  • Analyse actions and decisions made during the planning and execution phases.

For the most complex and critical post-operations analysis reports, the airport stakeholders collaborate to produce an analysis and reach conclusions that will benefit the overall airport community

System requirements:

To support the Extended AOP implementation, the following elements shall be taken into account:

• Initial AOP system requirements as defined in Objective AOP11.1;
• Airport Operations Plan management tools containing the rolling plan of the airport operations and capabilities (landside and airside) for each time frame (from medium term to Post-Ops);
• Airport Performance Monitoring System to monitor performance against the goals;
• Airport Performance Assessment and Management Support System to assess the severity of the deviations from the plan detected by the Monitoring of Airport Performance service and their impact on the airport processes and on the airport performance;
• Airport Post-operations analysis tool to develop standard and ad-hoc Post-Ops Analysis reports.

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.

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		31/12/2027	Applicability Area 1 + Applicability Area 2

References

European ATM Master Plan

OI step -	[AO-0801-A]-Collaborative Airport Planning Interface

AOP11.2	Extended Airport Operations Plan

	Enablers -	AIRPORT-03	AIRPORT-31 AOP05	AIRPORT-38	AOC-ATM-13	HUM-007	PRO-028 FCM11.1, FCM11.2	SWIM-APS-03a	SWIM-APS-04a
		SWIM-INFR-05a	SWIM-NET-01a						
OI step -	[AO-0802-A]-A-CDM process enhanced through integration of landside (passenger only) process outputs								
	Enablers -	AERODROME-ATC-57	AIRPORT-03	AIRPORT-31 AOP05	AIRPORT-35a	AIRPORT-38	HUM-007	HUM-014	HUM-015
OI step -	[AOM-0803]-Dynamically Shaped Sectors Unconstrained By Predetermined Boundaries (Obsolete)								
	Enablers -	None							
OI step -	[DCB-0310]-Improved Efficiency in the Management of Airport and ATFCM Planning								
	Enablers -	AERODROME-ATC-57	AIRPORT-02	AIRPORT-38	NIMS-41	REG-0510			

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

Essential Operational Changes

ATM Interconnected Network

SESAR Solution

#21 - Airport Operations Plan and AOP-NOP Seamless Integration

ICAO GANP - ASBUs

ACDM-B1/1	Airport Operations Plan (AOP)

Deployment Programme

2.2.2	Extended AOP

European Plan for Aviation Safety

- none -	

Operating Environments

Airport
Network

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	By
AOP11.2-ASP01	Extended AOP Data/Operational elements implementation	01/01/2021	31/12/2027
AOP11.2-ASP02	Airport Performance Services Implementation	01/01/2021	31/12/2027
AOP11.2-ASP03	Data quality service	01/01/2021	31/12/2027
AOP11.2-ASP04	Safety assessment	01/01/2021	31/12/2027
AOP11.2-ASP05	Training	01/01/2021	31/12/2027
AOP11.2-ASP06	Operational use	01/01/2021	31/12/2027
AOP11.2-APO01	Extended AOP Data/Operational elements implementation	01/01/2021	31/12/2027
AOP11.2-APO02	Airport Performance Services implementation	01/01/2021	31/12/2027
AOP11.2-APO03	Data quality service	01/01/2021	31/12/2027
AOP11.2-APO04	Safety assessment	01/01/2021	31/12/2027
AOP11.2-APO05	Training	01/01/2021	31/12/2027
AOP11.2-APO06	Operational use	01/01/2021	31/12/2027

AOP11.2	Extended Airport Operations Plan

Expected Performance Benefits

Safety:	Enhanced predictability.
Capacity:	Improved airport resilience/limiting capacity reduction in degraded situations.
Operational Efficiency:	Enhanced predictability.
Cost Efficiency:	-
Environment:	Enhanced predictability.
Security:	-

Detailed SLoA Descriptions

AOP11.2-ASP01	Extended AOP Data/Operational elements implementation	From: 01/01/2021	By: 31/12/2027
Action by:	ANS Providers		
Description & purpose:	ANSPs to ensure coordination, collection and integration in the system of AOP data. This activity is performed with all airport stakeholders involved, defining a Memorandum of Understanding (MOU) / Memorandum of Cooperation (MOC) if necessary. These data comprise: - iAOP data including Flight trajectory Airport resources and MET data. (Applicable ONLY to ANSPs that do not have an iAOP in operation); - Extended AOP data including landside data that have a performance impact on flight predictability and efficiency.		
	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-57]-Advanced Airport Tower CWP to support new functionalities [AIRPORT-03]-Airports Operation Plan (AOP) tool		
Finalisation criteria:	1 - iAOP and extended AOP data have been integrated into the systems.		
AOP11.2-ASP02	Airport Performance Services Implementation	From: 01/01/2021	By: 31/12/2027
Action by:	ANS Providers		
Description & purpose:	ANSP support the AO in the implementation of the following four services: • Steer Performance Service: define common KPIs among all stakeholders • Monitoring Performance Service: develop a system of monitoring and providing alerts in case of deviation of scheduled plan • Manage Performance Service: implement tool to assess the severity and impact of the deviations from the scheduled plan. Propose a solution by triggering the relevant collaborative decision-making processes resulting in an update of the AOP, made by the relevant airport stakeholders. • Post-OPS analysis Service: produce post-operations analysis reports for comparing the airport performance against the performance plan and identify the root causes of any deviation).		
	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:	[AIRPORT-40]-Airport Performance Monitoring System		
Finalisation criteria:	1 - Airport Performance Services have been developed and implemented.		
AOP11.2-ASP03	Data quality service	From: 01/01/2021	By: 31/12/2027
Action by:	ANS Providers		
Description & purpose:	Set up a service (systems and procedures) to ensure AOP data quality (accuracy and integrity).		
	Note :This SLoS 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:	[AIRPORT-38]-Airport/ATFCM Extended data interface		
Finalisation criteria:	1 - Data Quality Service has been tested and validated.		
AOP11.2-ASP04	Safety assessment	From: 01/01/2021	By: 31/12/2027
Action by:	ANS Providers		

AOP11.2	Extended Airport Operations Plan

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.

AOP11.2-ASP05	Training	From:	By:
		01/01/2021	31/12/2027

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
ATM Master Plan relationship:	[HUM-007]-New communication and interaction patterns between stakeholders of airport operations linked to collaborative rolling AOP/NOP management.
Finalisation criteria:	1 - Training has been completed.

AOP11.2-ASP06	Operational use	From:	By:
		01/01/2021	31/12/2027

Action by:	ANS Providers
Description & purpose:	Extended AOP is in operational use once the data have been integrated into the systems, their integrity ensured, the safety assessment has been delivered and accepted, and the training has been completed.
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 - Extended AOP is put into service.

AOP11.2-APO01	Extended AOP Data/Operational elements implementation	From:	By:
		01/01/2021	31/12/2027

Action by:	Airport Operators
Description & purpose:	AO ensure coordination, collection and integration in the system of AOP data. This activity is performed with all airport stakeholders involved, defining a Memorandum of Understanding (MOU)/Memorandum of Cooperation (MOC) if necessary. These data comprise: • iAOP data including Flight trajectory Airport resources and MET data. (ONLY Applicable to AOs that do not have an iAOP in operation) • Extended AOP data including landside data that have a performance impact on flight predictability and efficiency.
	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:	[AIRPORT-03]-Airports Operation Plan (AOP) tool
Finalisation criteria:	1 - iAOP and extended AOP data have been integrated into the system.

AOP11.2-APO02	Airport Performance Services implementation	From:	By:
		01/01/2021	31/12/2027

Action by:	Airport Operators
Description & purpose:	AO implements the following four services: • Steer Performance Service: define common KPIs among all stakeholders • Monitoring Performance Service: develop a system of monitoring and providing alerts in case of deviation of the scheduled plan • Manage Performance Service: implement a tool to assess the severity and impact of the deviations from the scheduled plan. Propose a solution by triggering the relevant collaborative decision-making processes resulting in an update of the AOP, made by the relevant airport stakeholders. • Post-OPS analysis Service: produce post-operation analysis reports for comparing the airport performance against the performance plan and identify the root causes of any deviation.
	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:	[AIRPORT-40]-Airport Performance Monitoring System
Finalisation criteria:	1 - Airport Performance Services have been developed and implemented.

AOP11.2	Extended Airport Operations Plan

AOP11.2-APO03	Data quality service	From:	By:
		01/01/2021	31/12/2027

Action by:	**Airport Operators**
Description & purpose:	Set up a service (systems and procedures) to ensure AOP data quality (accuracy and integrity).
	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:	[AIRPORT-03]-Airports Operation Plan (AOP) tool
	[AIRPORT-38]-Airport/ATFCM Extended data interface
Finalisation criteria:	1 - Data Quality Service has been tested and validated.

AOP11.2-APO04	Safety assessment	From:	By:
		01/01/2021	31/12/2027

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.
	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.

AOP11.2-APO05	Training	From:	By:
		01/01/2021	31/12/2027

Action by:	**Airport Operators**
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
ATM Master Plan relationship:	[HUM-007]-New communication and interaction patterns between stakeholders of airport operations linked to collaborative rolling AOP/NOP management.
Finalisation criteria:	1 - Training has been completed.

AOP11.2-APO06	Operational use	From:	By:
		01/01/2021	31/12/2027

Action by:	**Airport Operators**
Description & purpose:	Extended AOP is in operational use once the data have been integrated into the systems, their integrity ensured, the safety assessment has been delivered and accepted, and the training has been completed.
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 - Extended AOP is put into service.