Deployment Scenario Title	Enhanced arrival procedures
Deployment Scenario Description	Enhanced arrival procedures: these make use of satellite navigation and augmentation capabilities such as GBAS and SBAS to enhance landing capabilities and to facilitate advanced arrival procedures (e.g. glide slope increase, displaced runway threshold).
Essential Operational Change	Airport and TMA performance
Maturity	In development phase: Key Solutions Approaching Maturity

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
									Deployment												
												Benefit									

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, CNS, AIS, MET	TWR, APP, ENR, CNS, AIS, MET, AMC	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.02-02	Enhanced Arrival Procedures	Enhanced Arrival Procedures encompass several new concepts of operation such as: - Dual...	SOL PJ OI DS EOC ICAO

Operational Improvement Steps			
OI Step Code	**OI Step Title**	**OI Step Description**	**Related Elements**
AO-0308	Enhanced Arrival Procedures using Dual Thresholds (DT)	The Enhanced arrival procedures using Dual Thresholds (DT) is applicable to airports with at...	SOL OI EN DS ICAO
AO-0319	Enhanced Arrival Procedures using a Second Runway Aiming Point (SRAP)	Enhanced arrival procedures using a Second Runway Aiming Point (SRAP) will allow inbound aircraft...	SOL OI EN DS
AO-0320	Enhanced Arrival Procedures using Increased Glide Slope (IGS)	Enhanced arrival procedures using Increased Glide Slope (IGS) will allow inbound aircraft to...	SOL OI EN DS
AO-0321	Enhanced Arrival Procedures using Adaptive Increased Glide Slope (A-IGS)	Enhanced arrival procedures using Adaptive Increased Glide Slope (A-IGS) will allow inbound...	SOL OI EN DS
AO-0331	Enhanced Arrival Procedure using an Increased Glide Slope to a Second Runway Aiming Point (IGS-to-SRAP)	This enhanced arrival procedure, applying an Increased Glide Slope (above the approach angle in...	SOL EN DS

Enablers						
Required/ Optional	**New/ Inherited**	**Develop/ Use**	**Enabler Code**	**Enabler Title**	**Enabler Description**	**Related Elements**
🔒			A/C-39	Flight Management and Guidance for Adaptive Increased Glide Slope (A-IGS)	Airborne functions to determine optimum glide slope derived from published procedure, and based...	STK OI DS
🔒			AERODROME-ATC-25	Aerodrome ATC System to support Second Runway Aiming Point operations	Aerodrome ATC System to support second runway aiming point operations' management in terms of...	STK OI EN DS
🔒			AERODROME-ATC-70	Aerodrome ATC System to support Dual Thresholds operations	Aerodrome ATC System to support dual thresholds operations' management in terms of final approach...	STK OI EN DS
🔒			AERODROME-ATC-71	Aerodrome ATC System to support Increased Glide slope operations	Aerodrome ATC System to support increased glide slope operations' management in terms of final...	STK OI EN DS
🔒			AERODROME-ATC-94	Aerodrome ATC system to support IGS-to-SRAP operations	Aerodrome ATC system to support IGS-to-SRAP operations in traffic separation and monitoring of...	STK OI EN DS
🔒			APP ATC 114	Approach ATC System to support Increased Glide Slope operations	Approach ATC System to support increased glide slope operations' management in terms of...	STK OI EN DS
🔒			APP ATC 115	Approach ATC System to support Second Runway Aiming Point operations	Approach ATC System to support second runway aiming point operations' management in terms of...	STK OI EN DS
🔒			APP ATC 116	APP ATC System to support Dual Thresholds operations	Approach ATC System to support dual thresholds operations' management in terms of separations,...	STK OI EN DS
🔒			APP ATC 163	Approach ATC system to support IGS-to-SRAP operations	Approach ATC system to support IGS-to-SRAP operations in traffic separation and monitoring of...	STK OI EN DS

Enablers						
Required/ Optional	New/ Inherited	Develop/ Use	Enabler Code	Enabler Title	Enabler Description	Related Elements
→			A/C-01	Enhanced positioning for LPV/RNP based on Single Frequency SBAS	Enhanced positioning for Localizer Precision with Vertical Guidance Approach based on Single...	STK OI EN DS
→			A/C-02a	Enhanced positioning using GBAS single frequency	Enhanced positioning using GBAS single frequency (GPS L1)	STK OI EN DS
→			A/C-02b	Enhanced positioning using multi constellation GNSS dual frequency	Enhanced precision and availability/continuity of positioning (based on GNSS dual frequency,...	STK OI EN DS
→			A/C-04	Flight management and guidance for improved lateral navigation in approach via RNP	Flight management and guidance to improve lateral navigation in approach e.g. 2D RNP value down...	STK OI EN DS
→			A/C-04a	Flight management and guidance for Advanced RNP	Flight management and guidance for Advanced RNP i.e. RNP1 with more deterministic FRT in...	STK OI EN DS
→			A/C-05a	APV Barometric VNAV	Flight management and guidance to perform Approach Procedure with Vertical guidance (APV) using...	STK OI DS
→			A/C-06	Flight management and guidance for LPV approach based on SBAS	Flight management and guidance for Localizer Precision with Vertical guidance approach (LPV)...	STK OI EN DS
→			A/C-18	Flight management and guidance for automatic braking according to a pre-defined runway exit	Flight management and guidance for Automatic braking on-board according to a pre-defined runway...	STK OI EN
→			A/C-56a	Flight management and guidance for Precision Approach GBAS CATII/III using GPS L1	Flight management and guidance for Initial Precision Approach GBAS CATII/III using e.g. GPS L1 or...	STK OI EN DS
→			A/C-56b	Flight management and guidance to support GBAS CATII/III using dual GNSS	Flight management and guidance to support CATII/III approaches based on GBAS (using dual GNSS) or...	STK OI EN
→			A/C-86	On-board assistance to aircraft energy management	On-board system that provides energy management cues to the flight crew supporting them in...	STK OI
→			A/C-87	On-board assistance to flare	On-board system that provides flare assistance information to the flight crew supporting them in...	STK OI
→			AERODROME-ATC-72	Aerodrome ATC system to support Adaptive Increased Glide Slope operations	Aerodrome ATC System to support adaptive increased glide slope operations' management in terms...	STK OI EN
→			APP ATC 113	Approach ATC System to support Adaptive Increased Glide Slope operations	Approach ATC System to support adaptive increased glide slope operations' management in terms of...	STK OI EN

Enablers						
Required/ Optional	New/ Inherited	Develop/ Use	Enabler Code	Enabler Title	Enabler Description	Related Elements
→			CTE-N06	Space Based Augmentation System (SBAS)	Space Based Augmentation Systems (SBAS, i.e. EGNOS, WAAS) are civil aviation safety-critical...	STK OI EN DS
→			CTE-N07	Ground Based Augmentation System (GBAS)	Ground Based Augmentation System (GBAS) is a civil-aviation safety-critical system that supports...	STK OI EN DS
→			CTE-N07a	GBAS Cat I based on Single-Constellation / Single-Frequency GNSS (GPS L1)	GBAS Cat I is deployed as a precursor to GBAS Cat II/III to support validation of precision...	STK OI EN
→			CTE-N07b	GBAS Cat II/III based on Single-Constellation / Single-Frequency GNSS (GPS L1)	Single-Constellation / Single-Frequency (GPS L1) GBAS Cat II/III is deployed as a precursor to...	STK OI EN DS
→			CTE-N07c	GBAS Cat II/III based on Multi-Constellation / Multi-Frequency (MCMF) GNSS (GPS + GALILEO / L1 + L5)	Multi-Constellation / Multi-Frequency GBAS Cat II/III will support Cat II/III operations.	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