

<b>Deployment Scenario Title</b>	Dynamic extended TMAs for advanced CCO/CDO and improved arrival and departure operations
<b>Deployment Scenario Description</b>	Dynamic extended TMAs for advanced CCO/CDO and improved arrival and departure operations: the objective is to improve descent and climb profiles in busy airspace, as well as the horizontal flight efficiency of arrivals and departures, while ensuring traffic synchronisation, short-term DCB and separation. This activity has a very broad scope, which includes advances in airspace design, development of ground tools, and development of ATC and airborne procedures.
<b>Essential Operational Change</b>	Airport and TMA performance
<b>Maturity</b>	In development phase: Key R&D Activities


Applicable Operating Environment			
Airport	Terminal Airspace	En-Route	Network









Timeline																					
2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035

Performance Contribution of the DS				
Capacity	Safety	Environment	Cost-efficiency	Operational efficiency

Stakeholders affected (at least one enabler to be deployed)						
ANSP		AO		AU		Network Manager
Civil	Military	Civil	Military	Civil	Military	
TWR, APP, ENR, MET	TWR, APP, ENR, MET	APT Operator	APT Operator	Scheduled, BA Fixed, BA Rotorcraft, GA, FOC	Transport, Fighter, Light, WOC,	Network Manager

SESAR Solutions			
Solution Code	Solution Title	Solution Description	Related Elements
PJ.01-02	Use of Arrival and Departure Management Information for Traffic Optimisation within the TMA	Use of Arrival and Departure Management Information for Traffic Optimisation within the TMA sees...	<b>SOL</b> <b>PJ</b> <b>OI</b> <b>DS</b> <b>EOC</b>
PJ.01-03B	Dynamic E-TMA for Advanced Continuous Climb and Descent Operations	Dynamically attributed use of routes brings together vertical and lateral profile issues in both...	<b>PJ</b> <b>OI</b> <b>DS</b> <b>EOC</b>
PJ.01-W2-08	Dynamic E-TMA for advanced continuous climb and descent operations and improved arrival and departure operations	The objective of this key R&D activity is to improve descent and climb profiles in busy...	<b>PJ</b> <b>DS</b> <b>EOC</b>

Operational Improvement Steps			
OI Step Code	OI Step Title	OI Step Description	Related Elements
AOM-0702-B	Advanced Continuous Descent Operations	Progressive implementation of CDO ideally from ToD, and in high density operations, employing new...	SOL OI EN DS
AOM-0705-B	Advanced Continuous Climb Operations	Progressive implementation of CCO, ideally to ToC, and in high density operations, employing new...	SOL OI EN DS 
AOM-0806	Dynamic Management of Terminal Airspace Routes and Transition	In order to manage the transition into and out of the TMA from/to airports and En-route sectors...	SOL EN DS
TS-0302	Departure Management from Multiple Airports	Departure information is compiled and presented to the TMA Supervisor to allow adjustment to the...	SOL EN DS
TS-0307	Integrated Arrival Departure Management for traffic optimisation within the TMA and Extended TMA Airspace	Traffic in the TMA and nearby sectors is managed in near real-time, taking advantage of predicted...	SOL EN DS

Enablers						
Required/Optional	New/Inherited	Develop/Use	Enabler Code	Enabler Title	Enabler Description	Related Elements
			A/C-33a	Class B SATCOM	Description: Satellite A-G datalink in multilink or in a standalone environment, based on...	STK OI DS PCP
			A/C-37a	Downlink of trajectory data according to contract terms (ADS-C) compliant to ATN baseline 2 (FANS 3/C)	Downlink of trajectory data (waypoints or pseudo waypoints with associated constraints and/or...	STK OI EN DS PCP
			AAMS-13	ASM scenario management sub-system equipped with tools for assessing the impact of airspace changes on capacity	ASM scenario management sub-system enhanced with tools to assist Network functions to assess the...	STK OI DS
			AERODROME-ATC-41	Synchronization of departing traffic flows from multiple airports	Aerodrome system enhanced to process the departure traffic flows interactions with traffic flows...	STK OI EN DS
			APP ATC 62	Demand and Capacity system enhanced to better handle departure flows out of the TMA	The enhanced system will help measure demand versus capacity within the TMA and provide solutions...	STK OI DS
			APP ATC 63	Demand and Capacity system enhanced to better handle approach sectors/flow load in real-time	The enhanced system will measure demand versus capacity within the E-TMA and adjacent ACC...	STK OI DS
			APP ATC 110	Enhance Arrival Management to collaborate with non-local Departure Management.	Arrival Management modified to collaborate with Departure Management in order to synchronize...	STK OI DS
			ER APP ATC 120	Enhance Conflict Detection and Resolution to Use the RBT/RMT	Conflict detection determines interactions between trajectories, based on the current RBT/RMT,...	STK OI DS

Enablers						
Required/ Optional	New/ Inherited	Develop/ Use	Enabler Code	Enabler Title	Enabler Description	Related Elements
→			METEO-03c	Provision and monitoring of real-time airport weather information for time-based separation and curved approaches	ATM-MET ground based sub-system dedicated to acquire, collect, combine, provide and monitor...	STK OI EN DS ⚙️
→			METEO-04c	Generate and provide MET information relevant for Airport and approach related operations at short notice ('time to decision' between 3 minutes and 7days) including rotorcraft and RPAS	The ATM-MET system is acquiring, generating, assembling and providing Meteorological (MET)...	STK OI EN DS ⚙️
→			METEO-05c	Generate and provide MET information relevant for TMA and En-route related operations at short notice ('time to decision' between 3 minutes and 7days), including for low-level IFR operations.	The ATM-MET system is acquiring, generating, assembling and providing Meteorological (MET)...	STK OI EN DS
🔒			NIMS-50	Dynamic route finding and optimisation tool to enable optimal routes usage in the TMA	Tool enables dynamic allocation of routes including ATFCM and most up-to-date trajectory input.	STK OI DS
🔒			PRO-252	Procedure for human intervention to identify TMA congestion and adjust departure flows where required	Where automated support to departure metering and/or coordination of dependent traffic flows from...	STK OI DS
→			AERODROME-ATC-33	Coupled sequencing tool enhanced to better handle arrivals and departures	Coupled AMAN-DMAN enhanced to manage mixed mode and dependent runway operations as well as to...	STK OI EN DS
→			ER APP ATC 149a	Air-Ground Datalink Exchange to Support i4D - Extended Projected Profile (EPP)	Air/Ground datalink management is modified to support the acquisition of the EPP via ADS-C. The...	STK OI EN DS PCP
→			METEO-03	Provision and monitoring of real-time airport weather information (PCP)	ATM-MET ground based sub-system dedicated to acquire, collect, combine, provide and monitor...	STK OI EN DS PCP ⚙️
→			METEO-04b	Generate and provide MET information services relevant for Airport and final approach related operations (PCP)	ATM-MET system acquiring, generating, assembling and providing Meteorological (MET) information...	STK OI EN DS PCP
→			METEO-05b	Generate and provide MET information relevant for TMA and En-route related operations (PCP)	ATM-MET system acquiring, generating, assembling and providing Meteorological (MET) information...	STK OI EN DS PCP