Deployment Programme 2015 (DP 2015)

Annex A
Annex B
Annex C
Annex D

FPA MOVE/E2/2014-717/SESAR FPA
SGA MOVE/E2/2014-717/SI2-699519

Work Package B2 – 4.2

Deliverable 4.2.2

26th November 2015

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Annex A – Project view - Projects' details

1.1.1 AF 1 Extended Arrival Management & PBN in high density TMA

Content	Description
REFERENCE NUMBER	**007AF1**
TITLE	**Performance Based Navigation (PBN) implementation in Vienna (LOWW)**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.1**
PROJECT DESCRIPTION	**Objectives:** – 2014 RNP AR Procedures to Runway 16 LOWW for noise abatement purposes implemented – 2015 feasibility study for open PBN transitions to final approach conducted – 2015 night SIDs on PBN basis implemented – 2016 one LPV (SBAS) approach in LOWW implemented
PROJECT LEADER	AUSTRO CONTROL
MEMBER STATE	AUSTRIA
TIMING	01/03/2014 – 30/12/2016
AIRBORNE	
INTERDEPENDENCIES	006AF5 ATM Data Quality (ADQ)
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	AF1, Sub AF 1.2 Family 1.2.2, Family 1.2.3
NM links	**NSP:** SO 6/5 **NOP:** Capacity constraints due to environmental obligations with regard to RWY usage plan and SID routings. Enhanced DEP spacing.

Content	Description
REFERENCE NUMBER	**013AF1**
TITLE	**Implementation of RNP Approaches with Vertical Guidance at the Belgian civil aerodromes within the Brussels TMA**
MAIN AF / Sub AF / Family	**AF 1; Sub AF 1.2; Family 1.2.1**
PROJECT DESCRIPTION	**Objectives:** The main objective of this project is to: – Achieve compliancy with ICAO AR37.11, EC Part-AUR (currently being developed at EASA) and Commission Implementing Regulation (EU) No 716/2014 Annex 1. – Implement Required Navigation Performance (RNP) Approaches (Lateral Navigation/Vertical Navigation (LNAV/VNAV) and Localizer Performance with Vertical guidance (LPV) minima) on all instrument runway ends of Brussels Airport and Antwerp Airport
PROJECT LEADER	BELGOCONTROL
MEMBER STATE	BELGIUM
TIMING	01/01/2015 - 13/09/2018
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	AF1, Sub AF 1.2, Family 1.2.2
NM links	**NSP:** SO 6/5, SO 9/4 **NOP:** None

Content	Description
REFERENCE NUMBER	**051AF1**
TITLE	**Required Navigation Performance Approaches at CDG Airport with vertical guidance**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.1**
PROJECT DESCRIPTION	**Objectives:** – To implement RNP APCH with LPV minima and with LNAV/VNAV minima for Runway 08L/26R – To equip 51 B777 aircraft of Air France with LNAV/VNAV capability – To implement RNP APCH with LPV minima and with LNAV/VNAV minima for Runway 09L/27R – To maintain maximum CDG Airport Runway Throughput when one ILS equipment is not available by ensuring independent triple parallel approaches capability between CDG and Le Bourget airports The associated indicators are : For objective 1 : Publication of the procedures (source : French AIP) For objective 2 : Number of flights/h in case of ILS outage compared to the flight average
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/07/2014 - 01/10/2017
AIRBORNE	Air France, 51 B777 aircraft
INTERDEPENDENCIES	Subsequent Projects for Required Navigation Performance Approaches at other French airports
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	AF1, Sub-AF 1.2, Family 1.2.2 AF1, Sub-AF 1.2, Family 1.2.3 AF1, Sub-AF 1.2, Family 1.2.4
NM links	**NSP:** SO 6/5, SO 9/4 **NOP:** None

Content	Description
REFERENCE NUMBER	**060AF1**
TITLE	**ENAIRE reference geographic database (Family 1.2.2)**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.2**
PROJECT DESCRIPTION	**Objectives:** – The project will generate an ENAIRE reference dataset structure and set up the managing processes to maintain the information up to date with authoritative sources reference data. – Procedure design tools will be updated to make use of this database content; digital cartography (terrain and obstacles) and aeronautical data defining instrumental manoeuvres from authoritative sources with required quality and integrity. – To achieve the required high levels of integrity the Spanish AIS provider will participate in the data provision and management processes. – To populate the database with full datasets for LEMD, LEBL and LEPA TMA's.
PROJECT LEADER	ENAIRE
MEMBER STATE	SPAIN
TIMING	01/01/2014 – 31/12/2017
AIRBORNE	
INTERDEPENDENCIES	061AF1 - RNP APCH Implementation in Palma de Mallorca
SYNCHRONIZATION	No
LINKS	AF5 ITY ADQ
NM links	**NSP:**SO 6/5 **NOP:** Not applicable

Content	Description
REFERENCE NUMBER	**061AF1a**
TITLE	**Required Navigation Performance Approach Implementation in Palma de Mallorca**
MAIN AF / SUB AF / Family	**AF 1 / Sub AF 1.2; Family 1.2.1**
PROJECT DESCRIPTION	**Objectives:** The main objective of this project is to improve the precision of the approach trajectories and to develop and implement fuel efficient and environmental friendly procedures for approach in this high density TMA airport. The new RNP APCH procedures will help increase the accessibility by means of RNP APCH to LPV minima procedures (using SBAS), in combination with LNAV and LNAV/VNAV minima for those operators not equipped with SBAS technology. These procedures will make operations at these sites more efficient and profitable, thus enhancing the use of the airports and saving operational costs, both for aircraft and airport operators (AENA). Specifically, the objectives of this project are: – Reduce the missed-approach rate when using non-precision approach runway headers for landing. – Increase safety by enabling straight approach procedures when not possible by means of current navaids infrastructure. – Reduce costs for Aircraft Operators (AOs) whenever an airport change must be done due to operational restrictions at destination airport. – Enhance airports and AOs business types by means of allowing broader kinds of flying activities at the airports. Phase 1: – Implementation of RNP Approaches in Palma de Mallorca Phase 2: – Implementation of RNP Approaches in Barcelona – Implementation of RNP Approaches in Madrid
PROJECT LEADER	ENAIRE
MEMBER STATE	SPAIN
TIMING	Phase 1: 01/11/2015 - 03/07/2017 (implementation starts in 11/2016)
AIRBORNE	
INTERDEPENDENCIES	060AF1 ENAIRE reference Geographic Database
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	
NM links	**NSP**: SO 6/5 **NOP**: None

Content	Description
REFERENCE NUMBER	**065AF1**
TITLE	**ENAV Geographic DB for Procedure Design**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.2**
PROJECT DESCRIPTION	**Objectives:** – To upgrade the ENAV geographic database for procedure design suite based on two products developed by IDS (SIPRO and eTOD). – To implement improvements to the solution currently used and help to execute the Electromagnetic Compatibility analyses to determine the expected radio-electric performances of the new navaids equipment (SIPRO). – To validate a new technique for automatic feature extraction from Digital Orthophoto with the tool Electronic Terrain and Obstacle Database (eTOD). – To use the tools above to implement with priority RNP operations over the geographic applicability area identified within the PCP: LIRF and LIMC.
PROJECT LEADER	ENAV
MEMBER STATE	ITALY
TIMING	02/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	Subsequent Projects for RNP Approach Implementation at LIRF and LIMC
SYNCHRONIZATION	
LINKS	AF5 ITY ADQ
NM links	**NSP:** SO 6/5 **NOP:**No reported plan for RNP operations**.**

Content	Description
REFERENCE NUMBER	**083AF1**
TITLE	**AMAN extended to en-route**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.1; Family 1.1.2**
PROJECT DESCRIPTION	**Objectives:** – Upgrade NM systems to cope with extended AMAN requirements. – Introduce in the network view and the collaborative NOP, the information managed and shared with NM system by local extended AMAN systems (from airports / ANSP's where available) – Support the network coordination of extended AMAN functions and provide, if necessary, the network view on extended AMAN measures. The project is a key contributor to the following Strategic Objectives mentioned in the Network Strategy Plan (NSP): – SO 4: Plan optimum capacity and flight efficiency – SO 5: Facilitate business trajectories and cooperative traffic management – SO 6: Fully integrate airport and network operations
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, EUROCONTROL, ECTL/NM
LINKS	AF4 NOP
NM links	**NSP:** Not assessed **NOP:** Not assessed

Content	Description
REFERENCE NUMBER	**091AF1**
TITLE	**Enhanced Terminal Airspace (TMA) using RNP-Based Operations**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.3**
PROJECT DESCRIPTION	**Objectives:** The objectives of the project for Gatwick Airport are as follows: – Introduce point merge – Efficient BOGNA Standard Instrument Departure (SID) Route – Dual Precision Area Navigation (P-RNAV) routes with easterly and westerly arrival and departure routes to runway (RWY) 26 and 08, providing rolling respite – Increase RWY capacity by introducing ADNID SID – Re-design SIDs and STARs to meet RNP specifications As a result of these changes, the project would deliver the following benefits: – Improvements in arrivals and departures stability – Significant improvement in operational resilience – Reduced fuel burn for airlines – Reduced CO2 emissions (reduced track mileage) – in line with Gatwick Airport and NATS carbon reduction targets – Reduced noise impact for people on the ground through provision of rotating respite – Delivery against requirements of S106 Legal Agreement – Support the delivery of NATS 10% carbon emissions reduction target The project is divided into two Phases: – Phase 1: Enhanced terminal airspace using P-RNAV for all Standard Instrument Routes. – Phase 2: Enhanced terminal airspace to meet RNP specifications (out of scope of this INEA Call).
PROJECT LEADER	Gatwick Airport Limited
MEMBER STATE	UK
TIMING	01/01/2014 – 31/03/2018
AIRBORNE	
INTERDEPENDENCIES	Phase 2 of this project 117AF5 Implementation of Initial SWIM Capability (AF5) across NATS, task 4 120 AF1 London Airspace Management Program (LAMP)
SYNCHRONIZATION	With Airspace Users, ANSPs
LINKS	AF1, s-AF 1.2, Family 1.2.2 AF1, s-AF 1.2, Family 1.2.4
NM links	**NSP:** SO 6/5, SO 9/4 **NOP:** ERNIP indirectly mentions this project.

Content	Description
REFERENCE NUMBER	**104AF1**
TITLE	**Lower Airspace optimization**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.1; Family 1.1.2**
PROJECT DESCRIPTION	**Objectives:** – This project aims to contribute to the PCP AF-1 Extended AMAN and PBN in high density TMAs, through the development and implementation of short term improvements for Stockholm TMA and the development of a roadmap for long term implementation. – A complete set up of requirements for the design and use of the future terminal airspace for Stockholm – A baseline and a defined long term forecast – Well defined KPIs for the baseline and the future – Implementation of short term measures within Stockholm TMA – A long term implementation Plan (What, When) with the main purpose to: o Increase the general efficiency of operations in lower airspace (more efficient route structure, better use of the available space, better planning of movements) o Specifically increase efficiency by the removal of sub-optimal solutions currently required to ensure safety, e.g. during missed approaches o Reduce environmental impact
PROJECT LEADER	LFV
MEMBER STATE	SWEDEN
TIMING	01/02/2015 - 30/06/2016
AIRBORNE	
INTERDEPENDENCIES	Subsequent Project for the long term optimization of the Lower Airspace
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	AF1, Sub AF 1.2, Family 1.2.3 AF 3
NM links	**NSP:** SO 6/5 **NOP:** None

Content	Description
REFERENCE NUMBER	**107AF1**
TITLE	**First phase of RNAV1 and RNP-APCH approaches Amsterdam Schiphol (EHAM)**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.3**
PROJECT DESCRIPTION	**Objectives:** – Publication and operational implementation of an RNAV1 fixed inbound route to RWY 36R from ARTIP. – Publication and operational implementation of an RNAV1 fixed inbound route to RWY 18C from ARTIP to be flown as CDO. – Publication and operational implementation of an RNP APCH procedure to RWY 22 with vertical guidance.
PROJECT LEADER	LVNL
MEMBER STATE	NETHERLANDS
TIMING	01/01/2014 – 01/03/2017
AIRBORNE	
INTERDEPENDENCIES	Second phase of RNAV1 and RNP-APCH approaches Amsterdam Schiphol (EHAM)
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs
LINKS	AF 1; Sub AF 1.2; Family 1.2.3
NM links	**NSP:** SO 6/5, SO 9/4 **NOP:** None

Content	Description
REFERENCE NUMBER	**119AF1**
TITLE	**Manchester TMA Re-Development**
MAIN AF / SUB AF / Family	**AF1; Sub AF 1.2; Family 1.2.3**
PROJECT DESCRIPTION	**Objectives:** Introduction of RNAV1 SIDs (Standard Instrument Departure) and STARs (Standard Arrival Route) within the existing Manchester Terminal Manoeuvring Area (MTMA) in order to systemise the airspace infrastructure. The systemised airspace will : – Exploit existing and future aircraft capabilities to fly precise trajectories (through use of Performance Based Navigation – PBN), enabling greater flexibility in airspace design through closely spaced arrival and departure routes independent of ground-based navigation aids. – Offer greater resilience against human error (pilot or controller), with fewer interactions between routes and a reduction in tactical interaction by controllers. o Reduced tactical intervention will offer a corresponding increase in capacity – Locate routes where they best meet the needs of airports and flight profiles, making far better use of finite terminal airspace. – Save fuel and reducing noise by enabling continuous descent approaches (CDAs) and continuous climb departures (CCDs) to be flown from/to significantly higher altitudes than available today. The revised RNAV route infrastructure will align with LAMP (London Airspace Management Programme) requirements and maximise the benefits within the majority of the UK TMA. The Project is split into two phases: Phase 1: Project Definition (PD) from Jan 2012 – December 2016 Goal: Develop PBN designs for the Manchester TMA airspace, and surrounded impacted areas for Consultation in November 2015 and validation by December 2016 Phase 2: Implementation from December 2016 – Q4 2018. Goal: Implement the revised NTCA designs into Operations subject to approval of CAA Consultation
PROJECT LEADER	NATS
MEMBER STATE	UK
TIMING	01/01/2014 – 30/11/2018
AIRBORNE	
INTERDEPENDENCIES	117AF5 Implementation of Initial SWIM Capability (AF5) across NATS, task 4 120 AF1 London Airspace Management Program (LAMP)
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs

LINKS	
NM links	**NSP:** SO 6/5; SO 9/4 **NOP:** Airport capacity constrained by TMA/Approach

Content	Description
REFERENCE NUMBER	**120AF1**
TITLE	**London Airspace Management Programme (LAMP)**
MAIN AF / SUB AF / Family	**AF 1; Sub AF 1.2; Family 1.2.3**
PROJECT DESCRIPTION	**Objectives:** – Produce systemised airspace design for the London TMA by using PBN-based procedures and STARs facilitating RNP-1 SIDs where required at London Airports – Introduce greater efficiencies in the design of airspace to accommodate forecast demand and also facilitate Continuous Climb and Descent Operations minimising delay and realising fuel savings This application concerns the first implementation of the LAMP programme (Phase 1a), implementing that part of the London TMA affecting London City Airport and higher level re-sectorization and airspace modification within the TMA. The LAMP project will be delivered in a phased approach; the first deployment (Phase 1a) being delivered prior to the implementation of the key enabling project of raising the Transition Altitude (TA) to 18,000 feet from the current 6,000 feet. Subsequent phases of LAMP will be deployed after the TA change in 2018.
PROJECT LEADER	NATS
MEMBER STATE	UK
TIMING	01/01/2014 – 31/04/2016
AIRBORNE	
INTERDEPENDENCIES	Subsequent Phases of this Project
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, Military
LINKS	117AF5 Implementation of Initial SWIM Capability (AF5) across NATS, task 4 091AF1 Enhanced Terminal Airspace using RNP based Operations (Gatwick)
NM links	**NSP:** SO 6/5; SO 9/4 **NOP:** LAMP project is contained in NOP. The project introduces RNAV 1 in preparation of future RNP1 introduction**.**

1.1.2 AF2 Airport integration and throughput

Content	Description
REFERENCE NUMBER	**008AF2**
TITLE	**External Gateway System (EGS) implementation**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	**Objectives:** EGS (External Gateway System) will connect the Tower and Approach ATS Units' subsystems DIFLIS (Digital Flight Strip System) and ASTOS (A-SMGCS – Airport Surface Movement and Guidance Control System) to the ATM Data Processing System. The EGS implementation contributes to AF2 of the PCP implementing rule as an enabler for future Electronic Flight Strip, DMAN, CDM and A-SMGCS enhancements. The former ATM Data processing system VAS will be removed for end of life (EOL) reasons.
PROJECT LEADER	Austro Control
MEMBER STATE	Austria
TIMING	25/02/2014 – 10/12/2015
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	No
LINKS	AF 2; Sub AF 2.2; Family 2.2.1
NM-Links	**NSP:** SO6/4 & SO6/6 **NOP:** Yes (Annex 5)

Content	Description
REFERENCE NUMBER	**011AF2**
TITLE	**Collaborative Decision Management (CDM) fully implemented**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - CDM fully implemented in LOWW and certified by Eurocontrol - Process organisation established, considering all stakeholders involved and guaranteeing a sustainable CDM operation - Meaningful KPIs are constantly measured and used for improvement - Additional tasks contain Enhanced De-icing and the guarantee of a Degraded Mode in case of partial system failure
PROJECT LEADER	Austro Control
MEMBER STATE	AUSTRIA
TIMING	17/07/2014 – 29/08/2016
AIRBORNE	
INTERDEPENDENCIES	077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With: ECTL/NM
LINKS	AF 2; AF 4; Sub AF 2.1; Sub AF 4.2; Family 2.1.1; Family 2.1.4; Family 4.2.2; Family 4.2.3
NM-Links	**NSP:** SO6/4 **NOP:** Yes (Annex 5)

Content	Description
REFERENCE NUMBER	**018AF2**
TITLE	**Enhancement of Airport Safety Nets for Brussels Airport (EBBR)**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** The main objective of this project is to upgrade the existing Airport Safety Nets function, associated with the A-SMGCS system at Brussels Airport (EBBR), to obtain (or even exceed) the level of performance as envisaged under ATM functionality AF 2 as defined in the PCP Regulation (see ANNEX, section 2.1.5). Two related sub-projects are defined: - Sub-project 1: Validation and Operational introduction of the Advanced Safety Nets function, developed by Belgocontrol, at Brussels Airport (Control Tower). - Sub-project 2: Further enhancement (by Belgocontrol) of the Advanced Safety Nets function by adding a "Taxi Route conformance monitoring" functionality. -
PROJECT LEADER	BELGOCONTROL
MEMBER STATE	BELGIUM
TIMING	02/06/2014 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	NO
SYNCHRONIZATION	With ANSPs
LINKS	AF 2; Sub AF 2.2; Family 2.2.1
NM LINKS	**NSP:** SO6/6; **NOP:** None;

Content	Description
REFERENCE NUMBER	**022AF2**
TITLE	**Vehicle Tracking System (VTS)**
MAIN AF / SUB AF / Family	**AF2; Sub AF 2.5; Family 2.5.2**
PROJECT DESCRIPTION	**Objectives:** Goal Display position and identification of all vehicles entering maneuvering area on a regular basis on the groundradar display to controller. Motivation - Improve safety airport ground movements (additional safety net) - Comply with Level-1 A-SMGCS requirement (SES Legislation – ESSIP initiative)
PROJECT LEADER	Brussels Airport
MEMBER STATE	BELGIUM
TIMING	01/01/2008 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	NO
SYNCHRONIZATION	With: ANSPs
LINKS	AF 2; Sub AF 2.2; Sub AF 2.4; Family 2.2.1
NM LINKS	**NSP:** SO6/6; **NOP:** None;

Content	Description
REFERENCE NUMBER	**023AF2**
TITLE	**SMAN-Vehicle**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** Upgrade and Extend the A-SMGCS L2 for all relevant ground vehicles moving on the manoeuvring area by providing new functionalities for the drivers: alerts, geo-fencing.
PROJECT LEADER	Aéroports de Paris: CDG Airport & ORLY Airport
MEMBER STATE	FRANCE
TIMING	01/08/2014 – 30/08/2017
AIRBORNE	
INTERDEPENDENCIES	- 027AF2 - SMAN-Airport - 048AF2 - SYSAT@CDG - 050AF2 - SYSAT@ORLY
SYNCHRONIZATION	With: Airports, ANSPs
LINKS	AF 2; Sub AF 2.5; Family 2.5.1 AF 2; Sub AF 2.4; Family 2.2.1
NM LINKS	**NSP :** SO 6/6 **NOP:** None

Content	Description
REFERENCE NUMBER	**024AF2**
TITLE	**SAIGA**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.4**
PROJECT DESCRIPTION	**Objectives:** Extend the capabilities of the airport resources management system : Stands, Gates, bridges, and Baggage claims, to : - Consolidate the Airport Operational Plan - Consolidate the Pre-departure sequencing and DMAN capability - Optimize and increase the efficiency and performances of operations - Better support crisis situation and faster recovering
PROJECT LEADER	Aéroports de Paris: CDG Airport & ORLY Airport
MEMBER STATE	FRANCE
TIMING	01/01/2014 – 31/12/2015
AIRBORNE	
INTERDEPENDENCIES	- 025AF2 - TSAT to the Gate; - 026AF2 - Evolutions CDM-CDG; - 027AF2 - SMAN-Airport; - 129AF2 - CDM-Orly
SYNCHRONIZATION	With: Airspace Users, Airports, ANSPs, ECTL/NM
LINKS	AF 2; Sub AF 2.1; Family 2.1.1 AF 4; Sub AF 4.2; Family 4.2.1 & Family 4.2.2
NM LINKS	**NSP :** SO 6/2 &SO 6/4 **NOP:** None

<table>
<tr><th>Content</th><th>Description</th></tr>
<tr><td>REFERENCE NUMBER</td><td>025AF2</td></tr>
<tr><td>TITLE</td><td>TSAT to the Gate</td></tr>
<tr><td>MAIN AF / SUB AF / Family</td><td>AF 2; Sub AF 2.1; Family 2.1.3</td></tr>
<tr><td>PROJECT DESCRIPTION</td><td>Objectives:
The use of VDGS/Displays is driven by 2 types of needs:
- Consolidate the Pre-departure Sequence and enhance predictability by implementing highly recommended milestones: In-bloc (AIBT - milestone n°7 - Airport CDM Manual V4) and Off-bloc (AOBT- milestone n°15 - Airport CDM Manual V4).
- Display key A-CDM information, such as TSAT, to all stakeholders located at the Gate: Airlines crews, Ground handler and Airport operator.
Visual Display Guidance System (VDGS) units and Displays address sub AF 2.1 and associated Families:
- 2.1.1 Consolidate Initial DMAN capabilities
- 2.1.3 Enhance Basic A-CDM
- 2.1.4 Consolidate Initial Airport Operational Plan (AOP)
Number of stands concerned :
<table><tr><th>First Phase (2014 – 2016)</th><th>Second phase (2017 – 2019)</th></tr><tr><td>• CDG
○ 64 VDGS
○ 34 Displays
• ORLY
○ 36 VDGS
○ 16 Displays</td><td>• CDG
○ 256 VDGS
○ 136 Displays
• ORLY
○ 144 VDGS
○ 64 Displays</td></tr></table></td></tr>
<tr><td>PROJECT LEADER</td><td>Aéroports de Paris: CDG Airport & ORLY Airport</td></tr>
<tr><td>MEMBER STATE</td><td>FRANCE</td></tr>
<tr><td>TIMING</td><td>01/01/2014 - 31/12/2016</td></tr>
<tr><td>AIRBORNE</td><td></td></tr>
<tr><td>INTERDEPENDENCIES</td><td>- 024AF2 - SAIGA;
- 026AF2 - Evolutions CDM-CDG;
- 027AF2 - SMAN-Airport;
- 129AF2 - CDM-Orly</td></tr>
<tr><td>SYNCHRONIZATION</td><td>With: Airspace Users, Airports, ANSPs, ECTL/NM</td></tr>
<tr><td>LINKS</td><td>AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.4
AF 2; Sub AF 2.5; Family 2.5.1</td></tr>
<tr><td>NM LINKS</td><td>NSP : SO 6/2 &SO 6/4

NOP: None</td></tr>
</table>

Content	Description
REFERENCE NUMBER	**026AF2**
TITLE	**Evolutions CDM-CDG**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** Upgrade CDM@CDG airport tools (PDS and De-icing tool) to be more efficient and to enhance actual functionalities to respond to the requirements of operational staff. It directly responds to the pre requisite S-AF 2.1 though Family 2.1.1 ("initial DMAN capability") and Family 2.1.3 (Basic A-CDM) - DPI improvements - TSAT stabilization - PLN / Airport slot reconciliation - PDS/DMAN interface - Training infrastructure - Variable Taxi Time calculation - De-icing tool improvements
PROJECT LEADER	Aéroports de Paris: Paris CDG Airport
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	- 024AF2 - SAIGA; - 025AF2 - TSAT to the Gate; - 027AF2 - SMAN-Airport; - 048AF2 - SYSAT@CDG; - 077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With: Airspace Users, Airports, ANSPs, ECTL/NM
LINKS	AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.2 AF 2; Sub AF 2.2; Family 2.2.1 AF 4; Sub AF 4.2; Family 4.2.2; Family 4.2.3
NM LINKS	**NSP :** SO 6/4 **NOP:** None

Content	Description
REFERENCE NUMBER	**027AF2**
TITLE	**SMAN-Airport**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.4.1**

PROJECT DESCRIPTION	**Objectives:**
	- Develop and integrate Airport Surface Management Tool which allows managing and monitoring information of the airfield area under the responsibility of the airport operator.
	  ○ Enhance Initial AOP to airfield area
	  ○ Improve Airport Safety Nets functionalities
	  ○ Facilitate A-SMGCS planning functions by improving predictability of Take-Off times
	- The system will share information with all stakeholders/Systems and in particular with the ATC ASMGCS
	The system is currently used by the ATC tower supervisor and apron managers.

PROJECT LEADER	Aéroports de Paris: CDG Airport & ORLY Airport
MEMBER STATE	FRANCE
TIMING	02/01/2015 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	- 024AF2 - SAIGA; - 025AF2 - TSAT to the Gate; - 026AF2 - Evolutions CDM-CDG; - 048AF2 - SYSAT@CDG - 050AF2 – SYSAT@ORLY - 129AF2 – CDM-Orly
SYNCHRONIZATION	With: Airspace users, Airports, ANSPs
LINKS	AF 2; Sub AF 2.4; Family 2.2.1; Family 2.1.2; Family 2.4.1
NM LINKS	**NSP :** SO 6/2 &SO 6/4 **NOP:** None

Content	Description
REFERENCE NUMBER	**030AF2**
TITLE	**Equipment of ground vehicles to supply the A-SMGCS**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.5.2**
PROJECT DESCRIPTION	**Objectives:** - Supply the A-SMGCS with accurate information - Allow the efficient deployment of the A-SMGCS Level 1 & 2 by providing the location of the vehicle and the identification - Improve the safety on the platform with knowing the location of the vehicles and the possibility to identify runway incursion - Be compliant with the regulation
PROJECT LEADER	**Aéroports de la Cote d'Azur**
MEMBER STATE	FRANCE
TIMING	28/02/2014 - 30/10/2015
AIRBORNE	
INTERDEPENDENCIES	- 049AF2 - SYSAT@NCE
SYNCHRONIZATION	With: Airports, ANSPs
LINKS	AF 2; Sub AF 2.5; Family 2.5.1 AF 2; Sub AF 2.4; Family 2.2.1
NM LINKS	**NSP :** SO 6/6 **NOP:** Advanced ATC Tower Implementation planned for 2015; DMAN not available; AMAN available. No reported CDM basic.

Content	Description
REFERENCE NUMBER	**031AF2**
TITLE	**Data exchanges with the Air Navigation Service Provider**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - Implement a new channel for data exchanges between us and the ANSP - Improve the data exchanges (quality and quantity) - Create a common awareness of all operational situations - Through the improvement of the awareness, improve the management of adverse conditions and make the operations more efficient
PROJECT LEADER	**Aéroports de la Cote d'Azur**
MEMBER STATE	FRANCE
TIMING	25/11/2014 - 04/07/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With: Airports, ANSPs
LINKS	AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.4
NM LINKS	**NSP :** SO 6/4 **NOP:** Advanced ATC Tower Implementation planned for 2015; DMAN not available; AMAN available. No reported CDM basic.

Content	Description
REFERENCE NUMBER	**032AF2**
TITLE	**Data exchanges with the Network Manager Operations Center**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - Be part of the European Network - Improve the real time data exchanges - Improve the operations efficiency at a local level and at a European one - Facilitate the flow and capacity management - Improve the situational awareness - Better anticipation of the different situations - Improve the management of normal and adverse conditions
PROJECT LEADER	**Aéroports de la cote d'Azur**
MEMBER STATE	FRANCE
TIMING	04/02/2015 - 06/05/2016
AIRBORNE	
INTERDEPENDENCIES	- 077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With: Airports, ANSPs, ECTL/NM
LINKS	AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.4 AF 4; Sub AF 4.2; Family 4.2.2; Family 4.2.3
NM LINKS	**NSP :** SO 6/4, SO 6/2 **NOP:** Advanced ATC Tower Implementation planned for 2015; DMAN not available; AMAN available. No reported CDM basic.

Content	Description
REFERENCE NUMBER	**033AF2**
TITLE	**Data exchanges with COHOR**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - Obtain correct and on-time information for general aviation flights - Make the operations easier in order to better anticipate the management of the resources - Make the whole operations more efficient through an easier way to obtain automatically the information - As general aviation traffic is a big part of our whole traffic, the improvement of the management of this part allow a gain in the management efficiency for the whole traffic
PROJECT LEADER	**Aéroports de la Cote d'Azur**
MEMBER STATE	FRANCE
TIMING	15/09/2014 - 15/04/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With: Airports
LINKS	AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.3
NM LINKS	**NSP :** SO 6/4 **NOP:** Advanced ATC Tower Implementation planned for 2015; DMAN not available; AMAN available. No reported CDM basic.

Content	Description
REFERENCE NUMBER	**042AF2a**
TITLE	**A-SMGCS Düsseldorf**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** The A-SMGCS-Düsseldorf project comprises the implementation of an A-SMGCS Level 2, including RIM function, at Düsseldorf Airport to improve runway safety and throughput and to support the provision of air traffic services and apron services. The project covers the following activities: - Replacing/exchanging the current primary sensor - Setting up the new cooperative sensor (MLAT) - Provision of the required infrastructure - Implementation of a tracker and a ground situation display - Safety assessments The realisation of this project will be the preparatory work for the further A-SMGCS Level 3 and 4. Implementation of the routing function is not part of the described project.
PROJECT LEADER	DFS
MEMBER STATE	GERMANY
TIMING	30/04/2013 –31/12/2019
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With: Airports
LINKS	AF 2; Sub AF 2.4; Family 2.4.1
NM-Links	**NSP:** SO6/6 **NOP:** None

Content	Description
REFERENCE NUMBER	**048AF2**
TITLE	**SYSAT@CDG**
MAIN AF / SUB AF / Family	**AF 2; SUB AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	**Objectives:** In all CDG tower facilities (3 ATC + 2 apron cab) and Approach control room - introduce Electronic Flight Strip - provide new ASMGCS level 2 tracker with enhanced ground situation display including some level 3/4 functionalities - provide new Air Situation Display - provide new weather information, synoptic display and electronic documentation - increase information sharing among ATC actors and Airport handler especially regarding DMAN and CDM processes - be ready for SESAR evolution Phase 1 (2014-2016) : product acquisition and installation preparation Phase 2 (2017-2018): installation in operational rooms
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 31/12/2018
AIRBORNE	
INTERDEPENDENCIES	- 023AF2 - SMAN-Vehicle; - 026AF2 - Evolutions CDM-CDG; - 027AF2 - SMAN-Airport; - 054AF2 - CDG2020 Step1
SYNCHRONIZATION	With: Airspace Users; Airports: ANSPs
LINKS	AF 2; Sub AF 2.1; Family 2.1.1 AF 2; Sub AF 2.2; Family 2.2.1 AF 2; Sub AF 2.3; Family 2.1.2; Family 2.3.1 AF 2; Sub AF 2.4; Family 2.1.2; Family 2.2.1; Family 2.4.1 AF 2; Sub AF 2.5; Family 2.5.1; Family 2.1.2; Family 2.2.1
NM LINKS	**NSP :** SO6/6 **NOP:** A-SMGCS (level 2): Available in TWR and APCH

Content	Description
REFERENCE NUMBER	**049AF2**
TITLE	**SYSAT@NCE**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	**Objectives:** In the Tower cab and Approach control room - provide ASMGCS level 1 capability before full SYSAT deployment - introduce Electronic Flight Strip - evolve ASMGCS to level 2 with enhanced ground situation display including some level 3/4 functionalities, - provide new Air Situation Display, - provide new weather information, synoptic display and electronic documentation, - be ready for SESAR evolution. Phase 1 (2014-2016) : Acquisition, Deployment preparation Phase 2 (2017-2019): Deployment, Training and transition
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 01/07/2019
AIRBORNE	
INTERDEPENDENCIES	- 030AF2 - Equipment of ground vehicles to supply the A-SMGCS
SYNCHRONIZATION	With: ANSPs, Airport
LINKS	AF 2; Sub AF 2.1; Family 2.1.1 AF 2; Sub AF 2.2; Family 2.2.1 AF 2; Sub AF 2.3; Family 2.1.2; Family2.3.1 AF 2; Sub AF 2.4; Family 2.1.2; Family 2.2.1; Family 2.4.1 AF 2; Sub AF 2.5; Family 2.5.1; Family 2.1.2; Family 2.2.1
NM LINKS	**NSP :** SO6/6 **NOP:** A-SMGCS (level 1): Ongoing Implementation.

Content	Description
REFERENCE NUMBER	**050AF2**
TITLE	**SYSAT@ORY**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	In Tower cab and Approach control room - introduce Electronic Flight Strip, - provide new ASMGCS level 2 tracker with enhanced ground situation display including some level 3/4 functionalities, - provide new Air Situation Display, - provide new weather information, synoptic display and electronic documentation, - increase information sharing among ATC actors and Airport handler especially regarding DMAN and CDM processes, - be ready for SESAR evolution. Phase 1 (2014-2016) - ACQUISITION - SYSTEM ADAPTATION Phase 2 (2017-2019): IMPLEMENTATION
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 01/07/2019
AIRBORNE	
INTERDEPENDENCIES	- 023AF2 - SMAN-Vehicle; - 129AF2 - CDM-Orly; - 130AF2 - BOREAL-Orly
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs
LINKS	AF 2; Sub AF 2.1; Family 2.1.1 AF 2; Sub AF 2.2; Family 2.2.1 AF 2; Sub AF 2.3; Family 2.1.2; Family 2.3.1 AF 2; Sub AF 2.4; Family 2.1.2; Family 2.2.1; Family 2.4.1 AF 2; Sub AF 2.5; Family 2.5.1; Family 2.1.2; Family 2.2.1
NM LINKS	**NSP :** SO 6/6 **NOP:** A-SMGCS not reported.

Content	Description
REFERENCE NUMBER	**054AF2**
TITLE	**CDG2020 Step1**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** - Improve runway safety against runway intrusion - Improve runway throughput at peak arrival period A 2020 action plan has been set up to improve performance at CDG, following a balanced approach in the areas of safety and capacity. Step1 of the action plan is targeting improvement of the performance level at the horizon of 2017 by implementing new systems and procedures identified as quick wins. The deployment of those actions is coordinated with Aéroport de Paris (ADP) and the airport users.
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 01/03/2017
AIRBORNE	
INTERDEPENDENCIES	- 048AF2 - SYSAT@CDG;
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, EUROCONTROL
LINKS	AF 1; Sub AF 1.1; Family 1.1.1 AF 2; Sub AF 2.3; Family 2.3.1
NM LINKS	**NSP :** SO6/6 **NOP:** A-SMGCS (level 2): Available in TWR and APCH

Content	Description
REFERENCE NUMBER	**057AF2a**
TITLE	**Fulfillment of the prerequisite EFS for the PCP AF2 Sub-Functionality: Airport Integration and Throughput (Phase A)**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	**Objectives:** Partial fulfillment of the IR 716/2014 "Pilot common project", and in special the AF2 functionality which identifies the use of EFS ("Electronic Flight Strip" in the Tower domain) as a prerequisite for the following functions: - Departure management synchronized with pre-departure sequencing - Departure management integrating surface management constraints - Time based separation - Automated assistance to controller for surface movement planning and routing - Airport safety nets Family 2.1.2 Electronic Flight Strip (EFS). Electronic Strip where all the information regarding instructions controller/pilot about flight plan, surveillance, etc., are integrated. The tool will ease the data input and display for the use of advanced tools like DMAN, A-SMGCS and CDM." There will be two EFS operation modes, according to the operational complexity of the airport: 1. Based on lists. The information contained in the flight strip will be available in different lists and windows of the system 2. Based on labels. In airports with surface surveillance systems, the relevant flight strip information will be displayed (apart from the lists and windows) in the corresponding flight label It will require the development of a dynamic simulation system for training purposes. The following Spanish airports will implement Electronic Flight Strip: 1. Adolfo Suárez Madrid-Barajas 2. Barcelona El Prat 3. Palma de Mallorca This proposal includes all the development activities, to be carried out from 2014 to 2016, prior to the operational validation of the new function. The operational validation and deployment of the functionality in the above mentioned airports will be performed 2017 onwards.
PROJECT LEADER	ENAIRE
MEMBER STATE	SPAIN
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs
LINKS	AF 2; Sub AF 2.2; Sub AF 2.3; Sub AF 2.4; Sub AF 2.5; Family 2.4.1
NM LINKS	**NSP:** SO 6/5 & SO 6/6; **NOP:** None;

Content	Description
REFERENCE NUMBER	**058AF2a**
TITLE	**Fulfillment of the prerequisite A-SMGCS 2 for the PCP AF2 Sub-Functionality: Airport Integration and Throughput (Phase A)**
MAIN AF / SUB AF / Family	**AF 2 ; Sub AF 2.2 ; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** Partial fulfillment of the IR 716/2014 "Pilot common project", and in special the AF2 functionality which identifies the implementation and deployment of A-SMGCS 2 as a prerequisite for the Airport Safety Nets function. ENAIRE´s Family 2.2.1 A-SMGCS 2 will focus on Runway Incursion Alerts. The function shall integrate the surveillance information (regarding all relevant aircraft and vehicles on the area) and controller runway related clearances, to generate and distribute the appropriate alerts. The following Spanish airports will implement Runway Incursion Alerts based on A-SMGCS 2 : 1. Adolfo Suárez Madrid-Barajas 2. Barcelona El Prat 3. Palma de Mallorca This proposal includes all the development activities, to be carried out from 2014 to 2016, prior to the operational validation of the new function. The operational validation and deployment of the functionality in the above mentioned airports will be performed 2017 onwards.
PROJECT LEADER	ENAIRE
MEMBER STATE	SPAIN
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With : Airspace Users, Airports, ANSPs
LINKS	AF2 ; Sub AF 2.3 ; Sub AF 2.4 ; Sub AF 2.5
NM LINKS	**NSP:** SO 6/6; **NOP:** ASMGCS Level 1 available in LEMD; On-going implementation Level 1 in LEBL; ASMGCS Level 1 available in LEPA;

Content	Description
REFERENCE NUMBER	**064AF2**
TITLE	**ENAV Airport System upgrade**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** The main objective is to increase the efficiency and safety of operations at Malpensa and Fiumicino, the two main Italian airports, by improving the surveillance coverage, quality and accuracy in order to extend its capabilities over the all movement area (including most of the suitable apron areas), with a view to implement functionalities that shall facilitate and enable the deployment of Airport Safety Nets as requested within Reg. 716/2014 The enhancement of surveillance is needed in order to fully satisfy the requirements for ASMGCS level 1 and for laying down the bases for ASMGCS Level 2. In particular, the aim of this project is to achieve the Implementation of A-SMGCS level 2 at Malpensa airport and full A-SMGCS level 1 at Fiumicino airport. The project modularity will reflect the different requirements at airport level, allowing each working package to be further decomposed in different modules. In particular the surveillance functionality will be improved through: - The implementation of a new multi-sensor data fusion that will be able to integrate all the contributions coming from different surveillance sensors (ADS-B, Multilateration, SMR,) - The enhancement of the current Surface Movement Radar (SMR) - the upgrade of the Multilateration system (MLAT), enhancing the actual coverage by adding and integrating other MLAT ground stations. The new tower system will provide the : - Electronic Flight Progress Strips (EFPS). - New Airport Surveillance Data presentation - Basic safety (Conflicting clearances through the use of EFPS).
PROJECT LEADER	ENAV
MEMBER STATE	ITALY
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	NO
SYNCHRONIZATION	With Airport, ANSPs
LINKS	AF 2; Sub AF 2.1; Family 2.1.2
NM LINKS	**NSP :** SO 6/5 & SO 6/6 ; **NOP:** In LIMC, A-SMGCS (level 1): Ongoing Implementation. WIP in progress with Italian CAA to define A-SMGCS level 1. In LIRF, ASMGCS not reported ;

Content	Description
REFERENCE NUMBER	**086AF2**
TITLE	**A-CDM Extension**
MAIN AF / SUB AF / Family	**AF2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - Enhancement of the pre-departure sequencing (PDP Family 2.1.3 Basic A -CDM) by: o Considering minimum departure intervals (MDI) on standard instrument departures (SID) o facilitating a demand & capacity balance capability - Implementation of a "de-icing" element enabling Airport CDM for adverse conditions (PDP Family 2.1.3 Basic A-CDM)
PROJECT LEADER	FRAPORT
MEMBER STATE	Germany
TIMING	01/03/2014 – 12/02/2016
AIRBORNE	
INTERDEPENDENCIES	077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With ANSP, ECTL / NM
LINKS	AF 4; Sub AF 4.2; Family 4.2.2; Family 4.2.3
NM-Links	**NSP:** SO6/4 **NOP:** A-CDM available

Content	Description
REFERENCE NUMBER	**087AF2a**
TITLE	**Apron Controller Working Position**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.4; Family 2.4.1**
PROJECT DESCRIPTION	**Objectives:** Fraport AG is responsible for apron management services at Frankfurt Airport and as such subject to a number of provisions in Commission Implementing Regulation (EU) No 716/2014 ("Pilot Common Project"). These are: - 2.1.1 Departure Management Synchronised with Pre-Departure Sequencing (in particular with regard to 'variable taxi-times'), - 2.1.2 Departure Management integrating Surface Management Constraints ('routing'), - 2.1.4 Automated Assistance to Controller for Surface Movement Planning and Routing, - 2.1.5 Airport Safety Nets and - 2.5 Essential prerequisites. The latter concern particularly A-SMGCS Level 1 and 2, EFS and DMAN. Consequently, the implementation project is linked to the following sections of the Preliminary Deployment Programme (PDP): - SMGCS Level 1 (Surveillance) (Family 2.2.1 (A-SMGCS Level 1/2)), - SMGCS Level 2 (Alerting) (Family 2.2.1 (A-SMGCS Level 1/2) and Family 2.5.1 (Airport Safety Nets Associated with A-SMGCS Level 2)), - A-SMGCS Level 2+ (Routing) (S-AF 2.4 (Automated Assistance to Controller for Surface Movement Planning and Routing)) and - —as a prerequisite—EFS (Family 2.1.2 Electronic Flight Strips (EFS)). Underlying objectives of the project are: - The implementation of an Advanced Surface Movement Guidance and Control System (A-SMGCS) providing routing, guidance and surveillance for the control of aircraft and vehicles in order to maintain the declared surface movement rate under all weather conditions while maintaining the required level of safety. - The routing and planning function shall calculate the most operationally relevant route as free as possible of conflicts which permits the aircraft to go from stand to runway, from runway to stand or any other surface movement. - The apron controller working position shall allow the controller to manage surface route trajectories. - 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. - The system shall also be complemented by a function providing controllers with appropriate alerts when potential conflicts primarily on taxiways and intrusions to restricted areas are detected. Conflicts on runways are of secondary interest in this implementation project as the runway system is controlled by the local Air Navigation Service Provider. - The controller working position shall host warnings and alerts with an appropriate human-machine interface (HMI) including support for cancelling the alert.

	- Digital systems, such as electronic flight strips (EFSs), shall integrate the instructions given by the controller with other data such as flight plan, surveillance, routing, published rules and procedures
PROJECT LEADER	FRAPORT
MEMBER STATE	GERMANY
TIMING	01/01/2014 – 31/12/2016 (Part 1)
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With: ANSP
LINKS	AF 2; Sub AF 2.1; Sub AF 2.2; Sub AF 2.5; Family 2.1.1; Family 2.1.2; Family 2.5.1; Family 2.4.1
NM-Links	**NSP:** SO6/6 **NOP:** A-SMGCS (level 1): Available in TWR. Electronic Strips: Available in TWR and APP

Content	Description
REFERENCE NUMBER	**088AF2**
TITLE	**Airport Safety Net: Mobile Detection of Air Crash Tenders**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** - Equipage of Air Crash Tenders with a Moving Map based on A-SMGCS surveillance data - Identification of deviations from routes and procedures of Air Crash Tenders (PDP Family 2.5.1 Airport Safety Nets associated with A-SMGCS Level 2) - Improvement of situational awareness of Air Crash Tenders (PDP Family 2.5.1 Airport Safety Nets associated with A-SMGCS Level 2) - Early prediction of situations that would end up in hazardous situations (PDP Family 2.5.1 Airport Safety Nets associated with A-SMGCS Level 2)
PROJECT LEADER	FRAPORT
MEMBER STATE	Germany
TIMING	01/07/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	
LINKS	
NM-Links	**NSP:** SO6/6 **NOP:** A-SMGCS (level 1): Available in TWR. Electronic Strips: Available in TWR and APP

Content	Description
REFERENCE NUMBER	**092AF2**
TITLE	**Enhanced Departure Management integrating airfield surface assets**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** The high-level objectives of the project are as follows: - Achieve 100% equipage of ground service vehicles with tracking technology - Increase airside safety by providing visibility of appropriate vehicles and equipment to Air Traffic Control Tower - Enable further implementation of Airport Safety Nets (ATM Sub-Functionality 2.5) - Improve taxi conflict prediction to reduce number of stop-and-go taxiing - Improve efficiency of airside operations by providing real-time information about location of ground service equipment and vehicles to Ground Handling Agents (GHAs) and Airport Flow Centre
PROJECT LEADER	Gatwick Airport Limited
MEMBER STATE	UK
TIMING	01/03/2015 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With: Airports
LINKS	AF 2; Sub AF 2.2; Family 2.2.1
NM LINKS	**NSP:** SO 6/6 ; **NOP:** A-CDM fully implemented;

Content	Description
REFERENCE NUMBER	**094AF2**
TITLE	**Time-Based Separation for Final Approach**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.3; Family 2.3.1**
PROJECT DESCRIPTION	**Objectives:** The high-level objectives of the project are as follows: - Implement initial spacing monitor to support air traffic controller to deliver optimum separation between arriving aircraft - Improve utilization of existing RWY capacity - Increase landing rates, especially during strong headwind conditions and reduce arrival and knock-on delays
PROJECT LEADER	Gatwick Airport Limited
MEMBER STATE	UK
TIMING	30/01/2014 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	120AF1 - London Airspace Management Programme (LAMP)
SYNCHRONIZATION	With: Airspace Users, Airports, ANSPs
LINKS	AF 1; Sub AF 1.1; Family 1.1.1
NM LINKS	**NSP:** SO 6/5 ; **NOP:** Not available;

Content	Description
REFERENCE NUMBER	**097AF2**
TITLE	**Time Based Separation**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.3; Family 2.3.1**
PROJECT DESCRIPTION	**Objectives:** - Deployment of Time-based separation (TBS) at Heathrow Airport in order to address the biggest single cause of delay to Heathrow arrivals - strong headwinds on final approach. - Time Based Separation is expected to reduce this delay by as much as 50% of all strong wind regulations applied at Heathrow (equating to c.20% reduction in overall Heathrow ATFM delay) with a projected benefit to the airlines in the range £6m to £7.5m per annum. Any reduction in spacing during strong wind conditions will not result in aircraft being closer than minimum radar separation of 2.5nm. As noted by Eurocontrol the European Network Manager, London Heathrow airport remained a delay hot spot in 2013 due to our significant impact to aircraft operations under adverse weather conditions. Strong winds is the most impacting condition to Heathrow flights operations thus knocking on to wider global operations. The TBS concept aims to improve resilience to the impact of high head wind conditions by: - Reducing the cost of wind-related arrival delay - Improving the consistency of spacing (for wake pairs) (TBS) is a pioneering new system plus operational methodology aimed at organizing the separation of arriving aircraft at Heathrow by time instead of distance. This will radically cut flight delays and reduce cancellations due to high headwinds. Supported in the Airports Commission's interim report in December 2013, the delivery of TBS comes after three years of exhaustive analysis from co-members of the Single European Sky Research ATM Research and development programme (SESAR). The introduction of a time-based separation method at Heathrow will help maintain the landing rate under strong headwind conditions and thus deliver an average improvement of 4 flights per hour beyond today's rate. Every year halving the current delay figure under strong wind conditions while significantly reducing the need for airlines to cancel flights due to the effects of strong headwinds.
PROJECT LEADER	Heathrow Airport Limited
MEMBER STATE	UK
TIMING	01/01/2014 – 01/12/2015
AIRBORNE	
INTERDEPENDENCIES	120AF1 - London Airspace Management Programme (LAMP)
SYNCHRONIZATION	With: Airspace Users, Airports, ANSPs
LINKS	AF 1; Sub AF 1.1; Family 1.1.1
NM LINKS	**NSP:** SO 6/5; **NOP:** Not available;

Content	Description
REFERENCE NUMBER	**099AF2**
TITLE	**Initial Airport Operational Plan (AOP)**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.4**
PROJECT DESCRIPTION	**Objectives:** Airfield Flow Management The key improvement area is the production of a rolling airfield plan with added layers or resilience and architectural consolidations. The AOP is an up-to-date plan or "on the day schedule" with pre-tactical provisions from the pre-tactical DCB (covered under another call submission within AF4). It is the airfield part of the Airport Operations Plan (AOP), known here as the 'airfield plan'. The solution builds on the pre-requisite ACDM Concept and tooling and expands inline with the future SESAR APOC/AOP concept. By sharing this rolling plan with the Airport Operations Centre (APOC) and other stakeholders, the use of resources can be optimized. The production of a common and optimized rolling airfield plan will cover three main steps: - The ability to create a plan (based initially on the schedule, updated with the latest information) that can be shared among all stakeholders. - The ability to evaluate and then update the airfield plan using different scenarios (known as Demand Capacity Balancing, DCB) to optimise it. - The ability to take into account user preferences – in all operational circumstances and not only during disruptions, as is the case today. This is known as User Driven Prioritisation Process (UDPP). The vision for the airport and stakeholders to operate in line with a rolling airfield plan which is up to-date and reflects external factors and user preferences will be a major cultural change. In Summary an AOP is: - An integrated operating environment to improve efficiency, effectiveness and resilience against disruptions - A common shared truth to facilitate timely and focused collaborative decision making - Empowering the workforce to make a real difference with the right information at the right time Why AOP? - To aide decision making in complex landscape of airport operations - To optimise allocation of limited Airport resources - To support enhanced passenger experience
PROJECT LEADER	Heathrow Airport Limited
MEMBER STATE	UK
TIMING	01/09/2014 – 01/12/2015
AIRBORNE	
INTERDEPENDENCIES	- 073AF5 - SWIM Common Components - 082AF5 - SWIM compliance of NM systems
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, EUROCONTROL/NM
LINKS	AF 4; AF 5; Sub AF 4.2; Sub AF 5.5; Family 4.2.1; Family 4.2.2; Family 4.2.3; Family 4.2.4
NM LINKS	**NSP:** SO 6/2; **NOP:** There are currently no agreed plans for capacity expansion at Heathrow. Opportunities to increase the resilience (as opposed to the capacity) of the Heathrow operation continue to be explored;

Content	Description
REFERENCE NUMBER	**100AF2**
TITLE	**Airport Safety Nets associated with A-SMGCS Level 2 - Preparation for SMAN**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.1**
PROJECT DESCRIPTION	**Objectives:** - Concept of Operation has been developed to clarify the AGL and field infrastructure component design and architecture requirements for an integrated ASMGCS level 4/5 Surface manager (SMAN). - A holistic Options analysis and selection process is being undertaken to assess the functional and safety integrity requirement of the Ground Movement Control System as a system design that is fully congruent and potentially pre-integrated with the ASMGSC4/5 Surface Manager. - Primary Cable specification, distribution and operational architecture is being surveyed to scope design and installation of an airfield-wide GMCS primary cabling matrix to allow floating separation and necessary system integrity for automatic/.semi-automatic operation. - Existing AGL system architecture is undergoing resilience and communication architecture modification to allow for validation testing of floating separation and seamless operational transition to the new GMCS/SMAN function.
PROJECT LEADER	Heathrow Airport Limited
MEMBER STATE	UK
TIMING	01/01/2014 – 31/12/2015
AIRBORNE	
INTERDEPENDENCIES	NO
SYNCHRONIZATION	With: Airports, ANSPs
LINKS	AF 2; AF 2.2; Sub AF 2.2.1
NM LINKS	**NSP:** SO 6/6; **NOP:** A-SMGCS (level 2) is available in TWR;

Content	Description
REFERENCE NUMBER	**103AF2**
TITLE	**Standardization of A-SMGCS**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** With this project Copenhagen Airport will upgrade the existing A-SMGCS to a newer and standardized version. The standardization of the existing A-SMGCS will facilitate the future procurement of ad-on modules necessary for the implementation of the A-SMGCS advanced functions, cf. point 2 of the Annex to the PCP regulation 716/2014. Furthermore, it will enable Copenhagen Airport to enter into a partnership with other EU airports, which are also looking to upgrade to the standardized expansion module to A-SMGCS. The project is also part of Copenhagen Airport's strategy "Expanding CPH", which objective is to facilitate the expected future growth in operations at Copenhagen Airport.
PROJECT LEADER	Køpenhavns Lufthavne A/S
MEMBER STATE	DENMARK
TIMING	01/12/2014 – 16/11/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With ANSPs
LINKS	
NM-Links	**NSP:** SO6/6 **NOP:** A-SMGCS (level 2): Available in TWR and APP. Electronic Strips: Available in TWR and APP

Content	Description
REFERENCE NUMBER	**108AF2**
TITLE	**Electronic Flight Strips at Schiphol TWR**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.2**
PROJECT DESCRIPTION	**Objectives:** - Digital flight data processing at Schiphol Towers and the Tower simulator - Safer and more efficient handling of ground traffic - Efficient and flexible data distribution and data sharing - Enabler for safety support systems - Enabler for CDM extension of functionalities **Description:** - Work Package 1: Project Management - Work Package 2: Tender Organisation - Work Package 3: Electronic Flight Strip Application - Work Package 4: Console Adjustments - Work Package 5: Transition The overall expected results after EFS is operational with particular reference to the ATM Performance contribution: - A 'digital' tower environment with a digital data flow (so without paper flight strips); - Identical tower working positions with cleaned up and simplified consoles; - A flexibility gain in allocating functions to working positions and extending the amount of working positions; - A quieter working environment (speechless co-ordination, less standing up and walking in the tower, printing noises, etc.). These results will lead to less working errors (thus an increase in safety) and a more efficient use of both data and ATC personnel in the ATM process at the tower. It is an enabler for a lot of planned future activities like safety net functions, conflict detection, data sharing, enhanced CDM, automation of specific functions, enhanced A-SMGCS, etc.
PROJECT LEADER	LVNL
MEMBER STATE	Netherlands
TIMING	01/09/2014 – 01/01/2018
AIRBORNE	
INTERDEPENDENCIES	109AF2 - Airport CDM implementation Schiphol
SYNCHRONIZATION	With Airports
LINKS	AF 2;Sub AF 2.1; Sub AF 2.3; Sub AF 2.2; Sub AF 2.5; Family 2.1.1; Family 2.1.3; Family 2.2.1; Family 2.5.1
NM-Links	**NSP:** SO6/5 & SO6/6 **NOP:** Electronic Strips: Ongoing Implementation in TWR

Content	Description
REFERENCE NUMBER	**109AF2**
TITLE	**Airport CDM implementation Schiphol**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** Airport CDM implementation according to Eurocontrol guidelines consisting of 2 major parts: Local Airport CDM - Real time CDM data presentation to pilots and handlers - CDM for adverse conditions - Development of an HMI presentation for SUC - CDM Trials - Process and procedure development and implementation - (Local) CDM information sharing Connection to Eurocontrol NMOC - Connecting the local CDM process to the NMOC - allow exchange of DPI messages in accordance with Eurocontrol specifications
PROJECT LEADER	Schiphol Nederland B.V. (AAS)
MEMBER STATE	NETHERLANDS
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	**077AF4 - Interactive Rolling NOP**
SYNCHRONIZATION	With ANSP, ECTL/NM
LINKS	AF 2; AF 4; AF 5;Sub AF 2.1; Sub AF 2.5; Sub AF 4.2; Sub AF 5.5; Family 2.1.1; Family 2.1.4; Family 2.5.1; Family 4.2.2; Family 4.2.3; Family 5.5.1
NM-Links	**NSP:** SO 6/5 & SO 6/6 **NOP:** CDM Local Project Manager (PM) established Gap Analysis: completed Memorandum of Understanding: Done Implementation: not finalised

Content	Description
REFERENCE NUMBER	**115AF2**
TITLE	**A-SMGCS Renewal of the Surface Movement Radar (BORA)**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** The Surface Movement Radar enables exact positioning including identification of all aircraft and other vehicles on all relevant operation areas. The original system was purchased and installed in 2003 and has thus concluded an uninterrupted operating time of 10 years. Main parts of this much differentiated technology are no longer available to order, which means a continued and operationally necessary maintenance can no longer be guaranteed. Only the specified modernization will enable a continuous availability of the operationally essential SMR, and thus avoid security relevant gaps in the service. In the short term and long term, the Surface Movement Radar shall enable the following objectives: - The departure sequence at the runway shall be optimized according to the real traffic situation reflecting any change off-gate or during taxi to the runway. - Thus enabled, A-SMGCS shall provide optimized taxi by monitoring of real surface traffic and by considering updated taxi times in departure management regardless of meteorological or other impacting conditions. In a further step, planned routing and planning function free as possible of conflicts which permits the aircraft to go from stand to runway, from runway to stand or any other surface movement. This protect supports Family 2.2.1 A-SMGCS Level 1/2.
PROJECT LEADER	Munich Airport
MEMBER STATE	GERMANY
TIMING	24/01/2014 - 31/12/2015
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With ANSPs
LINKS	
NM-Links	**NSP:** SO 6/3 & SO 6/4 **NOP:** Basic SMR is available in TWR and APP. A-SMGCS (level 1) available in TWR and APP

Content	Description
REFERENCE NUMBER	**129AF2**
TITLE	**CDM-Orly**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** - Upgrade PDS for sharing information with DMAN, - Implement De-icing tool for improving operational efficiency - Share essential information, such TSAT, on the CDM Website for all stakeholders These functionalities contribute directly to the pre-requisite S-AF 2.1 "Departure Management synchronized with Pre Departure sequencing", through Family 2.1.1 "Initial DMAN capability" and Family 2.1.3 "Basic A-CDM" : - PDS upgrades / DMAN/PDS interface integration - De-icing manager tool upgrades - CDM Website upgrades
PROJECT LEADER	**Airports de Paris: Orly Airport**
MEMBER STATE	FRANCE
TIMING	01/01/2014 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	- 050AF2 - SYSAT@ORY - 077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, ECTL/NM
LINKS	AF 2; Sub AF 2.1; Family 2.1.1; Family 2.1.2 AF 2; Sub AF 2.2; Family 2.2.1 AF 4; Sub AF 4.2; Family 4.2.2; Family 4.2.3
NM LINKS	**NSP :** SO 6/4; SO 6/6 **NOP:** Advanced ATC Tower implemented. NM will continue to provide support towards A-CDM implementation - planned for Q2 2016.

Content	Description
REFERENCE NUMBER	**130AF2**
TITLE	**BOREAL- Orly**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** - Improve safety by upgrading knowledge of surface state and reaction time. - Enabler to sub-functionalities defined into the IR 716/2014: A-SMGCS Level 1/2 (2.2.1) SAF 2.5/2.4 Boreal is the control and visualization station of the state of the runways and taxiways lights in Paris-Orly. Replacement of existing equipment is designed to enhance the robustness and the level of knowledge of information on state of the lights, in order to improve the reaction time of operational maintenance team and to upgrade or extend the tools which allow managing and monitoring information of the airfield area.
PROJECT LEADER	Aéroports de Paris: Orly Airport
MEMBER STATE	FRANCE
TIMING	01/02/2015 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	- 050AF2 - SYSAT@ORY - 077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With Airports, ANSPs
LINKS	AF 2; Sub AF 2.5; Family 2.5.1
NM LINKS	**NSP :** SO 6/6 **NOP:** A-SMGCS not reported.

Content	Description
REFERENCE NUMBER	**135AF2**
TITLE	**Ryanair RAAS Programme**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.5; Family 2.5.2**
PROJECT DESCRIPTION	**Objectives:** Implement aircraft systems contributing to airport safety nets. (ref: Family 2.5.2) The objective is to equip all Ryanair aircrafts with Honeywell Runway Awareness and Advisory Systems (RAAS) to improve situational awareness, reduce the risks of runway incursion, runway confusion and runway excursions and thus contribute to the overall airport safety net for high-density airports. Airport safety nets consist of the detection and alerting of conflicting ATC clearances to aircraft and deviation of vehicles and aircraft from their instructions, procedures or routing which may potentially put the vehicles and aircraft at risk of a collision. The main benefit is related to the increase of runway usage awareness, and consequently an increase of runway safety. On-board systems and technology uses airport data coupled with on-board sensors to monitor the movement of an aircraft around the airport and provide relevant information to the flight crew. Further applications of on-board systems are related to continuous monitoring of aircraft landing performance, providing pilots with a real-time, constantly updated picture. The on-board systems detect potential and actual risk of collision with other traffic during runway operations and provide the Flight Crew with the appropriate alert. An on-board airport safety net will improve safety in runway operations, mostly at airports where no safety net is provided to controllers.
PROJECT LEADER	Ryanair
MEMBER STATE	IRELAND
TIMING	01/01/2015 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	NO
SYNCHRONIZATION	With Airspace Users
LINKS	NO
NM LINKS	**NSP:** SO 6/6; **NOP:** None;

Content	Description
REFERENCE NUMBER	**136AF2**
TITLE	**A-CDM Optimization**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.1; Family 2.1.3**
PROJECT DESCRIPTION	**Objectives:** Although Airport Collaborative Decision Making Optimization Project covers several areas that can be attributed to basic A-CDM the focus is primarily on optimization of "Information Sharing" which is one of the cornerstones in the milestone approach process described in the A-CDM Manual. The detailed purpose of the project is - to facilitate cooperation between different organizations while raising the quality of information dissemination at Stockholm Arlanda Airport and at Network Manager Operations Centre (NMOC). - The distribution of information will only be recorded once - Online information will replace the estimated values. - The quality of operational flight data will increase by making data available online - Improve the quality of "Departure Progress Information" to NMOC The main steps are: - Development and introduction a WEB-interface. - Development and introduction of an Flight Operational APP - Develop and introduce a CDM portal - System integration - Introducing Flight information at GATE and STAND
PROJECT LEADER	Swedavia
MEMBER STATE	SWEDEN
TIMING	01/01/2015 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	077AF4 - Interactive Rolling NOP
SYNCHRONIZATION	With, ECTL/NM
LINKS	AF 2; AF 4; AF 5; Sub AF 2.1; Sub AF 2.5; Sub AF 4.2; Sub AF 5.5; Family 2.1.1; Family 2.1.4; Family 2.5.1; Family 4.2.2; Family 4.2.3; Family 5.5.1
NM-Links	**NSP:** SO 6/3 & SO 6/4 **NOP:** Local Airport CDM Implementation: Yes. Integration of Airports into the network (DPI, FUM): FUMs are used. DPI Operational Evaluation (testing): Current Status for DPI: Short Delay. Planned for Q1 2015.

Content	Description
REFERENCE NUMBER	**137AF2a**
TITLE	**Enhancement of Airport Safety Nets at Stockholm Arlanda Airport**
MAIN AF / SUB AF / Family	**AF 2; Sub AF 2.2; Family 2.2.1**
PROJECT DESCRIPTION	**Objectives:** - Improve the performance of the surveillance function of the A-SMGCS system at Stockholm Arlanda airport, in order to enable to provision of high-quality, reliable surveillance data for integration in the advanced Airport Safety Nets function. - Keep the implementation of the surveillance function up-to-date to enable future expansion of the ASMGCS system, to enable future functionality of the A-SMGCS system and to ensure interoperability with new components in the future. The main steps to reach this objective are: - Upgrade of SMR stations - Enhancement of Airport Safety Nets - Operational validation and introduction of Airport Safety Nets
PROJECT LEADER	Swedavia
MEMBER STATE	SWEDEN
TIMING	01/08/2015 – 01/06/2017
AIRBORNE	
INTERDEPENDENCIES	136AF2 - A-CDM Optimization
SYNCHRONIZATION	With ANSPs
LINKS	AF2; Sub AF 2.1; Sub AF 2.5; Family 2.1.1; Family 2.1.3; Family 2.5.1
NM-Links	**NSP:** SO 6/6 **NOP:** A-SMGCS (level 1) is available in TWR A-SMGCS (level 2) implementation is on-going. Electronic Strips: Available in TWR and APP.

1.1.3 AF3Flexible ASM and Free Route

Content	Description
REFERENCE NUMBER	**004AF3**
TITLE	**AZA Traffic Flow Restriction (TFR) – LIDO planning system**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.1**
PROJECT DESCRIPTION	**Objectives:** TFR (Traffic Flow Restriction) is a LIDO FLIGHT LUFTHANSA SYSTEMS module that allows integrating traffic flow restriction document (RAD) and the EUP/UUP into the flight planning process within Lido/Flight. The RAD is the document published by Central Flow management Unit (CFMU) of EUROCONTROL and describes routes on which restrictions are imposed for a specific period. By this Lido tool Alitalia will be able to plan usually closed segments (CDR) obtaining in this way important optimization to company routes and also be able to catch the opportunity to plan over new segments whose availability will be unveiled day by day. The main objectives are: – Improve the route efficiency pursuing the minimum cost (Total cost = fuel costs + ATC costs + time cost). – Automation on the research of the best routing – Research of the best routing looking at the daily availability of DCT and RAD restriction removal – Reduction of CO2 and other emissions due to optimized flight plans.
PROJECT LEADER	Alitalia
MEMBER STATE	ITALY
TIMING	01/05/2014 – 01/04/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	
LINKS	
NM links	**NSP:** direct link with: SO 5/1 Enable 4D trajectories at planning level, in cooperation with airspace users and ANSPs an indirect link with SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible). **NOP:** The Network Operation Plan (NOP) does not directly address the requirements and plans for Airspace Users.

Content	Description
REFERENCE NUMBER	**005AF3**
TITLE	**AZA Free Flight – Direct Optimization**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.1**
PROJECT DESCRIPTION	**Objectives:** The feature "Free Flight – Direct Optimization" lets users define arbitrary waypoints by their coordinates and dynamically trigger a calculation of the missing segment between the newly defined Free Flight waypoint and any other Free Flight or system-known waypoint, or between two systems known waypoints. The feature can be used as part of the regular flight planning process. It is also suitable for the modification of reclearance procedures or as in flight assistance. With the aid of graphical maps, flight dispatchers can visualize and evaluate a given calculated route, select a waypoint, replace it with a Free Flight waypoint, eliminate waypoints deemed superfluous and reconnect the Free Flight waypoint with existing route objects. The application plots the missing segment between a designated Free Flight waypoint and the designated next waypoint. Main objective is: – Improve the route efficiency pursuing the minimum cost (Total cost = fuel costs + ATC costs + time costs). – Reduction of CO2 and other emissions due to optimized flight plans.
PROJECT LEADER	Alitalia
MEMBER STATE	ITALY
TIMING	01/05/2015 – 01/05/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	
LINKS	
NM links	**NSP:** direct link with: SO 5/1 Enable 4D trajectories at planning level, in cooperation with airspace users and ANSP; an indirect link with SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible). **NOP :** The Network Operation Plan (NOP) does not directly address the requirements and plans for Airspace Users

Content	Description
REFERENCE NUMBER	**015AF3**
TITLE	**LARA integration in CANAC 2**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.1; Family 3.1.2**
PROJECT DESCRIPTION	**Objectives:** – Providing ATCO's (Air Traffic Controller) with military information about areas reservation in order to optimise the use of airspace – Automate the display of airspace reservation in the EUROCAT (in the ODS (Operational input and Display System) of the FDP (Flight Data Processing) system) – Provide information about status of airspace reservation in the ADIDS-c (Aeronautical Data Information Display System)
PROJECT LEADER	BELGOCONTROL
MEMBER STATE	BELGIUM
TIMING	01/01/2014 - 01/01/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	
LINKS	
NM links	**NSP:** direct links with SO 3/2 (Implement Advanced Flexible Use of Airspace), SO 3/3 (Implement appropriate cross-border airspace structures, enabling a flexible use of airspace - to achieve the flight efficiency targets and ensure appropriate cross-border sectorization) **NOP:** It is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as the airspace management (advanced FUA) measure and Technical Measures (minor upgrades of CANAC 2 system) for capacity enhancement in 2015/2016

Content	Description
REFERENCE NUMBER	**020AF3**
TITLE	**Borealis Free Route Airspace (Part 1)**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.4**
PROJECT DESCRIPTION	**Objectives:** The Borealis Alliance will implement Free Route Airspace (FRA) within the NEFRA region that consists of the two functional airspace blocks (FAB) of Denmark-Sweden and North European Functional Airspace Block (Estonia, Finland, Latvia, Norway). Free Route Airspace is a key element of the Pilot Common Project and NEFRA is a cross-border inter-FAB region of Europe. This project will be broken down into airspace design, fast and real-time simulations and finally implementation. A second part is planned at a later stage to cover also the airspaces of UK, Ireland and Iceland
PROJECT LEADER	BOREALIS Alliance
MEMBER STATE	Not applicable
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL/NM
LINKS	AF3; Sub AF3.2, Family 3.2.1 AF3; Sub AF3.2, Family 3.2.3 AF4; Sub AF 4.1, Family 4.1.1 AF4; Sub AF 4.2, Family 4.2.2 AF4; Sub AF 4.2, Family 4.2.3 AF4; Sub AF 4.4; Family 4.4.1
NM links	**NSP:** SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible) ; SO 3/3 (Implement appropriate cross-border airspace structures, enabling a flexible use of airspace - to achieve the flight efficiency targets and ensure appropriate cross-border sectorization as required for FRA deployment) ; SO 3/4 (Coordinate the development and implementation of airspace design and airspace management improvements to achieve the flight efficiency targets and ensure appropriate network connectivity and coordination) ; SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures) for AVINOR and LGS. **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as the airspace/ free route airspace measure for capacity enhancement in 2015-2019 time slot by NAVIAIR, EANS, Finavia, IAA, AVINOR, LFV and NATS ; the technical measures for capacity enhancements in 2015-2019 time slot by NAVIAIR, EANS, LGS, IAA, AVINOR, LFV and NATS

Content	Description
REFERENCE NUMBER	**053AF3**
TITLE	**4-Flight deployment in DSNA pilot ACCs**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.1**
PROJECT DESCRIPTION	**Objectives:** – Replace the current operational CAUTRA ATM System for Reims and Marseille ACCs and major APP, by a modern SESAR compliant and interoperable full ATM system based on the brand new Coflight Flight Data Processing System (FDPS), in order to increase DSNA's performance – Support the implementation of the European ATM Master Plan for France and of the SESAR concept – Comply with the Single European Sky (SES) and FABEC rules – Switch to "stripless" environment and up-to-date technologies – Reduce total cost of ownership, by sharing development and evolution costs and risks for the new system, with other ANSP partners
PROJECT LEADER	DSNA
MEMBER STATE	FRANCE
TIMING	01/07/2014 – 31/12/2018
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	
LINKS	
NM links	**NSP:** direct links with SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures). **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as Technical measure for capacity enhancement by the deployment of new ATM system (4-flight) by Reims and Marseille ACCs in 2019.

Content	Description
REFERENCE NUMBER	**056AF3**
TITLE	**ASM tool Implementation**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.1; Family 3.1.1**
PROJECT DESCRIPTION	**Objectives:** Air Space Management (ASM) tool implementation is a prerequisite for Free Route Airspace Implementation of AF3 – Flexible Airspace Management and Free Route of the Commission Implementing Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project (PCP) supporting the implementation of the European Air Traffic Management Master Plan. The EUROCONTROL LARA ASM tool will: – enhance Civil-Military ATM performance; – provide real-time exchange of airspace management data; – enhance situational awareness – facilitates collaborative decision-making – improve safety
PROJECT LEADER	EANS
MEMBER STATE	ESTONIA
TIMING	01/01/2014 – 31/07/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ECTL/NM
LINKS	AF 4; Sub AF 4.2
NM links	**NSP :** SO 3/2 (Implement Advanced Flexible Use of Airspace) SO 3/3 (Implement appropriate cross-border airspace structures, enabling a flexible use of airspace - to achieve the flight efficiency targets and ensure appropriate cross-border sectorization). **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as the procedural measures for capacity enhancement in 2016.

Content	Description
REFERENCE NUMBER	**063AF3**
TITLE	**ENAV implementation of Free Route**
MAIN AF / SUB AF / Family	**AF3; Sub AF 3.2; Family 3.2.4**
PROJECT DESCRIPTION	**Objectives:** The project aims to implement free route operations in Italy through a seamless integration of the four Italy ACCs enabling airspace users to flight-plan their preferred trajectories within the whole Italian airspace. The deployment will address both technical systems and operational airspace design and procedures. ENAV and BLUE MED FAB partners have been implementing Free Route Airspace concept according to the agreed BLUE MED FAB Implementation Programme, within which the Free Route Airspace concept will be applied in all its stages: from the implementation of night DCTs, up to more ambitious Free Route scenarios on regional scale. The project aims to implement free route operations in Italy through a seamless integration of the four Italy ACCs enabling airspace users to flight-plan their preferred trajectories within the whole Italian airspace. The deployment will cover technical systems, operational airspace design and procedures addressing the following objectives: – Enable users preferred trajectories within whole Italian airspace – Upgrade of ATM Systems – Seamless integration of four Italy ACCs – ATS-route network optimization, including arrival and departure procedures – Sectors adaptation to accommodate the changes in traffic flows where needed
PROJECT LEADER	ENAV
MEMBER STATE	ITALY
TIMING	01/01/2014 - 31/12/2017
AIRBORNE	
INTERDEPENDENCIES	– 095AF3 – Implementation of FRA in Greece
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL/NM
LINKS	AF3; Sub AF 3.1, Family 3.1.1 AF3; Sub AF3.2; Family 3.2.1, AF 4; Sub AF4.1; Family 4.1.1
NM links	**NSP:** direct links with SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible); SO 3/4 (Coordinate the development and implementation of airspace design and airspace management improvements to achieve the flight efficiency targets and ensure appropriate network connectivity and coordination); SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures). **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as free route airspace measure for capacity enhancement in 2015-2017 time slot by 4 Italian ACCs Technical measure by the deployment of MTCD by 4 Italian ACCs in 2016.
Content	**Description**
REFERENCE NUMBER	**080AF3**

TITLE	**ASM and A-FUA implementation**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.1; Family 3.1.3**
PROJECT DESCRIPTION	**Objectives:** – Improve Network performance and support a better utilisation of the Free Route Airspace and fixed route structure through enhanced ASM processes and tools – Enhance performance driven ASM/ATFCM processes (including those ATS processes that are linked to the ASM/ATFCM processes); – Introduce more dynamic and flexible ASM/ATFCM/ATS processes; – Production of key performance indicators for AFUA
PROJECT LEADER	EUROCONTROL / Network Manager
MEMBER STATE	Belgium
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, Military
LINKS	AF 3.1; AF 3.2
NM links	**NSP:** SO 3; SO 4; SO 5 **NOP:**

Content	Description
REFERENCE NUMBER	**081AF3**
TITLE	**NM DCT/FRA Implementation and support**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.1**
PROJECT DESCRIPTION	**Objectives:** This project contributes directly to the implementation of AF3 / S-AF3.2 Free Route: – Family 3.2.2 Upgrade NM Systems to support Direct Routing Operation (DCT) – Family 3.2.3 Implement Direct Routes The project allows to : – Ensure and co-ordinate the gradual implementation, in a harmonized way, of Free Route Airspace, including DCT based, throughout the European airspace. – Adapt NM systems to cope with Free route developments The project is a key contributor to the following Strategic Objectives mentioned in the Network Strategy Plan (NSP): – SO 3 : Implement a seamless and flexible airspace – SO 4: Plan optimum capacity and flight efficiency – SO 5: Facilitate business trajectories and cooperative traffic management
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs
LINKS	AF 4; Sub AF 4.2
NM links	NM inputs provided through the normal channels as any other implementing stakeholder.

Content	Description
REFERENCE NUMBER	**095AF3**
TITLE	**Implementation of FRA in Greece**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family 3.2.4**
PROJECT DESCRIPTION	**Objectives:** HANSP and BLUE MED FAB partners have been implementing Free Route Airspace concept according to the agreed BLUE MED FAB Implementation Program, within which the Free Route Airspace concept will be applied in all its stages: from the implementation of night DCTs, up to more ambitious Free Route scenarios on regional scale. The project aims to implement free route operations in Greece through a seamless integration of the two Greek ACCs enabling airspace users to flight-plan their preferred trajectories within the airspace of HELLAS UIR. The deployment will cover technical systems, operational airspace design and procedures addressing the following objectives: – Enable users preferred trajectories within the airspace of HELLAS UIR – Upgrade of ATM Systems – Seamless integration of two Greek ACCs – ATS-route network optimization, including arrival and departure procedures – Sectors adaptation to accommodate the changes in traffic flows where needed
PROJECT LEADER	HCAA
MEMBER STATE	GREECE
TIMING	01/11/2015 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	– 063AF3 - ENAV implementation of flexible ASM and Free Route
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL/NM
LINKS	AF3, Sub AF3.2, Family 3.2.1 AF 4; Sub AF 4.2
NM links	**NSP:** direct links with SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible); SO 3/4 (Coordinate the development and implementation of airspace design and airspace management improvements to achieve the flight efficiency targets and ensure appropriate network connectivity and coordination); SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures). **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as free route airspace measure for capacity enhancement in 2016-2019 time slot by Athens and Makedonia ACCs; Technical measure by the deployment of a new ATM system by Athens and Makedonia ACCs(2015-2017).

Content	Description
REFERENCE NUMBER	**102AF3**
TITLE	**Free route airspace from the Black Forest to the Black Sea**
MAIN AF / Sub AF / Family	**AF 3; Sub AF 3.2; Family 3.2.4**
PROJECT DESCRIPTION	**Objectives:** – development of the cross-border FRA concept within FAB CE – validation of the cross-border FRA concept within FAB CE – development of the FRA concept intra-FAB CE (throughout the FAB) – validation of the FRA concept intra-FAB CE (throughout the FAB) – increase airspace capacity – reduce the environmental footprint – via flexible/shorter routes improve the sustainability of aviation
PROJECT LEADER	HUNGAROCONTROL
MEMBER STATE	HUNGARY
TIMING	01/09/2015 -21/04/2017
AIRBORNE	
INTERDEPENDENCIES	– 063AF5 - ENAV implementation of flexible ASM and Free Route
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL/NM
LINKS	AF3; Sub AF3.2, Family 3.2.1 AF 4; Sub AF 4.2
NM links	**NSP:** This project has indirect links with NSP SO, as it does not address the deployment but the preparatory activities for deployment: SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible);SO 3/3 (Implement appropriate cross-border airspace structures, enabling a flexible use of airspace - to achieve the flight efficiency targets and ensure appropriate cross-border sectorization as required for FRA deployment) ; SO 3/4 (Coordinate the development and implementation of airspace design and airspace management improvements to achieve the flight efficiency targets and ensure appropriate network connectivity and coordination) ; SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures). **NOP:** This project is addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as Free route airspace measure for capacity enhancement in 2015-2019 time slots by Austro Control, Croatia Control, ANS CR, LPS SE and Slovenia Control. HungaroControl already deployed fully FRA within The Budapest FIR airspace but did not refer in their capacity plans for FABCE FRA deployment. BHANSA capacity plans are not addressed by NOP as ATS provision above FL 325 is delated to Serbia and Croatia and their respective ANSPs; the technical measures for capacity enhancements in 2015-2019 time slot by Austro Control, Croatia Control, ANS CR, LPS SE and Slovenia Control.

Content	Description
REFERENCE NUMBER	**122AF3**
TITLE	**Family 3.1.1 NAV Portugal - Initial ASM tool to support AFUA**
MAIN AF / SUB AF / Family	**AF 3; AF 3.1 ; Family 3.1.1**
PROJECT DESCRIPTION	**Objectives:** Airspace Management (ASM) and Advanced Flexible Use of Airspace (A-FUA) aims to provide the possibility to manage airspace reservations more flexibly in response to airspace user requirements. Changes in airspace status shall be shared with all concerned users, in particular Network Manager, air navigation service providers and airspace users (Flight Operations Centre/Wing Operations Centre (FOC/WOC)). ASM procedures and processes shall cope with an environment where airspace is managed dynamically with no fixed-route network. Data-sharing shall be enhanced by the availability of airspace structures in support of a more dynamic ASM and Free Routing Airspace (FRA) implementation. FRA is the airspace defined laterally and vertically, allowing free routing with a set of entry/exit features. Within this airspace, flights remain subject to air traffic control. ASM solutions shall support all airspace users, including enabling the alignment of FRA, Conditional Route (CDR) and published Direct Routing (DCT). These ASM solutions shall be based on forecast demand received from the local Air Traffic Flow and Capacity Management (ATFCM) function and/or the Network Manager. Establish a collaborative civil-military airspace planning at Lisbon FIR integrated on the European Network level through an integrated Airspace Management/Air Traffic Flow Capacity Management (ASM/ATFCM) process and an extended planning phase into the day of operations. Ensure full exploitation of capacity becoming available through the identification of efficient combinations of areas allocation, routes availability, including CDRs, and Lisbon ACC sector configurations able to cope with traffic demand. The process will be applied also for improving the planning activities related to the updates to airspace status. Foster a consistent application of the Flexible Use of Airspace (FUA) Concept across the European network, and support a safe, efficient and accurate flow of ASM data. The improved planning process refers to the use of specific procedures allowing Airline Operators (AOs) to optimise their flight planning in order to achieve a more efficient utilization of available airspace through more dynamic responses to specific short notice or real-time airspace status changes, requirements and route optimization at the pre-tactical and/or tactical levels. Develop, validate and implement ASM/ATFCM processes, procedures and supporting tools at national, subregional and the European Network level to ensure that airspace is used more flexibly, capacity is better balanced and predictability is enhanced through greater adherence to planned activities as a result of better planning and notification. Ultimately, the ASM operations continue until the real-time activation of airspaces in the Lisbon ACC or routes (below FL 240, since above that level the FIR airspace is full free route). The alignment between both ASM/ATFCM processes shall continue to ensure the assessment of the network impact, the identification of flights affected by real-time modifications, as well as the timely dissemination of the decisions. Airspace uses (allocations, activations, deactivations) are issued from the ASM tools (LARA,) via B2B.
PROJECT LEADER	Nav Portugal

MEMBER STATE	PORTUGAL
TIMING	01/01/2014 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ECTL/NM
LINKS	AF3; Sub AF 3.2; Family 3.2.1 AF4; AF5, sub AF5.3; Family 5.3.3
NM links	**NSP:** direct links with SO 3/2 (Implement Advanced Flexible Use of Airspace); SO 3/3 (Implement appropriate cross-border airspace structures, enabling a flexible use of airspace - to achieve the flight efficiency targets and ensure appropriate cross-border sectorization). **NOP:** This project that aims to deploy LARA tool by the end of 2016 is not addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS).

Content	Description
REFERENCE NUMBER	**131AF3**
TITLE	**1st part of the upgrade of the P_21 PEGASUS system to SESAR functionalities - Test and Validation Platform**
MAIN AF / SUB AF / Family	**AF 3; Sub AF 3.2; Family3.2.1**
PROJECT DESCRIPTION	**Objectives:** The P_21 system transition to iTEC has the following objectives: – Deployment of Preliminary Deployment Plan functionalities of the ATM System, mostly the ATM. Functionality 3 - Flexible Airspace Management and Free Route (Family 3.2.1), with references to: ○ Pilot Common Project – Technical Annex for the AF 03: • 3.1.1. Airspace Management and Advanced Flexible Use of Airspace: ▪ The ATC system shall support flexible configuration of sectors so that their dimensions and operating hours can be optimized according to the demands of the NOP ▪ The system shall allow a continuous assessment of the impact of changing airspace configurations on the network ▪ ATC systems shall correctly depict the activation and de-activation of configurable airspace reservations and the change of a volume of airspace from a fixed route network to FRA ▪ The ASM, ATFCM and ATC systems shall securely interface in a way that allows the provision of air navigation services based on a common understanding of the airspace and traffic environment. The ATC systems shall be modified to enable this functionality to the extent necessary to comply with Regulation (EC) No 552/2004, point 4 of Part A of Annex II. • 3.2.1. Free Route - ATC systems shall implement the following: ▪ Flight data processing system, including HMI, to manage trajectory/flight planning without reference to the fixed ATS network ▪ Flight planning systems to support FRA and cross-border operations ▪ ASM/ATFCM to manage FRA — for FRA, Medium Term Conflict Detection (MTCD) including Conflict Detection Tools (CDT), Conflict Resolution Assistant (CORA), Conformance Monitoring, and APW for dynamic airspace volumes/sectors; Trajectory prediction and de-confliction shall support an automated MTCD tool adapted to operate in FRA airspace and, when required, on DCT ▪ Flight Data Processing System (FDPS) shall support FRA, DCT and A-FUA ▪ The controller working position shall support the operating environments, as appropriate ▪ ○ Baltic FAB CONOPS ▪ 3.3.6 FRA (Free Route Airspace) ▪ The deployment of FRA will initially require the introduction of a number of key enablers - System support – enhancement for the purposes of flight

	planning, flight data processing, flight data display and exchange, coordination, conflict detection and resolution; – Deployment at the same time of elements of other ATM Functionalities: ○ Enable the ATM System to support RNP operations (Family 1.2.3) ○ Electronic Flight Strips (Family 2.1.2) ○ Interface to NMS (Family 4.2.3) ○ FDP system adaptation to interface with NOP (Family 4.4.1) ○ ATM system adaptation to support AIXM 5.1 (Family 5.3.2) ○ FDPS upgrade preparing for IOP Flight Object exchanges (Family 5.6.1) – Alignment of the PEGASUS ATM system to further joint development within the iTEC cooperation and with the FAB partner
PROJECT LEADER	PANSA
MEMBER STATE	POLAND
TIMING	01/09/2015 – 28/02/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With ANSPs, ECTL/NM
LINKS	AF3; Sub AF3.1, Family 3.1.1 AF 1, AF 4, AF 5; Family 1.2.3, Family 2.1.2, Family 4.2.3, Family 4.4.1, Family 5.3.2, Family 5.6.1
NM links	**NSP:** The project has direct links with SO 3/1 (Deploy full free route airspace throughout the European ATM network, to the maximum extent possible); SO 3/2 (Implement Advanced Flexible Use of Airspace); SO 4/1 (Modernise the local/FAB system capabilities including ATC planning functions and Controller tools procedures); **NOP:** This project is not addressed by NOP Annex 5 (ACC TRAFFIC FORECAST & CAPACITY PLANS) as the PANSA listed only the data link system improvement as the technical measures for capacity enhancement.

1.1.4 AF4 Network Collaborative Management

Content	Description
REFERENCE NUMBER	**062AF4**
TITLE	**ENAV initiative for the identification of Network Collaborative Management requirements**
MAIN AF/ SUB AF/ Family	**AF 4, Sub AF 4.2, Family 4.2.3**
PROJECT DESCRIPTION	**Objectives:** ENAV will develop a study in order to identify all requirements and provisions to meet the demands set for AF4 under Reg. 716/2014. The study will identify measures in order to implement: – Optimized management of traffic demand, including high-level/peak hours traffic requests. Some enhancement through reduction in controller workload. – Enhanced by improved sharing of the network situation – Better use of the available network capacity – Increased through suppression of flight ATFM regulations thanks to local ATFCM measures with the same ATC sector manning – Small benefits through improved use of the airport and airspace capacity resulting from a better knowledge of the airspace availability and of the traffic demand. – Reduction of costs induced by delays – Reduction of flight delays Enhanced through use of cost effective tools to access network information instead of expensive local tools or procedures and through the improved capacity
PROJECT LEADER	ENAV
MEMBER STATE	ITALY
TIMING	01/01/2014 - 31/12/2017
AIRBORNE	
INTERDEPENDENCIES	– 063AF3 - ENAV implementation of flexible ASM and Free Route – 066AF5 - ENAV AIS system Upgrade to support AIXM5.1 – 078AF4 - ATFCM measures (STAM) – 079AF4 - Trajectory accuracy and traffic complexity
SYNCHRONIZATION	With ANSPs, NM
LINKS	AF4,SubAF4.1, Family 4.1.1 AF4,SubAF4.2, Family 4.2.2 AF4,SubAF4.4, Family 4.4.1 AF4,SubAF4.4, Family 4.4.2 AF3,SubAF3.1, Family 3.1.1 AF3,SubAF3.2, Family 3.2.1 AF3,SubAF3.2, Family 3.2.3 AF5,SubAF5.3, Family 5.3.1
NM links	**NSP :** SO4/1, SO4/2, SO4/3, SO5/1, SO5/4 **NOP:**Marginal with NOP annex 5 (ACC traffic forecast and capacity plan) with a reference to the improved ATFCM process (including STAM) by 4 Italian ACCs

Content	Description
REFERENCE NUMBER	**077AF4**
TITLE	**Interactive Rolling NOP**
MAIN AF/ SUB AF/ Family	**AF 4; Sub AF 4.2; Family 4.2.2**
PROJECT DESCRIPTION	**Objectives:** – Extension and improvement of the process referred to as the interactive rolling NOP. – Replacing the existing interfaces (NOP Portal, CHMI and EHMI) into a single interface – Provision of the common interface to all Stakeholders to enable the collaborative decision making processes used to build and execute the Network Operations Plan. The project is a key contributor to the following Strategic Objectives mentioned in the Network Strategy Plan (NSP): – SO 4: Plan optimum capacity and flight efficiency – SO 5: Facilitate business trajectories and cooperative traffic management
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	– 078AF4 – ATFCM measures (STAM) – 081AF3 - NM DCT/FRA Implementation and support – 082AF5 - SWIM compliance of NM systems
SYNCHRONIZATION	With Airspace Users; Airports; ANSPs; EUROCONTROL; MET
LINKS	AF4;SubAF4.2; Family 4.2.3 AF4;SubAF4.1; Family 4.1.1 AF3;Sub AF 3.2; Family 3.2.3 AF3Sub AF 3.2; Family 3.2.4 AF5;Sub AF 5.3; Family 5.3.1
NM LINKS	**NSP**: SO4, SO5 **NOP**: Yes

Content	Description
REFERENCE NUMBER	**078AF4**
TITLE	**ATFCM measures (STAM)**
MAIN AF/ SUB AF/ Family	**AF 4; Sub AF 4.1; Family 4.1.2**
PROJECT DESCRIPTION	**Objectives:** – Minimizing ATFCM delay by reducing the need for ATFCM regulations and its impact on operations. – Improve the balance between demand and available capacity through cooperation between ATFCM and ATS processes, through targeted measures on (an) individual flight(s). – Delivery of a complete package of system support and operational procedures, to enable the harmonised and effective deployment of Short Term ATFCM Measures throughout the European airspace. – Support the network coordination between stakeholders and provide the network view for the elaboration, decision and execution of STAM measures. – Provide the collaborative environment to stakeholders during the elaboration, decision and execution of STAM measures. The project is a key contributor to the following Strategic Objectives mentioned in the Network Strategy Plan (NSP): – SO 4: Plan optimum capacity and flight efficiency – SO 5: Facilitate business trajectories and cooperative traffic management
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	– 077AF4 - Interactive Rolling NOP – 062AF4 - ENAV initiative for the identification of Network Collaborative Management requirements – 083AF1 - AMAN extended to en-route
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs
LINKS	AF4;SubAF4.2; Family 4.2.2 AF1; Sub AF 1.1; Family 1.1.3
NM LINKS	**NSP:** SO4/ SO5 **NOP:** Yes

Content	Description
REFERENCE NUMBER	**079AF4**
TITLE	**Trajectory accuracy and traffic complexity**
MAIN AF/ SUB AF/ Family	**AF 4; Sub AF 4.4; Family 4.4.2**
PROJECT DESCRIPTION	**Objectives:** This IP addresses the Family 4.4.1 'FDP System adaptation and EFD (EFTMS flight data message)' and contributes to the S-AF4.4 'Automated Support for Traffic Complexity Assessment'. – The accuracy of demand assessment will be significantly improved by the use of the Extended Flight Plan (EFPL) in the planning phase, meaning a Flight Plan enriched with detailed trajectory and flight performance information. This will also positively impact the ETFMS flight data (EFD) messages process. – The better accuracy of the initial trajectory information provided by NM will improve traffic predictability in general, and more specifically facilitate the traffic complexity assessment both at local and central level. – The implementation of Network Traffic Scenario management tools at NM level will also directly contribute to manage traffic complexity. – Improved trajectory/constraint accuracy/awareness will also result in potential improvements to flight efficiency.
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	062AF4 - ENAV initiative for the identification of Network Collaborative Management requirements
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, EUROCONTROL
LINKS	AF4,SubAF4.1, Family 4.1.1
NM LINKS	**NSP:** SO5 **NOP:** Yes

Content	Description
REFERENCE NUMBER	**123AF4**
TITLE	**Family 4.2.3 NAV Portugal Interface to NMS AFP**
MAIN AF/ SUB AF/ Family	**AF 4; Sub AF 4.2; Family 4.2.3**
PROJECT DESCRIPTION	**Objectives:** – The purpose of this national project (action), on the Lisbon FIR, is to contribute for the European wide objectives of the IR 716/2014 AF#4, namely on the Improvement of the collaboration between the NM and ANS providers, airports and airspace users in flight plan filing. – The Lisbon FIR ATM system should automatically provide AFP message for: o Missing flight plan o Change of route o Diversion o Change of flight rules or flight type o Change of requested cruising level o Change of aircraft type o Change of aircraft equipment. – The APL and ACH messages sent by IFPS and AFP messages are automatically processed
PROJECT LEADER	Nav Portugal
MEMBER STATE	PORTUGAL
TIMING	01/05/2015 – 31/03/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	NM
LINKS	
NM LINKS	**NSP:** SO4/1, SO4/2 **NOP:** Annex 5

1.1.5 AF 5 Initial SWIM

Content	Description
REFERENCE NUMBER	**006AF5**
TITLE	**ATM Data Quality (ADQ)**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3; Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** The project aims to migrate Austro Control's aeronautical data base to support AIXM 5.1, ensuring the data quality to be high enough to be compatible with System Wide Information Management (SWIM). This migration will support the enhancement of security, data integrity and capacity, as well as promotion of ATM automation. The proposed action is therefore instrumental to the fulfilment of the requirements according to ICAO Annex15 and ESSIP INF05, as well as for creating the basis for a smooth implementation of SES/ADQ, more specifically aiming at: – Compliance to ICAO Annex 15 and Commission Regulation (EU) No 73/2010 ensured – Validation and integrity checks introduced – Workflow management system introduced to the service delivery management domain (SDM) – Stream for internal and external data delivery digitalized – National legislation aligned
PROJECT LEADER	AUSTROCONTROL
MEMBER STATE	AUSTRIA
TIMING	01/01/2014 – 15/12/2015
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airports
LINKS	AF 1/Sub AF 1.2/ Family 1.2.1 AF 1/Sub AF 1.2/ Family 1.2.2 AF 1/Sub AF 1.2/ Family 1.2.3 AF 3/ Sub AF 3.2/ Family 3.2.1 AF 3/ Sub AF 3.2/ Family 3.2.3 AF 4/Sub AF 4.2/ Family 4.2.2 AF5/Sub AF 5.3/ Family 5.3.1
NM links	**NSP:** SO 2/5 **NOP:**No link

Content	Description
REFERENCE NUMBER	**009AF5**
TITLE	**Integrated Briefing System New (IBSN)**
MAIN AF / SUB AF / Family	**Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** – AIDA (Aeronautical Information Data-handling-system Austria)/Integrated Briefing System (IBS) Legacy System (technology end of life as well as software architecture) replaced – "EAD customized" (EAD - European Aeronautical Database) implemented – Connection to existing Austro Control infrastructure (network, working positions, ECITs – EAD Connection Interface Terminal, BF (Briefing Facility)-Box, IBS Web services etc.) ensured – Data from legacy system transferred – AIDA/IBS legacy system cut out and sub-provider contracts cancelled – OPS (operations) training (AIM/VFSS) and briefing of technical personnel (ACG Service Control Center and experts) conducted – Nagios and Trouble Ticket System inserted – "EAD customized" set in operation after successful FAT and SAT **Description:** Austro Control's Integrated Briefing Legacy System has reached end of life (of the technological product cycle)and needs to be replaced. The new briefing service will be prepared to be compliant with the System-Wide Information Management (SWIM) architecture. The upgrade of AIS services shall be seen as a SWIM prerequisite by using EAD core services (reference is made to ESSIP INF 05) New briefing functions introduced by the new system include: – Graphical display (FPL – Flight Plan & NOTAM – Notification to airman) – Mobile devices – Meteorological (MET) web interface – Webshop
DELIVERABLES AND MILESTONES	**Deliverables:** – 1.1.3 Execution Phase - Meeting minutes, project reports – 1.1.4 Finalization Phase - Project closedown report – 1.2.2 Process In voices - Paid invoices – 1.2.3 Verify contracts - Verified contracts – 1.2.4 Revise Service Level - Agreements Revised SLAs – 1.4.1 Start BF-box - BF-box connected and ready for operation – 1.4.2 Provide VFSS WP (Citrix) - Working positions installed and ready for operation – 1.4.3 Configure network/monitoring - Network ready for operation and monitoring available – 1.4.4 Provide MET - Services Interface control document - web service definition language (WSDL) implemented – 1.5.1 Revise Contingency Procedures - Updated Contingency Procedures – 1.5.2 Revise Manuals - Updated Manuals – 1.5.3 Revise SCC Procedures - Updated SCC Procedures – 1.6.1 Test MET connection - Test protocols – 1.6.2 Test performance - Test protocols

	– 1.6.3 Assure continuous testing - According to test plan conducted and protocols – 1.6.4 Organize FAT - Test plan – 1.6.5 Conduct FAT - FAT Protocol – 1.6.7 Organize SAT- Test plan – 1.6.8 Conduct SAT - SAT Protocol – 1.7.1 Create training plan - Training Plan – 1.7.2 Implement training - Training documentation – Participant certificates – 1.8.1 Create and implement concepts for data migration - Migration concepts, Migration plan, Migration documentation and verification – 1.8.2 Plan release - Release plan documents – 1.8.3 Implement release - Release certification – 1.8.4 Requirement Spec. Tax for Webshop - Requirement specification document – 1.9.1 Compile marketing concept - Marketing concept – 1.9.2 Inform customers - Mailings, meetings, events, etc. – 1.9.3 Create folders and posters - Marketing material – 1.10.1 Decommission facilities - Decommissioning report – 1.10.2 Conduct asset retirement - Updated asset management register **Milestones:** – 1.2.5 Procurement and contracts completed – 1.6.6 FAT successfully conducted – 1.6.9 SAT successfully conducted – 1.7.3 Certificate received – 1.8.5 New system is operational – 1.9.4 Customers are informed – 1.10.3 AIDA/IBS legacy system decommissioned
PROJECT LEADER	Austro Control
MEMBER STATE	AUSTRIA
TIMING	01/01/2014 – 30/11/2015
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL / NM, MET
LINKS	AF 4; Sub AF 4.2; Family 4.2.3
NM links	**NSP:** SO 2/5 **NOP:**No link

Content	Description
REFERENCE NUMBER	**014AF5**
TITLE	**MPLS WAN project**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.1; Family 5.2.1**
PROJECT DESCRIPTION	**Objectives :** In the context of the Common Backbone Network Group (Germany, Belgium, Luxembourg and the Netherlands), the RAPNET (Regional Aeronautical Packet switched NETwork) is currently used by these ANSP's to connect to the PENS (Pan-European Network System). The evolution of this inter-ANSP network is based on MPLS (MultiProtocol Label Switching) and Belgocontrol needs to implement a compatible networking infrastructure. The specific goals of MPLS WAN project are: – to create a secure and performing IP-based Ground-Ground communication network for the transfer of both operational data (Radar, Voice, Meteo, Aeronautical and Flight Information) and administrative data (LAN and Telephony)… – to share the different Belgocontrol applications on the network with the required data integrity; – to replace current SDH (Synchronous Digital Hierarchy) based by an MPLS based Wide Area Network (WAN). The project will allow compliance with EU 409/2013 and 716/2014
PROJECT LEADER	BELGOCONTROL
MEMBER STATE	BELGIUM
TIMING	17/11/2014 - 07/06/2018
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airports, ANSPs, MET
LINKS	
NM links	**NSP:** SO 6/5, SO 9/4 **NOP:** AMAN projects are mentioned in NOP for many FABEC ANSPs.

Content	Description
REFERENCE NUMBER	**016AF5**
TITLE	**Initial WXXM Implementation on Belgocontrol systems**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.4; Family 5.4.1**
PROJECT DESCRIPTION	**Objectives:** The main objectives of this project are: – Enabling the Brussels Regional OPMET DataBank (RODB) to: o Receive and store ICAO OPMET data in IWXXM (ICAO Meteorological Information Exchange) format; o handle requests from users and to exchange ICAO OPMET data in IWXXM format; – Enabling the issuance of Belgian OPMET data in IWXXM format to ensure conformity with the envisaged Amendment 77 to ICAO Annex 3; – Enabling the Belgocontrol ATS Messages Handling system (AMHS) to support exchange of messages in XML (Extensible Markup Language) data formats (IWXXM, …)
PROJECT LEADER	BELGOCONTROL
MEMBER STATE	BELGIUM
TIMING	01/01/2014 - 11/11/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, MET
LINKS	
NM links	**NSP:** SO 2/5 **NOP:**No

Content	Description
REFERENCE NUMBER	**040AF5**
TITLE	**ADQ – Aeronautical Data Quality**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3; Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** The project consists of DFS migration of their relevant IT systems to AIXM5.1. The Project ADQ is the focal point for all technical issues Reg.73/2010 and establishing AIXM5.1-ability, which will allow: – receiving in conformity with Reg. 73/2010 aeronautical data in AIXM5.1 format, – exchange data between internally databases in AIXM5.1 format and also – providing external entities with aeronautical data in the AIXM5.1 format. In consultation with the German authority BAF, the implementation will be proved by ECTL Specification as Means of Compliance (MoC). One of these ECTL specifications for compliance of AIXM5.1 is the documentation of - Aeronautical information Exchange (Aix)
PROJECT LEADER	DFS
MEMBER STATE	GERMANY
TIMING	01/10/2013 – 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	– 041AF5 - EASI - EAD AIM System Integration – 084AF5 - Implementation of Prerequisites for the Provision of Aerodrome Mapping Data and Airport Maps as Data Originator (Aeronautical Information Exchange)
SYNCHRONIZATION	With Airports
LINKS	AF 1; Sub AF 1.2; Family 1.2.2, Family 5.3.1
NM links	**NSP:** SO 2/5 **NOP:** No

Content	Description
REFERENCE NUMBER	**041AF5**
TITLE	**EASI - EAD AIM System Integration**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3; Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** The DFS project EASI will replace the current DFS system DIAS by the centrally provided EAD system in the context of AIS/ARO functions. This step to a centralised system enables the direct provision of DFS NOTAM and flight plan information via this centralised service. As soon as implemented on the EAD, this DFS information will be available in AIXM-5.1-format and DFS will directly input this data in AIXM-5.1. The abdication of a DFS-specific AIS-system reduces the complexity for the launch of AIXM-5.1 as the number of interfaces and especially parallel AIXM-5.1-implementations is limited. The effort to implement AIXM-5.1 on an internal system can then be spent to support the AIXM-5.1-implementation by EUROCONTROL on the central system. The migration to the central EAD-system is performed by the usage of standard-EAD-terminal-clients and EAD-standard-interfaces.
PROJECT LEADER	DFS
MEMBER STATE	GERMANY
TIMING	05/08/2013 – 31/07/2018
AIRBORNE	
INTERDEPENDENCIES	– 040AF5 - ADQ – Aeronautical Data Quality
SYNCHRONIZATION	With Airspace Users, ANSPs, EURO CONTROL ,ECTL / NM
LINKS	AF 4/ Sub AF 4.2/ Family 4.2.2, AF 5/ Sub AF 5.3/ Family 5.3.2
NM links	**NSP:** SO 2/5 **NOP:** No link

Content	Description
REFERENCE NUMBER	**059AF5**
TITLE	**Implementation and operation of an IP-based G/G data communication network in ENAIRE**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.2; Family 5.2.1**
PROJECT DESCRIPTION	**Objectives:** Evolution of the existing ENAIRE's aeronautical data network (REDAN) in order to ensure an agreed level of Ground-Ground interconnectivity between ENAIRE ATSUs and stakeholders as required to facilitate information exchange with the communication requirements of new applications (SWIM based). This evolution will include voice and data integration and Alignment of REDAN technology with the current and future state-of-the-art. Benefits are expected through Reduction of maintenance and operation costs. The scope of the project includes deployment of the new network infrastructure in ACCs and remote sites (TWRs, radar and radio stations, etc.), user integration into new infrastructure, training and Safety studies and continuous supervision of the deployed network infrastructure.
PROJECT LEADER	ENAIRE
MEMBER STATE	SPAIN
TIMING	01/01/2014 - 31/12/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, MET
LINKS	
NM links	**NSP:** SO 8/3 **NOP:**No link

Content	Description
REFERENCE NUMBER	**066AF5**
TITLE	**ENAV AIS system Upgrade to support AIXM5.1**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3; Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** The Aeronautical Information Exchange Model (AIXM) is designed to enable the management and distribution of Aeronautical Information Services (AIS) data in digital format. ENAV uses an IDS suite called AERODB for AIS static data storage, exchange, manipulation and AIP and Charts production, the actual DB use AIXM 4.5 protocol. The PIB producing system (AOIS Web) is actually based on a non-standard format environmental DB. The project will complete theAERODB migration to the new information exchange model and will change from AOIS web to a new application called EWADs, in order to ensure fully capability AIS system to support AIXM 5.1 data format,
PROJECT LEADER	ENAV
MEMBER STATE	ITALY
TIMING	01/04/2014 - 30/06/2016
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airports, ANSPs
LINKS	
NM links	**NSP:** SO 8/3 **NOP:**No link

Content	Description
REFERENCE NUMBER	**067AF5**
TITLE	**Coflight-eFDP System Development**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.6; Family 5.6.1**
PROJECT DESCRIPTION	**Objectives:** The Coflight-eFDP System is the Flight Data Processing (FDP) System of new generation designed to meet the needs of European Air Navigation Service Providers (ANSPs) for the next decade, satisfying the need for the harmonisation and interoperability of air traffic management systems in Europe. The Coflight Programme is part of a wider programme that involves the renewal of the whole National ATM System, called 4-Flight, for ENAV and DSNA, through which they will develop their completely brand new ATM system to meet all the requirements from the SES performance scheme as well as from all the relevant regulations for the coming years. 4-Flight will guarantee the optimal performances in terms of safety, capacity, environmental impact and cost efficiency, contributing to a significant improvement of the network performances in Europe. The 4-Flight's system core and infrastructure will be made available by the Coflight Programme, which will provide an overall ATM System Oriented architecture and sockets for the other internal components that will be developed according to SESAR compliant user requirements. Coflight will provide also the connections with most of the external systems through SESAR standardised Flight Object based Gate-To-Gate IOP. This project will focus on the development of the successive upgrading software versions (V2R1, V3+ and V4) from requirements to functional tests and reports
PROJECT LEADER	ENAV/DSNA
MEMBER STATE	ITALY
TIMING	01/01/2014 - 31/12/2016
AIRBORNE	
INTERDEPENDENCIES	– 053AF3 - 4-Flight deployment in DSNA pilot ACCs
SYNCHRONIZATION	With Airports, ANSPs, EUROCONTROL, NM
LINKS	AF 3; Sub AF 3.2
NM LINKS	**NSP:** SO5/1 **NOP:** No

Content	Description
REFERENCE NUMBER	**073AF5**
TITLE	**SWIM Common Components**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3Family 5.2.2**
PROJECT DESCRIPTION	**Objectives:** The objective of this project is twofold: *1. SWIM Data Models - deployment toolkit:* The goal is to have common rules for the data capturing/mapping/interpretation. It will include: • Development of an AIXM Coding Guidelines Service. This service will update the AIXM 5.1 coding guidelines better reflecting the needs of a wider range of stakeholders, such as NM sub-systems, ATC, procedure designers, etc. • Provide AIXM Data Validation Services, ensuring that data sets are syntactically valid (against the XML Schema) and semantically correct and can be used in confidence for a particular application. The initial set of AIXM 5.1 Business Rules needs to be maintained and enhanced, considering the feedback from the implementations and the needs of the various stakeholder groups. • Provide a Web Based Training (WBT) Service for the latest AIXM version. The existing AIXM 4.5 WBT is outdated and there is a strong need for a new AIXM 5.1 WBT Service. The deployment toolkits will be updated based on further versions of the following specifications: ○ Aeronautical Information Exchange Model (AIXM) version 5.2 ○ Weather Exchange Model (WXXM) and ICAO Weather Exchange Model (IWXXM) version 3 ○ Flight Information Exchange Model (FIXM) version 4 *2. Registry:* The SWIM Registry will provide a platform for the service providers to find information about SWIM (SWIM Reference Management) and will provide a limited support for the end-users, including minor changes to the look and feel of the SWIM registry and allow updates of the SWIM references when needed.
PROJECT LEADER	EUROCONTROL
MEMBER STATE	BELGIUM
TIMING	01/01/2016 - 31/12/2020
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airports, ANSPs, Airspace Users, NM, MET
LINKS	AF 2/Sub AF 2.1/ Family 2.1.3; AF 2/Sub AF 2.1/ Family 2.1.4 AF 4/ Sub AF 4.2/,; Family 4.2.1 ; AF 4/ Sub AF 4.2/ Family 4.2.3; AF 4/ Sub AF 4.2/ Family 4.2.4 AF 5/Sub AF 5.1/ Family 5.1.1; AF 5/Sub AF 5.4; AF 5/Sub AF 5.5 AF 5/Sub AF 5.6
NM LINKS	NM inputs provided through the normal channels as any other implementing stakeholder**.**

Content	Description
REFERENCE NUMBER	**082AF5**
TITLE	**SWIM compliance of NM systems**
MAIN AF / SUB AF / Family	**AF 5; Sub, 5.5, Family 5.5.1**
PROJECT DESCRIPTION	**Objectives:** The project aims at extending NM systems technical capabilities to initiate SWIM compliance and at developing/deploying new NM B2B services to exchange network / flight plan information with the operational stakeholders. It aims compliance with the requirements of SWIM Yellow Profile and it includes: – the exchange of network / flight plan information using the Yellow SWIM TI Profile; – the new NM B2B services. This IP addresses the following Family (ies): – Family 5.5.1 Interface and Data requirements – Family 5.6.1 FDPS Upgrade preparing for IOP Flight Object Exchanges
PROJECT LEADER	EUROCONTROL/NETWORK MANAGER
MEMBER STATE	BELGIUM
TIMING	01/01/2014 – 30/06/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, ECTL/NM
LINKS	AF 2/Sub AF 2.1/ Family 2.1.3 AF 2/Sub AF 2.1/ Family 2.1.4 AF 3/Sub AF 3.2/ Family 3.2.4 AF 4/Sub AF 4.2/ Family 4.2.3 AF 4/Sub AF 4.2/ Family 4.2.4 AF5/ Sub AF 5.2 AF5/ Sub AF 5.3 AF5/ Sub AF 5.6/ Family 5.6.1
NM LINKS	NM inputs provided through the normal channels as any other implementing stakeholder.

Content	Description
REFERENCE NUMBER	**084AF5**
TITLE	**Implementation of Prerequisites for the Provision of Aerodrome Mapping Data and Airport Maps as Data Originator (Aeronautical Information Exchange)**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.3;Family 5.3.1**
PROJECT DESCRIPTION	**Objectives:** This implementation project will ensure that Frankfurt Airport can fulfil its role as data originator for aerodrome mapping data and airport maps as required by 5.1.3 Aeronautical Information Exchange, bullet point "provide aerodrome mapping data and airport maps" of Commission Regulation (EU) No 716/2014. The implementation of this project will allow the provision of aerodrome mapping data and airport maps by standard XML schema as per AIXM 5.1. In order to implement Regulation (EU) No 73/2010 and to be able to fulfil their role as data originator for aerodrome mapping data and airport maps German airports, their associations ADV and IDRF and DFS agreed upon a common process for the aeronautical data chain and the definition of the interface between airports and the air navigation services provider, DFS. The interface dealing with data and information provided by the originators (airports) to the receiver (DFS) will use the AIXM 5.x format (Aeronautical Information Exchange Model). Therefore, a tool is required which transforms the data formats used at airports in such a way that they are accepted by the interface provided by DFS and that they comply with the requirements of Commission Regulation (EU) No 73/2010 and Commission Implementing Regulation (EU) No 716/2014 ("Pilot Common Project"). The implementation project is a prerequisite for the exchange of information among operational stakeholders as required by Commission Regulation (EU) 716/2014.
PROJECT LEADER	FRAPORT
MEMBER STATE	GERMANY
TIMING	01/01/2014 – 31/03/2016
AIRBORNE	
INTERDEPENDENCIES	– 041AF5 - EASI - EAD AIM System Integration
SYNCHRONIZATION	With Airports
LINKS	
NM LINKS	**NSP** : SO2/5 **NOP** : None

Content	Description
REFERENCE NUMBER	**110AF5**
TITLE	**Meteorological Information Exchange by MET ANSP KNMI**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.4; Family 5.4.1**
PROJECT DESCRIPTION	**Objectives:** The project aims at: – Implementation of a flexible and cost-effective interoperable exchange of MET information for Amsterdam TMA and ACC, Amsterdam Airport Schiphol, Airspace Users, Military and Network Manager compliant with the iSWIM data formats and interfaces. – Demonstration and verification of the operational deployment of iSWIM for MET information, and to provide feedback on the principles, standards and specifications currently defined for **iSWIM** in AF5 and the information and exchange models and schemes of ICAO (WXXM), WMO (METCE) and the EUROCONTROL/FAA (WXCM-WXXM-WXXS). – The implementation and verification covers the standard MET products: TAFs for civil airports in Amsterdam TMA and ACC (WP1); AIRMETs and SIGMETs for the Amsterdam FIR (WP2); METARs and AUTO METARs for civil airports in Amsterdam TMA and ACC (WP4); (AUTO) MET reports and warnings for civil airports in Amsterdam TMA and ACC (WP5). It covers the provision of continuous sensor information for all available runways in Amsterdam TMA and ACC. – The development and implementation of a central database and web services to make the iSWIM compliant MET information easily available to users (WP3). – The realization of a cost-effective, secure and standard interface (PENS) for dissemination of safety critical MET information to ATM (WP6). – The development and implementation of (geo)graphical user interfaces to facilitate the generationand monitoring of the MET products and the efficient maintenance of these data formats. – The embedding of the systems/applications (new and/or extended) for the above mentioned provision of MET information in the operational production and monitoring chains of KNMI.
PROJECT LEADER	KNMI
MEMBER STATE	NETHERLANDS
TIMING	01/06/2015 - 31/12/2018
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, EURO CONTROL, ECTL/NM, MET
LINKS	
NM LINKS	**NSP :** SO2/5 **NOP :** None

Content	Description
REFERENCE NUMBER	**117AF5**
TITLE	**Implementation of Initial SWIM Capability (AF5) across NATS**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.1; Family 5.2.2**
PROJECT DESCRIPTION	**Objectives** The objective is to enable iSWIM as an enabler for other PCP elements that deliver benefits in safety, capacity, cost-effectiveness and environment. Initial System Wide Information Management (iSWIM) supports information exchanges that are built on standards and delivered through an internet protocol (IP)-based network by SWIM enabled systems and will be delivered in the following blocks: Common Infrastructure Components (Sub AF 5.1);SWIM Technical Infrastructure and Profiles (Sub AF 5.2); Aeronautical information exchange (Sub AF 5.3) ; Meteorological information exchange (Sub AF 5.4); Cooperative network information exchange (Sub AF 5.5) and Flight information exchange (Sub AF 5.6)NATS proposal is to deliver a core Enterprise Information Service (EIS) capability to interconnect ATM services within centres, with Airports and other users and to underpin and enable later stages of information exchange by Flight Object. Delivery of the core EIS is the prime action in this 2014 funding call to enable information exchanges of this nature, a number of NATS core systems (primarily Networks, FDP, AIS and Meteo) also require update and enhancement. By their nature, these enhancements need to be carried out first and form the other sub-action elements of this 2014 funding call. Provision of full Flight Object exchange and IOP are expected to be part of future funding requests.
PROJECT LEADER	NATS
MEMBER STATE	UK
TIMING	01/01/2014 – 31/07/2018
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, Airports, ANSPs, ECTL/NM, MET
LINKS	AF 1, AF 3, AF 4, AF 6; AF 5/Sub AF 5.1/ Family 5.1.1 AF5/Sub AF 5.2, AF5/ Sub AF 5.3/ Family 5.3.1 AF5/ Sub AF 5.3/ Family 5.3.2 AF 5/Sub AF 5.5, AF 5/ Sub AF 5.6
NM LINKS	**NSP**: "SO2/1; SO2/5; SO2/4; **NOP**: NO;

Content	Description
REFERENCE NUMBER	**127AF5**
TITLE	**National WAN Infrastructure - CANDI-IP preparation project**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.1; Family 5.2.1**
PROJECT DESCRIPTION	**Objectives:** The project aims at providing requirements for an adequate WAN infrastructure that will be compliant with the requirements of an IP g/g communications network is available. This WAN infrastructure will: – Ensure continuous availability of WAN data transport in EKDK FIR – Ensure logical and physical segregation of operationally critical data – Ensure that requirements on VoIP data transport are fulfilled – Ensure that rules and requirements on IPv6 data transport are fulfilled – Interface to PENS
PROJECT LEADER	NAVIAIR
MEMBER STATE	DENMARK
TIMING	03/02/2014 - 27/04/2015
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	No
LINKS	
NM LINKS	**NSP**: SO8/3; **NOP**: None;

Content	Description
REFERENCE NUMBER	**134AF5**
TITLE	**PILOT PLATFORM for access services to OPMET (worldwide/ECAC) data (METAR, TAF, SIGMET) in WXXM format**
MAIN AF / SUB AF / Family	**AF 5; Sub AF 5.4; Family 5.4.1**
PROJECT DESCRIPTION	**Objectives:** Upgrade Meteo service to provide reliable actual and forecast Meteo data, wherever required across the ATM network, in WXXM format. The project consists in the achievement of a pilot platform as WEB Service for access to OPMET (worldwide/ECAC) data (METAR, TAF, SIGMET) in WXXM format
PROJECT LEADER	ROMATSA
MEMBER STATE	ROMANIA
TIMING	02/03/2015 - 01/09/2017
AIRBORNE	
INTERDEPENDENCIES	
SYNCHRONIZATION	With Airspace Users, ANSPs, ECTL/NM, MET
LINKS	AF 5/Sub AF 5.1/ Family 5.1.1
NM LINKS	**NSP:** SO2/5; **NOP**: None;

Annex B – Standardization and Regulation Matrices

Standardization and Regulation Matrices (S&R) represent a key Annex to the Deployment Programme 2015. They are developed with the primary objective of providing an accurate **snapshot** of the current **state of play of Standards and Regulation** mapped with the 44 Families of the Deployment Programme.

In order to provide an up-to-date picture, SDM has started elaborating the matrices by taking into account **three main sources of information**:

- the **Pilot Common Project itself** (Commission Implementing Regulation (EU) No 716/2014 and especially the related indicative Roadmap with respect to standardization and regulation needs);
- **Integrated Roadmap Dataset #14**, as provided by **SJU**;
- the indicative roadmap **with respect to standardization and regulation needs for PCP implementation**, as reviewed by **EASCG, chaired by EUROCAE**;

This information was elaborated and analyzed by SDM in full coordination with **EASA, EDA, NM and SJU** as well as with **EUROCAE** which contribution and inputs were pivotal towards the finalization of the Standardization and Regulation matrices **proposed for Consultation to Operational Stakeholders** beginning of August.

The S&R matrices have to be considered as **a living document that will be regularly updated** throughout Deployment Programme's life time.

Output of consultation

Operational stakeholders **acknowledged and supported** the work performed by SDM in **consolidating an integrated roadmap on Standardization & Regulation for each of the family of the Deployment Programme, starting from the validation, continuing with industrialization and concluding with deployment phase**. Operational stakeholders appreciated the **proactive role of SDM in developing a view on the potential needs** and understood that SDM view is not binding for standardization/regulatory bodies.

The **operational stakeholders' priorities were aligned with SDM view** and are summarized below.

General remarks

- There is a **need to avoid unnecessary standards and regulations** in order not to hinder and slowdown actual implementation;
- Possible mechanisms to **accelerate the production and development of standards**, are needed and should be explored;
- An **analysis on the possible performance needs and subsequent benefits**, both in terms of stakeholders' categories and geographical scope, would be beneficial and allow a prioritization of some of the activities;

Specific Priorities

AF1

- It was emphasized the **need for a timely delivery of the PBN Regulation**, in order to harmonize and support deployment throughout Europe. The lack of the above mentioned regulation is considered as a **high risk for an effective and synchronized deployment**;
- The SDM view that **no Regulation or Standards** is **needed for Extended AMAN implementation was confirmed**.

AF2

- **Time Based Separation** implementation has been highlighted as a **potential issue** in terms of further studies needed in particular for its link with AMAN and/or different sequencing techniques.

AF3

- The relevance of **cross border DCT/Free Routing** was highlighted, emphasizing the **need for further guidelines** and potentially more regulation to ensure harmonized implementation **in support to Airspace Users**.

AF5

- The need to add **cybersecurity requirements in the Matrices and in the DP** as a whole was envisaged as a priority for the next update of the Deployment Programme;
- It was stressed the importance of **progressing with all the draft documents available in support of AF5 implementation** and all the necessary Information Exchanges enabling the other AFs implementation.

AF6

- SDM and meeting participants agreed on the **importance of the currently on-going SJU study concerning Data Link services and on the need to identify Data Link implementation as a high level risk for deployment.**

AF1 - Extended AMAN and PBN in high density TMA

Sub-AF1.1: Arrival Management extended to en-route Airspace

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.1 Arrival Management extended to en-route Airspace	31.12.2015	TS-0102 (Baseline) TS-0305 (Baseline) TS-0305-A										Before 2014	01/2024

Family 1.1.1 – Basic Aman

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.1.1 Basic AMAN	Available	TS-0102 (Baseline)										Before 2014	12/2020
SDM View	AMAN is one component within an ATM system. ATM systems are bespoken systems, thus not subject to standardisation. Supporting guidance material could be beneficial												

Family 1.1.2 – AMAN Upgrade to include Extended Horizon Function

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.1.2 AMAN Upgrade to include Extended Horizon Function	*31.12.2015*	*TS-0305 (Baseline) TS-0305-A*										*01/2015*	*01/2024*
SDM View	*OLDI AMA message supports initial implementations without need for immediate additional standards. Initial deployment based on bilateral agreements. Supporting guidance material could be beneficial.*												

Sub-AF1.2: Enhanced TMA using RNP-based Operations

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	**V3 (R&D) End**	**OIs**	**Standardisation**			**Means of compliance and Certification or Community Specifications**			**Regulation**			**Deployment**	
			Activities	**Organisation**	**Delivery**	**Activities**	**Organisation**	**Delivery**	**Activities**	**Organisation**	**Delivery**	**IOC**	**FOC**
1.2 Enhanced TMA using RNP-Based Operations	*31.12.2016*	*AOM-0605 AOM-0604 (Baseline) AOM-0603 AOM-0602 (baseline) AOM-0601 (baseline)*	*ICAO PBN Manual (Doc 9613)*	*ICAO*	*Available*	*(1) a) EASA AMC 20-27 (Airworthiness Approval and Operational Criteria for RNPAPPROACH (RNP APCH) Operations Including APV BAROVNAV Operations.* *b) EASA AMC 20-28 (Airworthiness Approval and Operational Criteria related to Area Navigation for Global Navigation Satellite System approach operation to Localiser Performance with Vertical guidance minima using Satellite Based Augmentation System).*	*(1) EASA*	*(1) Effective*	*(1) Opinion 03/2015 (EASA regulatory material on PBN incorporating Doc 9613)* *(2) Commission Regulation amending Commission Regulation (EU) no 1178/2011 and 965/2012 as regards operational approval of PBN)* *(3) Revision of operational approval criteria for Performance-Based Navigation (PBN) RMT.0256/0257* *(4) Technical requirement and operation procedures for Airspace design including procedure design (RMT.0445)* *(5) Provision of requirements in support of global PBN operations (Maintaining CS-ACNS) - RMT.0519*	*(1) EASA* *(2) EASA* *(3) EASA* *(4) EASA* *(5) EASA*	*(1) 2015* *(2) 2016* *(3) 2015* *(4) 2016* *(5) 2016*	*Before 2014*	*2024*

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
									(6) Technical requirements and operational procedures for the provision of data for airspace users for the purpose of air navigation (RMT.0593)	(6) EASA	(6) 2016		

Family 1.2.1 – RNP approaches with vertical guidance

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.2.1 RNP approaches with vertical guidance	Available	AOM-0602 (Baseline) AOM-0604 (Baseline)	ICAO PBN Manual (Doc 9613)	ICAO	Available				(1)Technical requirement and operation procedures for Airspace design including procedure design (RMT.0445) (2) Provision of requirements in support of global PBN operations (RMT. 0519) (3) PBN rule-making (NPA 2015-01)	(1) EASA (2) EASA (3) EASA	(1) 2016 (2) 2016 (3) 2016	Before 2014	01/2019
SDM View	EASA regulation under development and is likely to require PBN/RNP. Expected availability in 2016.												

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
	Comprehensive ICAO manual available. Lack of regulation is a risk for early deployments.												

Family 1.2.2 – Geographical Database for Procedure Design

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.2.2 Geographical Database for procedure design			*ICAO PBN Manual (Doc 9613)*	*ICAO*	*Available*				*(1) Technical requirements and operational procedures for the provision of data for airspace users for the purpose of air navigation (RMT.0593)* *(2) Opinion 02/2015, Technical requirements and operating procedures for the provision of data to airspace users for the purpose of air navigation* *(3) Commission Regulation (EU). 73/2010 (ADQ IR) as amended by*	*(1) EASA* *(2) EASA* *(3) European Commission*	*(1) 2015* *(2) 2015* *(3) available*	*01/2014*	*01/2019*

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
									Commission Implementing Regulation (EU) 1029/2014				
SDM View	*Important prerequisite for deployment.* *Ready for deployment. No need for further standard or regulation*												

Family 1.2.3 – RNP1 operations in high density TMAs (ground capabilities)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.2.3 RNP1 operations in high density TMAs (ground capabilities)	*31.12.2016*	*AOM-0605* *AOM-0603* *AOM-0602 (baseline)* *AOM-0601 (baseline)*	*ICAO PBN Manual (Doc 9613)*	*ICAO*	*Available*				*PBN rule-making (NPA 2015-01)*	*EASA*	*2016*	*01/2015*	*01/2024*
SDM View	*EASA regulation under development and is likely to require PBN/RNP. Expected availability in 2016.* *V3 ends at end of 2016 (AOM0605), but all other OIs are linked to the baseline.* *Lack of regulation is a risk for early deployments.*												

Family 1.2.4 – RNP1 operations in high density TMAs (aircraft capabilities)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.2.4 RNP1 operations in high density TMAs (aircraft capabilities)	31.12.2016	AOM-0603 AOM-0605	ICAO PBN Manual (Doc 9613)	ICAO	Available				(1) PBN rule-making (NPA 2015-01) (2) Provision of requirements in support of global PBN operations (RMT. 0519)	(1) EASA (2) EASA	(1) 2016 (2) 2016	01/2015	01/2024
SDM View	EASA regulation under development and is likely to require PBN/RNP. Expected availability in 2016. Aircraft that are equipped are capable with AOM-0605, even if it has to be validated in Large Scale Demonstrations AAL (Augmented Approach to Land) by end 2016. Standard operational procedures are needed for pilots.												

Family 1.2.5 – Implement Advanced RNP Routing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
1.2.5 Implement Advanced RNP Routing	31.12.2016	AOM-0604 (baseline) AOM-0603	ICAO PBN Manual (Doc 9613)	ICAO	Available				PBN rule-making (NPA 2015-01)	EASA	2016	01/2019	01/2024
SDM View	EASA regulation under development and is likely to require PBN/RNP. Expected availability in 2016. Standards needed before the IOC of the Family.												

AF2 - Airport Integration and Throughput

Sub-AF2.1: DMAN synchronized with Pre-departure sequencing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.1 DMAN synchronized with Pre-departure sequencing	31.12.2016	TS-0202 AO-0501 (Baseline) AO-0601 (Baseline) AO-0602 (Baseline) AO-0801-A	(1) ED-141 Minimum Technical Specification for Airport-CDM	(1) EUROCAE	(1) Available	(1)Communication 2010/C 168/04 A-CDM Community Specification (ETSI EN 303 212 V1.1.1)	(1) ETSI	(1) 2010				Before 2014	01/2021
			(2)ED-145 Airport CDM Interface Specification	(2)EUROCAE	(2) Available	(2) A-CDM Community Specifications Update	(2) ETSI	(2) 2019					
			(3) ED-146 Guidelines for Test and Validation related to A-CDM interoperability	(3) EUROCAE	(3) Available	(3) AMC A-CDM	(3) EASA	(3) 2019					
			(4) Airport CDM Implementation Manual Version 4 Planned Update	(4) Eurocontrol	(4) 2017								
			(5) ICAO Doc 9971AN/485: Manual on	(5) ICAO	(5) Available								

Sub-ATM Functionality	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
			Collaborative Decision Making (CDM)										

Family 2.1.1 – Initial DMAN

DP 2015 Family	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.1.1 Initial DMAN	Available	TS-0202 AO-0602 (baseline)										Before 2014	01/2021
SDM View	No standards required.												

Family 2.1.2 – Electronic Flight Strips

DP 2015 Family	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.1.2 Electronic Flight Strips (EFS)	Available											Before 2014	01/2021

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
SDM View	No standards required.												

Family 2.1.3 – Basic A-CDM

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.1.3 Basic A-CDM	Available	AO-0501 (Baseline) AO-0601 (Baseline) AO-0602 (Baseline)	(1) ED-141 Minimum Technical Specification for Airport-CDM (2)ED-145 Airport CDM Interface Specification (3) ED-146 Guidelines for Test and Validation related to A-CDM interoperability (4) Airport CDM Implementation Manual Version 4 Planned Update	(1) EUROCAE (2)EUROCAE (3) EUROCAE (4) Eurocontrol	(1) Available (2) Available (3) Available (4) 2017	(1)Communication 2010/C 168/04 A-CDM Community Specification (ETSI EN 303 212 V1.1.1) (2) A-CDM Community Specifications Update (3) AMC A-CDM	(1) ETSI (2) ETSI (3) EASA	(1) 2010 (2) 2019 (3) 2019				Before 2014	01/2021

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
			(5) ICAO Doc 9971AN/485: Manual on Collaborative Decision Making (CDM)	*(5) ICAO*	*(5) Available*								
SDM View	*No further standards required. The S-AF 2.1 has achieved a good level of maturity. Most airports have deployed, or are in the process of deploying, the A-CDM concept, based on already available standardization guidance material (EUROCAE, EUROCONTROL) or recommendations (ICAO). These 3 packages fulfil the need for standardisation.*												

Family 2.1.4 – Initial Airport Operational Plan (AOP)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.1.4 Initial Airport Operational Plan (AOP)	*31.12.2016*	*AO-0801-A*										*Before 2014*	*01/2021*
SDM View	*No standards required. However, NM Technical Specification for AOP/ NOP exchange of information needs to be developed by 2017 (see Family 4.2.4)*												

***NB.** With regard to the whole ATM Functionality #1, the ARINC 660-B document shall be analyzed referring to possible needs of new/updated standards for airborne equipment during the elaboration phase of DP 2015*

Sub-AF2.2: DMAN integrating Surface Management Constraints

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.2 DMAN integrating Surface Management Constraints	31.12.2016	TS-0202 AO-0501 (Baseline) AO-0601 (Baseline) AO-0602 (Baseline) AO-0801-A	(1) Update of EUROCAE A-SMGCS MASPS (ED-87C) (2) Update of ED-87C towards version D (3) Updated A-SMGCS specifications (4) ICAO Doc. 9830 AN/452 A-SMGCS Manual, First Edition	(1) EUROCAE (2) EUROCAE (3) Eurocontrol (4) ICAO	(1) 2015 (2) 2017 (3) 2018 (4) Available	(1) Update of the A-SMGCS CS on the basis of the EUROCAE A-SMGCS MASPS (2) Update of EN 303213-1 and -2 to cover changes included in ED-87D (3) New EN 303213-x for Routing and Planning reflecting ED-87D	(1) ETSI (2) ETSI (3) ETSI	(1) 2019/ 2020 (2) 2019 (3) 2019	AMC update A-SMGCS	EASA	2020	Before 2014	01/2021

Family 2.2.1 – A-SMGCS Level 1&2

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.2.1 A-SMGCS Level 1&2	Available	AO-0205	(1) Update of EUROCAE A-SMGCS MASPS (ED-87C) (2) Updated A-SMGCS specifications (3) ICAO Doc. 9830 AN/452 A-SMGCS Manual, First Edition	(1)EUROCAE (2) Eurocontrol (3) ICAO	(1) 2015 (2) 2018 (3) Available	(1) Update of the A-SMGCS CS on the basis of the EUROCAE A-SMGCS MASPS	(1) ETSI	(1) 2019/ 2020	AMC update A-SMGCS	EASA	2020	Before 2014	01/2021
SDM View	No need for additional standardization. The update of ED-87C shall not impact existing A-SMGCS Level 1&2 implementations.												

Sub-AF2.3: Time-Based Separation for Final Approach

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.3 Time-Based Separation for Final Approach	Available	AO-0303	TBS tools Performance Specifications	Eurocontrol	Estimate 2016							01/2015	01/2024

Family 2.3.1 – Time Based Separation (TBS)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.3.1 Time Based Separation (TBS)	Available	AO-0303	TBS tools Performance Specifications	Eurocontrol	Estimate 2016							01/2015	01/2024
SDM View	Need for standards, possibly at ICAO level. Need to develop EASA AMC as soon as possible, to cover the safety-related aspects. Best practices from stakeholders could possibly be taken in consideration for standards and AMC development. Time Based Separation implementation has been highlighted as a potential issue in terms of further studies needed in particular for its link with AMAN and/or different sequencing techniques.												

Sub-AF2.4: Automated Assistance to Controller for Surface Movement Planning and Routing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.4 Automated Assistance to Controller for Surface Movement Planning and Routing	31.12.2016	AO-0205 TS-0202 TS-0203	(1) Update of ED-87C towards version D (2) Updated A-SMGCS Eurocontrol specification	(1)EUROCAE (2) Eurocontrol	(1) 2017 (2) 2018	(1) Update of EN 303213-1 and -2 to cover changes included in ED-87D (2)New EN 303213-x for Routing and Planning reflecting ED-87D	(1) ETSI (2) ETSI	(1) 2019 (2) 2019				01/2016	01/2024

Family 2.4.1 – A-SMGCS Routing and Planning Functions

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.4.1 A-SMGCS Routing and Planning Functions	31.12.2016	AO-0205 TS-0202 TS-0203	(1) Update of ED-87C towards version D (2) Updated A-SMGCS Eurocontrol specification	(1)EUROCAE (2) Eurocontrol	(1) 2017 (2) 2018	(1) New EN 303213-x for Routing & Planning reflecting ED-87D	(1) ETSI	(1) 2019				01/2016	01/2024
SDM View	Need to accelerate the standardization delivery, including safety-related aspects.												

Sub-AF2.5: Airport Safety Nets

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.5 Airport Safety Nets	31.12.2016	AO-0104-A AO-0204 AO-0105	(1)Update of EUROCAE A-SMGCS MASPS (ED-87C) (2) Updated A-SMGCS Eurocontrol Specification (3) Planned new ED	(1)EUROCAE (2) Eurocontrol (3) EUROCAE	(1) Available (2) 2018 (3) 2017	(1) Update of the A-SMGCS CS on the basis of the EUROCAE A-SMGCS MASP (2) Planned new AMC on procedures to be harmonized at European level	(1) ETSI (2) EASA	(1) 2019/ 2020 (2) 2020				Before 2014	01/2021

Family 2.5.1 – Airport Safety Net associated with A-SMGCS (L2)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP v.1 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.5.1 Airport Safety Net associated with A-SMGCS (L2)	31.12.2016	AO-0104-A	(1) Update of ED-87C towards version D (2) Planned new ED	(1) EUROCAE (2) EUROCAE	(1) 2017 (2) 2017	(1) Update of EN 303213-2 to cover changes included in ED-87D	(1) ETSI	(1) 2019				Before 2014	01/2021

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP v.1 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
SDM View	Need to accelerate the standardisation and CS delivery.												

Family 2.5.2 – Implement aircraft and vehicle systems contributing to Airport safety nets

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
2.5.2 Implement aircraft and vehicle systems contributing to Airport safety nets	31.12.2016	AO-0104-A	(1) Update of ED-87C towards version D (for vehicles).	(1) EUROCAE	(1) 2017	(1) Update of EN 303213-2 to cover changes included in ED-87D (for vehicles)	(1) ETSI	(1) 2019				Before 2014	01/2021
SDM View	Need to accelerate the standardisation and CS delivery.												

AF3 - Airspace Management and Free Route

Sub-AF3.1: ASM and Advanced FUA

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.1 ASM and Advanced FUA	31.12.2016	AOM-0202 (Baseline) AOM-0202-A AOM-0206-A CM-0102-A				Communication 2009/C 2196/05 Community Specifications for the application of the Flexible Use of Airspace (FUA)	Eurocontrol	Available	(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by Commission Implementing Regulation (EU) 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	Before 2014	01/2022

Family 3.1.1 – Initial ASM tool to support A-FUA

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.1.1 Initial ASM tool to support AFUA	Available	AOM-0202 (Baseline)				Communication 2009/C 2196/05 Community Specifications for the application of the Flexible Use of Airspace (FUA)	Eurocontrol	Available	(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by Commission Implementing Regulation (EU) 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	Before 2014	01/2019
SDM View	No need for regulation. Standards already exist covering information exchange (AIXM5.1).												

Family 3.1.2 – ASM management of real time data

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.1.2 ASM management of real time data	31.12.2016	AOM-0202-A				Communication 2009/C 2196/05 Community Specifications for the application of the Flexible Use of Airspace (FUA)	Eurocontrol	Available	(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by Commission Implementing Regulation (EU) 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	01/2017	01/2022
SDM View	No need for regulation. Standards already exist covering information exchange (AIXM5.1).												

Family 3.1.3 – Full rolling ASM/ATFCM process and ASM Information sharing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.1.3 Full rolling ASM/ATFCM process and ASM Information sharing	31.12.2016	AOM-0206-A AOM-0202-A				Communication 2009/C 2196/05 Community Specifications for the application of the Flexible Use of Airspace (FUA)	Eurocontrol	Available	(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by Commission Implementing Regulation (EU) 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	Before 2014	01/2022
SDM View	*No need for regulation. Standards already exist covering information exchange (AIXM5.1).*												

Family 3.1.4 – Management of Dynamic Airspace Configurations

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.1.4 Management of Dynamic Airspace Configurations	*Available*	*CM-0102-A*										*01/2017*	*01/2022*
SDM View	*No need for regulation and standards, while the support of guidance material development would be beneficial.*												

Sub-AF3.2: Free Route

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.2 Free Route	31.12.2016 (31.12.2017 for AOM-0502)	AOM-0500 AOM-0501 AOM-0502 CM-0202 (baseline) CM-0203 (baseline) CM-0102-A	.Update Eurocontrol specification for MTCD, MONA, TP prediction and APW	Eurocontroll	2016	(1) CS based on Eurocontrol specifications on "MTCD", "MONA", "TP", "APW" (2) Community Specifications for On-Line Data Interchange (OLDI) edition 4.2	(1) ESO (2) Eurocontrol	(1) 2018/19 (2) Available	(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	Before 2014	01/2022

Family 3.2.1 – Upgrade ATM systems (NM, ANSPs, AUs) to support Direct Routings (DCTs) and Free Routing Airspace (FRA)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.2.1 Upgrade ATM systems (NM, ANSPs, AUs) to support Direct Routings (DCTs) and Free Routing Airspace (FRA)	31.12.2016	CM-0202 (baseline) CM-0203 (baseline)				(1) CS based on Eurocontrol specifications on "MTCD", "MONA", "TP", "APW" (2) Community Specifications for On-Line Data Interchange (OLDI) edition 4.2	(1) ESO (2) Eurocontrol	(1) 2018/19 (2) Available				Before 2014	01/2022
SDM View	No need for regulation. Standards are planned to be updated. Guidelines from NM exist and need to be updated in order to support full Free Route implementation.												

Family 3.2.3 – Implement Published Direct Routings (DCTs)

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.2.3 Implement Published Direct Routings (DCTs)	31.12.2016	AOM-0500							(1) Commission Regulation (EC) 2150/2005 (2) Commission Regulation (EC) 677/2011 as amended by 970/2014	(1) European Commission (2) European Commission	(1) 2005 (2) 2011	Before 2014	01/2018
SDM View	No need for regulation and standards, Guidelines exist from ERNIP. Potential update of guidelines is needed for cross border DCT.												

Family 3.2.4 – Implement Free Route Airspace

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
3.2.4 Implement Free Route Airspace	*31.12.2016 (31.12.2017 for AOM-0502)*	*AOM-0501 AOM-0502*										Before 2014	01/2022
SDM View	*No need for regulation. Standards are planned to be updated. Guidelines from NM exist and need to be updated.*												

AF4 - Network Collaborative Management

Sub-AF4.1: Enhanced STAM

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.1 Enhanced STAM	31.12.2016	DCB-0308 DCB-0205 (baseline)										Before 2014	01/2022

Family 4.1.1 – STAM phase 1

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.1.1 STAM phase 1	Available	DCB-0205 (baseline)										Before 2014	01/2017
SDM View	No need for regulation and standards.												

Family 4.1.2 – STAM phase 2

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.1.2 STAM phase 2	31.12.2016	DCB-0308										01/2017	01/2022
SDM View	No need for regulation and standards. Guidelines to be provided by NM.												

Sub-AF4.2: Collaborative NOP

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.2 Collaborative NOP	31.12.2016	DCB-0208 DCB-0103-A AUO-0203-A IS-0102 (Baseline, already mature)				Communication 2014/C 14/08 Community Specifications for the Initial Flight Plan	Eurocontrol	Available				Before 2014	01/2022

Family 4.2.2 – Interactive Rolling NOP

		V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
	DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
				Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
	4.2.2 Interactive Rolling NOP	31.12.2016	DCB-0103-A										Before 2014	01/2022
SDM View	No need for regulation and standards. Network Manager additional guidance material is needed													

Family 4.2.3 – Interface ATM systems to NM systems

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.2.3 Interface ATM systems to NM systems	*31.12.2016*	*IS-0102 (Baseline, already mature) AUO-0203-A*				*Community Specifications 0101 Edition 1.1 Specification for the Initial Flight Plan*	Eurocontrol	Available				Before 2014	01/2022
SDM View	*No need for additional regulation and standards. Community Specifications to be updated with EFPL and Improved OAT FPL. Need to update guidelines for Harmonised & improved OAT FPL.*												

Family 4.2.4 – Interface ATM systems to NM systems

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.2.4 AOP/NOP Information Sharing	*31.12.2016*	*DCB-0103-A AO-0801 –B (Partially, scope of the initial AOP needs to be clarified)*										*Before 2014*	*01/2022*
SDM View	*Technical Specification for AOP/ NOP exchange of information need to be developed by 2017.*												

Sub-AF4.3: Calculated Take-off Time to Target Times for ATFCM Purposes

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.3 Calculated Take-off Time to Target Times for ATFCM Purposes	*31.12.2016 31.12.2020*	*DCB-0208 DCB-0213*										*01/2017*	*01/2022*

Family 4.3.1 – Target Times for ATFCM Purposes

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.3.1 Target times for ATFCM purposes	*31.12.2016*	*DCB-0208*										*01/2017*	*01/2022*
SDM View	*No need for additional regulation and standards. NM to produce guidance material to update Target Times.*												

Family 4.3.2 – Reconciled target times for ATFCM and arrival sequencing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.3.2 Reconciled target times for ATFCM and arrival sequencing	*31.12.2016 31.12.2020*	*DCB-0208 DCB-0213*										*01/2019*	*01/2022*
SDM View	*Standards, guidance material and potentially CS are needed before the start of deployment (IOC).*												

Sub-AF4.4: Automated Support for Traffic Complexity Assessment

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.4 Automated Support for Traffic Complexity Assessment	31.12.2016	CM-0103-A AUO-0203-A CM-0201-A				.						Before 2014	01/2022

Family 4.4.2 – Traffic Complexity Tools

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
4.4.2 Traffic Complexity tools	31.12.2016	CM-0103-A AUO-0203-A CM-0201-A										Before 2014	01/2022
SDM View	Guidance material is needed.												

AF5 - iSWIM[i]

Sub-AF5.1: Common Infrastructure Components

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.1 Common infrastructure components	31.12.2016	IS-0901-A	SWIM Foundation material a) AIRM b) Service Rulebook c) SWIM registry d) SWIM governance e) Compliance framework	Eurocontrol[1]	2017							Before 2014	01/2025

Family 5.1.1 – PENS 1

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.1.1 PENS1	Available											Before 2014	06/2018
SDM View	No need for regulation and standardisation identified.												

[1] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Family 5.1.2 – Future PENS

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.1.2 Future PENS	*31.12.2016*	*IS-0901-A*										*06/2018*	*12/2025*
SDM View	*No need for regulation and standardisation. Identified*												

Family 5.1.3 – Common SWIM Infrastructure Components

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.1.3 Common SWIM Infrastructure Components	*31.12.2016*	*IS-0901-A*	*SWIM Foundation material a) AIRM b) Service Rulebook c) SWIM registry d) SWIM governance e) Compliance framework" ATM Information security EN 16495*	*Eurocontrol[2]* *CEN*	*2017* *2017*							*06/2016*	*1/2025*

[2] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

		V3 Development Phase		V4 Industrialisation Phase								V5 Deployment Phase	
	DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
				Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
SDM View	*No regulatory need, whilst a need for a Specification (SWIM Foundation) and guidance material (AIRM, AIRM Rulebook, Service Rulebook and Compliance) by the end of 2016 in close cooperation with ICAO*													

Sub-AF5.2: SWIM Infrastructure and profiles

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.2 SWIM Infrastructure and profiles	31.12.2016	IS-0901-A CM-0201-A	(1) Stand/Spec on SWIM Yellow profile definition 2) Stand/Spec on SWIM Blue profile definition	(1) Eurocontrol (2) Eurocontrol	(1) 2017[3] (2) 2017				Commission Regulation (EC) n. 633/2007 on the application of a flight message transfer protocol	European Commission	2007	Before 2014	01/2025

Family 5.2.1 – Stakeholder Compliance IP

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.2.1 Stakeholder Compliance IP	31.12.2016	IS-0901-A CM-0201-A							Commission Regulation (EC) n. 633/2007 on the application of a flight message transfer protocol	European Commission	2007	Before 2014	01/2016
SDM View	No need for additional regulation and standardisation identified.												

[3] Specification developed by SESAR JU is planned for 2016, forming an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Family 5.2.2 – Stakeholder SWIM infrastructure components

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.2.2 Stakeholder SWIM infrastructure components	31.12.2016	IS-0901-A										Before 2014	01/2025
SDM View	No regulatory need, whilst a need for guidance material (yellow profile by the end of 2016, blue profile by the end of 2017) in close cooperation with ICAO												

Sub-AF5.3: Aeronautical Information Exchange

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.3 Aeronautical Information Exchange	31.12.2016	IS-0901-A	(1) AIXM (2) SWIM Foundation material a) AIRM b) Service Rulebook c) SWIM registry d) SWIM governance e) Compliance framework" (3) AMXM (AMDB)	(1) Eurocontrol (2) Eurocontrol[4] (3) EUROCAE	(1) Available (2) 2017 (3) 2015	Community specification on AMDB	CEN	Not planned				01/2017	01/2025

[4] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Family 5.3.1 – Upgrade / Implement Aeronautical Information Exchange system/service

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.3.1 Upgrade / Implement Aeronautical Information Exchange system/ service	31.12.2016	IS-0901-A	(1) AIXM (2) SWIM Foundation material a) AIRM b) Service Rulebook c) SWIM registry d) SWIM governance e) Compliance framework" (3) AMXM (AMDB)	(1) Eurocontrol (2) Eurocontrol[5] (3) EUROCAE	(1) Available (2) 2017 (3) 2015	Community specification on AMDB	CEN	Not planned				01/2017	01/2022
SDM View	No regulatory need, whilst a need for a Specification (SWIM Foundation) and guidance material (AIRM, AIRM Rulebook, Service Rulebook and Compliance) by the end of 2016 in close cooperation with ICAO.Community specification on AMDB should be ready before 2015.												

[5] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Sub-AF5.4: Meteorological Information Exchange

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.4 Meteorological Information Exchange	31.12.2016	MET-0101	(1)iWXXM (2) SWIM Foundation material a) AIRM b) Service Rulebook c) SWIM registry d) SWIM governance e) Compliance framework" 3) AMXM (AMDB)	(1) ICAO/WMO (2) *Eurocontrol*[6] (3) EUROCAE	(1) Available (2) 2017 (3) 2015							01/2017	01/2025

[6] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Family 5.4.1 – Upgrade / Implement Meteorological Information Exchange system/service

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.4.1 Upgrade/ Implement Meteorological Information Exchange system / service	31.12.2016	MET-0101	(1)iWXXM and WWXM (2) SWIM Foundation material a) AIRM b) AIRM Rulebook c) Service Rulebook d) Compliance framework 3) AMXM (AMDB)	(1) ICAO/WMO Eurocontrol and FAA (2) Eurocontrol[7] (3) EUROCAE	(1) Available (2) 2017 (3) 2015							01/2017	01/2025
SDM View	No regulatory need, whilst a need for a Specification (SWIM Foundation) and guidance material (AIRM, AIRM Rulebook, Service Rulebook and Compliance) by the end of 2016 in close cooperation with ICAO.Community specification on AMDB should be ready before 2017.												

[7] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Sub-AF5.5: Cooperative Network Information Exchange

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.5 Cooperative Network Information Exchange	31.12.2016	IS-0901-A	(1) Spec/Stand containing ICAO FIXM including flow management (2) SWIM Foundation material a) AIRM b) AIRM Rulebook c) Service Rulebook d) Compliance framework (3) Stand/Spec on SWIM Yellow profile definition Stand/Spec on SWIM Blue profile definition	(1) Eurocontrol (2) Eurocontrol[8] (3) Eurocontrol	(1) 2016 (2) 2017 (3) 2016 and 2017							01/2017	01/2025

[8] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Family 5.5.1 – Upgrade/Implement Cooperative Network Information Exchange system/services

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.5.1 Upgrade/ Implement Cooperative Network Information Exchange system/ services	*31.12.2016*	*IS-0901-A*	*(1) Spec/Stand containing ICAO FIXM including flow management* *(2) SWIM Foundation material* *a) AIRM* *b) AIRM Rulebook* *c) Service Rulebook* *d) Compliance framework* *(3) Stand/Spec on SWIM yellow profile definition* *Stand/Spec on SWIM Blue profile definition*	*(1) Eurocontrol* *(2) Eurocontrol[9]* *(3)Eurocontrol*	*(1) 2016* *(2) 2017* *(3) 2016 and 2017*							Before 2014	01/2025
SDM View	*No regulatory need, whilst a need for a Specification (SWIM Foundation) and guidance material (AIRM, AIRM Rulebook, Service Rulebook, Compliance, Yellow profile, blue profile (2017)) by the end of 2016 in close cooperation with ICAO.. Existing NM and local systems need to be gradually upgraded to comply with the above mentioned standards.*												

[9] Specification developed by SESAR JU will be an input to the Eurocontrol specification process. The SESAR JU deliverable will support early deployment.

Sub-AF5.6: Flight Information Exchange

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.6 Flight Information Exchange	31.12.2016	IS-0901-A CM-0201-A	(1) FIXM (2) ED133RevA (3) Stand/Spec on SWIM Blue profile definition	(1) Eurocontrol (2) EUROCAE (3) Eurocontrol	(1) 2016 (2) 2017 (3) 2017	Community specification on FDP	CEN	2019				01/2017	01/2025

Family 5.6.1 – Upgrade/Implement Flight Information Exchange system/services

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
5.6.1 Upgrade / Implement Flights Information Exchange system /service	31.12.2016	IS-0901-A CM-0201-A	(1) FIXM (2) ED133RevA (3) Stand/Spec on SWIM Blue profile definition	(1) Eurocontrol (2) EUROCAE (3) Eurocontrol	(1) 2016 (2) 2017 (3) 2017	Community specification on FDP	CEN	2019				01/2018	01/2025
SDM View	Community specification needed based on ED 133A and blue profile; need to anticipate the Community specification on FDP to 2018.												

[1] List of relevant SESAR Joint Undertaking Projects/Deliverables

SWIM Foundation	SESAR - 08.01.014
FIXM	SESAR – 08.01.03 EU-U.S: MoC CP 3.1
AIRM	SESAR - 08.01.03
AIRM Rulebook	SESAR - 08.01.03
Service Descriptions	SESAR - 08.03.10
Service Rulebook (= PCP ISRM foundation material)	SESAR - 08.03.10
TI Profiles (Yellow/Blue)	SESAR - 14.01.04
Compliance Framework	SESAR - 08.01.01

AF6 - Initial Trajectory Information Sharing

Sub-AF6.1: Initial trajectory information sharing

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
Sub-ATM Functionality	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
6.1 Initial trajectory information sharing	31.12.2016	IS-0303-A AUO-0301 (baseline) AUO-0203-A	(1) Update standards on CPDLC to support implementation of full trajectory exchange service including CPDLC elements in support of ADS-C EPP. ED-230, ED-231, ED-232, ED-233 (ATN B2) (2) Doc 9880, Doc 9776, GOLD and PANS/ATM (3) Update of ED75 to support initial 4D navigation capabilities as part of the package with EPP (ED-75D) (4) Flight object exchange (ED-133A)	(1) EUROCAE (2) ICAO (3) EUROCAE (4) EUROCAE	(1) Available (2) Available (3) Available (4) 2017	Update CS on DL (ETSI-EN-303-214)	ESOs	2020	(1) Commission Regulation (EC) n. 29/2009 (2) Commission Regulation (EC) n. 30/2009 (3) Commission Implementing Regulation (EU) 2015/310 (4) Updated regulatory package on DL Operations	(1) European Commission (2) European Commission (3) European Commission (4) EASA	(1) 2009 (2) 2009 (3) 2015 TBD	Before 2014	01/2026

Family 6.1.1 – FDP upgrade in preparation of integration of aircraft flight data prediction

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
6.1.1 FDP upgrade in preparation of integration of aircraft flight data prediction	31.12.2016	IS-0303-A	Flight object exchange (ED-133A)	EUROCAE	2017	‘						01/2020	01/2025
SDM View	Need for further air and ground standardisation before implementation in order to optimise the expected benefits and ensure harmonization. More related to ED-133A than to ATN B2. Available 2017.												

Family 6.1.2 – AG Datalink deployment for Air and Ground communication

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
6.1.2 AG Datalink deployment for Air and Ground communication	Available	AUO-0301 (baseline)	ED120	EUROCAE	Available	Commission 2012/C 168/03 Community Specification on DL (ETSI-EN-303-214 V1.2.1)	ETSI	Available	(1) Commission Regulation (EC) n. 29/2009 (2) Commission Regulation (EC) n. 30/2009 (3) Commission Implementing Regulation (EU) 2015/310	(1) European Commission (2) European Commission (3) European Commission	(1) 2009 (2) 2009 (3) 2009	Before 2014	02/2020

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
									(4) Updated regulatory package on DL Operations	*(4) EASA*	*TBD*		
SDM View	*A specific study is conducted by SESAR JU to confirm the capability of the foreseen technology. Results are awaited for mid-2016. The conclusion of this study could lead to another modification of the regulation*												

Family 6.1.3 – Air Ground Communication Service Upgrade

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
6.1.3 Air Ground Communication Service Upgrade	*Available*	*IS-0303-A*	*DL ATN B2*	*EUROCAE*		*Update CS on DL*	*ETSI*	*2020*				*01/2020*	*01/2025*
SDM View	*Need for standardisation before implementation*												

Family 6.1.4 – Aircraft Equipage in preparation of exchange of aircraft flight data prediction

	V3 Development Phase		V4 Industrialisation Phase									V5 Deployment Phase	
DP 2015 Family	V3 (R&D) End	OIs	Standardisation			Means of compliance and Certification or Community Specifications			Regulation			Deployment	
			Activities	Organisation	Delivery	Activities	Organisation	Delivery	Activities	Organisation	Delivery	IOC	FOC
6.1.4 Aircraft Equipage in preparation of exchange of aircraft flight data prediction	31.12.2016	IS-0303-A	(1) Update of ED75 to support initial 4D navigation capabilities as part of the package with EPP (ED-75D) (2) Update standards on CPDLC to support implementation of full trajectory exchange service including CPDLC elements in support of ED-230, 231, 232, 233 (ADS-C EPP) (3) Doc 9880, Doc 9776, ICAO GOLD and PANS/ATM	(1) EUROCAE (2) EUROCAE (3) ICAO	(1) Available (2) Available (3) Available							01/2020	01/2026
SDM View	Need for standardisation before implementation. It is worth noting that the current ICAO definition of ADS-C aircraft equipage is not convenient for Continental Europe ADS-C EPP information derived from on-board FMS and CPDLC information will be transferred over A/G datalink to ATC systems on ground												

Annex C – Updated IP Template for 2015 Proposal Elaboration

Capitalizing on the main lessons learned through the IP assessment process for the CEF Transport Call 2014, SDM has **customized the standard template**, adding specific fields and areas for Stakeholders to better illustrate their projects and to support future monitoring activities.

Such updated IP template will be used during the 2015 CEF Call for those project proposals related to deployment of the Pilot Common Project, in accordance with the Present Programme.

In particular, the updated IP template allows to clearly set the **references to the Deployment Programme** (e.g. AF, Sub-AF, Family, Synchronization Needs, concerned stakeholders, impact on militaries, interdependencies with other projects, etc.), indicate the **milestones at project and family level** (a set of milestones has been defined by SDM per each family), **detail the project costs**, and **enhance the performance-related information** (if deemed necessary).

The **effectiveness of the SDM monitoring activities** is expected to be improved, and at the same time the Stakeholders will be provided with a clear and transparent view of how DP monitoring will be performed. The template is structured as follows:

- Part I - **IP Description**
- Part II - **Economics**
- Part III - **Performance Impacts**
- Part IV - **Other Impacts**

It is to be noted that **each section** of the template (Technical, Economics, Performance, etc.) is also **introduced by a "guidance" sheet**, where indications on how to fill in the information are specified per each cell.

The updated IP template has been **already distributed in July to each Implementing Partner**, with the main objective of refining the technical contents, in the framework of the Specific Grant Agreement finalization for Call 2014.

The IP template is currently available at the following address:
http://www.sesardeploymentmanager.eu/implementing-partners/

Annex D – Performance Assessment and Cost Benefit Analysis Methodology

1. Introduction

The translation of PCP into DP and then into projects induces a significant refinement of the costs compared to the assumptions used for the PCP CBA defined two years ago by the SESAR Joint Undertaking (SJU). At the same time, several SJU's validation campaigns have occurred since PCP's CBA, also refining the benefits side.

Therefore, it is SDM's intention to analyse refined costs and expected benefits on the basis of performance related data to be collected through CEF Calls for Proposals. These analysis and subsequent monitoring once projects are awarded and running are to be done with the methodology defined in this document.

This methodology is elaborated for the purpose of compliance with Commission Implementing Regulation (EU) No 409/2013 and more specifically to assess the effectiveness of coordination and synchronisation of the deployment program (DP).

While the PCP CBA and the underlying methodology constitute the reference for comparison and implementation, it is clear that, at the time the projects are submitted, their contribution to performance shall be identified and possibly quantified at a much greater level of detail. Later on, at the time the projects are awarded, the CBAs of the projects shall be calculated and finally, the global CBA of the deployment program shall be built up summing the different parts being actually deployed.

The methodology covers the process of identifying and quantifying the benefits. It does also explain how projects shall be linked into threads to facilitate the calculation of CBA and how the consolidation both on benefits and costs shall occur to build a global CBA for the Deployment Program.

The methodology also defines rules of monitoring benefits and costs and considerations in terms of estimating accuracy.

As a first version, this methodology shall be tested and improved as some parts are clearly still under construction.

2. Benefits

2.1. Identifying benefits

2.1.1. Key Performance Areas (KPAs) and CBA metrics

The KPAs are derived from those of the SES performance regulation (EU IR 390/2013) and from those reflected in the ATM Master Plan (Edition 2015).

The following grid gives the CBA metrics used in relation to the KPAs.

KPAs	CBA metrics
ANS Cost Efficiency	Gate-to-Gate direct ANS-cost per flight
Capacity	En Route ATFM Delay
	Airport ATFM delay
	Operational Cancellations
Operational Efficiency	ASMA Time
	Taxi In Time
	ATC Delay
	Taxi Out Time
Environment	Savings linked to CO2 reduction
Safety/Security	

Figure 1: KPAs and CBA metrics

ANS Cost Efficiency and its CBA metrics are as in ATM Master Plan (Edition 2015).

Capacity and its CBA metrics show a more granular approach. Instead of measuring in additional flights, the calculation is based on time reduction allowing for additional flights in consistency with ATM Master Plan.

Operational efficiency and its CBA metrics show also a more granular approach while being aligned on the Master Plan indicators in order to identify euro value of the benefits. All indicators are translated into flight time reduction and fuel burn by flight.

Environment is expressed in CO2 emissions savings as in the Master Plan.

Safety and Security are not developed with CBA metrics.

Additionally SDM will include and ask for assessments concerning predictability and resilience aspects, which are needed as a previous step to assess capacity or operational efficiency in fuel on the local situation.

The PCP implementation spans across two reference periods of the performance scheme: RP2 (2015-2019) and RP3 (2020-2024). The RP2 targets have been promulgated by the Commission (CIR 2014/132 of 11 March 2014).

In terms of monitoring of the KPAs and in accordance with the EU IR 390/2013,

a) The breakdown of the annual EU delay target into a yearly delay reference value (target) is reported in the NOP publication (Edition May 2015). It represents the delay requirement for each ACC in Europe to ensure that the EU targets for the capacity KPA (0.5 min./flt. ATFM En-route delays) is made.

b) As far as Environment KPA is concerned, the following assessment criteria have been defined:

- Comparison with historical performance achieved in previous years;
- Consistency with the European Route Network Improvement Plan (ERNIP) developed by the Network Manager;
- Comparison with a reference value based on information provided by the Network Manager; such a reference value is reported in ERNIP.

2.1.2. Assessment approach

The assessment approach is summarized as follows:

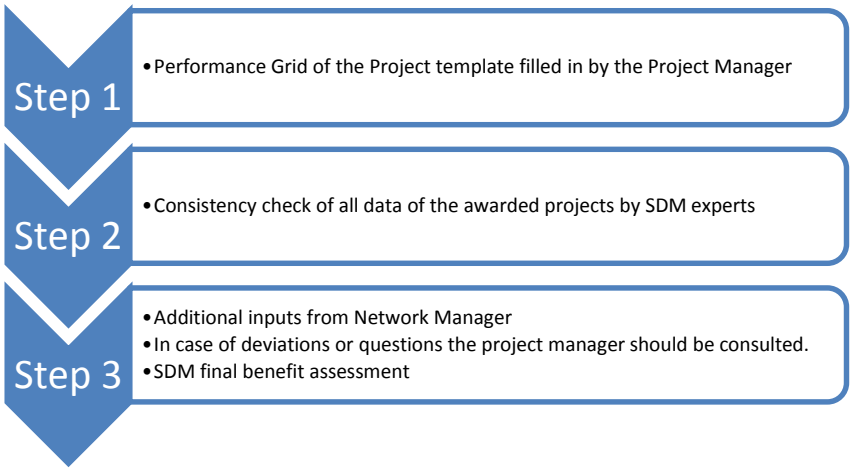

Figure 2: Steps for identifying benefits

The SDM by principle relies on the projects information submitted by the project manager to identify the KPAs where benefits are expected and to have an initial quantitative assessment where a % of improvement is identified or when other data are available. Additionally a check of whether the military impact was assessed will be done.

For this purpose, a performance assessment grid is included in the Project Template for collecting the initial performance information and benefit expectations from the project managers. This grid is based on the identification of improvements of Key Performance Areas (KPAs) and related information to support a quantitative analysis.

The SDM will review the results. In particular, a specific attention is given to the consistency of the data between projects and with the yearly published Network Operations Plan and European Route Network Improvement Plan. The review will take into consideration a geographical perspective based on the projects included in the NOP and European Route Network Improvement Plan (ERNIP) and their agreed evaluation in terms of capacity and flight efficiency. It is to be noted that the evaluations made in the ERNIP are consistent, in relative terms, with the improvement required on the basis of KPI on Environment that is based on the actual trajectory.

In any case, where questions have to be clarified, the respective project managers should be solicited. Additional information which could identify further benefits shall be taken into account. The final information shall be shared in return.

2.2. Measuring expected benefits

2.2.1. Scope of Initial Costs and Benefits Analysis (CBA)

The first question in the methodology is to assess if a single Implementing Project can sustain or not an independent CBA. If it does, then the analysis is straight forward. However, if the project is dependent of other projects to deliver its benefits, or, if the project benefits can't be isolated from other projects, then it is identified that it doesn't sustain an independent CBA.

In this case the decision will be to group it with relevant other projects. This grouping is called a thread. It will be based on the information included in the NOP and the ERNIP, whenever relevant. These threads shall be of the smallest possible dimension to generate tangible quantifiable benefits.

Grouping projects into threads, a distinction shall be made between the awarded projects and those projects not yet awarded which could fit in a thread bringing additional value. In this last case, the methodology allows to identify the missing projects, measure their expected additional value and consequently prioritize the gaps in the existing gap analysis of the Deployment Program.

For instance, projects that would affect one airport and for which the same KPIs would be impacted, would be possibly grouped into a thread.

The scope of the CBAs would therefore depend on whether the project is a standalone one or grouped with others.

2.2.2. From KPAs to Key Performance Indicators (KPIs)

The quantification of benefits is based on the estimation of improvement of Key Performance Areas compared with a baseline scenario. The estimation would be assessed considering the relevant KPIs associated to the KPAs. These KPIs are identified in accordance with the qualitative information given initially by the Project Managers, and further on, verified by SDM and NM (see par.2.1.2). The choice is made in accordance to the KPAs mentioned and the actual operational conditions of the project provided in the Network Operation Plan (NOP) and the European Route Network Improvement Plan. The Project Template includes guidance on how KPIs are related to KPAs.

2.2.3. Step Approach

As a general rule, it has been decided to follow a conservative way to calculate benefits as a result of comparing two decisions, "doing-nothing" or "project decision".

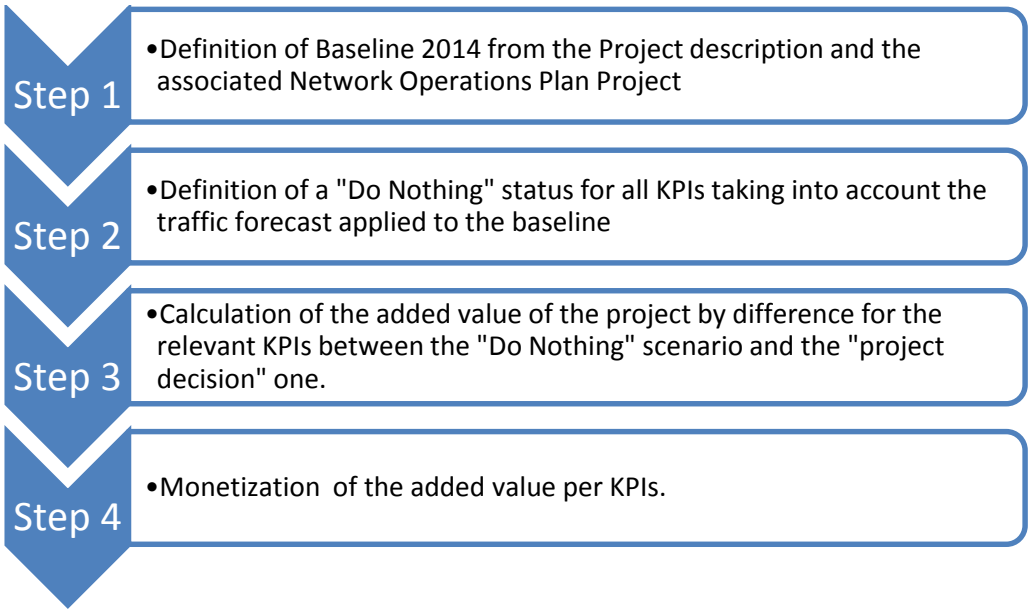

Figure 3: Steps for measuring expected benefits

The so called "step approach" is a systematic way to address any project or thread of projects. Four steps are defined:

2.2.3.1. Step one: Baseline 2014

Referring to the existing traffic situation in the area (airport, airspace) and using official public documentation such as the ones used by PRB, SDM generates the so-called "Baseline 2014".

The baseline 2014 describes the performance and traffic situation in 2014 of the geographical scope of the project (airport, airspace) within the Deployment Program. The base year will be 2014 and the 2014 NOP/ERNIP or other relevant data will define in principle this baseline.

2.2.3.2. Step two: "Do Nothing" scenario

In order to build a "Do Nothing" scenario, we need to project performance into the future according to the traffic forecast growth.

Concerning En-route airspace and TMA airspace when applicable (AF3, AF4, AF5, AF6 projects), when relevant, the NOP capacity assessment and planning process is the most validated and recognised methodology to project En-route ATFM delay (Capacity) and Flight Efficiency (Environment) performance into the future.

Concerning TMA or airports (AF1, AF2 project), it is widely recognised that runway-related performance depends on variables which are factored in queuing formulae (runway utilisation, exposition to external events, traffic variability). However, each airport has got its own specificity that prevent from using generic parameters. SDM will seek the support of each airport in defining the "Do Nothing" scenario. The input of the airport would then be cross-checked with the NOP data.

Concerning TMA capacity the "Do Nothing" scenario will be elaborated on a case by case

basis depending on what are the objectives of the Project.

To complete or crosscheck data of the airport / TMA "Do Nothing" scenario, the concept of "elasticity factor" could be used when NOP and ERNIP data are not available. Multiplied to the Key Performance Indicator (KPI), it gives the results for this KPI over time. A flat coefficient would illustrate a linear function.

Elasticity factors are based on:

- Historical data, observing the correlation traffic / performance (e.g. delay and capacity) for a given environment (airspace, airport) and as far as practical for a given operating condition (adverse or good weather)
- Queuing theory simulations in relation to traffic, capacity and **queuing** length
- Evolution of the correlation between traffic / performance through time. This could be exponential, power, linear.

The following table gives examples of elasticity factors in some standard cases. The factors are either flat on a time period or adjusted on a yearly basis.

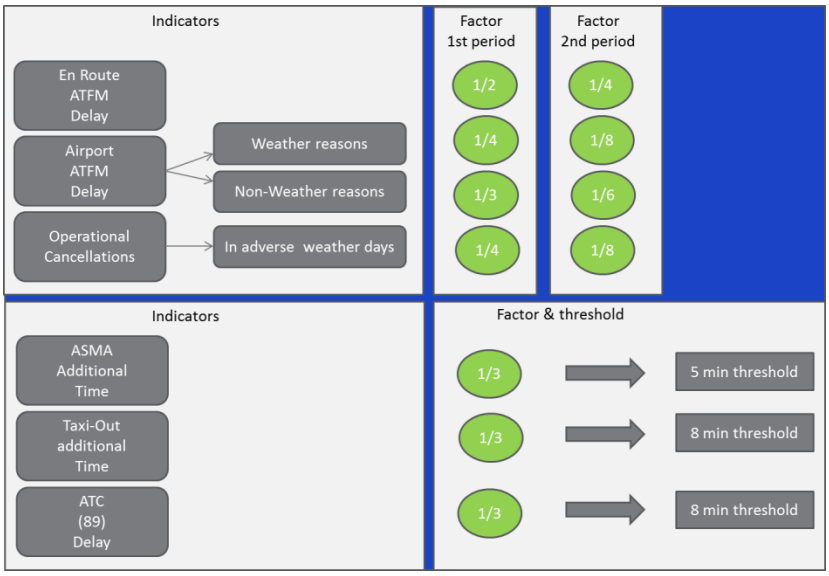

Figure 4: Examples of elasticity factors

The elasticity factor by itself, the duration and/or threshold are set per KPI.

Additionally the elasticity factor is by principle reduced by 50% for the second period of the lifetime cycle of the project or applied until reaching a determined threshold, depending on the overall development. This principle mitigates the fact that the positive effects after a certain period are less predictable.

Clear limits of application of the "elasticity factor" concept shall be mentioned in the CBA assumptions to avoid any misunderstanding on how it is used.

Finally, applied to all relevant KPIs, a "Do Nothing" performance evaluation will be made based on the latest traffic forecast, which in nearly every case will lead to an increase of delays and insufficient ATM results.

2.2.3.3. Step 3: Added-value as the difference between "Do-nothing" and "Project Decision"

The "Project Decision" scenario is qualified with an expected KPI's level (the expected performance benefits). This expected KPI's level is derived from the information given by the project and validated by the NOP/ERNIP documents when applicable.

Consideration is given to the ability of the project to deal with adverse weather conditions, resilience and robustness.

TMA related project will require a case by case assessment depending on:

a) If its contribution is mainly directed to improve the runway queuing at a given airport, then the TMA related project could be combined with AF1 and AF2 projects at that airport.

b) If its contribution is mainly directed to improve the TMA capability to handle multiple queuing at different airports, then the TMA related project could be treated separately.

c) If its contribution is mainly directed to improve the ATC sector capacity, then the TMA related project would be considered in the appropriate en-route / network AFs.

Finally, the difference between the two scenarios ("Do-nothing" and "Project Decision") is calculated.

2.2.3.4. Step four: monetization of benefits

The performance differences are monetized through a set of values defined as follows:

Cost-Assumptions		
Airport Restriction Airport ATFM (ER, Airport, TMA)	Tactical Ground Delay	28€/minute[2]
ASMA (add. Time) Taxi Out (add. Time) KEA (Actual flight tracking)	Tactical Airborne Delay	44€/minute[2]
ASMA (unimpeded) Taxi In/Out (unimpeded)	Strategic airborne Delay	50€/minute[1]
Flight Time Reduction	Airborne Strategic Cost	31€/minute[1]
Fuel	Kg	0,79€(2014) [1]
CO2	T	4,30€ (2014) [1]
Flight cancelled		7.600€[3]

1.EC 716-2014 Art.4c
2. EC 716-2014 Art.4c with values calculated with a 70/30 (low/high cost assumptions) ratio
3. Eurocontrol Standard Inputs ,Ed.6

Fig. 5 Cost assumptions

These references will be challenged and reviewed by the SDM for each Deployment Program new version. Initial values are taken from external sources.

Index for CO2 is 3.149 Kg/Kg fuel burned.

2.2.4. Data source

The choice of data sources is made to give preference to published sources when possible and to those consistent sources with the one used for PCP CBA, the ATM Master Plan and the SES high level goals.

Information is given by SDM while preparing the CBA, depending on the project.

The annex "Data source" gives the used links. It can be noted that some data is directly provided by the stakeholders (e.g. CODA).

2.3. Monitoring benefits

As some assumptions may change over time or deviation in traffic evolution or other reference data may occur, SDM will monitor benefits of all awarded projects on the basis of the CEF Calls.

Assumptions might be reviewed and yearly updates of data sources will be used by the SDM.

Also, because it is the final measurement of actual benefits of the project (or thread of) when implemented that is the final target, the SDM will monitor benefits until the change is fully operational. Further work is foreseen to complement the methodology on this topic.

2.4. Estimating accuracy of benefits

Accuracy of benefits is based depending on the project, either on specific assumptions, or, on NM tools. The CBA will always describe the assumptions taken.

For instance, and when applicable, the results of delay forecast at FAB/ANSP/ACC level as published in the Network Operations Plan (NOP) are taken on board. Also in these cases the route length extension analysis figures published in the European Route Network Improvement Plan (ERNIP) for the calculation of the flight efficiency benefits are used.

The results used in NOP and ERNIP have proved quite accurate in the recent years and are closely monitored every year through reporting and consultation with the concerned operational stakeholders in the NM cooperative decision making arrangements.

Valuable information will also be coming from the project managers bringing an operational understanding of their project that will be scrutinized by the SDM: contextual performance information collected through the project template, evaluation of the operational conditions and dependencies of the project, validation of the consistency with the NOP information, military impact if any.

It is expected that this accuracy will improve as the experience on project performance assessment will be capitalised over time.

3. Costs

3.1. Identifying costs

Costs are identified on the basis of the project as described and submitted to INEA for funding. Funding amounts are not included in the benefits.

As the CBA will focus on awarded projects, other costs, either related but not provided or spent without funding shall not be taken into account.

3.2. Measuring expected costs

Costs are measured according to the level of detail of the Project Template and according to the FPA coordination process. In accordance with INEA, the template has been reviewed by the SDM to address both the FPA coordination and the costs analysis.

3.3. Monitoring of costs

SDM will track costs in accordance with declared Implementation Project information to FPA coordination for payments. Additional information will be given in parallel with the FPA coordination.

3.4. Estimating accuracy of costs

Accuracy of costs is linked to the accuracy of the declared costs by the projects.

4. Analysing costs and benefits

4.1. Net Present Value (NPV)

Costs are deducted from the monetary benefits to compute the expected NPV.

The discount rate is 8% under further notice, like in the ATM Master Plan Edit 2015 and the reference and supporting material of Article 4(c) Regulation (EU) No 716/2014.

Results will be presented on the first year, then over periods of 5 and 10 years.

4.2. Analysis on costs and benefits results

The SDM shall integrate its analysis in the "Performance view" of the Deployment Program. It shall support the evaluation of the contribution of the Deployment Program to the SES high level goals. In a more detailed manner, it shall also identify risks on the outcome of some projects.

The SDM will share the information on the CBA results with the Implementing Project through the project monitoring tool that will be set up for the purpose.

Where a positive CBA is not possible to calculate or where a gap or bottleneck and/ or other circumstances are identified, the SDM will liaise with the respective Project Manager.

The results shall present the expected benefits monetized and the associated costs. Those projects that shall depend on future projects to realize the benefits will be presented in a performance driven gap analysis.

The global CBA is the CBA summing all CBAs of the Deployment Program for all awarded projects and threads. This global CBA shall be regularly published by the SDM for each new version of the Deployment Program and will mature over time to reflect the full scope of Commission Implementing Regulation (EU) No 716/2014.

4.3. Comparing with the PCP CBA

The initial reference for the PCP is the PCP CBA referred to in Commission Implementing Regulation (EU) 716/2014, article 4 – c). The global CBA is then compared to this reference to assess any significant deviation.

It is understood that the initial PCP CBA has been calculated on the basis of many assumptions and the analysis shall review the main changes in these assumptions to explain the differences. The possible differences with the initial PCP CBA supporting the PCP implementing Regulation shall be analysed with the SJU in view of identifying lessons to be learned and improving the CBA methodology to support the setting up of the next CPs.

Finally the main conclusions of this analysis shall be reported to the European Commission.

4.4. Comparing with the SES high level goals and Master Plan performance ambitions

The performance contribution of the projects will be compared against the SES high level goals and the Master Plan performance ambitions.