Monitoring View 2020

Guidance Material for SESAR Deployment Programme Implementation

Proposal for European Commission

FPA MOVE/E2/2014-717/SESAR FPA

Deliverable D2.2.1

Control

Approved by	**Nicolas Warinsko** General Manager	**Date** 10/12/2020	**Signature** Signed
Reviewed by	**Mariagrazia La Piscopia** Chief of Strategy and Programme Management	**Date** 09/12/2020	**Signature** Signed
Prepared by	**Ramon Raposo** SDP Execution Manager	**Date** 08/12/2020	**Signature** Signed

Table of content

Introduction 6

1. PCP Implementation Status 10

Current status of PCP deployment 10

Expected roadmap for PCP completion 18

Overview of PCP deployment per Family – Ground gaps 27

Covid-19 impacts on PCP deployment 33

2. Detailed Views per Family 40

Ground gaps – Monitoring Overview 40

AF1– Extended AMAN and PBN in high density TMA 44

Family 1.1.1 – Basic AMAN 44

Family 1.1.2 – AMAN Upgrade to included extended horizon function 45

Family 1.2.1 – RNP APCH with vertical guidance 49

Family 1.2.2 – Geographic database for procedure design 54

Family 1.2.3 – RNP 1 Operations in high density TMAs 55

Family 1.2.5 – RNP routes connecting Free Route Airspace (FRA) with TMA 57

AF2 – Airport Integration and Throughput 58

Family 2.1.1 – Initial DMAN 58

Family 2.1.2 – Digital systems such as Electronic Flight Strips (EFS) or stripless systems 59

Family 2.1.3 – Basic A-CDM 60

Family 2.1.4 – Initial Airport Operations Plan (AOP) 61

Family 2.2.1 – A-SMGCS Level 1 and 2 62

Family 2.3.1 –Time Based Separation (TBS) 66

Family 2.4.1 – A-SMGCS Routing and Planning Functions 67

Family 2.5.1 – Airport Safety Nets associated with A-SMGCS (Level 2) 68

Family 2.5.2 – Aircraft and vehicle systems contributing to Airport Safety Nets 69

AF3 – Flexible ASM and Free Route 70

Family 3.1.1 – ASM Tool to support AFUA 70

Family 3.1.2 – ASM management of real time airspace data 71

Family 3.1.3 – Full rolling ASM/ATFCM process and ASM information sharing ... 72

Family 3.1.4 – Management of Dynamic Airspace configurations 73

Family 3.2.1 – Upgrade of ATM systems to support DCTs and FRA 74

Family 3.2.3 – Implement Published Direct Routings (DCTs) 75

Family 3.2.4 – Implement Free Route Airspace 76

AF4 – Network Collaborative Management 81

Family 4.1.1 – STAM Phase 1 81
Family 4.1.2 – STAM Phase 2 82
Family 4.2.2 – Interactive Rolling NOP 83
Family 4.2.3 – Interface ATM systems to NM systems 84
Family 4.2.4 – AOP/NOP Information Sharing 85
Family 4.3.1 – Target times for ATFCM purposes 86
Family 4.3.2 – Reconciled Target Times for ATFCM and arrival sequencing 87
Family 4.4.2 – Traffic Complexity Tools 88
AF5 – Initial SWIM 89
Family 5.1.1 – PENS 1: Pan-European Network Service version 1 89
Family 5.1.2 – NewPENS: New Pan-European Network Service 90
SWIM Common Components: SWIM Governance (Family 5.1.3) and Public Key Infrastructure (Family 5.1.4) 91
Family 5.2.1 – Stakeholders Internet Protocol Compliance 93
Family 5.2.2 – Stakeholders SWIM Infrastructure Components 94
Family 5.2.3 – Stakeholders SWIM PKI and cyber security 95
Family 5.3.1 – Upgrade/Implement Aeronautical Information Exchange System / Service 96
Family 5.4.1 – Upgrade/Implement Meteorological Information Exchange System / Service 97
Family 5.5.1 – Upgrade/Implement Cooperative Network Information Exchange System / Service 98
Family 5.6.1 – Upgrade/Implement Flight Information Exchange System / Service supported by Yellow Profile 99
Family 5.6.2 – Upgrade/Implement Flight Information Exchange System / Service supported by Blue Profile 100
SWIM Services Implementation – Overview of deployment activities 101
AF6 – Initial Trajectory Information Sharing 102
Family 6.1.1 – ATN B1 based services in ATSP domain 102
Family 6.1.2 – ATN B2 based services in ATSP domain 103
Family 6.1.3 – A/G and G/G Multi Frequency DL Network in defined European Service Areas 104
Outlook on PCP deployment per Family – Airspace Users gaps 106
Appendix - Current status of PCP deployment – View by State 112
Austria 113
Belgium 114
Bulgaria 116
Croatia 117
Cyprus 118

Czech Republic 119
Denmark 120
Estonia 121
Finland 122
France 123
Germany 125
Greece 127
Hungary 128
Ireland 129
Italy 130
Latvia 132
Lithuania 133
Luxembourg 134
Malta 135
Maastricht Upper Area Control Center 136
Netherlands 137
Norway 138
Poland 139
Portugal 140
Romania 141
Serbia 142
Slovak Republic 143
Slovenia 144
Spain 145
Sweden 147
Switzerland 148
United Kingdom 149
List of Acronyms 151
Notes 152

Introduction

What is the Monitoring View?

The adoption by European Commission of the Reg. (EU) n. 716/2014 (Pilot Common Project), the establishment of the SESAR Deployment Manager as per Reg. (EU) n. 409/2013, as well as the subsequent elaboration of the SESAR Deployment Programme, mark all together a key step towards the Deployment Phase of SESAR.

More than six years after the beginning of this Phase, the modernization of the European ATM systems and infrastructure is progressing towards an operational reality. More importantly, it has already started delivering its expected performance benefits to the Aviation community, to its stakeholders and in turn to European passengers. The commitment of the operational stakeholders on this modernization journey, attested by the deployment progress achieved in 2020, has even managed to partially overcome the effects of the Covid-19 pandemic, analysed in detail within this document.

Since its inception, this modernization initiative entailed a coordinated effort from all operational stakeholders impacted by the PCP Regulation, together with the SDM support.

In order to better streamline and synchronize the implementation activities across Europe, the SESAR Deployment Programme includes a constantly evolving reporting mechanism, which monitors all implementation activities associated to the ATM functionalities of the SDP, allowing for a comprehensive understanding of how deployment is moving, and tracking the overall progress of the PCP implementation.

More specifically, any effective effort towards synchronization of the PCP deployment has to rely on the monitoring of all implementation initiatives launched by operational stakeholders impacted by the Pilot Common Project: such monitoring is not only limited to Implementation Projects performed under SDM coordination and benefitting of EU funding support, but also involves any other deployment activities undertaken by local stakeholders and aiming at implementing technological and/or operational elements within the SESAR Deployment Programme scope, helping to comply with the requirements set forth by Regulation (EU) n. 716/2014.

Monitoring the full picture of the SDP deployment also allows the identification of those activities that still need to be undertaken to achieve the full PCP implementation across Europe, also ensuring the adequate level of involvement of the requested stakeholder categories. Finally, a continuous analysis of the implementation progress allows to further investigate and evaluate the impact of external factors and crisis like the one endured by the Aviation sector in 2020, as a result of the Covid-19 pandemic.

The technical/operational elements to be deployed, as well as the geographical location (e.g. airport or country[1]) where the Family shall be deployed are defined as *implementation gaps* - representing what is still deemed necessary to ensure the complete and timely implementation of the related Family, Sub-AF, AF and then of the overall PCP.

Figure 1 - The SESAR Deployment Programme and the associated Guidance Material

As the deployment phase of SESAR continues to progress despite the Covid-19 impact, the tailored structure of the SESAR Deployment Programme has been designed in order to allow an adequate level of flexibility, and to ensure constant alignment with the evolving ATM reality, both on ground and on airborne side.

The 2020 Monitoring View is organized into the following sections:

[1] Depending on their specific features, this list is also complemented by the Network Manager – whose scope of activities expands beyond national borders to include the full European ATM Network – and by the Maastricht Upper Area Control (MUAC), considering its responsibility to provide air navigation service on behalf of Belgium, Germany, Luxembourg and the Netherlands. Airspace Users are also considered, for specific families.

- **Section 1**, which provides a high-level overview of the status of PCP deployment in Europe. Specifically, it identifies all activities that have already been completed since 2014, those currently in progress and/or planned, as well as the main implementation areas that still need to start. On the basis of the inputs gathered during the Monitoring Exercise from the operational stakeholders, this section also provides the expected deployment roadmap towards the full PCP implementation. It also includes a detailed analysis on Covid-19 impacts on PCP deployment as per Stakeholders declarations;
- **Section 2**, which provides the full detailed picture of the implementation status of PCP – clustered by Family – in each airport or country, whilst also presenting a dedicated view per stakeholder category for ground stakeholders.

The document is finally complemented by a dedicated Appendix, which – building on the same input underpinning the view per Family included in Section 2 – provides a view per Member State, illustrating the status of the PCP Implementation within each country included in the geographical scope of Regulation (EU) n. 716/2014.

The Appendix also lists the relevant SDM-coordinated Implementation Projects contributing to move the deployment forward within each country.

Key principles underpinning the SDM Monitoring Exercise

The elaboration, maintenance and periodic update of a consistent view on the status of implementation of all technological and operational elements included within the Pilot Common Project scope relies on the close cooperation between the SESAR Deployment Manager and the operational stakeholders directly impacted by the Regulation, as well as on the support of the Network Manager and of the European Defence Agency.

Indeed, a dedicated exercise is required to support the gathering of such an extensive amount of data and ensuring the adequate level of detail to support and steer the synchronization of the deployment efforts and investments across Europe. This exercise was carefully designed to be performed on a yearly basis, to engage all operational stakeholders, making sure that all relevant information is correctly harnessed and considered.

In this direction, the first preliminary SDM Monitoring Exercise has been established in 2015. To this end, building on the legacy of the Interim Deployment Programme (IDP) monitoring activities, the full alignment between specific Families from SDP 2015 and the IDP Activity Areas and/or Work Packages addressing PCP prerequisites and facilitators has been duly taken into consideration. Such exercise has then been refined and expanded since 2016, setting the ground for yearly iterations that ensure a more structured and reliable view.

The current monitoring exercise has been carried out taking into account targeted and detailed inputs provided by all relevant operational stakeholder categories, gathered through *ad-hoc* templates and surveys, specifically developed by the SESAR Deployment Manager, with the cooperation of EDA, NM[2] and the SESAR JU. To achieve such goal, the SDM Monitoring Exercise involves:

- The *ground stakeholders* (Air Navigation Service Providers, Airport Operators, MET Service Providers, military authorities and the Network Manager), organized and clustered on a geographical scope-basis;
- The *Airspace Users*, for those Families where they are directly involved, having specific regard to the PCP-related flight planning capabilities, as well as the aircraft capabilities. The analysis has been conducted building on a fleet-centric approach.

Moreover, in 2020 the SDM leveraged on its expertise so to further increase the consistency of the information included in the Monitoring View, by conducting an in-depth analysis of the contribution of coordinated Implementation Projects (IPs) to PCP deployment.

In particular, the analysis aimed at understanding which gaps are benefitting by which IPs, and by which extent. Templates received by operational stakeholders were pre-filled by SDM with this information at

[2] With specific regard to AF3 and AF4, Network Manager provides the initial data and information for the *ad hoc* templates and surveys distributed to European Air Navigation Service Providers: this information is subsequently validated by SDM in direct coordination with the ANSPs, before its integration into the yearly release of the Monitoring View.

milestone level, so to allow the exploitation of the progress related to CEF-funded initiatives for an even more accurate elaboration of data related to the overall PCP deployment.

The resulting snapshot is therefore the outcome of the integration of feedback received by all stakeholder categories involved in the deployment of each Family, and clearly identifies the remaining *gaps* in the deployment.

Considering the role of SDM as coordinator of 8[3] Implementation Actions directly contributing to the deployment of the Pilot Common Project under the SESAR Deployment Framework Partnership Agreement, SDM is also in the position of complementing the data gathered from stakeholders with information and updates stemming from 343 Implementation Projects currently under SDM direct oversight and coordination. This would result in a thorough consistency assessment and cross-check of information received, to be performed cooperatively with the involved operational stakeholders[4].

Whenever a gap has not been closed yet by deployment initiatives, the SDM Monitoring exercise also allows to identify the percentage of the gap still expected to be covered in order to achieve the full Family deployment. Such percentage is defined taking into account the different milestones that typically mark the steps on the way to the deployment of each Family at a specific airport or within a specific country.

As each milestone is assigned with a specific weight in the Family deployment, the progress towards the full coverage of a specific gap is defined by the achievement of this standard set of milestones from the Stakeholders' operating within the defined geographical scope[5]. In particular, a gap is considered closed when all associated milestones have been achieved, the technologies within the Family scope have been fully deployed and their operational use has effectively started.

Furthermore, within the SDM Monitoring Exercise, the expected date of completion of each Family within each airport / country has been also identified, on the basis of the declarations and information coming from the involved operational stakeholders.

Considering the massive impact of Covid-19 crisis upon European ATM stakeholders and on their capability to invest and carry on the modernization activities required by the Pilot Common Project, the 2020 SDM Monitoring Exercise included specific questions to investigate the magnitude of the crisis on each stakeholder. Further details are included within section "Covid-19 impacts on PCP deployment".

These inputs support the preparation of the overall roadmap toward full deployment, at Family, AF, and PCP level, thus building a high-level plan to meet the Regulation deadline and timely detect any deviation from the optimum planning or potential implementation delays.

Finally, SDM asked Stakeholders for additional information on technological elements considered as more strategic or deserving particular attention due to their features or characteristics. Such integrations focus on the following Families:

- **1.1.2** – AMAN upgrade to include Extended Horizon function
- **1.2.1** – RNP APCH with Vertical Guidance
- **1.2.3** – RNP1 Operations in high density TMAs (ground capabilities)
- **2.2.1** – A-SMGCS Level 1 and 2
- **3.2.4** – Free Route Implementation
- AF5 Families addressing the implementation of SWIM-based services, namely:
  - **5.3.1** – Upgrade / Implement Aeronautical Information Exchange system / service
  - **5.4.1** – Upgrade / Implement Meteorological Information Exchange system / service
  - **5.5.1** – Upgrade / Implement Cooperative Network Information Exchange system/service
  - **5.6.1** – Upgrade / Implement Flights Information Exchange system / service supported by Yellow Profile
  - **5.6.2** – Upgrade / Implement Flights Information Exchange system / service supported by Blue Profile

[3] Including 2015 CEF Call – Cluster 1, successfully closed

[4] As highlighted under Risk 2 of the SESAR Deployment Programme ("PCP implementation outside the framework of SESAR Deployment Framework Partnership Agreement"), SDM is not in the position of performing this thorough cross-check on implementation and plans beyond its direct coordination.

[5] Whenever necessary on the basis of their features and scope, some Families of the SESAR Deployment Programme have been further broken down into Functionalities and Intermediate Building Blocks, so as to provide a higher level of detail and to effectively track the progress of the deployment activities.

As a result, specific tables complement the charts at Family level included in Section 2.

Performance benefits delivered by SDM-coordinated Implementation Projects

SDM currently coordinates the execution of **343 Implementation Projects** (**155** already closed at the current date), spread over all 6 ATM functionalities of the Pilot Common Projects. The deployment activities **engage 93 beneficiaries**, across **27 EU Member States** and **6 Third Countries**.

Thanks to this coordination role, the SDM is in the position of assessing and evaluating how these Implementation Projects support the progress of PCP implementation as a whole by closing specific implementation gaps. The availability of such information – directly coming from the coordination and synchronization of the actual implementation initiatives – supports the definition of a more reliable picture of the current deployment status, as well as its constant update to reflect the latest deployment achievements.

Moreover, this detailed information and the granularity of the collected data allows to measure the direct performance contribution to ATM brought by the deployment of the PCP, especially for those activities directly coordinated by SDM.

SDM measured the **performance improvements** stemming from the first **155 Implementation Projects closed under its own coordination**, in particular with regard to key performance areas: capacity, operational efficiency, service costs, environment, safety and security.

The charts below provide a quick overview of the most relevant performance benefits, in terms of passenger´s time and on the environment:

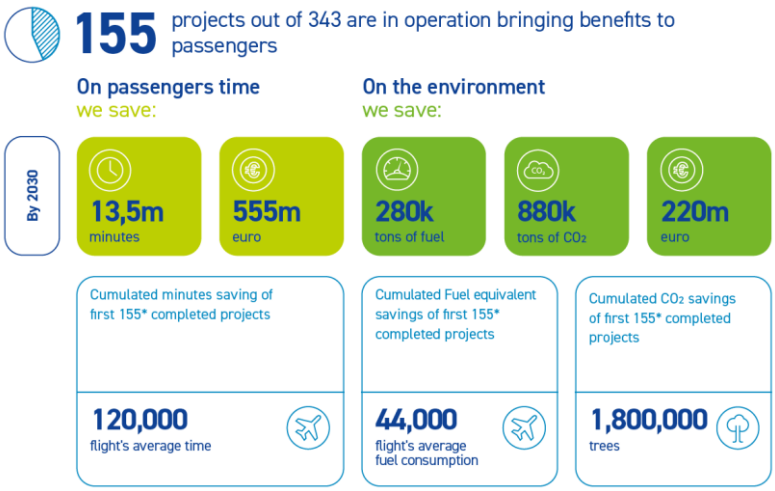


Figure 2 – SESAR Deployment benefits

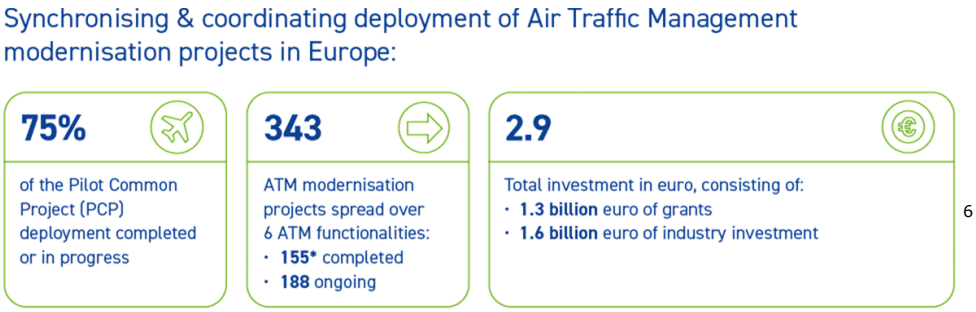


Figure 3 – SDM Synchronisation and Coordination

[6] *155 projects completed by December 2020
All figures have been recalculated to take into account the impact of the COVID-19 crisis on SESAR deployment in Europe.

1. PCP Implementation Status

Current status of PCP deployment

As anticipated in the introduction, SDM identified the concept of the coverage of the existing "gaps" as a suitable indicator to define the status of PCP deployment, as well as to measure the progress of the associated implementation activities. Tracking the growing number of covered (or "closed") gaps during the years allows for the identification of the pace at which deployment activities are delivering their tangible results. Furthermore, it enables the measuring of the gradually reducing scope of remaining activities to be performed to achieve the full deployment of the PCP.

A "*closed gap*" implies that the deployment of a Family within a specific geographical location (airport[7] or country – to refer to Airspace dimension – plus Network Manager and MUAC, when applicable) has been completed, and no further activities are necessary to ensure the operational use of the elements included in the Family scope. On the contrary, an "*open gap*" indicates the existence of activities that still need to be performed to ensure the complete implementation of the related Family.

The overall number of ground gaps has been defined by taking into account all implementation activities needed to deploy the SDP Families within the applicable countries. This means that whenever a Family has been declared as not applicable at a certain country/airport by the relevant operational stakeholders on the basis of local and/or operational considerations, no gap has been considered[8].

The following exceptions shall be noted:

- Implementation activities linked to Family 1.2.4, 6.1.4 and 6.1.5 are not included in the overall number of ground gaps, as their scope is merely associated to implementation activities to be performed on airborne side;
- Families 5.1.3 and 5.1.4 – given the specific features of the activities linked to the establishment of a common SWIM Governance framework and their dimension expanding beyond national borders – have been treated following a different approach, detailed as well within Section 2 (see section SWIM Common Components: SWIM Governance and Public Key Infrastructure);
- Family 1.2.5 has not been taken into account in the definition of the overall amount of gaps, as the implementation of its technological and operational elements is not mandatory neither according to the PCP nor to other EU regulations, and is not considered as a facilitator towards the deployment of one of the Sub-AFs included in Regulation (EU) n. 716/2014.

As a result of these assumptions and evaluations, the overall number of ground gaps illustrated within the Monitoring View is 1159. This number has been slightly reviewed from the 2019 edition, where a total number of 1160 of ground gaps were considered. Gathering inputs from the involved local stakeholders, the status of the following gap has been reconsidered:

- Family 3.2.1 – Belgium: after some interactions with the local ANSP and Network Manager, it was clarified that this Family is, from a PCP point of view, out of scope.

[7] The scope of the SDM Monitoring Exercise encompasses all 24 PCP airports but Istanbul Ataturk.
[8] For instance, Belgium, Luxembourg and Netherlands are considered as not applicable for what concerns *Family 3.2.3 – Implement Published Direct Routings (DCTs)* and *3.2.4 - Implement Free Route Airspace*, due to the fact that operations above FL 310 within the Benelux region is managed by the Maastricht Upper Area Control Center (MUAC).

According to the results of the SDM Monitoring Exercise, these 1159 gaps have been clustered into the following categories:

- *closed gaps*, for which the implementation has been already completed;
- gaps whose implementation is in progress with the support of EU funding and under the direct coordination of the SESAR Deployment Manager;
- gaps whose implementation is in progress without any direct EU funding support, through deployment activities performed by local stakeholders without the coordination of SDM;
- gaps whose implementation is planned by operational stakeholders, but where the associated activities have not started yet;
- gaps for which the implementation is not currently planned.

PCP implementation: a general view

Six years after the formal launch of the SESAR Deployment Phase, the implementation of the Pilot Common Project can be considered well underway: despite the significant impact of Covid-19 crisis, which sometimes resulted into postponements and re-scheduling of stakeholders' investments, **380 of the 1159 gaps composing the SESAR Deployment Programme scope are already closed**. This means that the associated technological and operational elements are already in use by the relevant stakeholders, with positive outcomes on the overall performance of ATM operations.

In comparison with results stemming from previous rounds of the SDM Monitoring Exercise, and despite the Covid-19 crisis which cannot be fully evaluated yet, **a positive trend can still be identified**, showing a steady improvement of the PCP deployment status: the overall percentage of implementation has constantly increased **from less than 19% in 2017, to 23,9% in 2018, to 27,8% in 2019**, **up to 32,8% in 2020**.

It is worth mentioning that the closed gaps are spread across all 6 ATM Functionalities and well-distributed amongst 31 SESAR Deployment Programme Families: this demonstrates the wide-ranging and far-reaching effort from all involved stakeholders. In particular, it is worth noting that the number of Families where at least one local implementation has been completed has increased to 31. This represents an increase compared to 2019, when closed gaps were only associated to 25 Families.

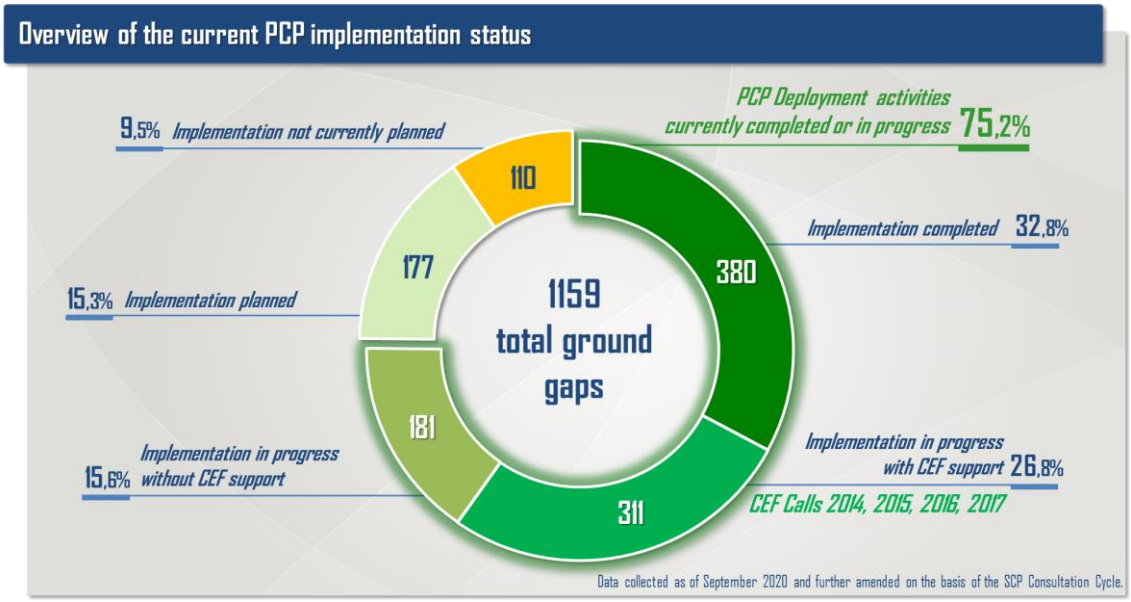


Figure 4 - Current PCP Implementation Status - Overview

Figure 4 further illustrates that the **implementation activities are progressing well, as they are addressing additional 492 gaps, which amounts to around 42% of the total**. More specifically, operational stakeholders are in the progress of closing 311 gaps benefitting from the outcomes of SDM-coordinated Implementation Projects, supported by EU public funding via CEF Calls 2014, 2015, 2016 and 2017. In addition, for 181 gaps, the implementation is in progress with Stakeholders' own resources and/or

through other means of funding / financing, without direct coordination from the SESAR Deployment Manager.

In other words, around **75,2% of the identified gaps are either closed, or in the process of being addressed by the relevant operational stakeholders, steadily improving from previous outlooks** (additional 3 percentage points from 2019 and around 4 percentage points from 2018). Considering the parallel increase of closed gaps, such monitoring results imply that operational stakeholders are enlarging their deployment focus on additional Families, expanding and pushing forward the overall implementation of the PCP.

In parallel, it should be underlined that these deployment efforts led to the delivery of partial results in additional 394 gaps, for instance through the implementation of specific functionalities and/or through the achievement of intermediate and more technologically mature steps: in some cases, this would already translate into performance and/or operational improvements, which would be further enhanced when the gap will be fully implemented.

Furthermore, around **15% of the total gaps are planned to be deployed**, according to the information provided by Stakeholders during the Monitoring Exercise: this brings the **total number of gaps already closed, addressed, or soon-to-be addressed by implementation activities to 1049, which means around 90% of the total SESAR Deployment Programme scope**. Conversely, there is a lack of specific plans only for the remaining 9,5%, decreasing from 2019 figures by 2,5%.

A further detailed look is needed for these last two figures: the total percentage of gaps for which implementation activities have not started yet is decreasing by 5,5% compared to 2019 outlook, amounting to around 25% of the total PCP scope. This is due to the strong commitment of operational stakeholders to implement the SESAR Deployment Programme, as demonstrated both by individual initiatives from local stakeholders and by their massive participation to the Calls launched under the CEF Framework.

All presented figures support the notion that – despite the current challenges and uncertainties linked to the Covid-19 crisis – the **SESAR deployment is still moving forward and delivering the expected performance improvements, continuing to translate the Pilot Common Project into an operational reality**.

However, attention should be still drawn to the lack of plans associated to specific implementation activities:

- as some Families have not yet achieved the appropriate level of maturity to launch the full deployment, only preliminary planning and preparatory activities could be performed. This is the case for Family 4.3.2 (13 gaps with no dedicated plans), Family 5.6.2 (19 gaps for which stakeholders have not elaborated any plan) and especially Family 6.1.2 (28 out of a total of 29 gaps);
- the potential uncertainties still linked (although slightly reducing) to the implementation of SWIM-related elements (especially those associated to ATM information exchanges, i.e. Sub-AF 5.3, 5.4, 5.5, 5.6), which relies on the establishment of the SWIM Governance Framework and on the establishment of common infrastructure components. Due to multiple reasons (technological maturity issue and the withdrawal of Flight Object from CP1 content, as well as stakeholders' necessity to re-prioritize investments after Covid-19) the deployment of Flight Object (Family 5.6.2) is suffering a setback. This also led to the withdraw of the IOP FO Implementation Project "2019_002_AF5 - IOP Foundation", already awarded by INEA;
- possible reservations from involved stakeholders regarding the deployment of Time Based Separation (Family 2.3.1) within all airports identified in the PCP Geographical scope;
- the sequencing of the Families implementation, which in some cases requires to proceed with the deployment of a specific Family to elaborate detailed plans to implement another (e.g. the integration of the AOP-NOP, which relies on the implementation of the local Initial Airport Operations Plans first).
- Finally, as a result of the impacts of the Covid-19 pandemic on the Aviation sector, several stakeholders were forced to halt some of their investments and are not yet in the position of defining specific plans, due to the uncertainty linked to a slow traffic recovery.

Some of these concerns have been identified as potential risks in the SESAR Deployment Programme that can threaten the timely PCP implementation, along with the potential misalignments between the SDP itself and the stakeholders' investment plans. SDM has also established a yearly Risk Assessment process for

specific gaps which might pose a threat to effective implementation and is supporting the local stakeholders in the preparation and implementation of the identified mitigation actions.

Detailed view per ATM Functionality

The following picture and the associated paragraphs provide a more detailed view per each PCP AF.

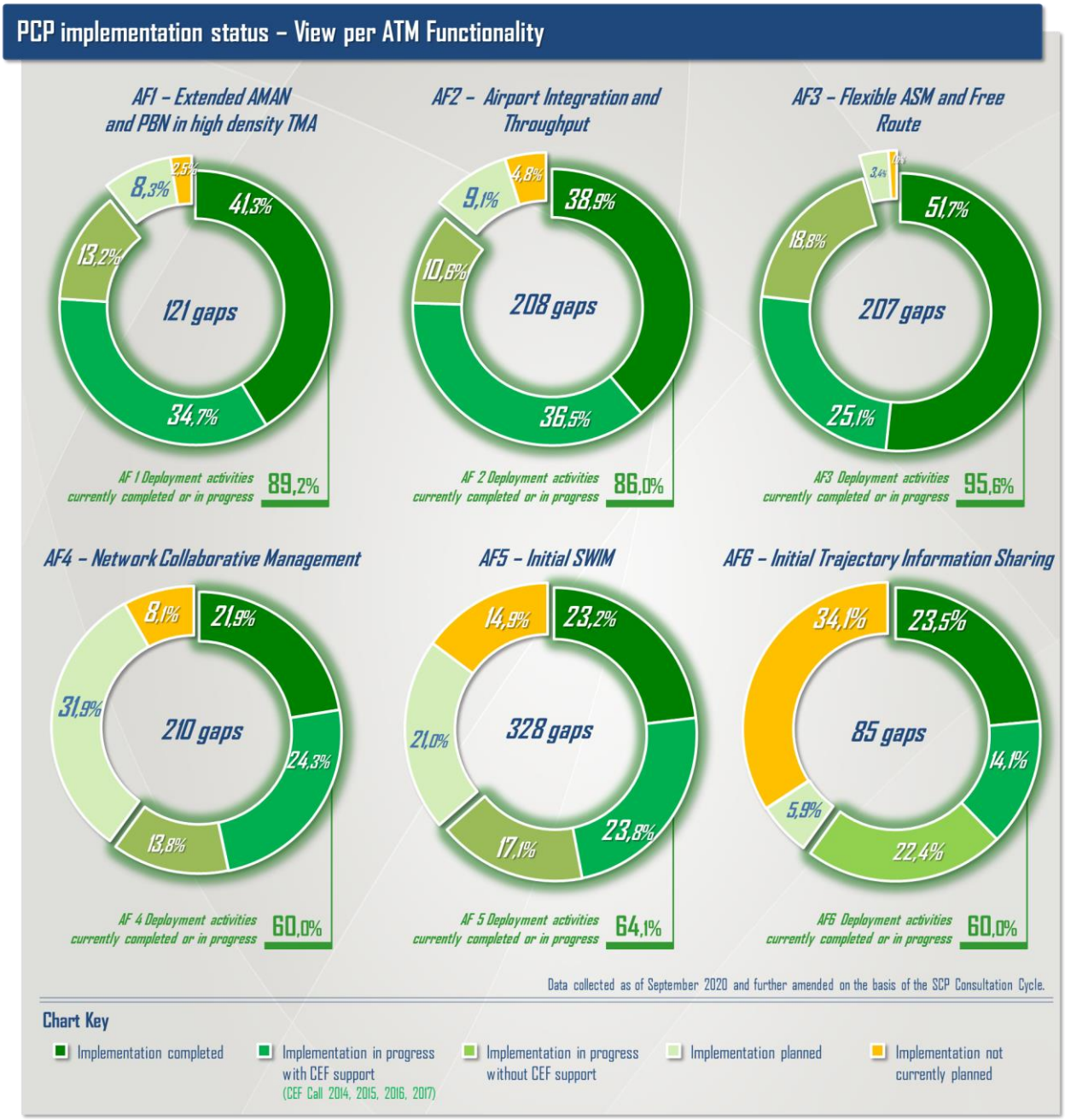


Figure 5 - PCP Implementation Status: view per AF

AF1 – Extended AMAN and Performance Based Navigation in the High-Density TMAs

41% of the existing implementation gaps associated to AF1 Families have already been closed by local stakeholders, with a significant improvement compared to the results from 2019 exercise (37,2%). Around 47% of the ATM Functionality is already in the process of being implemented (in most cases benefitting of EU funding support and of the SDM coordination activities). This means that the deployment of AF1 is not currently on-going only in 8% of the cases, with only 3 gaps for which no specific plans have been defined by the relevant stakeholders.

Whilst for Family 1.1.1 and 1.2.2 more than two thirds of the stakeholders operating in the PCP airports have already implemented the required technological and operational elements, ANSPs and Airport Operators have achieved significant results during 2019 and 2020 in deploying Family 1.2.1 (RNP APCH with vertical guidance), now fully implemented within 11 of the TMAs listed in the Regulation. Within most of the PCP Airports, RNP approaches with vertical guidance are already available for Airspace Users landing within one of the applicable runways. On the other hand, it is worth mentioning that – for some Families – deployment uptake has been slower, although the wide majority of deployment plans are aligned with the PCP deployment target dates (it is the case for Family 1.1.2 and 1.2.3).

Nevertheless, significant intermediate results have been achieved in the implementation of all the mentioned Families: 18 airports have already partially implemented the AMAN upgrade to include Extended Horizon function (in several cases the gap is near to be closed).

AF2 – Airport Integration and Throughput

Around 86% of the gaps associated to ATM Functionality 2 is either fully covered or the associated deployment activities are already in progress, with a slight increase from the 2019 monitoring results. In the wide majority of cases, the implementation activities are also coordinated and synchronized by SDM.

For a limited number of gaps (only 4,8% of their total number), no plans have been declared by stakeholders. That is due essentially to the uncertainties linked to Time Based Separation (addressed by Family 2.3.1): no plans have been declared by 5 airports out of the 16 into which the deployment is required, potentially due to the potential lack of substantial performance benefits, considering the local operational environment of some of these airports. It should be noted that the specific family has been removed from CP1.

The implementation of Families 2.1.1, 2.1.2, 2.1.3 and 2.2.1[9] is well progressing, as the number of fully or partially covered gaps amounts respectively to 21, 24, 24, 24 gaps out of the 24 airports, for a slight increase vis-à-vis 2019. Implementation is successfully progressing within all of these Families and considerable progress is still expected for the near future, although airport operators are amongst the stakeholders which have most suffered the negative outcomes of the Covid-19 crisis, with potential impacts on their capability to timely carry out specific investments in the short-term.

In parallel, only a limited number of airports have already successfully implemented the technological elements linked to Families 2.1.4, 2.4.1, 2.5.1 and 2.5.2. In this sense, it should be underlined that the CP1 re-structures ATM Functionality 2, in such a way to ensure a more synchronised deployment process, also by setting new target dates for the abovementioned Families.

Finally, thanks to a truly synchronized approach – brought forward by large multi-stakeholder initiatives involving airport operators and ANSPs from most of relevant countries – the deployment of A-SMGCS Routing and Planning Functions, Airport Safety Nets associated with A-SMGCS, and the implementation of Aircraft and vehicle systems contributing to Airport Safety Nets are on-going in the vast majority of PCP airports.

[9] The implementation of Family 2.2.1 is limited only to the Installation of A-SMGCS Level 1 and 2 and does not include the Surface Management Constraints integration that is described in the PCP Sub-AF 2.2.

AF3 – Flexible ASM and Free Route Airspace

Around 52% of the implementation gaps associated to AF3 have already been fully covered by operational stakeholders, making it the most advanced ATM functionality within the scope of the PCP from a deployment-extent perspective.

Direct Routings (DCTs) – addressed by Family 3.2.3 – is implemented throughout Europe, in accordance to Regulation (EU) n. 716/2014 and with the associated target date. In addition, significant results were already obtained in Families 3.1.1, which is now implemented in 26 out of the 28 applicable European countries (including MUAC), and 3.1.3, currently deployed in 23 countries.

The deployment of Free Route Airspace (Family 3.2.4) is also well progressing, with a continuous increase of countries where Airspace Users are now able to fly FRA, the number of countries having implemented FRA now amounts to 21, with remaining countries committed to a timely deployment. Moreover, with the implementation in MUAC and Germany, Free Route is now available within some of the most complex airspaces in Europe, enabling significant performance benefits, both in terms of reduction of jet fuel consumption and of CO_2 emissions.

91 gaps (around 45% of the AF scope) are in the process of being implemented – both within and beyond the umbrella of the FPA and the associated coordination of SDM – impacting all Families of the ATM Functionality.

A more focused outlook is needed for Family 3.2.1, which is associated to the upgrade of ATM systems supporting Sub-AF 3.2: the implementation activities have successfully started across Europe and, some of the tools and functionalities linked to the Families have already been implemented and are already used for operational purposes. In 19 of the countries included in the scope of the Families, local ANSPs have been able to deploy more than 50% of the Family scope, in 14 cases going above 70%.

Less than 1% of the identified gaps are not currently addressed by deployment initiatives, with stakeholders that in most cases however declare plans to comply with the Regulation deadlines, in line with 2019 outlook.

AF4 – Network Collaborative Management

Around 22% of AF4 gaps has been already closed by operational stakeholders, which is around four percentage points higher than in 2019.

However, it needs to be noted that AF4 is currently progressing at a slightly slower pace, if compared to AF1, AF2, and AF3. The reason is mainly due to the lower level of readiness of some of the elements linked to specific Families or to the expected sequencing of the implementation, which requires the achievement of specific milestones or intermediate steps in order for local stakeholders to proceed in their deployment efforts.

For example, Family 4.3.2 is marked as a low readiness Family and more than one third of the gaps are not yet associated to any implementation plans. On the other hand, for Family 4.2.2, most of stakeholders are waiting for the full availability of the new *nConnect* platform (currently under development by the Network Manager) to start the implementation at local side.

Most of the closed gaps are linked to Family 4.1.1 (STAM Phase 1), whose implementation was completed in all applicable countries already in 2019, making it the second Family of the SDP to be fully implemented by operational stakeholders. Positive results and improvements are also linked to Family 4.2.3 (i.e. the deployment of Interfaces between ATM systems and NM systems), where a total of 15 ANSPs resulted compliant with the existing requirements, increasing the positive trend from 2019. In particular, all COOPANS members have now fully implemented the Family by upgrading their systems and interfaces (Croatia, Denmark, Ireland and Sweden – in addition to Portugal which was already completed during 2019).

The currently on-going implementation activities roughly cover 38% of the existing gaps: these are mainly focused on STAM Phase II (Family 4.1.2), AOP-NOP Integration (Family 4.2.4), and the implementation of Traffic Complexity Tools (Family 4.4.2). In particular, for Families 4.2.3 and 4.4.2, the progress is often included into far-reaching upgrades of the relevant ANSPs ATM systems, covering a wider range of Families.

Finally, plans have been declared for around 32% of the total number of existing gaps, leaving only around 8% of the AF-related gaps without any associated specific implementation plans (in line with last year).

AF5 – Initial SWIM

The overall implementation of the ATM Functionality 5 is progressing and slightly improving compared to 2019. In respect to 2019 a positive trend has been recorded: 64% of the AF5 gaps have been addressed by the operational stakeholders (vis-à-vis 58% in 2019), either through their full closure or through deployment activities currently on going. More in detail, 76 out of the 328 gaps (23,2%) to be covered by the implementation of technological elements linked to the deployment of Initial SWIM have been closed (mostly linked to Family 5.1.1, 5.1.2 and 5.2.1), 134 are in the process of being addressed, and 69 are associated with future plans of the Operational Stakeholders to achieve the full PCP compliance.

It is worth highlighting that the significant efforts from ANSPs in Family 5.1.2 lead to a synchronized deployment of the Family: 28 countries (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, MUAC, Netherlands, Poland, Portugal, Romania, Serbia, Slovak, Slovenia, Spain, Sweden, Switzerland, UK) plus the Network Manager completed the migration to NewPENS during 2020.

Finally, in respect to 2019 a positive trend has been documented concerning the gaps which are not covered by any plans for future implementation. These elements now represent 14,9% of total gaps (against 21% recorded in 2019. This is mainly due to some technological elements, which are not yet fully mature, as well as to the fact that others will be ready for their implementation and subsequent full PCP compliance after the implementation of common components supporting SWIM adoption across Europe.

The global AF5 situation is expected to improve in the future, as all preparatory work now is demonstrating significant progress and especially thanks to the multi-Stakeholder initiatives described above and to their contribution to overall deployment. Substantial improvements are therefore expected to be tangible in the near future, thanks to the combined effort of the European Community.

AF6 – Initial Trajectory Information Sharing

The implementation of the three ground families associated to ATM Functionality 6 is tightly linked to the urgent deployment of DLS capabilities at European Level, divided into the ATSP domain (divided into Family 6.1.1 – ATN B1 based services and Family 6.1.2 - ATN B2 based services) and the communication domain, through Family 6.1.3 – A/G and G/G Multi Frequency DL Network in defined European Service Areas.

The deployment of Family 6.1.1 is well advanced, with 20 countries having the ATN B1 based services implemented and provided in full compliance with the appropriate Regulatory framework. On the other hand, for 31 gaps out of the 85 included in AF6, the implementation activities are in progress, in many cases also supported by activities coordinated by the SDM in its role of DLS Implementation Project Manager. These activities also allowed the achievement of intermediate results in 31 gaps (mostly spread across Family 6.1.1 and 6.1.3).

Family 6.1.2, associated to ATN B2[10] based services, is still a low readiness Family. That is the rationale underpinning the fact that in the vast majority of cases the implementation activities are neither in progress nor planned, as a higher level of maturity and readiness for the implementation is needed before starting a synchronized and effective deployment. Therefore, no gap is closed yet, although MUAC has planned a full implementation for early 2022.

In this sense, the SDM has elaborated a specific document named "Note on a synchronised deployment approach towards AF6" (SGA5-Activity 8 - Other outcomes 2020), with the main objective of providing an integrated roadmap as a preliminary strategy for the timely implementation of the ADS-C/EPP (as part of the ATS B2 standard as defined in EUROCAE ED228A document), including financial incentives to achieve the IR requirement in an efficient manner. To do this, the SDM has engaged with all the relevant and impacted stakeholders, with a specific focus on the operational stakeholders and manufacturing industries,

[10] Definition of requirements for the NM systems has started but there is no confirmed plan for validation activities yet. However, it is worth to be noted that a potential late implementation of ADS-C/EPP functionality in NM systems is independent from ANSPs implementation and will therefore not jeopardize these planning

collecting their inputs and/or deployment plans. Based on a detailed assessment of the current situation regarding ADS-C/EPP implementation plans (air and ground), complementary technologies to alleviate VDL M2 spectrum (SatCOM, LDACS and others) and the multilink concept under development, the SDM has proposed a list of concrete actions, from an operational and strategical perspective, in order to ensure a successful deployment of AF6, according to PCP.

In the future, thanks to its role of facilitator and DLS program manager, the SDM will be pleased to continue to deepen and oversee this topic, strengthening the engagement with the all the relevant stakeholders.

In this framework, it is worth mentioning that Family 6.1.3 deserves particular attention, as it aims at implementing the A/G and G/G Multi Frequency Data Link Network through the achievement of intermediate milestones, at Country and Europe-wide level. Although the latter represents the final step for the full achievement of the Family's scope in accordance to the SESAR Deployment Programme, the above-mentioned intermediate phases represent significant gates towards complete deployment.

In particular, the implementation step at Country level has been currently achieved in 21 countries, whilst only 4 are still in the process of reaching this first milestone. Looking at the global picture, it is worth noting that almost all stakeholders are successfully progressing with the implementation of the entire Family 6.1.3, with just one Country not presenting any plan to implement.

Expected roadmap for PCP completion

Overall roadmap

Complementing the snapshot on the current status of implementation of Reg. (EU) n. 716/2014, the structure and scope of the yearly SDM Monitoring Exercise allows to develop the expected roadmap towards the full implementation of the SESAR Deployment Programme, by combining data and information provided by the relevant ATM stakeholders operating within the PCP geographical scope.

SDM engaged all respondents to the Monitoring Exercise not only asking about the current status of their deployment activities, but also requesting to identify the expected date for the complete implementation of the Family within their own geographical area of responsibility. Moreover, in the 2020 Exercise SDM collected dedicated information about the impact of the Covid-19 crisis on stakeholders' capability to invest and to comply with the previously anticipated target dates.

By combining inputs from operational stakeholders operating within the same airport or within a specific country, SDM is able to identify for each gap the expected date on which all elements linked to a specific Family will be deployed and their operational use will start. The overall outcomes of this analysis are reported within Figure 6 and are further illustrated in the following paragraphs.

Following on from the status of implementation reported in the Monitoring View 2019 (specifically highlighted in orange) Figure 6 illustrates through the green curve the expected progress in the implementation of the Pilot Common Project.

It is worth noting that around 18,7% of the 1159 gaps that compose the SESAR Deployment Programme scope are planned to be deployed beyond the regulation target date, according to the indication of the stakeholders, due to lack of defined plans to steer the implementation at local level as well as an effect of Covid-19 crisis.

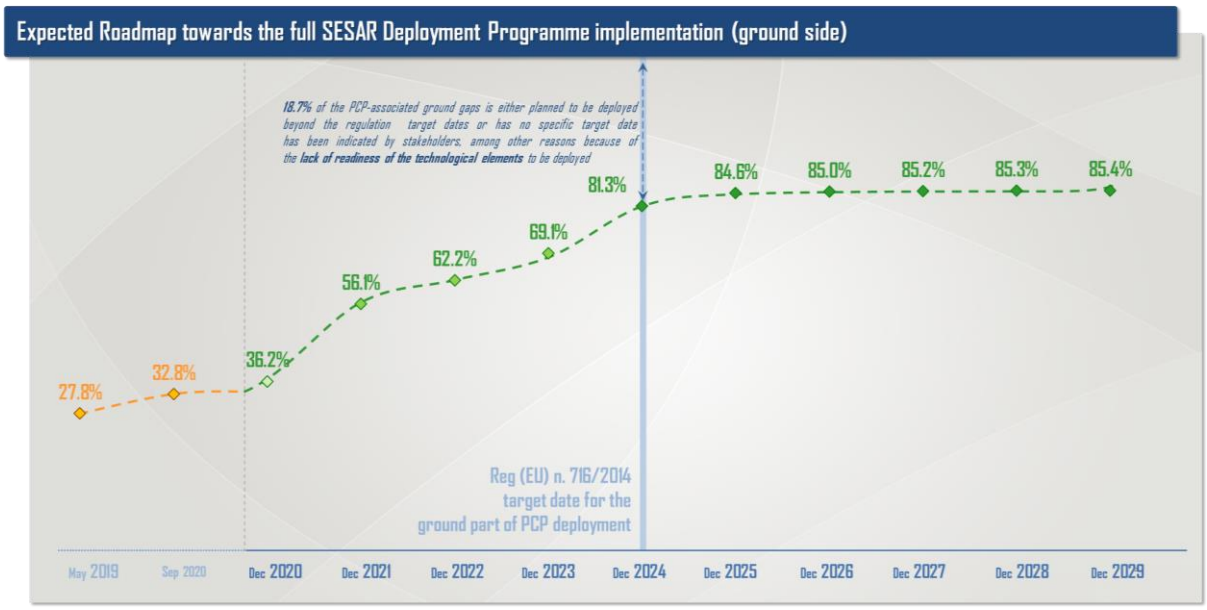


Figure 6 - Expected Roadmap towards the Full PCP implementation

As illustrated within the previous paragraph, the current[11] status of implementation of the Pilot Common Project includes 380 gaps fully covered, amounting to 32,8% of the total number of 1159 implementation gaps.

That marks a significant step forward from May 2019, when around 27% of the gaps were already closed. The most significant advancements have been registered in AF3, AF4 and AF5.

[11] Such status corresponds to the status of PCP implementation as in September 2020, when the monitoring data and associated information has been submitted by the relevant ATM operational stakeholders. Data will be refined and amended, in accordance to the Stakeholders' Consultation process until November 2020.

By the end of 2020, an additional set of 39 additional existing gaps are expected to achieve their full coverage, also benefitting from the progress of EU-funded and SDM-coordinated Implementation Projects. Among the soon-to-be closed gaps, it is worth mentioning the following:

- The deployment of Initial Airport Operations Plan (AOP) (Family 2.1.4) in Amsterdam, Dublin, Dusseldorf, Gatwick and Nice - will bring the total number of PCP airports operating iAOP to 6, further building the path for the wide-scale implementation of the Family;
- The progress in the implementation of Vehicle systems contributing to Airport Safety Nets (Part A) (Family 2.5.2) in Barcelona, Copenhagen, Dublin, Dusseldorf, Frankfurt, Madrid, Manchester and Palma de Mallorca will bring to a total of 14 out of 24 airports closing the gap.

In 2021 the implementation activities are expected to significantly accelerate, as the percentage of closed gaps will spike to around 56%, thanks to the closure of additional 231 gaps in addition to the ones expected to be closed in 2020, leading to a total number of 650.

Moreover, it is worth underlining that the acceleration in the deployment progress in 2021 is expected to be significantly pushed by the closure of implementation activities from AF3 (69) and especially AF4 (116).

By the end of 2022, the number of closed gaps will still continue to grow up to 721, topping 62% of the overall implementation of the Pilot Common Project: the constant growth (with 71 gaps closed during 2022) is explicitly led by the progress in the implementation of AF2, with 21 gaps to be closed, as well as by AF4 and AF5, which will close 14 and 15 gaps respectively.

According to information submitted by the relevant ATM stakeholders and with their currently declared plans, in the longer run (from 2022 to the end of 2029) the progress in PCP deployment will continue at a steady pace, allowing for the closure of above 269 gaps in total, with a significant increase in covered gaps especially within AF5.

At the current time, almost no ground gaps are explicitly declared to be closed beyond the PCP timeframe nor beyond the specific target date set forth in the Regulation for each ATM Functionality, but the lack of plans also indicates several non-compliances. However, the outcomes of the Covid-19 crisis, the slow recovery of air traffic demand and the review of the regulatory deadlines linked to the CP1[12] are expected to produce potential postponements in the planning of implementation activities from operational stakeholders. For this reason, several target implementation dates have been recorded to be beyond PCP deadline.

Due to the lack of readiness for implementation of specific Families (e.g. 4.3.2 Reconciled Target Times for ATFCM and arrival sequencing, 5.6.2 Upgrade/Implement Flight Information Exchange System/Service supported by Blue Profile, 6.1.2 ATN B2 based services in ATSP domain), no specific date has been specified for 183 gaps. A specific focus is needed for AF5 and AF6 implementation, as no completion date has been indicated for 113 gaps.

SDM, together with the relevant SES bodies and in cooperation with all involved stakeholders, is carefully monitoring these potential issues and is supporting operational stakeholders in the identification, definition and implementation of the necessary mitigation actions to raise the level of readiness for deployment of the relevant technological elements.

As an example, the establishment of an appropriate SWIM Governance framework, supported by the completion of 2016_141_AF5 "Deploy SWIM governance" is expected to improve the situation for AF5, paving the way for the timely implementation of the necessary components and structures to be implemented at European and local level, building the set for the different kinds of ATM information exchanges defined in the PCP.

Moreover, the new coordinated effort to deploy Data Link Services at European level is supporting a faster and more effective implementation of the data link capabilities at air/ground and ground/ground level, which would in turn enable the subsequent integration of Trajectory Information into the ATM systems.

[12] The Common Proposal 1 has been endorsed by SSC in November 2020, setting the regulatory framework for the Planning View 2021

Detailed views per ATM Functionality

AF1 – Extended AMAN and Performance Based Navigation in the High-Density TMAs

The implementation activities associated to AF1 are very well-advanced and already starting to deliver their first results in terms of operational benefits and of related performance improvements: 41% out of the 121 gaps to be covered have already been closed, laying down the ground for the future implementation of all technological and operational elements mandated by the Pilot Common Project.

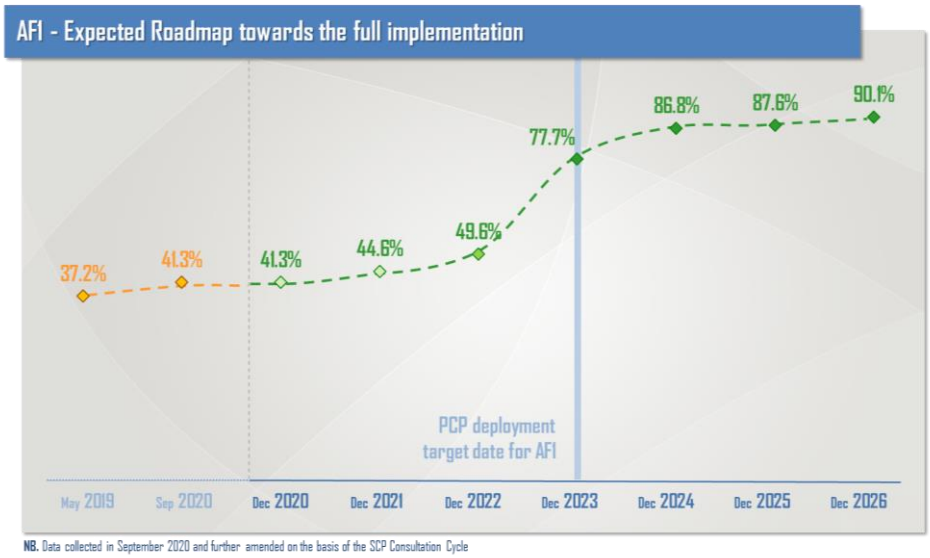


Figure 7 - AF1 Expected Roadmap for Implementation

The implementation progress rate is expected to slow down during 2020, 2021 and 2022, then experiencing a significant spike during 2023, bringing the total of closed gaps to 96 (around 77% of the total). No specific date has been indicated for just 12 (10%) of implementation gaps, whilst the remaining around 13% is expected to be implemented between January 2024 and December 2026.

It is worth noting that the implementation activities have already produced their results mainly regarding a facilitating Family, 1.1.1 Basic AMAN, and a complementary Family, 1.2.2 Geographic Database for Procedure design, which have been fully implemented respectively across 18 and 20 airports each.

The progress achieved within the implementation of these Families is of utmost importance: despite stakeholders are able to move directly towards toward the Extended AMAN, Basic AMAN would still represent a significant push towards the implementation of Family 1.1.2 (AMAN upgrade to include Extended Horizon function), whose implementation has currently achieved partial results in 19 out of the 24 PCP Airports (79%), although without any fully closed gap yet. In most cases, local stakeholders already upgraded the relevant AMAN planning tool, and are now in the process of expanding the horizon to adjacent ACCs. Such extension would be then completed, following plans compliant with the deployment target date stated in the Regulation – by the end of 2023.

The implementation of the Geographic Database for Procedure design works as an effective enabler for a full and effective deployment of Sub-AF 1.2. It is worth noting that in some cases implementation gaps associated to Family 1.2.1 and 1.2.3, some late implementations (beyond PCP target date) are foreseen.

RNP APCH procedures are already available for Airspace Users for all runways used for landings within Brussels, Dublin, Malpensa, Munich, Nice, Oslo Gardermoen, Palma de Mallorca, Paris CDG, Paris ORY, Rome Fiumicino and Vienna Schwechat: additional implementation are expected by the end 2021 in relevant hubs such as Barcelona and Copehagen. This wide-spread implementation would work as a spur for implementation on airborne side (with Airspace Users equipping their fleet with the appropriate on-board components, as well as training their flight crews) and support reduction in noise and carbon emissions in some of the largest airport in Europe.

The implementation of Family 1.2.5 – RNP routes connecting Free Route Airspace with TMA – is not mandatory according to Regulation (EU) n. 716/2014. In this perspective, it is worth underlying that the implementation activities linked to this Family are not included in the counting of the existing implementation gaps.

AF2 – Airport Integration and Throughput

The implementation of AF2 currently registers 81 gaps closed out of a total of 208, accounting for around 39% of the overall ATM Functionality. These results have often been achieved through the coordinated effort of ANSPs and Airport Operators, supported by EU public funding and by the oversight / synchronisation of the SESAR Deployment Manager.

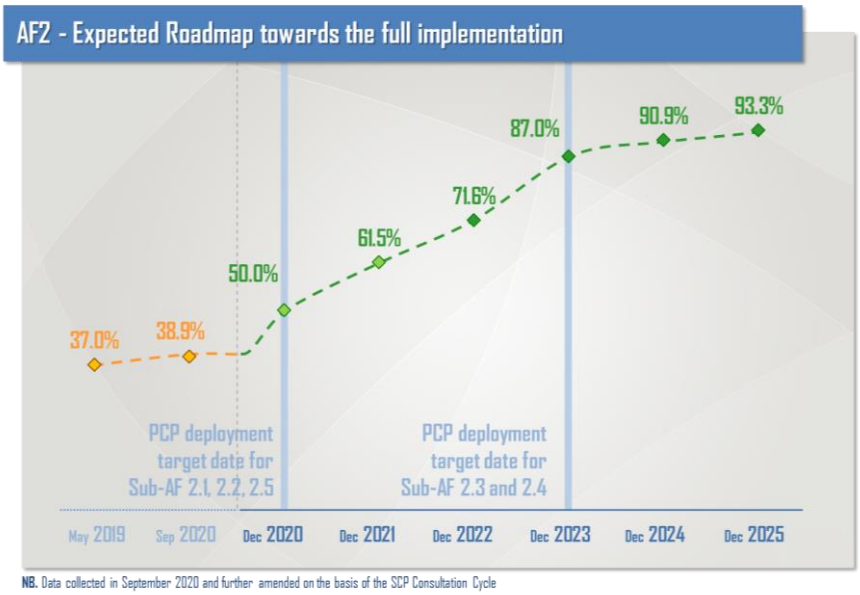


Figure 8 - AF2 Expected Roadmap for Implementation

In the next months, the progress rate of the ATM functionality is still expected to deliver results: by the end of 2020, the total number of closed gaps is expected to significantly increase to 104, amounting to around 50% of the total gaps for AF2. That is mostly due to the completion of the vast majority of Implementation Projects coordinated by SDM associated to AF2, in several cases involving a wide number of operational stakeholders from different PCP airports.

The implementation will then continue at full pace in the following years, bringing the total amount of closed gaps on December 2023 to 181, representing 89% of total gaps.

It should be noted that, by December 2024 (one year beyond PCP implementation target date) the number of closed gaps should be 189, amounting to 91% of the total existing implementation gaps. The main reason can be found in Covid-19 crisis, which severely hit the Airports category.

For 10 gaps, no specific date has been identified by the stakeholders, due to lack of detailed plans towards the full implementation: the number decreased by 50% in respect to 2019 outlook.

The status of implementation of Sub-AF 2.1 is however well-advanced at the current time, considering that Family 2.1.1, 2.1.2 and 2.1.3 are already deployed respectively in 18, 21 and 20 airports across the PCP geographical scope. The implementation efforts from operational stakeholders is expected to lead to the complete closure of the Families slightly beyond the FOC dates listed in the SESAR Deployment Programme, derived from the deployment target dates stated in the Pilot Common Project.

It is however worth emphasizing that the foreseen implementation of Family 2.2.1 is limited only to the Installation of A-SMGCS Level 1 and 2 and does not include the Surface Management Constraints integration, which is described in the PCP Sub-AF 2.2 and whose underpinning SESAR Solution was not successfully validated due to instability of the data.

A smaller number of tangible results (already delivering operational benefits to involved stakeholders and in turn to the passengers flying through these airports) are associated to Families 2.3.1, 2.4.1, 2.5.1 and 2.5.2: more specifically, Time Based Separation (Family 2.3.1) has already been implemented at Heathrow Airport, whilst the deployment A-SMGCS with Planning and Routing functions (Family 2.4.1) and the associated Airport Safety Nets (Family 2.5.1) have already started across several airports (London Heathrow also closed the gap for 2.5.1, joining Vienna Schwechat), often supported by wide-range multi-stakeholder initiatives coordinated by SDM and supported by EU funding.

Finally, the implementation of vehicle systems contributing and supporting Airport Safety Nets (Family 2.5.2) has been completed at Brussels Airport, London Stansted, Nice Cote d'Azur, Paris Charles De Gaulle, Paris Orly and Vienna Schwechat, with the wide majority of the remaining airports expected to be compliant by December 2020.

AF3 – Flexible Airspace Management and Free Route

The deployment of Flexible Airspace Management and of Free Route at European level is progressing at a notable speed, with around 52% of the identified implementation gaps already fully completed by operational stakeholders (mostly by the ANSPs in cooperation with the Network Manager, with the involvement in some cases of Military Authorities).

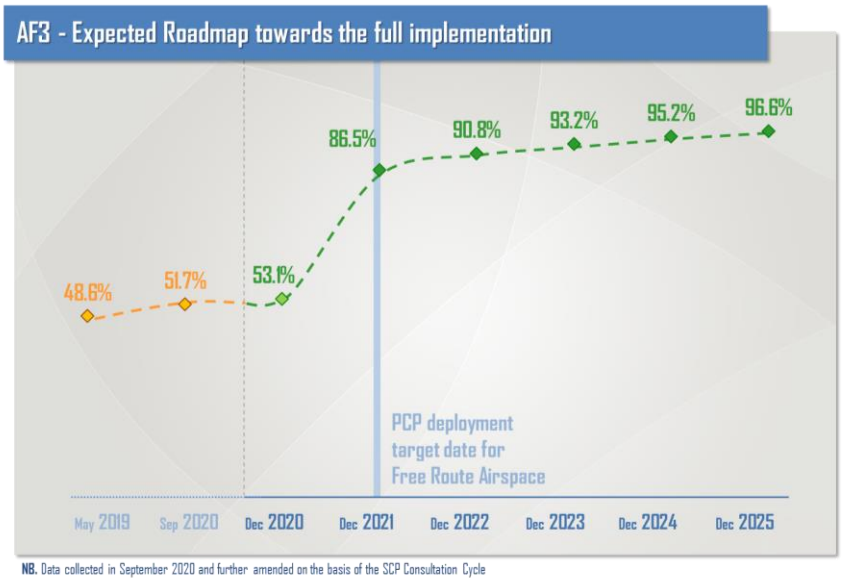


Figure 9 - AF3 Expected Roadmap for Implementation

By the end of 2020, the overall number of closed gaps is expected to raise at 110, reaching 53% of the total.

The progress of AF3 implementation is expected to significantly accelerate in the upcoming 12 months, leading to the coverage of around 86% of the identified gaps by the end of 2021, thanks to the almost full completion of Family 3.1.1 (ASM Tool to support AFUA), 3.1.3 (Full rolling ASM/ATFCM process and ASM information sharing), 3.2.4 (Implement Free Route Airspace), in compliance with the current PCP deadline for the ATM Functionality.

The completion of several wide-ranging upgrade of ATM systems currently undertaken by a vast set of ANSPs and the joint effort towards the FRA establishment at large scale is then expected to bring to the closure of additional 69 gaps by the end of 2021, pushing the total to 179 closed gaps (around 86%) by January 1st, 2022, the deployment target date of AF3.

The upgrade of ATM systems associated to Family 3.2.1 is already undergoing within all European countries, gradually bringing to the implementation of tools and functionalities listed in Reg. (EU) 716/2014 to support DCTs and Free Route Airspace.

Achieved before the end of 2017, the full-scale implementation of Direct Routing (DCTs) represented one of the earliest achievements in PCP deployment, with Family 3.2.3 implemented across all countries included in the Regulation geographical scope. DCTs was intended as a facilitating step towards the adoption of Free Route Airspace (Family 3.2.4), which is also progressing at fast pace: currently 21 gaps have been closed, with the notable addition of Germany and MUAC in 2020, two of the most complex and busy airspaces in the whole European network. However, it is worth mentioning that current plans for the FRA implementation do not always ensure a consistent and full implementation in all European airspace above FL 310, due to the limitations in terms of time, entry-exit point, cross-border, etc.

For a limited number of gaps (about the 3% of the total), no specific date for the full implementation has been identified by operational stakeholders, mostly linked to uncertainty on the closure of already on-going and/or planned activities. That is mostly the case of activities linked to the full deployment of Families 3.1.2 and 3.2.1, respectively registering 4 and 1 cases of missing date.

AF4 – Network Collaborative Management

The implementation activities associated to ATM Functionality 4 are progressing at a slower pace, in comparison with AF1, AF2 and AF3.

Around 22% of the identified implementation gaps have been closed until September 2020, but significant progress rate could be expected in 2021, with 119 gaps expected to be closed (3 by 2020 and 116 by 2021). This significant step will enable the closure of around 80% of the existing gaps linked to AF4 in January 2022, deployment target date of the AF in accordance to PCP Regulation.

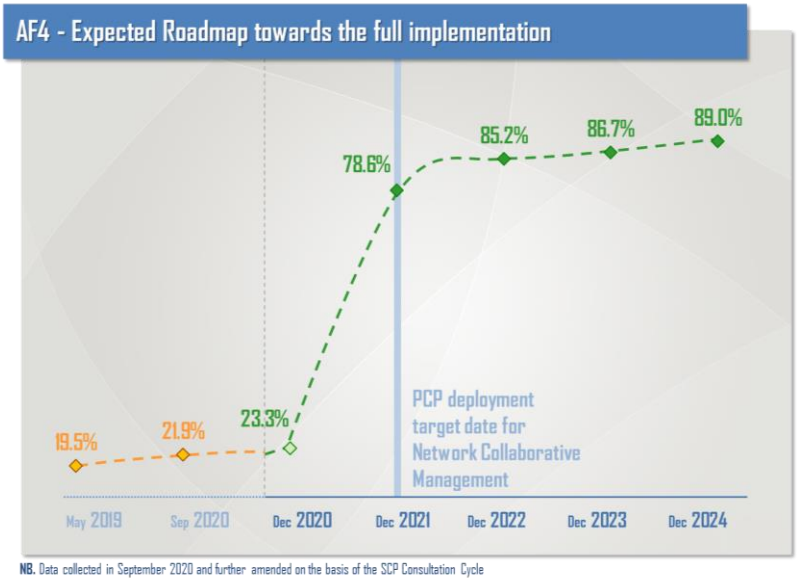


Figure 10 - AF4 Expected Roadmap for Implementation

This sudden increase in the number of closed gaps – and in the associated progress of the implementation of the ATM functionality – is closely connected in one hand with the deployment target date of this AF (2021) and on the other with the specific features of AF4, in particular with the role of the Network Manager in providing a tool allowing the information exchange with stakeholders, expected in 2021.

The implementation of specific Families at local level, like STAM Phase 2 (Family 4.1.2) and the Interactive Rolling NOP (Family 4.2.2) indeed requires the availability of a common platform, whose development is still on-going by NM. Once the platform enters into operational use, local stakeholders (mostly ANSPs) would be able to proceed with the implementation and close the associated gaps, simply by adapting their operational procedures and training their staff. As a result, the deployment date indicated by operational stakeholders is in most cases December 2021.

It has however to be noted that no specific date of completion has been identified by operational stakeholders for around 11% of the total number of gaps. That is mainly due to, first and foremost, the lack of technological maturity of Family 4.3.2, indicated as a low-level of readiness family within the Planning View.

In the course of 2019, STAM Phase 1 - a facilitating Family that supports the implementation of Sub-AF 4.1 – became the second Family within the SDP scope to be fully implemented within its whole geographical scope. Families 4.1.2, 4.2.2 and 4.2.3 are instead expected to experience a slower (although constant) deployment pace, as the wide majority of operational stakeholders identified December 2021 as the target date for the full deployment of such Families.

However, it has to be noted that the vast majority of stakeholders has already completed some of the building blocks that are included within Family 4.2.3 scope: 15 ANSPs have already deployed the full scope of the Family, whilst 16 put into operational use at least one of these building blocks. Finally, for 13 out of 16 cases the implementation is beyond 50%.

For Family 4.3.1, the responsibilities of the implementation are shared between Airspace Users and - on ground side - the Network Manager, which declared plans to timely and effectively comply with the defined regulatory target date, completing the implementation by the end of December 2021.

Finally, the deployment of Family 4.4.2 did not report any further update in terms of closed gaps, with the Traffic Complexity Tools already deployed and fully operational only within Bulgaria, Czech Republic, Switzerland, MUAC and United Kingdom. The implementation will continue at a regular pace until December 2021, when 24 out of 32 gaps will be closed. The deployment efforts from local stakeholders are in the majority of cases supported by SDM-coordinated and EU-funded implementation projects.

AF5 – Initial System Wide Information Management

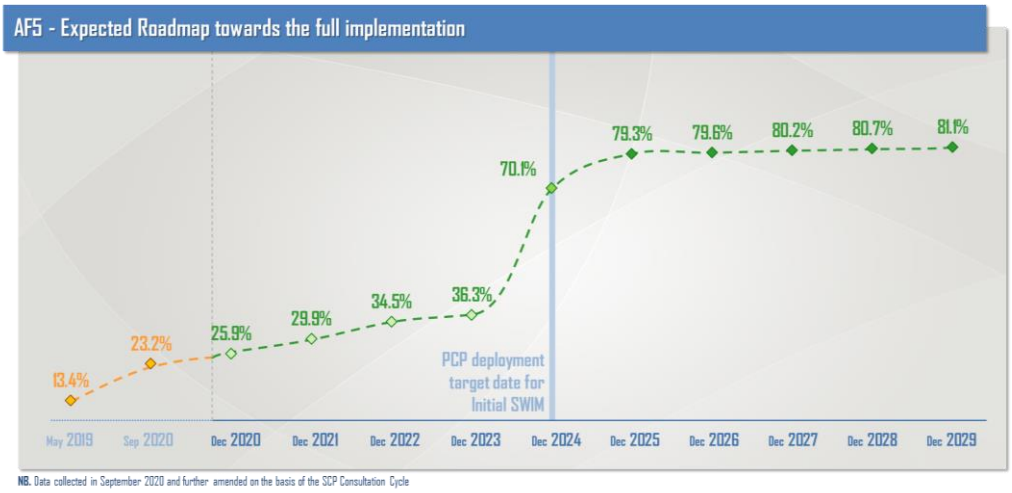


Figure 11 - AF5 Expected Roadmap for Implementation

Similarly to AF4, the implementation of ATM Functionality 5 is still progressing at a moderate pace, due both to the lower level of maturity of some of the technological elements included in the Families' scope and to the critical role of the still-to-be-fully-defined SWIM Governance Framework and of the Public Key Infrastructure (PKI), whose overall establishment has to be considered as a critical enabler for the complete implementation of the Family. Moreover, as reported in the dedicated section, AF5 is one of the Functionalities whose deployment has been most heavily impacted by the Covid-19 crisis, forcing stakeholders to hold, postpone or delay their investments and review their schedule.

More specifically, successful implementation of Families 5.3.1, 5.5.1, 5.6.1 covering the different kinds of ATM information exchanges, is highly dependent from the implementation of the specific stakeholders' infrastructure components (covered by Sub-AF 5.2) and especially from the deployment of the common components and structures to be deployed on a European-wide basis, as included in Families 5.1.1, 5.1.2, 5.1.3 and 5.1.4.

As a result, in respect to results presented in the Monitoring View 2019, 23,2% of the total number of AF5-related gaps are currently covered, although 9 additional gaps are expected to be covered in by the end of 2020. The situation is expected to improve even more from 2020 onwards, with 230 total gaps that will be closed by December 2024.

Several gaps, as anticipated, reported delays due to Covid-19 crisis: a spike in closed gaps will occur in 2025 (one year beyond PCP deployment target date), bringing the total number of closed gaps to 260 by December 2025, around 79% of total gaps.

Stakeholders did not provide a specific target date for the completion and full implementation of around 19% of the total number of gaps. That is specifically due to the lack of clearly defined plans for the deployment of the Families addressing local infrastructure components and ATM information exchanges (almost half of the gaps associated to Sub-AF 5.3, 5.4, 5.5 and 5.6 lacks a specific target date), as well as to the difficulties in planning the investments caused by Covid-19 crisis. It is however worth noting that for some of the Families, the associated technological elements still have to achieve the full readiness for implementation (for example, the Blue Profile and the Flight Object, covered by Family 5.6.2).

The implementation of the PENS-related part of Sub-AF 5.1 is by far the AF5 domain for which the implementation progress has achieved the most tangible results; PENS is fully implemented and operational in all applicable countries in the PCP geographical scope (including MUAC) and the implementation of Family 5.1.2 (NewPENS) proceeded at full pace during 2020, with the widest majority of countries participating to a dedicated multi-stakeholder Implementation Project, which allowed the full deployment in 28 countries.

In parallel, the activities associated to the establishment of a SWIM Governance Framework (according to Family 5.1.3) have been concluded the contribution of 20 partners including airport operators, airlines, ANSPs, MET, Military and Eurocontrol, benefitting of EU funding and in accordance to the specifically developed Action Plan. In particular, the Implementation Project developed a robust governance framework through a consistent set of principles, rules, processes and structure for SWIM governance, laid down in a structured set of documents (Agreement, Structure and Terms of Reference, SWIM service provision policy, etc.), providing the backbone for true ATM digitalization.

The same approach has been applied to the SWIM Common Public Key Infrastructure, thanks to the joint effort of around 30 operational stakeholders from all stakeholder categories, participating to a multi-stakeholder initiative funded under CEF Call 2017 and aiming at deploying the content of Family 5.1.4, as included in the SESAR Deployment Programme.

Finally, it is worth noting that despite Covid-19 crisis, deployment activities in AF5 achieved several goals: in respect to 2019 outlook, when only Families 5.1.1 and 5.2.1 had at least one gap covered, in 2020 five additional Families (5.1.2, 5.2.3, 5.3.1, 5.5.1, 5.6.1) registered the closure of at least one gap.

AF6 – Initial Trajectory Information Sharing

The implementation of the ground part of ATM Functionality 6 is related to Families 6.1.1, 6.1.2, and 6.1.3. The overall planning of the deployment of these families is strictly associated to the content of the DLS Recovery Plan, which has been elaborated with the specific purpose of steering the deployment of the most urgent technological elements that would lead to the deployment of Initial Trajectory Information Sharing at European level.

In accordance with the details of such plan, the implementation effort of operational stakeholders is currently focused on Family 6.1.1 and Family 6.1.3, respectively covering the implementation of ATN Baseline 1 at EU level and the supporting air / ground and ground / ground network.

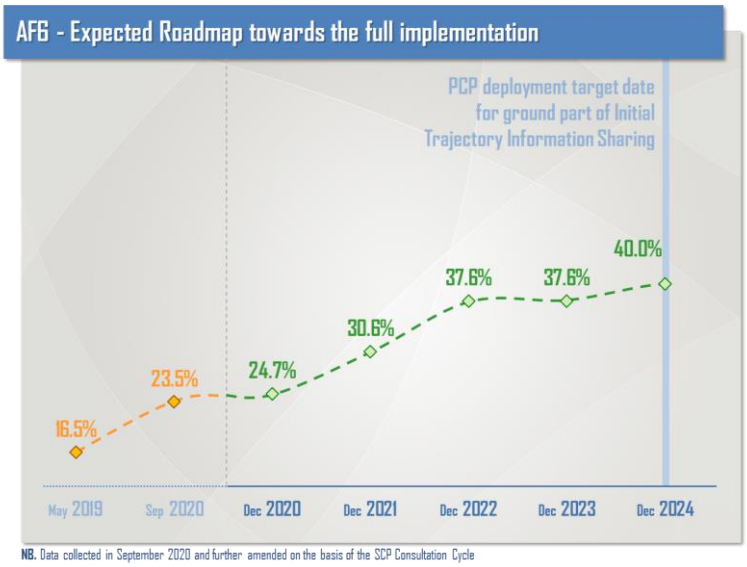


Figure 12 - AF6 Expected Roadmap for Implementation

With specific regard to Family 6.1.3, it is worth recalling that the deployment activities are composed of different steps: a preliminary implementation at country level, currently in the process of being completed, followed by the synchronized deployment beyond national borders (and eventually at EU level), whose details and features are still under definition, in accordance to the provisions included in the DLS Recovery Plan.

The implementation of Family 6.1.2, which is linked to the actual implementation of trajectory information sharing, will follow once all enablers have been deployed and the readiness of the Family has evolved to an adequate status.

The ground gaps that currently can be considered as closed are associated to the implementation of Family 6.1.1, which has achieved a notable progress, with the full coverage of 20 out of the 28 applicable Countries (Austria, Croatia, Czech Republic, Denmark Estonia, Finland, Germany, Hungary, Ireland, Italy, Latvia, MUAC[13], Poland, Slovenia, Spain, Sweden, Switzerland and United Kingdom).

For Family 6.1.3, the gaps that currently can be considered as closed with the full coverage are 20 out of 28 applicable Countries.

The implementation of this Family also benefitted from the SDM coordination in its role of DLS Project Manager and from the wide-ranging initiatives awarded in the framework of the CEF Call 2016. In this framework, stakeholders are cooperating both in the implementation of the local transitional solutions and in the definition of the target solution, to be deployed in a synchronized manner at EU level.

Finally, the implementation activities associated to Family 6.1.2 have not started yet, with the only exception of MUAC, which has planned a full implementation for early 2022. In fact, the implementation is highly depending from the progress in the implementation of the other two families. In this perspective,

[13] MUAC is composed by Belgium, Luxemburg and Netherlands

no specific planned date has been provided by the stakeholders, although the current scenario is expected to evolve in the upcoming years, when more detailed plans will be defined by the relevant operational stakeholders.

Overview of PCP deployment per Family – Ground gaps

Complementing the overview presented above, the following charts provide for a more detailed representation of the current status of PCP implementation at AF level, with a breakdown for each of the Families for which ground gaps have been identified. The information reported matches what is explained in the introductory charts, thus breaking down the gaps associated to each Family into the 5 categories.

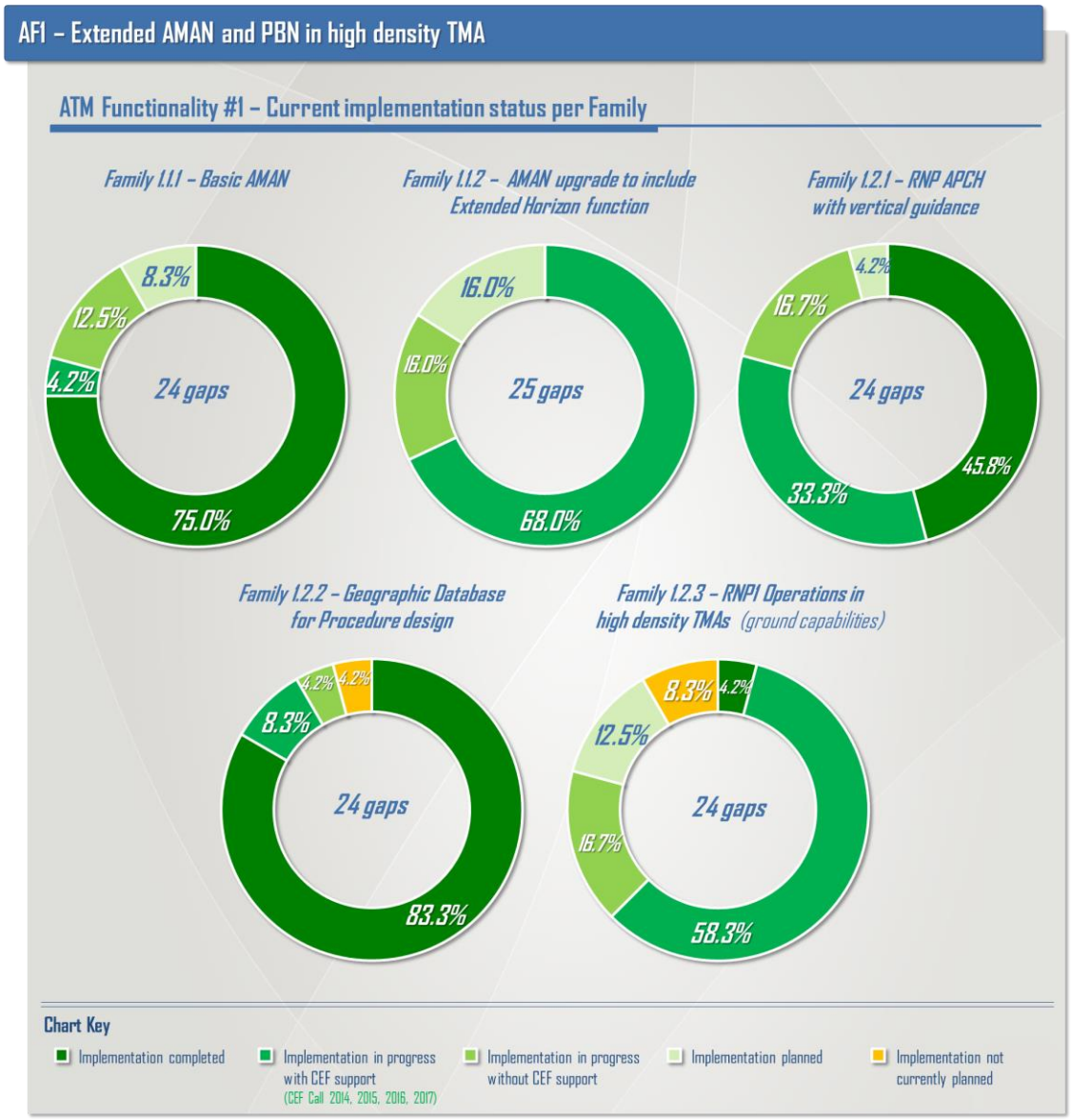


Figure 13 - AF1: current implementation status per Family

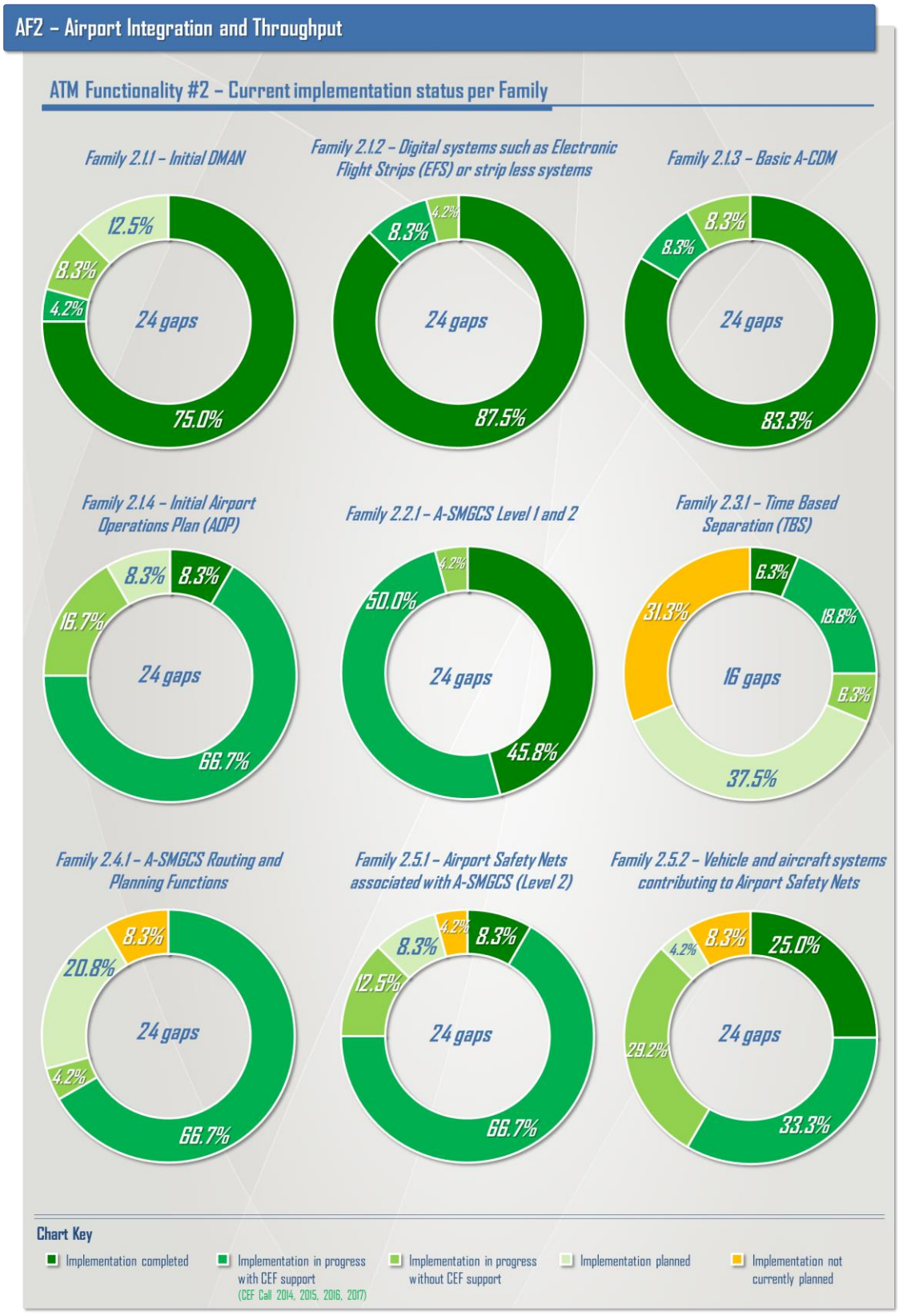


Figure 14 - AF2: current implementation status per Family

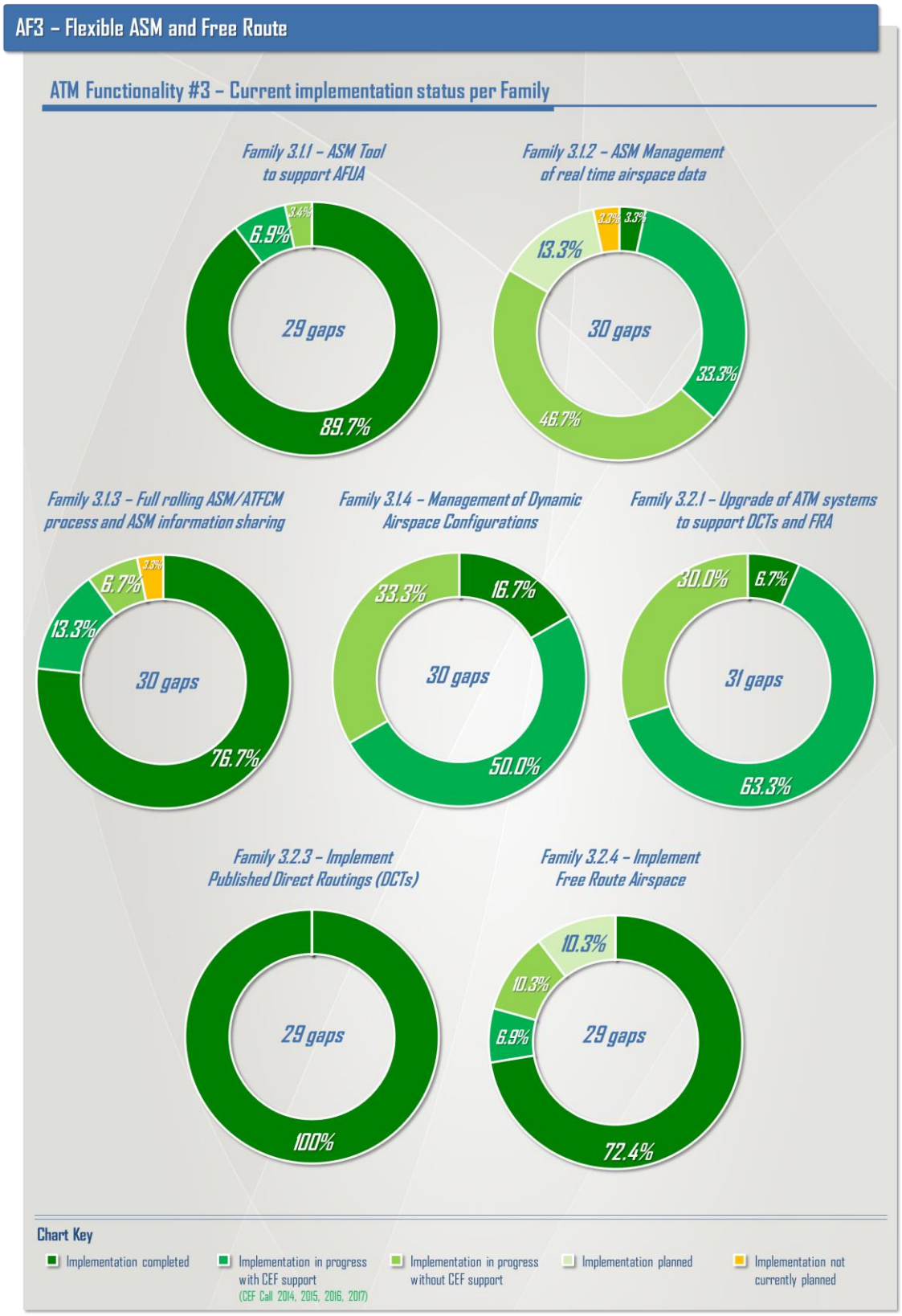


Figure 15 - AF3: current implementation status per Family

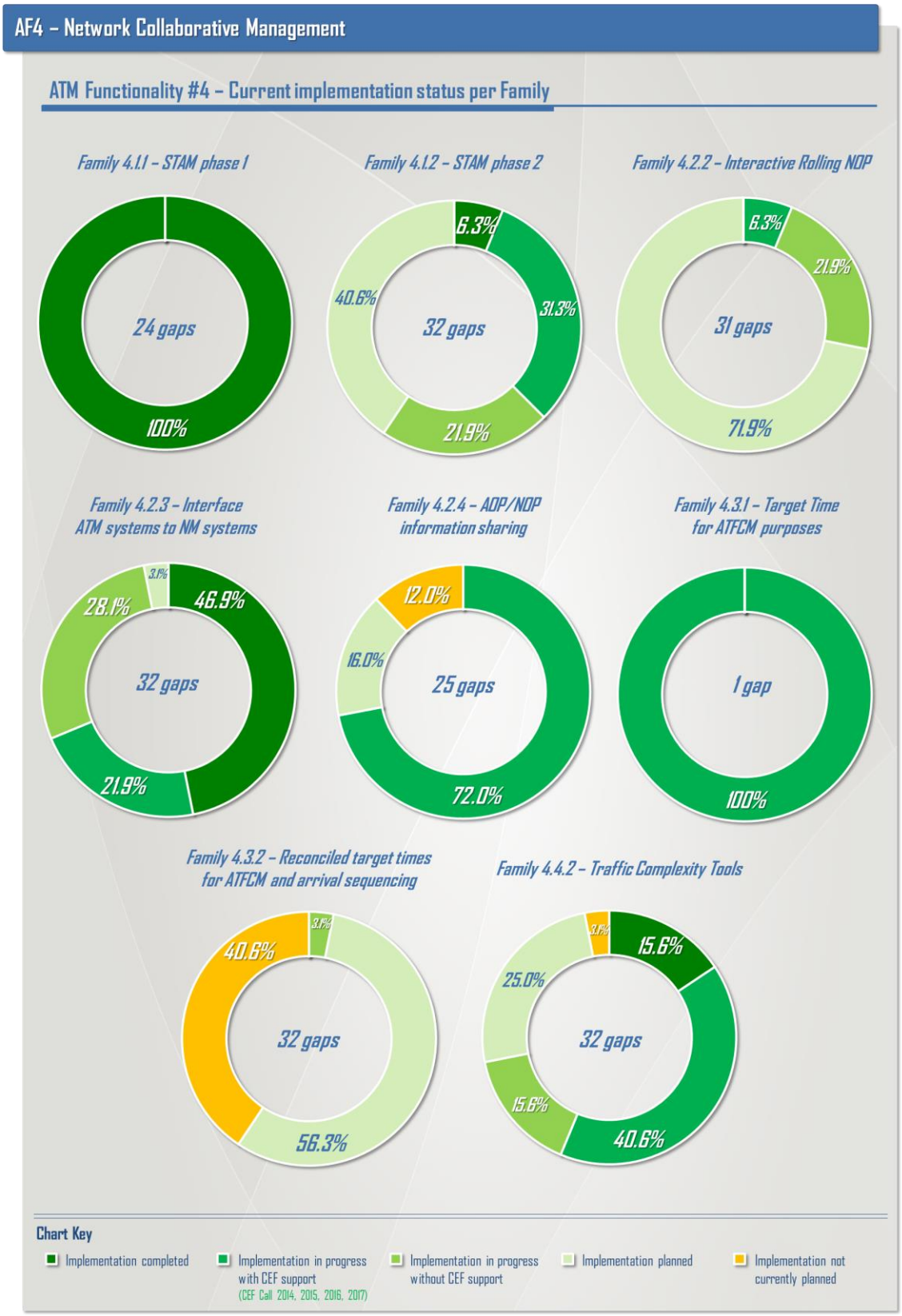


Figure 16 - AF4: current implementation status per Family

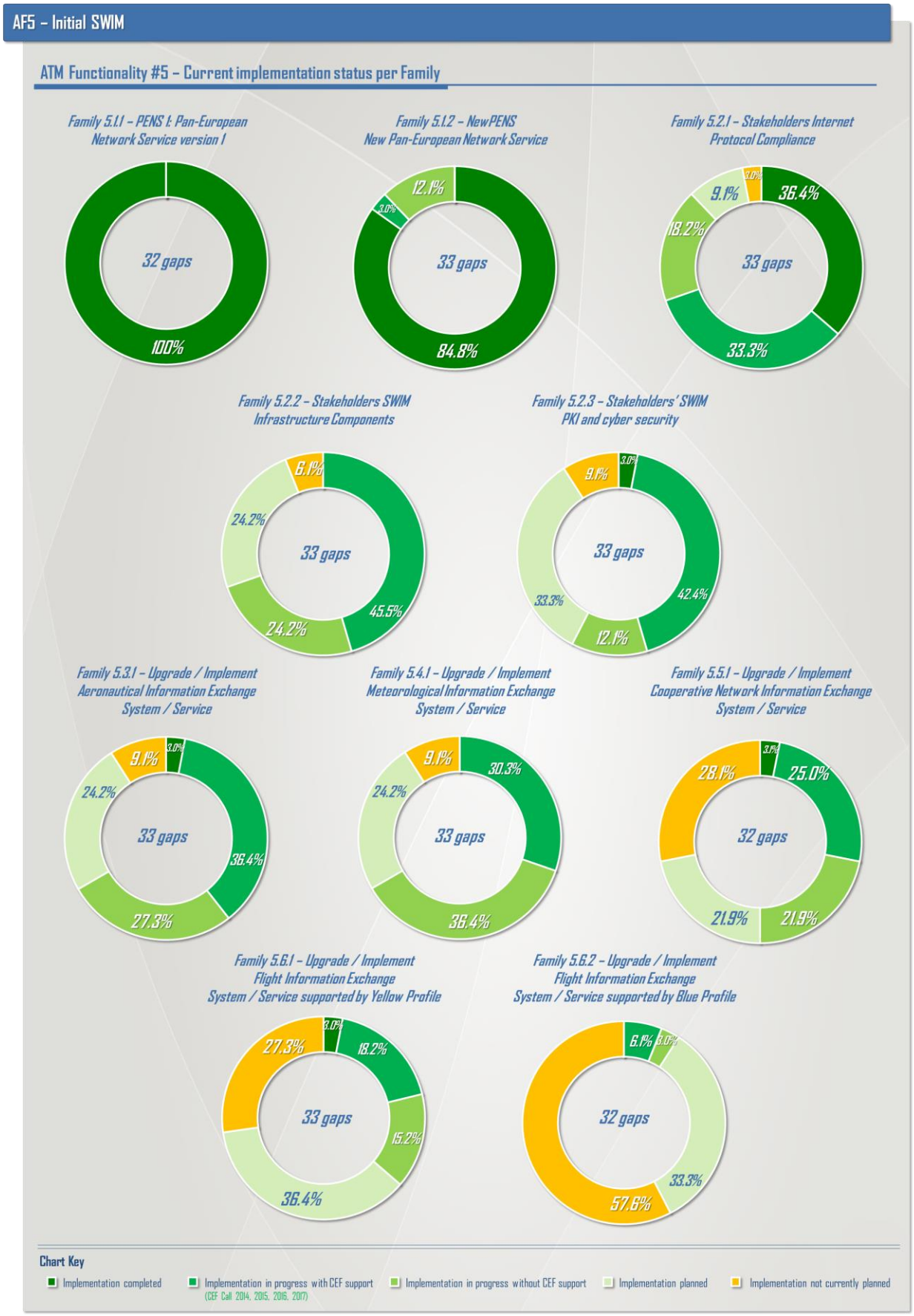


Figure 17 - AF5: current implementation status per Family

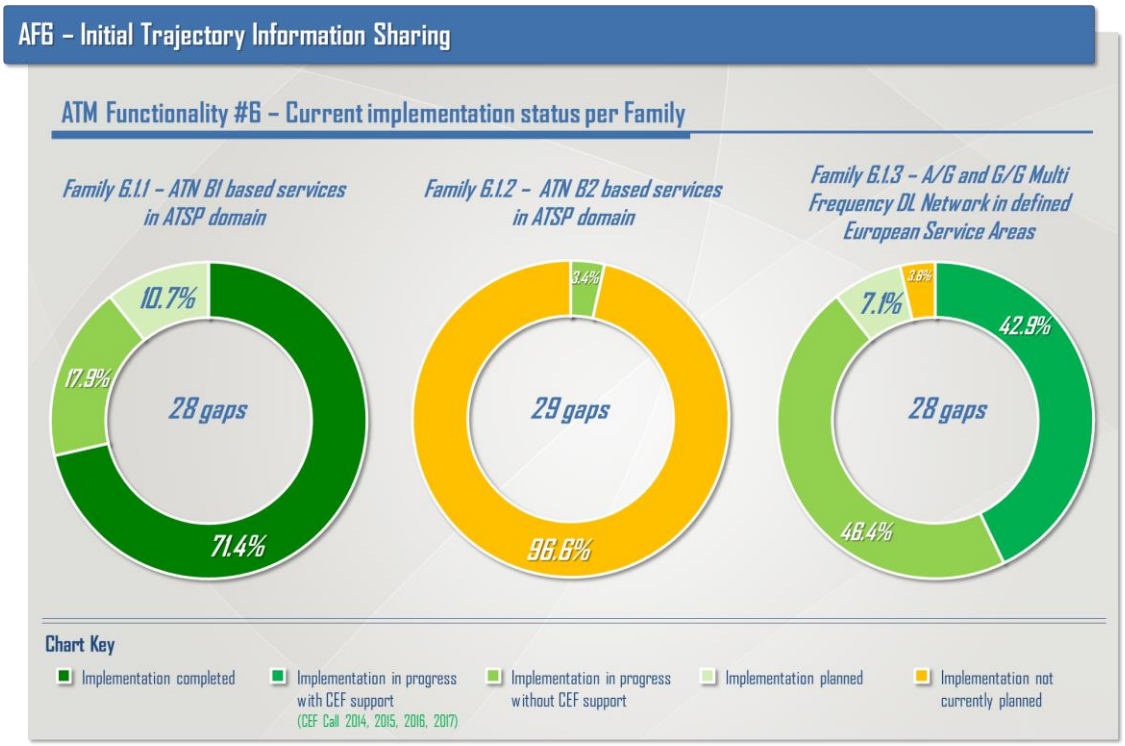


Figure 18 - AF6: current implementation status per Family

Covid-19 impacts on PCP deployment

Introduction

Covid-19 has put the global economy to the test, with air transport being one of the hardest hit sectors by the pandemic. Containment and other movement-restricting measures put in place to curb the spread of the virus have dealt an abrupt and brutal blow to the whole activity.

In order to assess the magnitude of the Covid-19 impact on the PCP Gaps implementation, SDM has launched a specific survey in the framework of the Monitoring View process.

Survey

One of the novelties of the templates used for the Monitoring Exercise 2020, is a cover page called "PCP Compliance" which is including specific column dedicated to the Covid-19 Survey, where Stakeholders can declare if the Covid-19 Pandemic impacted or not the PCP implementation of each applicable Family from AF1 to AF5. This page is also reporting the expected completion dates of the applicable Gaps in comparison with the initial expected completion dates included in MV2019, providing the possibility to include the rationale about the delay, caused or not by the Covid-19 Pandemic.

The survey has managed to capture a significant amount of feedback, entailing more than 90% of replies from the queried participants among Airport Operators, ANSPs, METPs and NM. Airspace Users and Military Stakeholders were not included in the questionnaires in order to alleviate their difficulties in replying during the critical days of the crisis.

It is worth noting that when Stakeholders did not include any statement ("YES" or "NO"), it was assumed that Covid-19 impact could not be measured at this stage.

In the same way, when an impact was declared ("YES") but no postponement was applied to "Expected completion date" from 2019, it was assumed that the delay could not be estimated.

A different approach has been followed for AF6 "Initial Trajectory Information Sharing", with dedicated templates to capture implementation plans, completion dates and overall PCP compliance. Elements in this functionality present maturity issues, hence concrete implementation plans cannot be elaborated at this stage. This fact does not allow a decoupled assessment from the Covid-19 impact. For this reason, AF6 is not included in the analysis.

Analysis and results

Overview of results

57% of the Stakeholders who provided their inputs to the SDM Monitoring Exercise declared that the Covid-19 crisis had a negative impact on their PCP implementation plans. **13% of them** explicitly declared no impact and 30% included no indication on the referred matter. These high level results, which can be substantiated now with more detail on each PCP functionality, confirm the results gathered by the SESAR Deployment Manager survey to stakeholders back in April 2020 regarding the considerable negative effect that the Covid-19 crisis is having in the ATM industry.

Out of all the reported impacts in which the stakeholders declared that the crisis has a negative effect in their implementation plans, the stakeholders did not associate a postponement from 2019´s estimation in the Expected Completion Dates for their applicable gaps in 59% of the replies. This fact is interpreted that **the delay could not be measured when the replies were provided**. On the remaining 41% who managed to quantify the delay in comparison with 2019, **the average implementation delay for was set in 21 months**.

The reported delays attributable to the crisis have been assessed in relation to the target dates set by the PCP Regulation. According to the above, the negative impact can be grouped into three categories:

- **5%** cases where the crisis entailed a delay, but the **expected completion date remains compliant with the PCP deadlines**;
- **36%** cases where the crisis entailed a delay which is **no longer compliant with PCP deadlines**. These delays are not isolated in specific functionalities of the PCP, but spread across the different elements of the Regulation;
- **59%** cases declare to be negatively affected by the crisis, but **stakeholders did not specify any delay.**

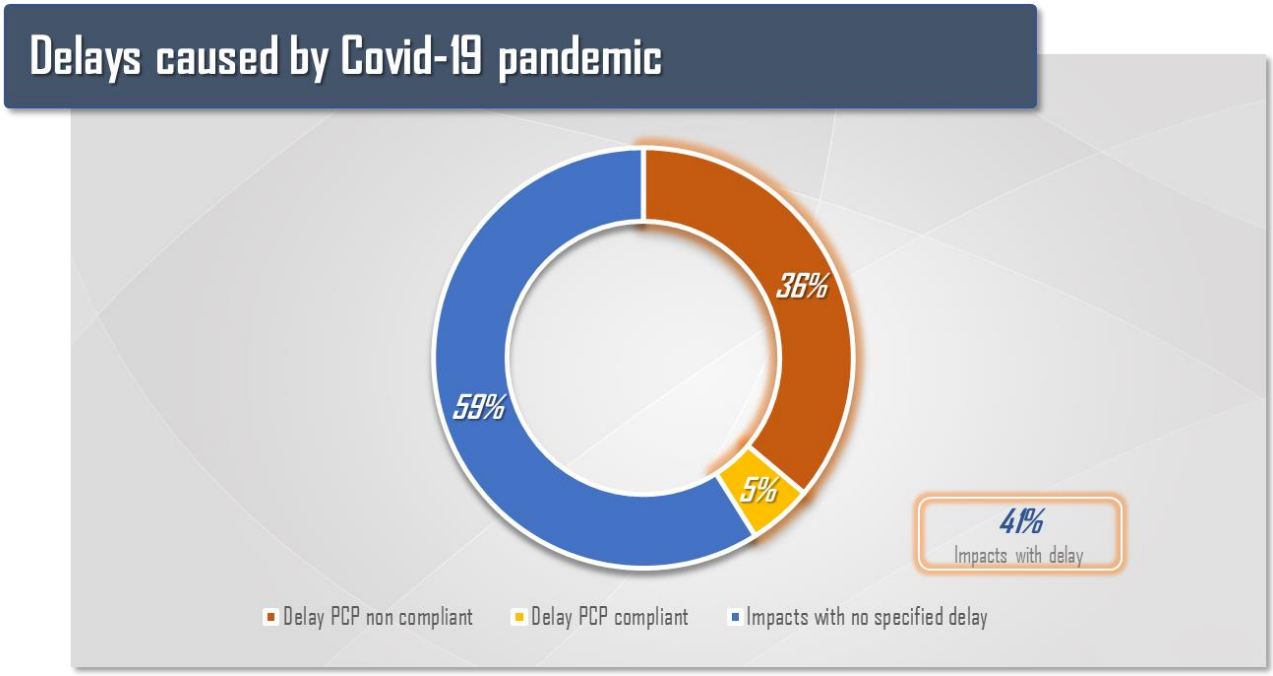


Figure 19 – Delays caused by Covid-19 pandemic

Impact per stakeholder category

Among the different surveyed Stakeholders' categories, which does not include Airspace Users nor Military, the Covid-19 Pandemic has been identified to have a negative effect in at least in one Family as follows:

- 75% of Air Navigation Service Providers;
- 72% of Airport Operators;
- 14% of Meteorological Service Providers;
- 0% for Network Manager.

At gap level, ANSPs declared that 198 Gaps are impacted due to Covid-19 out of 636 implementation Gaps (31%) applicable to them. Similarly, AOs declared 81 Gaps impacted out of 245 implementation Gaps (33%) and MET Service Providers declared 6 Gaps impacted out of 111 implementation gaps (5%). These values illustrate that ANSPs and AOs are equally suffering the effects of the pandemic to a greater degree than the MET Service Providers.

On the Network Manager side, no impact in the PCP implementation specifically related to Covid-19 has been reported.

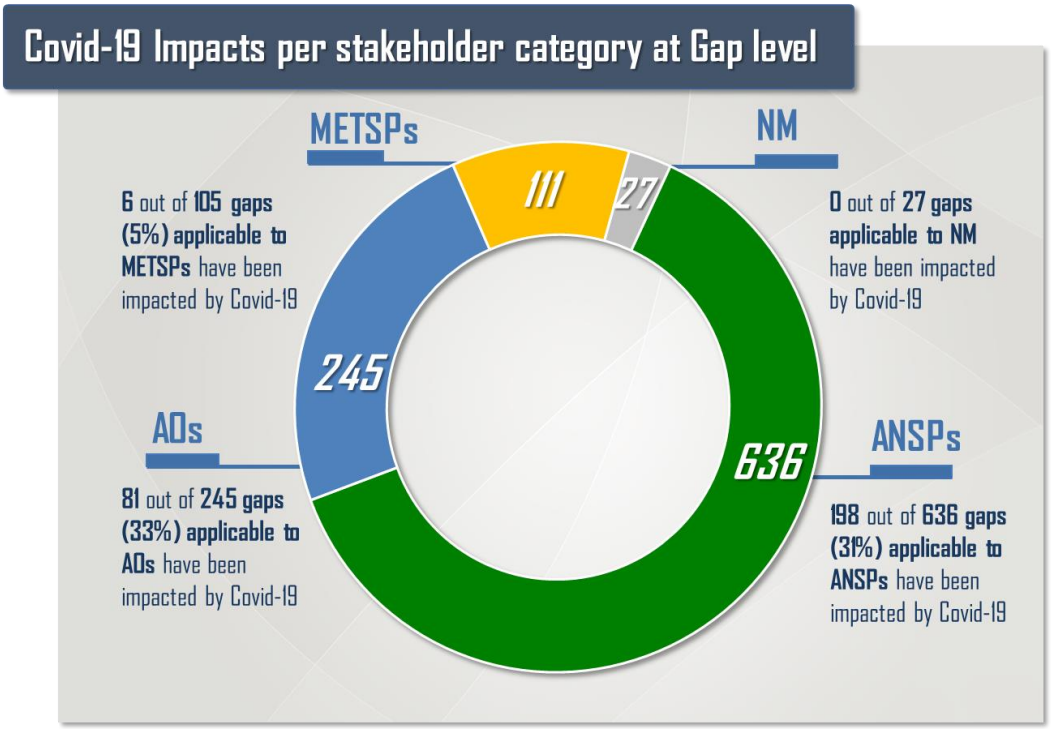


Figure 20 –Covid-19 impacts per stakeholder category at gap level

Out of those replies which declared a measurable delay due to Covid, Airport Operators shows an average implementation delay of 23 months, while the average delay on Gaps implemented by ANSPs is 20 months and the one affecting Gaps implemented by METPs is 15 months.

Impact per ATM functionality

Out of 672 gaps applicable to the different stakeholder categories, 256 resulted as affected by Covid-19 (38%). The total figure of applicable gaps did not take into account those gaps which have already been closed until now, as well as all those cases where a given Stakeholder category is not requested by the Pilot Common Project regulatory framework to directly invest to contribute to the closure of the gap. The latter cases apply only to a sub-set of specific Families and/or to a limited geographical scope.

The reported average delay ranges for the different ATM Functionalities from 16 to 28 months, being the highest average delay at AF level reported for "Flexible Airspace Management and Free Route" with 28 months and the lowest average delay for "Initial SWIM" with 16 months. The figure for "Initial SWIM" can be explained by a lower level of maturity for implementation and farther deployment target dates. In any case, **the figures illustrate that the spread of the impacts is shared across all ATM Functionalities**.

On the other hand, "Initial SWIM" is together with "Airport Integration and Throughput" the Functionalities mostly reported by the stakeholders as impacted by the crisis. This can be explained by that fact that stakeholders were able to report impact at Family level. Being those two AFs the ones with highest number of gaps, as a result of being broken down in more implementation Families and more stakeholders contributing to them.

The results gathered in the Monitoring Exercise are being graphically represented in several charts below, clustered per ATM Functionality, Sub-ATM Functionality and SESAR Deployment Programme Family. The charts titled "Total impacted and delayed gaps" represent in a bar chart the total number of times that a stakeholder has reported an incidence in the implementation due to Covid-19, broken down in situations where a delay has been associated to it and cases where a delay was not established. The charts titled "Average delay in months" depict in bar charts the average recorded delay from those cases where a delay was indeed identified. The line chart in the secondary axis informs about the number of times that a stakeholder has reported an incidence in the implementation due to Covid-19.

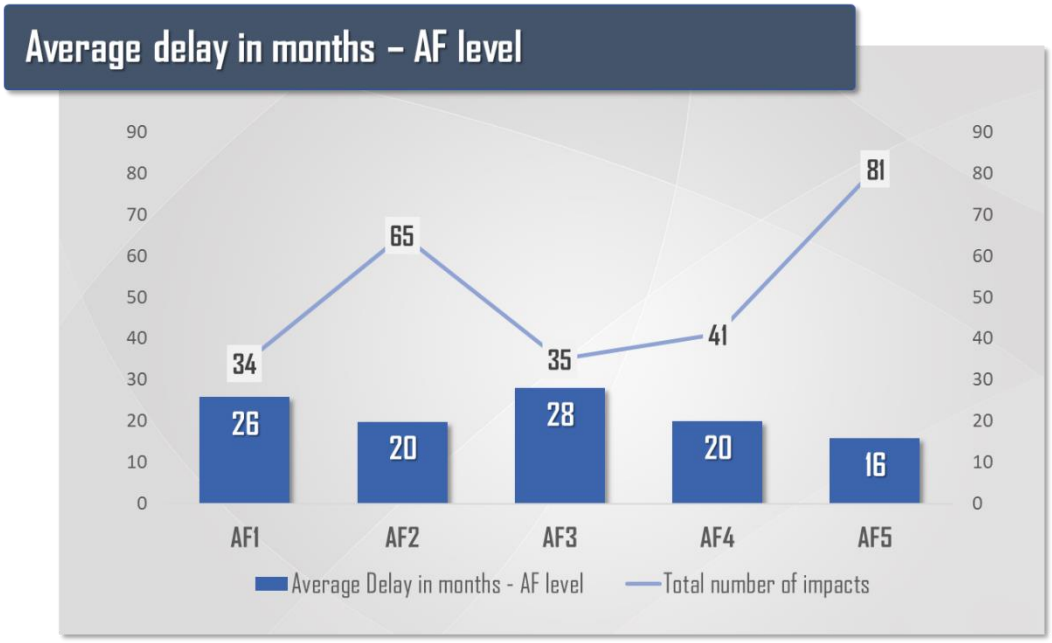


Figure 21 – Average delay in months caused by Covid-19 – AF

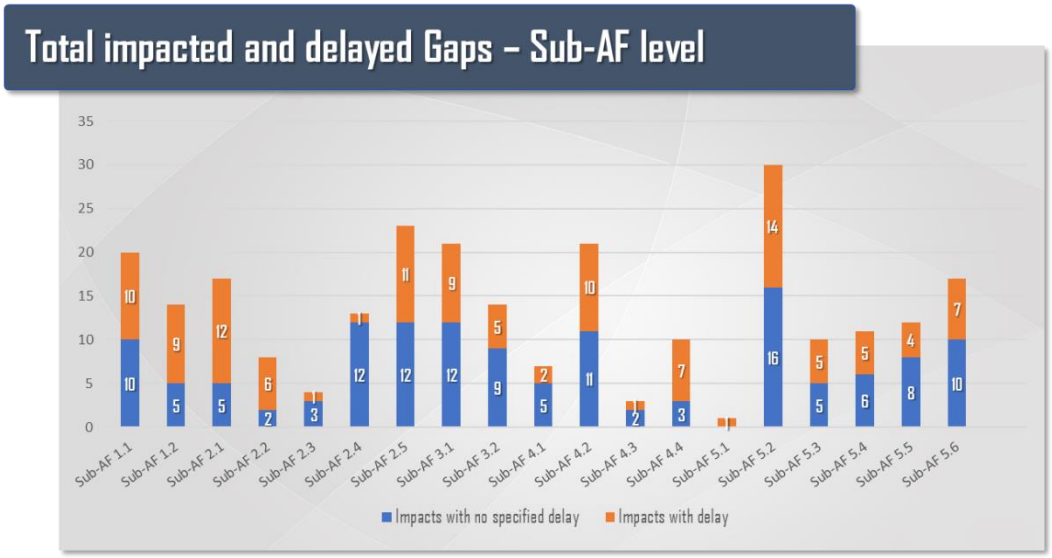


Figure 22 – Total impacted and delayed Gaps – Sub-AF level

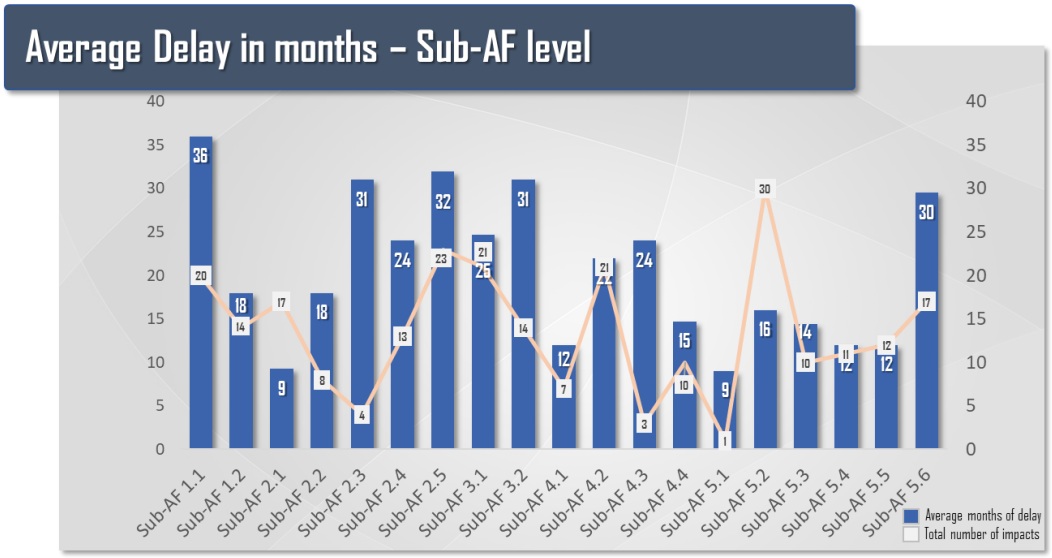


Figure 23 – Average Delay in months – Sub-AF level

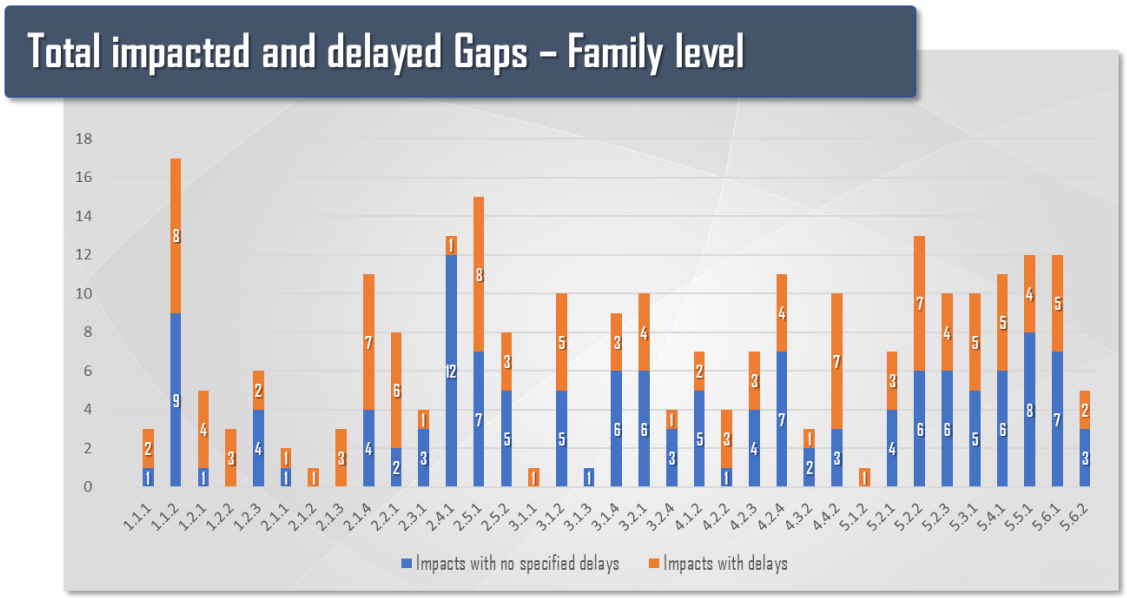


Figure 24 – Total impacted and delayed Gaps – Family level

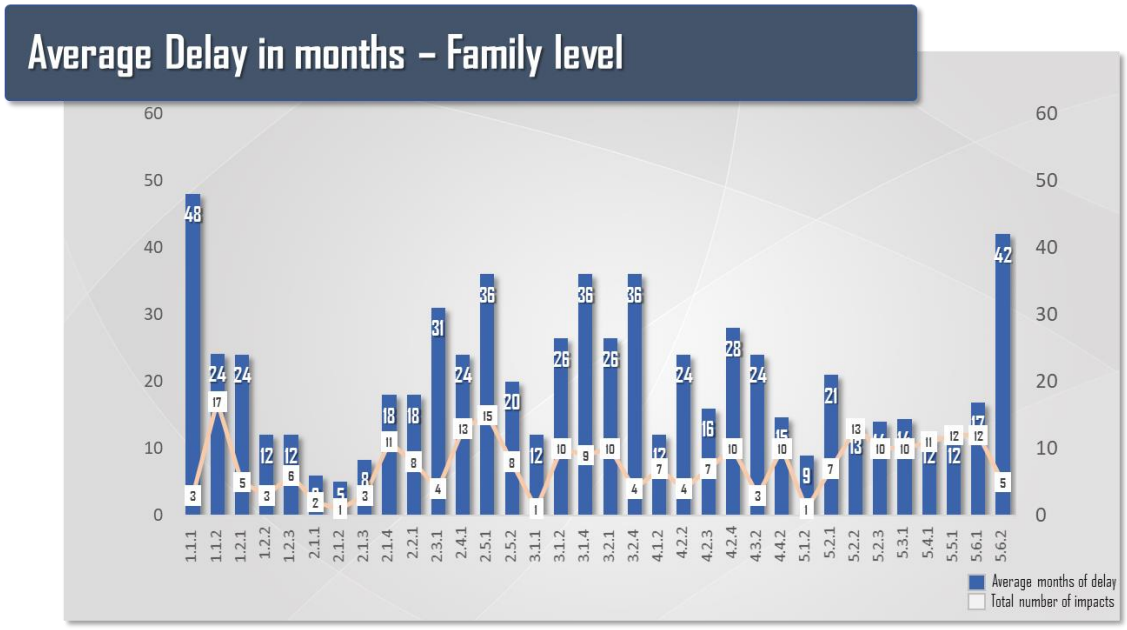


Figure 25 – Average Delay in months – Family level

Extended AMAN and PBN in high density TMA is substantially affected, both in number of occurrences and average delay.

DMAN synchronised with Pre-departure sequencing (Sub-AF 2.1), despite an average number of times being reported as affected, has a low average delay (9 months) mainly explained by the fact that it is a Functionality where the stakeholders had their investment plans quite advanced when the Crisis arrived.

Time Based Separation (Sub-AF 2.3) is showing a lower degree of affection in terms of affected gaps, mainly due to the existence of a limited geographical scope in comparison with other Functionalities and less required coordination among stakeholders, as it is mostly covered by ANSPs. Its average delay for the affected gaps is still considered high.

The Sub-ATM Functionalities in "Flexible Airspace Management and Free Route" together with "Network Collaborative Management" present negative effects in line with the already indicated average values. It can be highlighted the lower number of occurrences in Sub-AF 4.3 "Calculated Take-off Time to Target Times for AFTCM Purposes" is mainly due to the fact that Network Manager is the only existing gap for 4.3.1 "Target Time for ATFCM purposes" and the lack of concrete plans towards the implementation of 4.3.2 "Reconciled target times for ATFCM and arrival sequencing".

Maturity issues around "Flights Information Exchanges" (Sub-AF 5.6) can explain both the combination of low number of impacts with very high delay, particular for the Blue Profile, with average figures for Yellow Profile.

The charts regarding the effect at Family level clearly show certain Families with very few or none occurrences of negative effects. This is the case, for instance, of Family 1.1.1 "Basic AMAN", 2.1.1 "Initial DMAN", 2.1.2 "Electronic Flight Strips", 3.1.1 "ASM tool to support AFUA", 5.1.2 "NewPENS". This confirms the realisation of consolidated investment plans from stakeholders.

Covid-19 Analysis: Conclusions

It is hard for the aviation stakeholders to continue their investments because it is predicted that the recovery phase will take several years, undoubtedly influencing the future of PCP implementation. **The report shows that the average delay, for those already able to quantify it at this point in time, is of almost two years, similarly spread across the ATM functionalities identified in the PCP: Nearly 60% of the respondents acknowledged a negative effect impossible to be measured at this point in time.**

The Covid-19 Survey represents an important message coming from the Aviation Industry as it shows the considerable difficulties that Stakeholders are coping with in complying with the current PCP implementation target dates.

2020 has proven to be a very difficult period for all sectors of the aviation value chain. This is especially true for **Civil Airspace Users where after several years of buoyant growth and challenges to meet passenger demands, the global market for air travel has all but disappeared. European airlines are currently operating at less than 20% of their full potential and with the additional challenge of very low passenger yields.**

As a result, we have witnessed over the last year a significant reduction in staff numbers, especially those in the back office or not having a critical safety role. We have also observed a majority of staff being made redundant or are on short time working, and this restricted operation will remain well into 2021, therefore greatly limiting their ability to deploy and report.

Although not included in the survey, the Covid-19 crisis may also impact deployment for military stakeholders. **During this period, military stakeholders have been involved in the response to the COVID-19 pandemic, using their capabilities to support civil crisis management mechanisms.** At this point, military stakeholders are paying particular attention to the potential consequences of the Covid-19 crisis on defence budgets, both at national and at EU level. Consequently, and in line with the replies collected from the other groups of stakeholders, **this might have some negative implications in the medium term on deployment of SES related technology.**

The target deployment dates of CP1 Regulation are expected to help mitigate the effects of these delays. But the confirmation on the compliance from the stakeholders´ point of view will have to be confirmed once the stakeholders can provide accurate estimations on their implementation plans against the new Regulation.

2. Detailed Views per Family

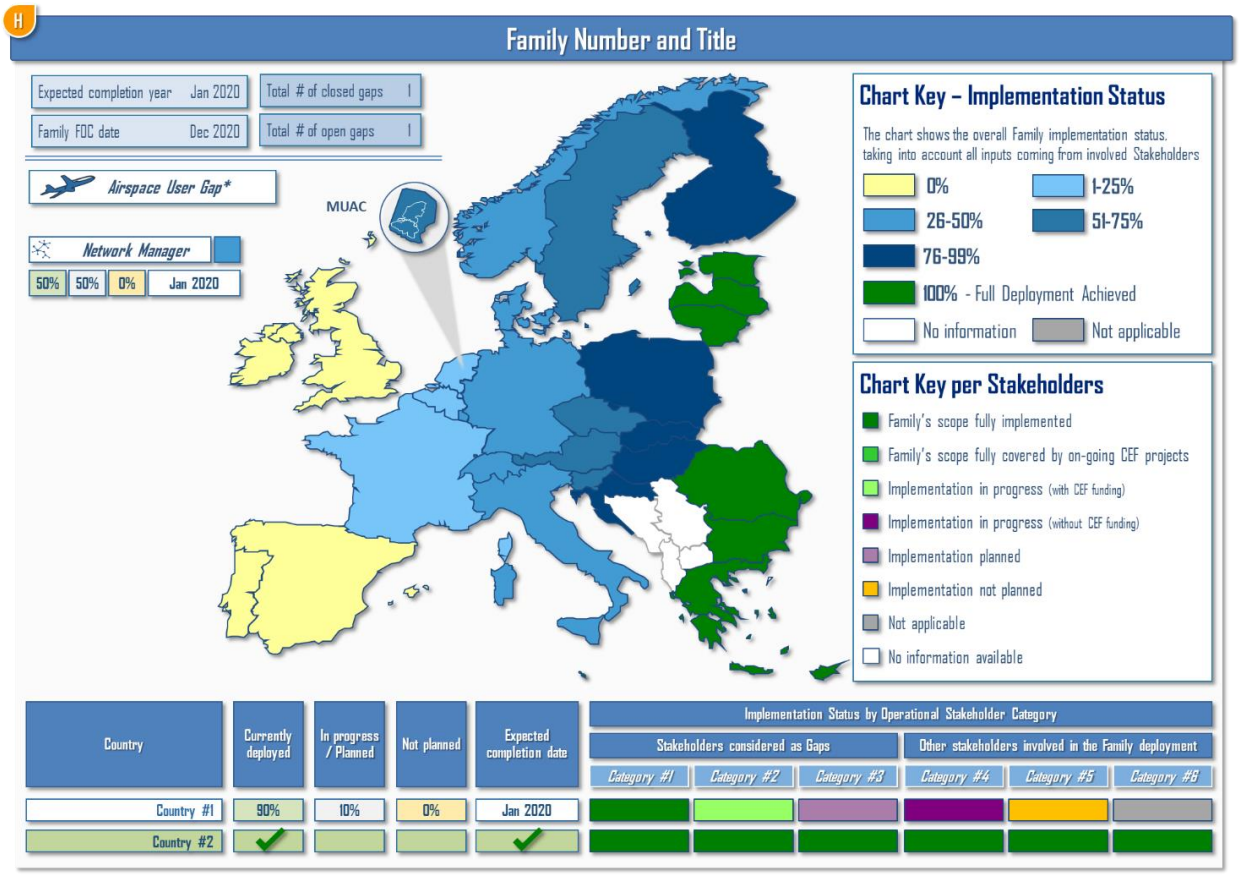
Complementing the overall picture of the deployment at global level, the specific structure of the SDM Monitoring Exercise (and especially its engagement of all operational stakeholders impacted by Regulation (EU) n. 716/2014) also allows to outline detailed views at local level, providing an accurate representation of the implementation progresses within each Country or Airport included within the PCP geographical scope. To this end, the Family-based charts included within the present Section aim at reporting on the overall status of implementation of technological and operational elements associated to each Family at local level, whilst also identifying the expected date of completion of such Family within the relevant country or airport.

This detailed outlook supports the identification of the main implementation areas to be tackled by future investments and helps avoiding any gap or critical delay in the Programme's implementation. Furthermore, the information gathered from each organization engaged in the Exercise results into dedicated *views per stakeholder*, which outlines how each ANSP, Airport Operator, MET Service Provider and/or Military authority is involved in tackling the existing implementation gaps. Considering the relevance of the Network Manager within several of the Families included in the SDP scope, a dedicated view on the status of the PCP with regard to NM systems and procedures is also included.

The overall picture of the "geography-based" ground gaps is complemented by the overview on the Airspace Users gaps, defined instead on a fleet-centric approach, due to the fact that AU operations typically expand beyond national and regional borders and affect the whole geographical scope defined by the Pilot Common Project. Specific surveys – associated to Airborne capabilities and to the Flight Planning capabilities – have been distributed to Airlines headquartered within the European Union, in order to build a representative view of the current status of implementation.

Ground gaps – Monitoring Overview

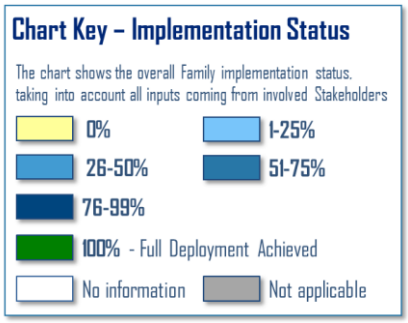
A generic mock-up of the charts used to provide a representation of the results of the SDM Monitoring Exercise is proposed hereafter for illustrative purposes.



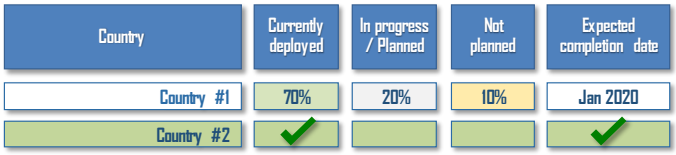
The structure of the chart has been developed with the specific objective of providing the reader with a wide set of data and information within a single snapshot: the following paragraphs include an overall explanation on how the information is presented.

Each chart is dedicated to a specific Family: its number and title are identified within the header of the charts. Furthermore, the level of readiness for implementation (High/Medium/Low) is mentioned, listing the readiness of the technological and operational elements included in the Family scope. The color of the banner indicates the category of the Family (blue for "*core*" PCP Families, green for "*facilitating*" Families, light red for "*complementary*" Families[14]).

The Europe chart shows different colors for each country included within the geographical scope of Regulation (EU) n. 716/2014; in addition, the Network Manager and Maastricht Upper Area Control (MUAC) are represented, as their specific activities expand beyond national borders. For ATM Functionalities 1 and 2, whose geographical scope is structured on an airport basis, the 25 PCP[15] airports are indicated, complemented – where applicable – by the Network Manager.



These colors provide a quick and effective indication of the overall implementation status of the Family, as each of them represents a different percentage of completion of the Family, corresponding to the current percentage of implementation (i.e. what has been already deployed by the relevant operational stakeholders).



This percentage is also explicitly reported – within a green box - in the table on the left, for applicable country or airport. The current status of implementation is then complemented by two additional percentages:

- the "*in progress / planned*" percentage, included in the grey boxes, which identifies the percentage of the Family that is covered by on-going activities and/or is planned to be covered by future initiatives (both within and beyond the SDM coordination[16]);
- the "*not planned*" percentage, included within the light-yellow boxes, which corresponds to the percentage of the Family for which no specific plan has been elaborated by the relevant operational stakeholders.

Whenever a Family has been fully deployed at local level, the whole row is covered in green.

In addition, thanks to the information gathered from the organizations consulted through the Monitoring Exercise, an expected completion date is provided for each gap: this date represents the expected date of achievement of the full deployment, i.e. the date in which all operational stakeholders operating within a certain country/airport plan to complete the implementation of the Family.

[14] According to the SESAR Deployment Programme 2018, in order to better organise the PCP implementation and support stakeholders in the refinement of their investment plans, the 48 families of the Programme have been clustered into three categories:

- *core PCP Families*, regrouping all operational and technological improvements that are explicitly mentioned within the text of Regulation (EU) No 716/2014;
- *facilitating Families*, including implementation activities linked to PCP Sub-AFs, which can facilitate full deployment as an intermediate step to achieving the operational concept. They are not mandatory under the PCP Regulation;
- *complementary Families*, which are linked to the PCP Sub-AFs and are deemed necessary to cover an existing gap not explicitly addressed in the PCP Regulation; they are not mandatory under Reg. (EU) No 716/2014, although they can be mandatory in accordance with other EU Regulations;

[15] The scope of the SDM Monitoring Exercise encompasses all 24 PCP airports but Istanbul Ataturk.

[16] For gaps addressed by initiatives under its specific coordination, SDM is also able to perform an additional cross-check and consistency assessment of the information gathered from Stakeholders vis-à-vis the actual progress of the Implementation Projects. For gaps outside SDM direct coordination, the scope of local initiatives and plans is evaluated only on the basis of information declarations provided by operational stakeholders.

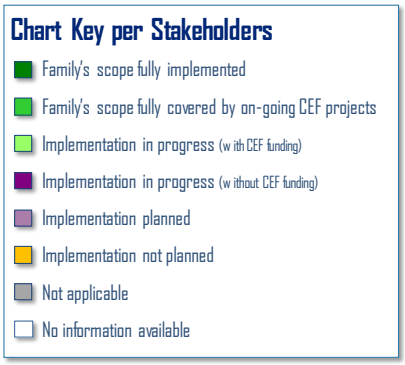
All information stemming from local deployment initiatives will be summarized within the boxes included in the upper left corner of the chart, which report – at Family level – the following information:

- the expected completion year, i.e. when the Family will be implemented within its whole geographical scope (e.g. all countries and airports), in comparison with the Full Operational Capability date, as identified in the SESAR Deployment Programme;
- the total number of gaps which have already been closed by operational stakeholders;
- the total number of gaps which remain open, thus needing additional deployment activities before the full implementation is achieved at local level.

For each country, the right section of the table allows readers to check the status of implementation for each category of stakeholders impacted by the Regulation and/or involved in the Family full deployment. Specifically, building on the clustering included in the Family descriptions from the Planning View, two kinds of involvement per stakeholder category is envisaged:

- Stakeholders considered as gaps – including those stakeholder categories that are requested by the Pilot Common Project regulatory framework to directly invest to fill-in the implementation gaps and are therefore potentially eligible for co-funding under the upcoming CEF Transport Calls;
- Other stakeholders involved in the Family deployment, including those categories that shall be considered as contributors to the full operational deployment of the Family itself, without being necessarily requested by the PCP regulatory framework to invest.

Building and further refining the clustering used in the previous releases of the Deployment Programme, seven categories of implementation status have been identified for each involved stakeholder, plus an eighth one in case of missing information.



This information is featured in the right section of the table at the bottom of the chart and will be populated on the basis of inputs provided by operational stakeholders through the Monitoring Exercise and – for the SDM-coordinated implementation activities – on the basis of the outcomes of SDM coordination.

The following chart key / categories are represented:

1. Family's scope fully implemented, thus no additional activities to fully deploy the Family scope is expected by the operational stakeholder;
2. Family's scope fully covered by on-going CEF projects, thus the current SDM-coordinated Implementation Projects are expected to lead to the full deployment of the technological and operational elements associated to the Family from the operational stakeholder's perspective;
3. Implementation in progress (with CEF funding): in this case, the operational stakeholder is directly involved in one or more CEF-funded and SDM-coordinated Implementation Projects that are contributing to the deployment of the Family;
4. Implementation in progress (without CEF funding): the operational stakeholder is currently deploying the technological and/or operational elements within the Family scope's, without the CEF funding support and beyond the SDM remit;
5. Implementation planned: the operational stakeholder has plans to deploy the Family, although the associated implementation activities have not started yet;
6. Implementation not planned: in this case, no actual plans to implement the Family have been prepared by the operational stakeholder;
7. Not applicable: in this case, taking into account the specific features and the local arrangements of the geographical scope of the implementation, the operational stakeholder is not expected to be involved in the Family deployment activities.
8. No information available.

It is worth noting that – having regard to categories 2 and 3 – the current edition of the Monitoring View takes into account all Implementation Projects awarded within the framework of CEF Calls 2014, 2015, 2016 and 2017. For categories 4 and 5, the scope of the local initiatives or plans (i.e. the percentage of the gap that will be addressed) is evaluated and assessed on the basis of stakeholders' declarations only.

Whenever the specific features of Family (as described within the Planning View 2019) require for an active involvement of the Airspace Users to achieve its full deployment and the realization of the related performance benefits, a dedicated label has been added. Due to the nature of the AU stakeholders, which are not strictly connected to an EU State but are rather operating beyond national borders and across the whole PCP geographical scope, the label highlights the identification of a dedicated Airspace Users gap for the Family.

In previous editions of the Monitoring View, the charts also marked those implementation initiatives / gaps which were deemed crucial for the improvement of the performance levels at Network level. The ACCs with highest average delays and most capacity constrained Airports within the frame of PCP were identified in cooperation with the Network Manager in accordance with the latest available version of the European Network Operations Plan and with the European Route Network Improvement Plan (ERNIP) Database.

In this years´ edition, with the 2020 circumstances of traffic decline due to Covid-19, which result in a decline of approximately 60% less daily flights compared with 2019 traffic, the identification of relevant implementation gaps for the overall performance of the Network has been deemed unnecessary due to the insignificance of capacity constraints.

AF1– Extended AMAN and PBN in high density TMA

1.1.1 Basic AMAN

Expected completion year: Dec 2026
Family FOC date: Jan 2020
Total # of closed gaps: 18
Total # of open gaps: 6

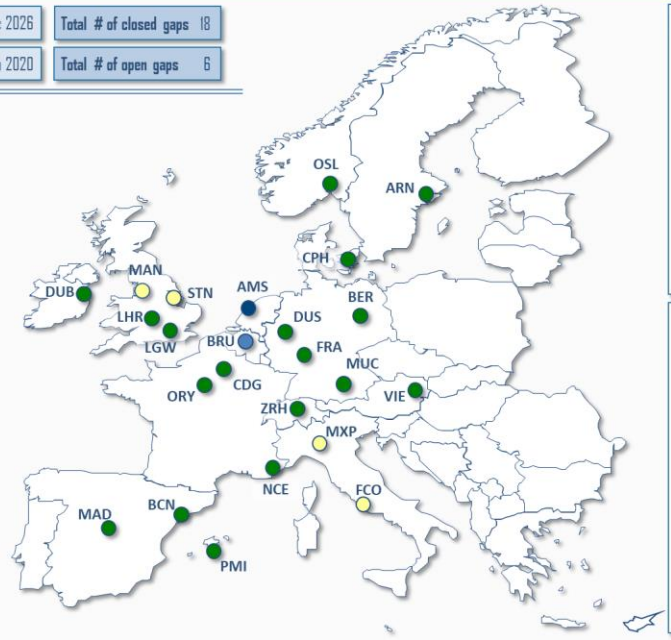


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved
					ANSPs	*Airport Operators*
Amsterdam Schiphol	85%	15%	0%	Jul 2021		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	✓			✓		
Brussels National	40%	60%	0%	Dec 2024		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Dusseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	0%	100%	0%	-		
Madrid Barajas	✓			✓		
Manchester Ringway	0%	100%	0%	-		
Milan Malpensa	0%	100%	0%	Dec 2023		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	0%	100%	0%	Dec 2023		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

H

1.1.2 AMAN Upgrade to include Extended Horizon function

Expected completion year	Dec 2026
Family FOC date	Jan 2024
Total # of closed gaps	0
Total # of open gaps	25

Network Manager: 30% | 55% | 15% | Dec 2023

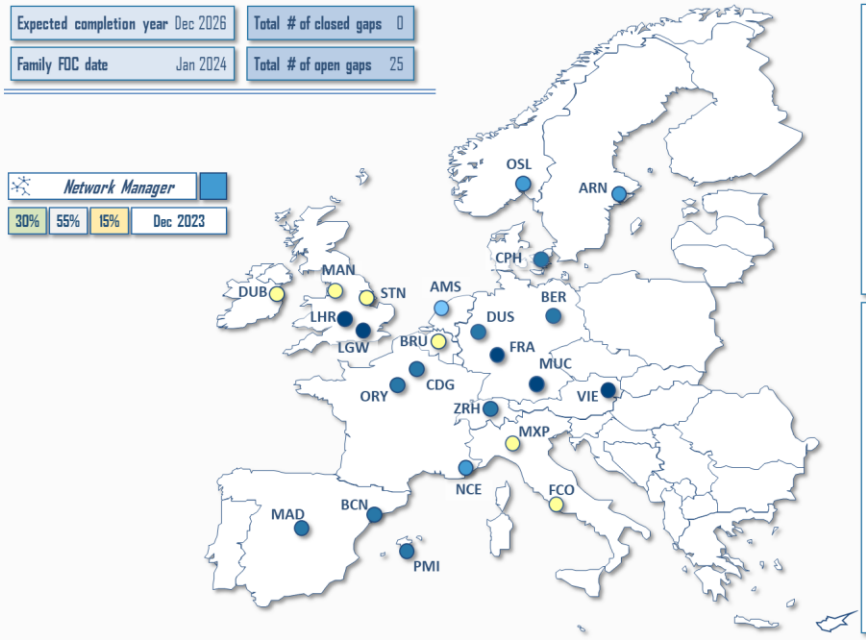


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Airport Operators
Amsterdam Schiphol	15%	85%	0%	Dec 2024			
Barcelona El Prat	60%	40%	0%	Dec 2024			
Berlin Brandenburg Airport	60%	40%	0%	Dec 2023			
Brussels National	0%	100%	0%	Dec 2025			
Copenhagen Kastrup	70%	0%	30%	Dec 2024			
Dublin Airport	0%	100%	0%	Mar 2023			
Dusseldorf International	60%	25%	15%	Dec 2023			
Frankfurt International	85%	15%	0%	Dec 2023			
London Gatwick	85%	15%	0%	-			
London Heathrow	85%	15%	0%	-			
London Stansted	0%	100%	0%	-			
Madrid Barajas	75%	25%	0%	Dec 2024			
Manchester Ringway	0%	100%	0%	-			
Milan Malpensa	0%	100%	0%	Dec 2023			
Munich Franz Josef Strauss	90%	10%	0%	Dec 2023			
Nice Cote D'Azur	50%	10%	40%	Dec 2023			
Oslo Gardermoen	50%	15%	35%	Oct 2024			
Palma de Mallorca Son Sant Joan	75%	25%	0%	Dec 2024			
Paris Charles De Gaulle	55%	15%	30%	Dec 2023			
Paris Orly	60%	10%	30%	Dec 2023			
Rome Fiumicino	0%	100%	0%	Dec 2023			
Stockholm Arlanda	50%	0%	50%	Dec 2024			
Vienna Schwechat	80%	20%	0%	Dec 2024			
Zurich Kloten	70%	30%	0%	Dec 2023			

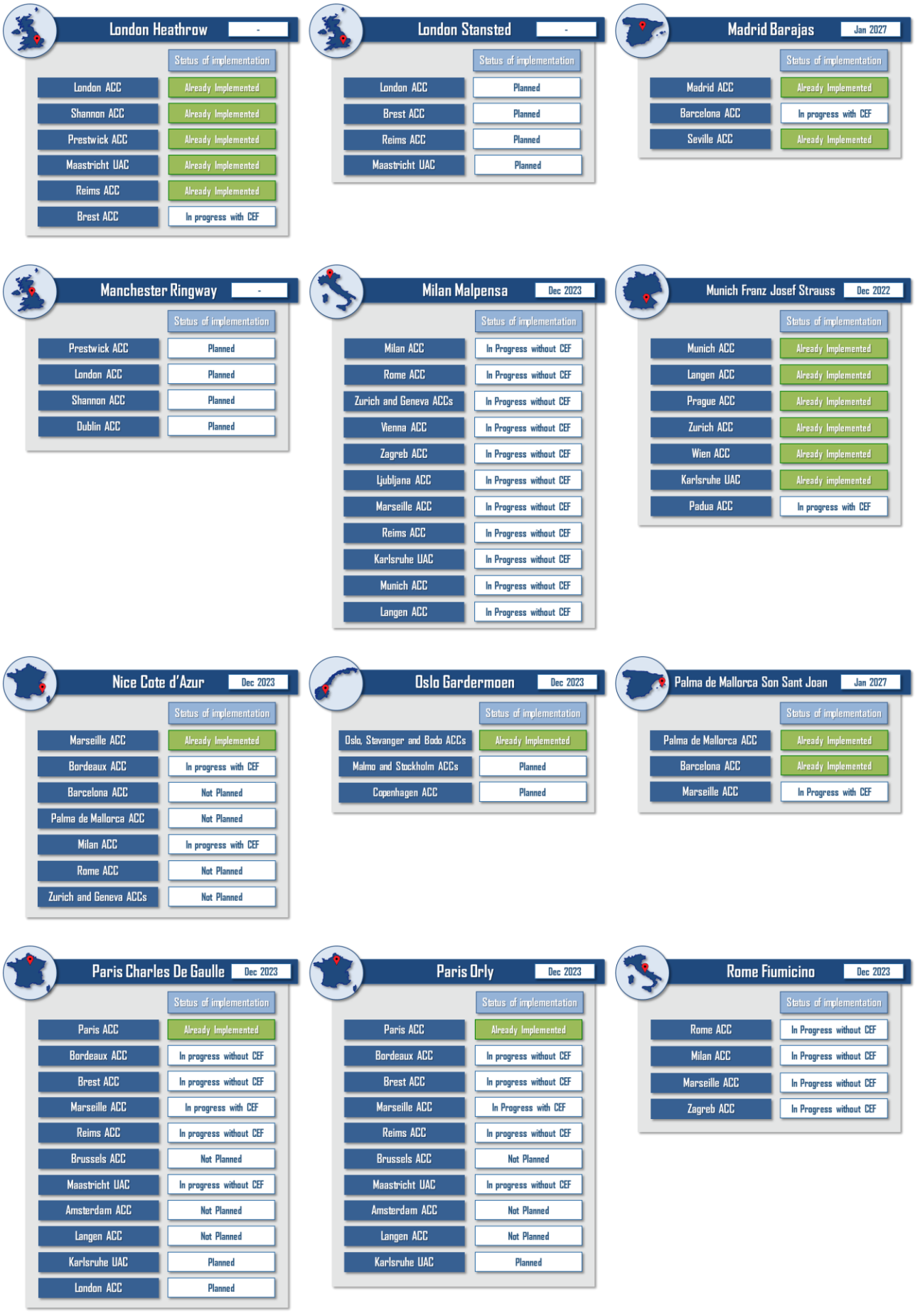
Focus on Extended AMAN implementation

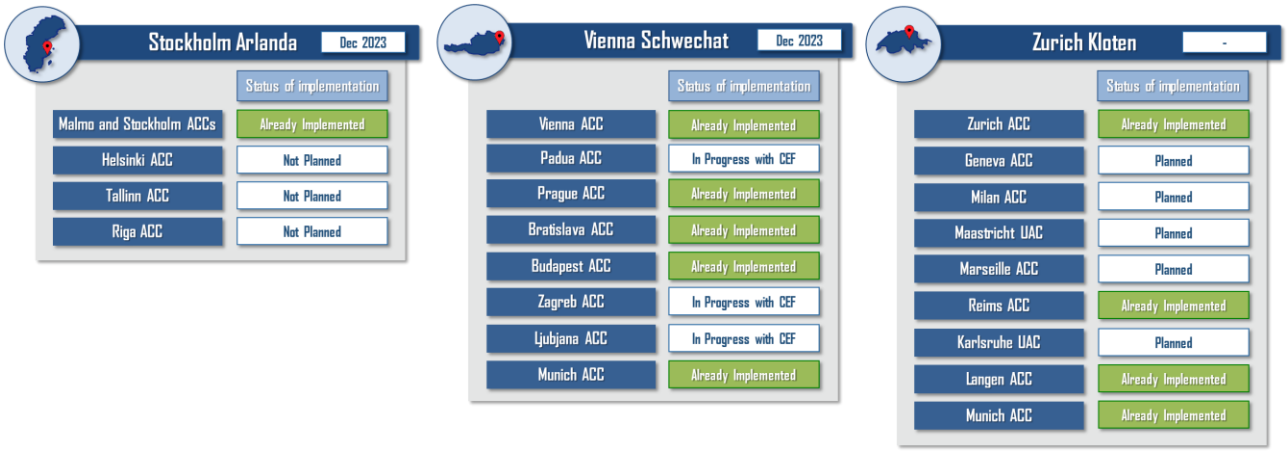
Taking into account the specific features of the implementation of the Extended AMAN within a specific TMA, operational stakeholders were called to provide additional and more detailed information in the 2020 Monitoring Exercise.

In particular, the monitoring of Family 1.1.2 is further detailed, and is organized on the basis of the Area Control Centers potentially impacted by the extension of the horizon of the Arrival Manager system.

Information on the status of implementation of the Family have been requested to operational stakeholders and – when possible – cross-checked with input and data stemming from SDM-coordinated Implementation Projects.

In this perspective, the following tables report on the status of implementation of Extended AMAN in the 24 TMAs, providing specific information on the Area Control Centers impacted by the deployment activities.


London Heathrow
-
Status of implementation
London ACC
Already Implemented
Shannon ACC
Already Implemented
Prestwick ACC
Already Implemented
Maastricht UAC
Already Implemented
Reims ACC
Already Implemented
Brest ACC
In progress with CEF
London Stansted
-
Status of implementation
London ACC
Planned
Brest ACC
Planned
Reims ACC
Planned
Maastricht UAC
Planned
Madrid Barajas
Jan 2027
Status of implementation
Madrid ACC
Already Implemented
Barcelona ACC
In progress with CEF
Seville ACC
Already Implemented
Manchester Ringway
-
Status of implementation
Prestwick ACC
Planned
London ACC
Planned
Shannon ACC
Planned
Dublin ACC
Planned
Milan Malpensa
Dec 2023
Status of implementation
Milan ACC
In Progress without CEF
Rome ACC
In Progress without CEF
Zurich and Geneva ACCs
In Progress without CEF
Vienna ACC
In Progress without CEF
Zagreb ACC
In Progress without CEF
Ljubljana ACC
In Progress without CEF
Marseille ACC
In Progress without CEF
Reims ACC
In Progress without CEF
Karlsruhe UAC
In Progress without CEF
Munich ACC
In Progress without CEF
Langen ACC
In Progress without CEF
Munich Franz Josef Strauss
Dec 2022
Status of implementation
Munich ACC
Already Implemented
Langen ACC
Already Implemented
Prague ACC
Already Implemented
Zurich ACC
Already Implemented
Wien ACC
Already Implemented
Karlsruhe UAC
Already implemented
Padua ACC
In progress with CEF
Nice Cote d'Azur
Dec 2023
Status of implementation
Marseille ACC
Already Implemented
Bordeaux ACC
In progress with CEF
Barcelona ACC
Not Planned
Palma de Mallorca ACC
Not Planned
Milan ACC
In progress with CEF
Rome ACC
Not Planned
Zurich and Geneva ACCs
Not Planned
Oslo Gardermoen
Dec 2023
Status of implementation
Oslo, Stavanger and Bodo ACCs
Already Implemented
Malmo and Stockholm ACCs
Planned
Copenhagen ACC
Planned
Palma de Mallorca Son Sant Joan
Jan 2027
Status of implementation
Palma de Mallorca ACC
Already Implemented
Barcelona ACC
Already Implemented
Marseille ACC
In Progress with CEF
Paris Charles De Gaulle
Dec 2023
Status of implementation
Paris ACC
Already Implemented
Bordeaux ACC
In progress without CEF
Brest ACC
In progress without CEF
Marseille ACC
In progress with CEF
Reims ACC
In progress without CEF
Brussels ACC
Not Planned
Maastricht UAC
In progress without CEF
Amsterdam ACC
Not Planned
Langen ACC
Not Planned
Karlsruhe UAC
Planned
London ACC
Planned
Paris Orly
Dec 2023
Status of implementation
Paris ACC
Already Implemented
Bordeaux ACC
In progress without CEF
Brest ACC
In progress without CEF
Marseille ACC
In Progress with CEF
Reims ACC
In progress without CEF
Brussels ACC
Not Planned
Maastricht UAC
In progress without CEF
Amsterdam ACC
Not Planned
Langen ACC
Not Planned
Karlsruhe UAC
Planned
Rome Fiumicino
Dec 2023
Status of implementation
Rome ACC
In Progress without CEF
Milan ACC
In Progress without CEF
Marseille ACC
In Progress without CEF
Zagreb ACC
In Progress without CEF


Stockholm Arlanda
Dec 2023
Status of implementation
Malmo and Stockholm ACCs
Already Implemented
Helsinki ACC
Not Planned
Tallinn ACC
Not Planned
Riga ACC
Not Planned
Vienna Schwechat
Dec 2023
Status of implementation
Vienna ACC
Already Implemented
Padua ACC
In Progress with CEF
Prague ACC
Already Implemented
Bratislava ACC
Already Implemented
Budapest ACC
Already Implemented
Zagreb ACC
In Progress with CEF
Ljubjana ACC
In Progress with CEF
Munich ACC
Already Implemented
Zurich Kloten
-
Status of implementation
Zurich ACC
Already Implemented
Geneva ACC
Planned
Milan ACC
Planned
Maastricht UAC
Planned
Marseille ACC
Planned
Reims ACC
Already Implemented
Karlsruhe UAC
Planned
Langen ACC
Already Implemented
Munich ACC
Already Implemented

H

1.2.1 RNP APCH with vertical guidance

Expected completion year: Dec 2026 | Total # of closed gaps: 11

Family FDC date: Jan 2021 | Total # of open gaps: 13

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

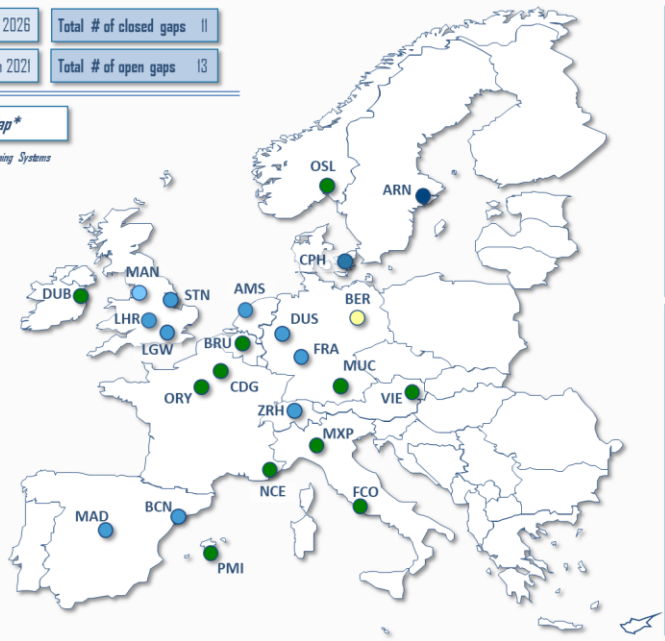


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	50%	50%	0%	Dec 2023		
Barcelona El Prat	35%	65%	0%	May 2021		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2023		
Brussels National	✓			✓		
Copenhagen Kastrup	55%	45%	0%	Dec 2021		
Dublin Airport	✓			✓		
Dusseldorf International	50%	50%	0%	Dec 2023		
Frankfurt International	50%	50%	0%	Dec 2023		
London Gatwick	50%	0%	50%	-		
London Heathrow	50%	0%	50%	-		
London Stansted	50%	50%	0%	Dec 2026		
Madrid Barajas	30%	70%	0%	Nov 2022		
Manchester Ringway	15%	85%	0%	May 2023		
Milan Malpensa	✓			✓		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	✓			✓		
Stockholm Arlanda	95%	5%	0%	Dec 2023		
Vienna Schwechat	✓			✓		
Zurich Kloten	40%	40%	20%	Dec 2023		

Focus on RNP APCH implementation

In order to gather additional details on the status of implementation of RNP APCH procedures across the 24 airports included in the PCP Geographical scope and to build a clearer picture of the progress of the associated implementation activities, for the 2020 Monitoring Exercise, SDM requested operational stakeholders to provide additional data and inputs.

Considering the objective of fully implementing RNP approach procedures in the PCP airports, it was deemed necessary to further deepen the granularity of the monitoring data, in order to keep track of the progress of the Family for each applicable Instrument Runway Ends (IREs).

Information on the status of implementation have been requested to operational stakeholders, integrated with input and data stemming from SDM-coordinated Implementation Projects and – when possible – cross-checked with the existing Aeronautical Information Publications. In this perspective, the following tables report on the status of implementation per each Runway of the 24 PCP Airports, as well as on the overall target date for the full implementation of the Family.

Amsterdam Schiphol — Dec 2023

	LNAV/VNAV procedures	LPV procedures
Runway 04	In Progress with CEF	In Progress with CEF
Runway 06	Already Implemented	Already Implemented
Runway 09	In Progress with CEF	In Progress with CEF
Runway 18C	Already Implemented	Already Implemented
Runway 18L	Not Applicable	Not Applicable
Runway 18R	In Progress with CEF	In Progress with CEF
Runway 22	Already Implemented	Already Implemented
Runway 24	In Progress with CEF	In Progress with CEF
Runway 27	In Progress with CEF	In Progress with CEF
Runway 36C	In Progress with CEF	In Progress with CEF
Runway 36L	Not Applicable	Not Applicable
Runway 36R	Already Implemented	Already Implemented

Barcelona El Prat — May 2021

	LNAV/VNAV procedures	LPV procedures
Runway 02	In Progress with CEF	In Progress with CEF
Runway 07L	In Progress with CEF	In Progress with CEF
Runway 07R	In Progress with CEF	In Progress with CEF
Runway 20	Not Applicable	Not Applicable
Runway 25L	In Progress with CEF	In Progress with CEF
Runway 25R	In Progress with CEF	In Progress with CEF

Berlin Brandenburg Airport — Dec 2023

No information at landing runway level is provided, as the airport operations has not started yet. Further details on the status of implementation will be provided in future releases of the Monitoring View.

Brussels National — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 01	Already Implemented	Already Implemented
Runway 07L	Already Implemented	Already Implemented
Runway 07R	Already Implemented	Already Implemented
Runway 19	Already Implemented	Already Implemented
Runway 25L	Already Implemented	Already Implemented
Runway 25R	Already Implemented	Already Implemented

Copenhagen Kastrup — Dec 2021

	LNAV/VNAV procedures	LPV procedures
Runway 04L	In Progress with CEF	In Progress with CEF
Runway 04R	In Progress with CEF	In Progress with CEF
Runway 12	In Progress with CEF	In Progress with CEF
Runway 22L	In Progress with CEF	In Progress with CEF
Runway 22R	In Progress with CEF	In Progress with CEF
Runway 30	In Progress with CEF	In Progress with CEF

Dublin Airport — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 10	Already Implemented	Already Implemented
Runway 16	Already Implemented	Already Implemented
Runway 28	Already Implemented	Already Implemented
Runway 34	Already Implemented	Already Implemented

Dusseldorf International — Dec 2023

	LNAV/VNAV procedures	LPV procedures
Runway 05L	Already Implemented	Planned
Runway 05R	Already Implemented	Planned
Runway 23L	Already Implemented	Planned
Runway 23R	Already Implemented	Planned

Frankfurt International — Dec 2023

	LNAV/VNAV procedures	LPV procedures
Runway 07C	Already Implemented	Planned
Runway 07L	Already Implemented	Planned
Runway 07R	Already Implemented	Planned
Runway 18	Not Applicable	Not Applicable
Runway 25C	Already Implemented	Planned
Runway 25L	Already Implemented	Planned
Runway 25R	Planned	Planned

London Gatwick — -

	LNAV/VNAV procedures	LPV procedures
Runway 08L	Already Implemented	Not Planned
Runway 08R	Already Implemented	Not Planned
Runway 26L	Already Implemented	Not Planned
Runway 26R	Already Implemented	Not Planned

London Heathrow — -

	LNAV/VNAV procedures	LPV procedures
Runway 09L	Already Implemented	Not Planned
Runway 09R	Already Implemented	Not Planned
Runway 27L	Already Implemented	Not Planned
Runway 27R	Already Implemented	Not Planned

London Stansted — Dec 2026

	LNAV/VNAV procedures	LPV procedures
Runway 04	Already Implemented	Planned
Runway 22	Already Implemented	Planned

Madrid Barajas — Nov 2022

	LNAV/VNAV procedures	LPV procedures
Runway 14L	Not Applicable	Not Applicable
Runway 14R	Not Applicable	Not Applicable
Runway 18L	In Progress with CEF	In Progress with CEF
Runway 18R	In Progress with CEF	In Progress with CEF
Runway 32L	In Progress with CEF	In Progress with CEF
Runway 32R	In Progress with CEF	In Progress with CEF
Runway 36L	Not Applicable	Not Applicable
Runway 36R	Not Applicable	Not Applicable

Manchester Ringway — May 2023

	LNAV/VNAV procedures	LPV procedures
Runway 05L	In Progress with CEF	In Progress with CEF
Runway 05R	In Progress with CEF	In Progress with CEF
Runway 23L	Already Implemented	In Progress with CEF
Runway 23R	In Progress with CEF	In Progress with CEF

Milan Malpensa — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 17L	Already Implemented	Already Implemented
Runway 17R	Already Implemented	Already Implemented
Runway 35L	Already Implemented	Already Implemented
Runway 35R	Already Implemented	Already Implemented

Munich Franz Josef Strauss — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 08L	Already Implemented	Already Implemented
Runway 08R	Already Implemented	Already Implemented
Runway 26L	Already Implemented	Already Implemented
Runway 26R	Already Implemented	Already Implemented

Nice Cote d'Azur — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 04L	Already Implemented	Already Implemented
Runway 04R	Already Implemented	Already Implemented
Runway 22L	Not Applicable	Not Applicable
Runway 22R	Not Applicable	Not Applicable

Oslo Gardermoen — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 01L	Already Implemented	Already Implemented
Runway 01R	Already Implemented	Already Implemented
Runway 19L	Already Implemented	Already Implemented
Runway 19R	Already Implemented	Already Implemented

Palma de Mallorca Son Sant Joan — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 06L	Already Implemented	Already Implemented
Runway 06R	Not Applicable	Not Applicable
Runway 24L	Already Implemented	Already Implemented
Runway 24R	Already Implemented	Already Implemented

Paris Charles De Gaulle — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 08L	Already Implemented	Already Implemented
Runway 08R	Already Implemented	Already Implemented
Runway 09L	Already Implemented	Already Implemented
Runway 09R	Already Implemented	Already Implemented
Runway 26L	Already Implemented	Already Implemented
Runway 26R	Already Implemented	Already Implemented
Runway 27L	Already Implemented	Already Implemented
Runway 27R	Already Implemented	Already Implemented

Paris Orly — Closed

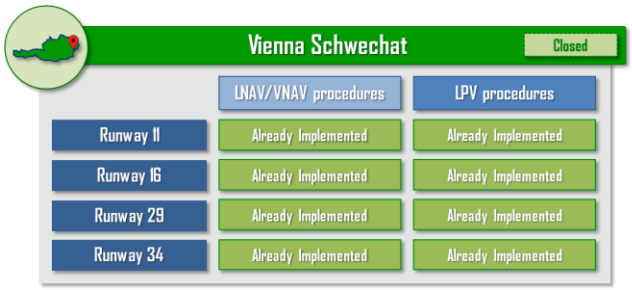
	LNAV/VNAV procedures	LPV procedures
Runway 02	Already Implemented	Already Implemented
Runway 06	Already Implemented	Already Implemented
Runway 08	Already Implemented	Already Implemented
Runway 20	Already Implemented	Already Implemented
Runway 24	Already Implemented	Already Implemented
Runway 26	Already Implemented	Already Implemented

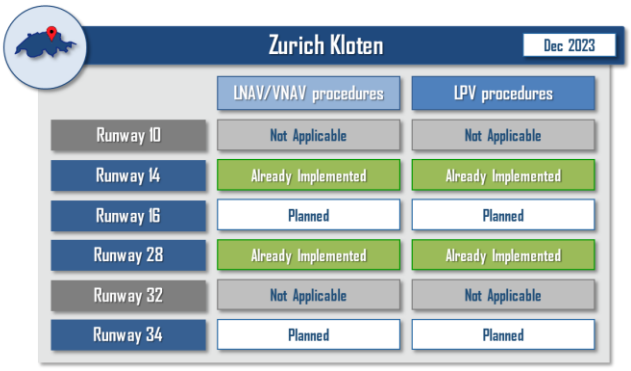
Rome Fiumicino — Closed

	LNAV/VNAV procedures	LPV procedures
Runway 07	Already Implemented	Already Implemented
Runway 16L	Already Implemented	Already Implemented
Runway 16R	Already Implemented	Already Implemented
Runway 25	Already Implemented	Already Implemented
Runway 34C	Already Implemented	Already Implemented
Runway 34L	Already Implemented	Already Implemented
Runway 34R	Already Implemented	Already Implemented

Stockholm Arlanda — Dec 2023

	LNAV/VNAV procedures	LPV procedures
Runway 01L	Already Implemented	In Progress with CEF
Runway 01R	Already Implemented	In Progress with CEF
Runway 08	Already Implemented	In Progress with CEF
Runway 19L	Already Implemented	In Progress with CEF
Runway 19R	Already Implemented	In Progress with CEF
Runway 26	Already Implemented	In Progress with CEF


Vienna Schwechat
Closed
LNAV/VNAV procedures
LPV procedures
Runway 11
Already Implemented
Already Implemented
Runway 16
Already Implemented
Already Implemented
Runway 29
Already Implemented
Already Implemented
Runway 34
Already Implemented
Already Implemented


Zurich Kloten
Dec 2023
LNAV/VNAV procedures
LPV procedures
Runway 10
Not Applicable
Not Applicable
Runway 14
Already Implemented
Already Implemented
Runway 16
Planned
Planned
Runway 28
Already Implemented
Already Implemented
Runway 32
Not Applicable
Not Applicable
Runway 34
Planned
Planned

H

I.2.2 Geographic Database for Procedure design

Expected completion year: Dec 2022 | Total # of closed gaps: 20

Family FOC date: Jan 2019 | Total # of open gaps: 4

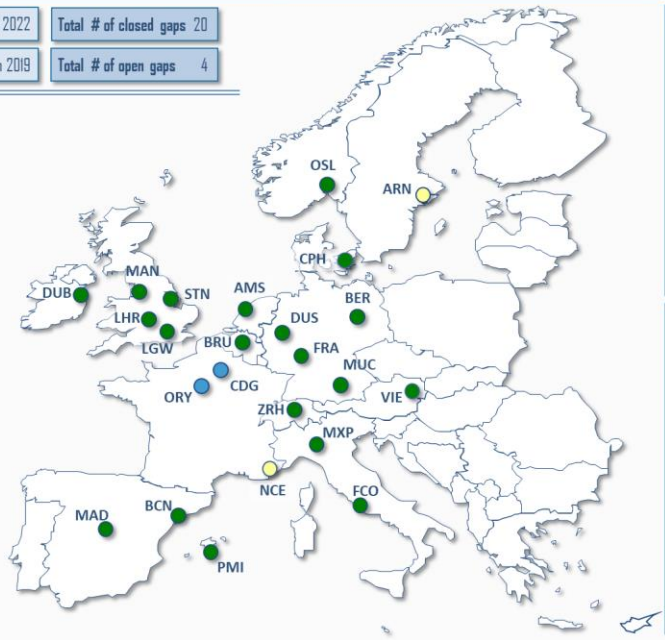


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	✓			✓		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	✓			✓		
Brussels National	✓			✓		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Dusseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	✓			✓		
Madrid Barajas	✓			✓		
Manchester Ringway	✓			✓		
Milan Malpensa	✓			✓		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	0%	0%	100%	-		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	50%	50%	0%	Dec 2022		
Paris Orly	50%	50%	0%	Dec 2022		
Rome Fiumicino	✓			✓		
Stockholm Arlanda	0%	100%	0%	Dec 2022		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

H

I.2.3 RNP 1 Operations in high density TMAs (ground capabilities)

Expected completion year: Dec 2026 | Total # of closed gaps: 1

Family FOC date: Jan 2024 | Total # of open gaps: 23

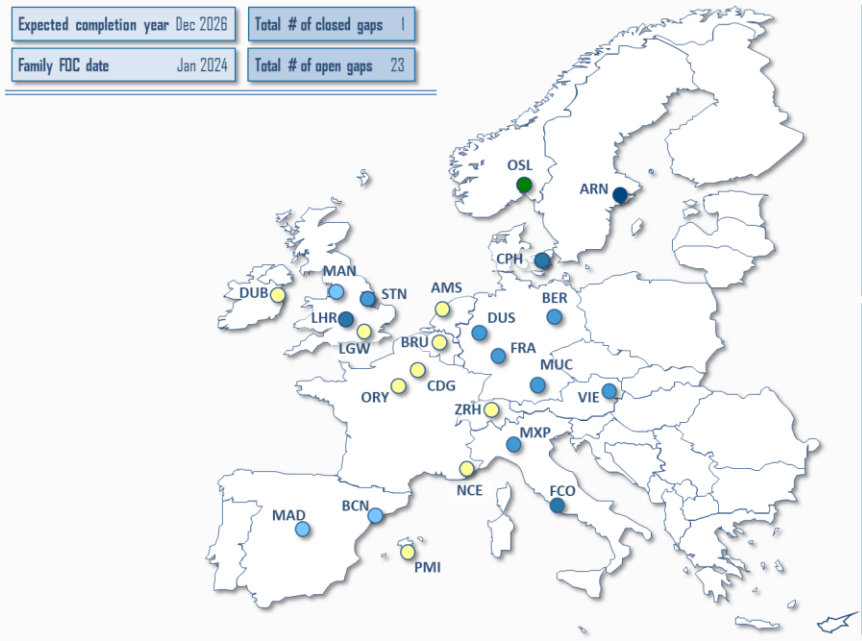


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	0%	100%	0%	Dec 2023		
Barcelona El Prat	15%	85%	0%	Dec 2022		
Berlin Brandenburg Airport	35%	65%	0%	Dec 2023		
Brussels National	0%	55%	45%	Dec 2023		
Copenhagen Kastrup	55%	45%	0%	Dec 2021		
Dublin Airport	0%	100%	0%	Dec 2023		
Dusseldorf International	35%	65%	0%	Dec 2023		
Frankfurt International	35%	65%	0%	Dec 2023		
London Gatwick	0%	80%	20%	Dec 2023		
London Heathrow	55%	35%	10%	Dec 2026		
London Stansted	30%	70%	0%	Dec 2026		
Madrid Barajas	15%	85%	0%	Dec 2022		
Manchester Ringway	15%	85%	0%	Dec 2023		
Milan Malpensa	50%	50%	0%	Dec 2023		
Munich Franz Josef Strauss	35%	65%	0%	Dec 2023		
Nice Cote D'Azur	0%	0%	100%	-		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	0%	80%	20%	-		
Paris Orly	0%	0%	100%	-		
Rome Fiumicino	60%	40%	0%	Dec 2023		
Stockholm Arlanda	90%	10%	0%	Jan 2024		
Vienna Schwechat	45%	55%	0%	Dec 2023		
Zurich Kloten	0%	100%	0%	Dec 2024		

Focus on RNP1 procedures implementation

The deployment of RNP1 SIDs and STARs at the 24 airports and TMAs included in the PCP scope is well underway. For most of the airports and TMAs, STARs are planned to be deployed earlier than SIDs. However, some airports and TMAs still have not started the deployment or presented plans for deployment.

In Oslo Gardermoen the gap is fully covered with 24 SIDs and 12 STARs already implemented. Out of 24 gaps, it should be noted how in 14 cases either airports or ANSPs are proceeding in the deployment of the family benefitting from CEF-funded initiatives.

One airport plans to implement RNP1 at the end of 2026. Three airports have not declared any end date, whilst two have no firm plans for RNP1. The rest have plans that are in line with the PCP requirement for full implementation 1st January 2024.

In two cases, local stakeholders have started deploying RNAV1 procedures rather than RNP1, as explicitly required by the PCP Regulation. The SESAR Deployment Manager view is that RNAV1 implementation initiatives are acceptable as an intermediate step and as a way of building experience and confidence in PBN operations, but that alone does not constitute a sufficient condition to close the gap. In order to be fully compliant with the PCP and with the SESAR Deployment Programme, an RNP1 route structure is required.

M

I.2.5 RNP routes connecting Free Route Airspace (FRA) with TMA

Expected completion year Dec 2023

Family FOC date Jan 2024

Network Manager

40%	60%	0%	Dec 2023

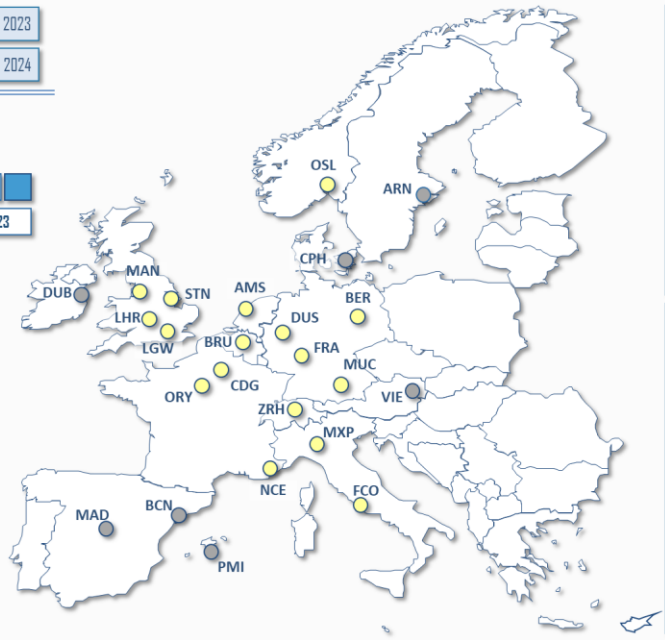


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: Network Manager
Amsterdam Schiphol	0%	20%	80%	-		
Barcelona El Prat						
Berlin Brandenburg Airport	0%	20%	80%	-		
Brussels National	0%	0%	100%	-		
Copenhagen Kastrup						
Dublin Airport						
Dusseldorf International	0%	20%	80%	-		
Frankfurt International	0%	20%	80%	-		
London Gatwick	0%	100%	0%	-		
London Heathrow	0%	100%	0%	-		
London Stansted	0%	100%	0%	-		
Madrid Barajas						
Manchester Ringway	0%	100%	0%	-		
Milan Malpensa	0%	100%	0%	Mar 2023		
Munich Franz Josef Strauss	0%	20%	80%	-		
Nice Cote D'Azur	0%	0%	100%	-		
Oslo Gardermoen	0%	100%	0%	Dec 2023		
Palma de Mallorca Son Sant Joan						
Paris Charles De Gaulle	0%	0%	100%	-		
Paris Orly	0%	0%	100%	-		
Rome Fiumicino	0%	100%	0%	Mar 2023		
Stockholm Arlanda						
Vienna Schwechat						
Zurich Kloten	0%	100%	0%	-		

H

2.1.1 Initial DMAN

Expected completion year: Dec 2023 | Total # of closed gaps: 18

Family FOC date: Jan 2021 | Total # of open gaps: 6

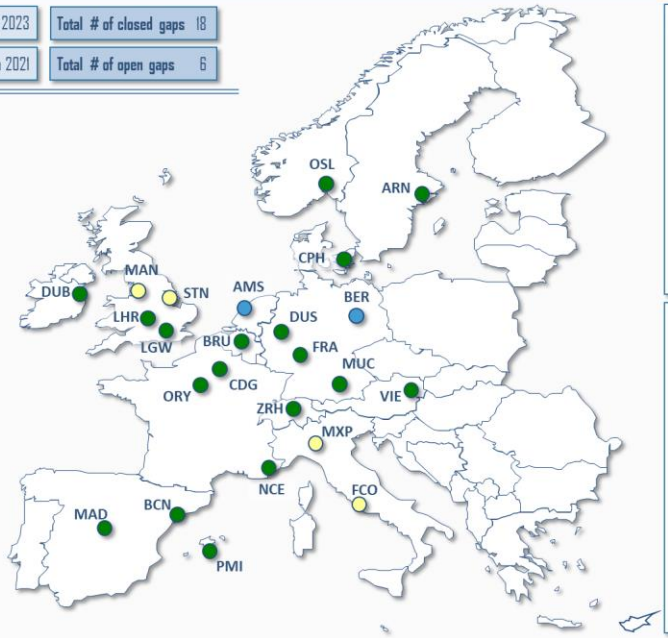


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	40%	60%	0%	Dec 2021		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	40%	60%	0%	Dec 2020		
Brussels National	✓			✓		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Dusseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	0%	100%	0%	Dec 2021		
Madrid Barajas	✓			✓		
Manchester Ringway	0%	100%	0%	Dec 2021		
Milan Malpensa	0%	100%	0%	Dec 2023		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fumicino	0%	100%	0%	Dec 2023		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

H

2.1.2 Digital systems such as Electronic Flight Strips (EFS) or stripless systems

Expected completion year Dec 2022	Total # of closed gaps 21
Family FDC date Jan 2021	Total # of open gaps 3

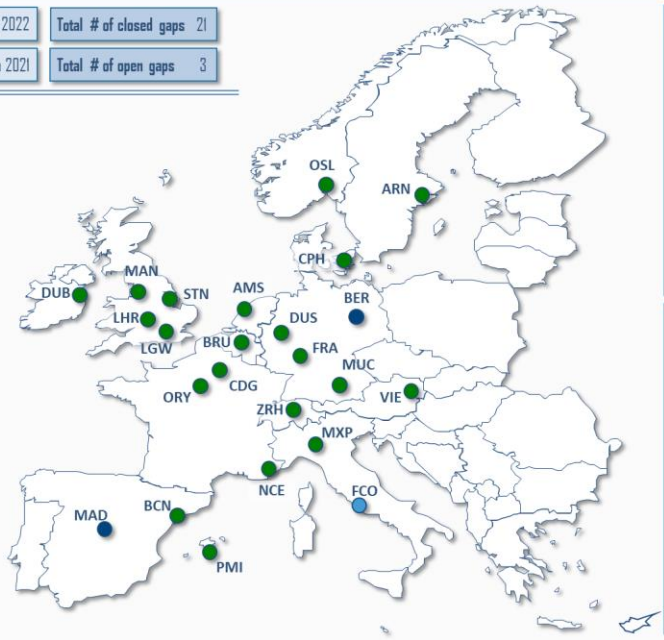


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	✓			✓		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	95%	5%	0%	Dec 2020		
Brussels National	✓			✓		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Dusseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	✓			✓		
Madrid Barajas	90%	10%	0%	Feb 2021		
Manchester Ringway	✓			✓		
Milan Malpensa	✓			✓		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fumicino	35%	65%	0%	Dec 2022		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

H

2.1.3 Basic A-CDM

Expected completion year: Dec 2021
Family FOC date: Jan 2021
Total # of closed gaps: 20
Total # of open gaps: 4

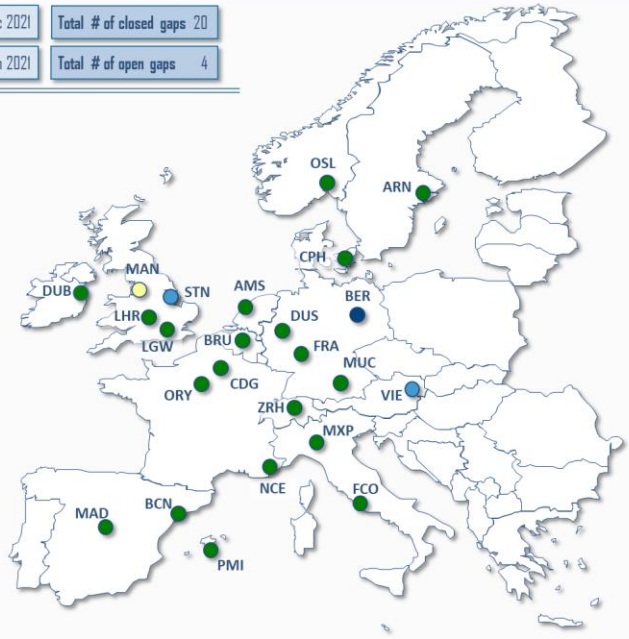


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Airport Operators	Network Manager
Amsterdam Schiphol	✓			✓			
Barcelona El Prat	✓			✓			
Berlin Brandenburg Airport	95%	5%	0%	Dec 2020			
Brussels National	✓			✓			
Copenhagen Kastrup	✓			✓			
Dublin Airport	✓			✓			
Dusseldorf International	✓			✓			
Frankfurt International	✓			✓			
London Gatwick	✓			✓			
London Heathrow	✓			✓			
London Stansted	30%	70%	0%	Dec 2021			
Madrid Barajas	✓			✓			
Manchester Ringway	0%	100%	0%	Jun 2021			
Milan Malpensa	✓			✓			
Munich Franz Josef Strauss	✓			✓			
Nice Cote D'Azur	✓			✓			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son Sant Joan	✓			✓			
Paris Charles De Gaulle	✓			✓			
Paris Orly	✓			✓			
Rome Fiumicino	✓			✓			
Stockholm Arlanda	✓			✓			
Vienna Schwechat	40%	60%	0%	Jun 2021			
Zurich Kloten	✓			✓			

H

2.1.4 Initial Airport Operations Plan (AOP)

Expected completion year Dec 2024	Total # of closed gaps 2
Family FOC date Jan 2021	Total # of open gaps 22

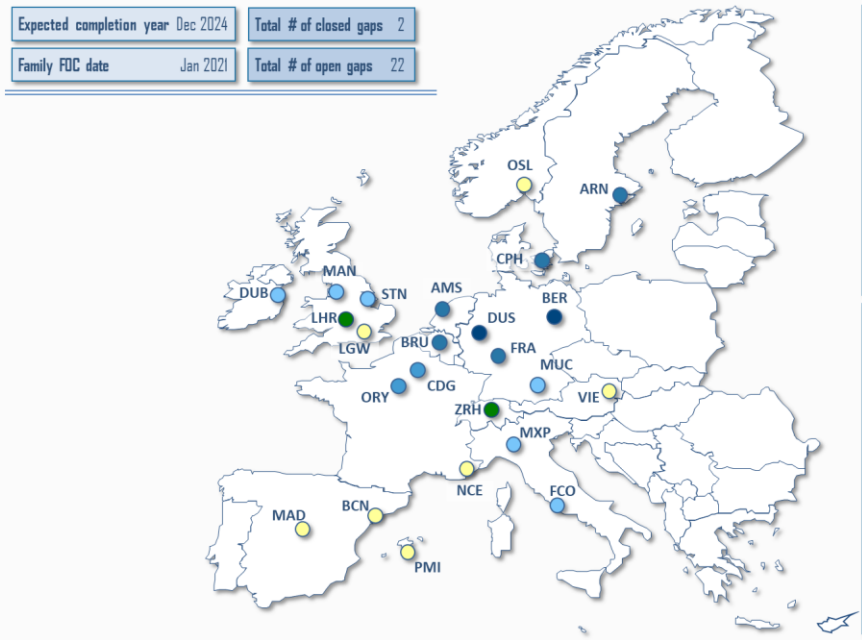


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	*Airport Operators*	*MET Providers*
Amsterdam Schiphol	70%	30%	0%	Dec 2020			
Barcelona El Prat	0%	100%	0%	Dec 2021			
Berlin Brandenburg Airport	85%	15%	0%	-			
Brussels National	70%	30%	0%	Dec 2022			
Copenhagen Kastrup	55%	45%	0%	Dec 2022			
Dublin Airport	10%	90%	0%	Dec 2020			
Dusseldorf International	80%	20%	0%	Dec 2020			
Frankfurt International	55%	45%	0%	Dec 2021			
London Gatwick	0%	100%	0%	Dec 2020			
London Heathrow	✓			✓			
London Stansted	10%	90%	0%	Dec 2023			
Madrid Barajas	0%	100%	0%	Dec 2021			
Manchester Ringway	10%	90%	0%	Dec 2021			
Milan Malpensa	25%	75%	0%	Dec 2024			
Munich Franz Josef Strauss	20%	80%	0%	Dec 2022			
Nice Cote D'Azur	0%	100%	0%	Dec 2020			
Oslo Gardermoen	0%	100%	0%	Dec 2021			
Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2021			
Paris Charles De Gaulle	45%	55%	0%	Jun 2022			
Paris Orly	45%	55%	0%	Jun 2022			
Rome Fiumicino	25%	75%	0%	Dec 2024			
Stockholm Arlanda	75%	25%	0%	Dec 2022			
Vienna Schwechat	0%	100%	0%	Dec 2023			
Zurich Kloten	✓			✓			

H

2.2.1 A-SMGCS Level 1 and 2

Expected completion year: Dec 2023	Total # of closed gaps: 11
Family FOC date: Jan 2021	Total # of open gaps: 13

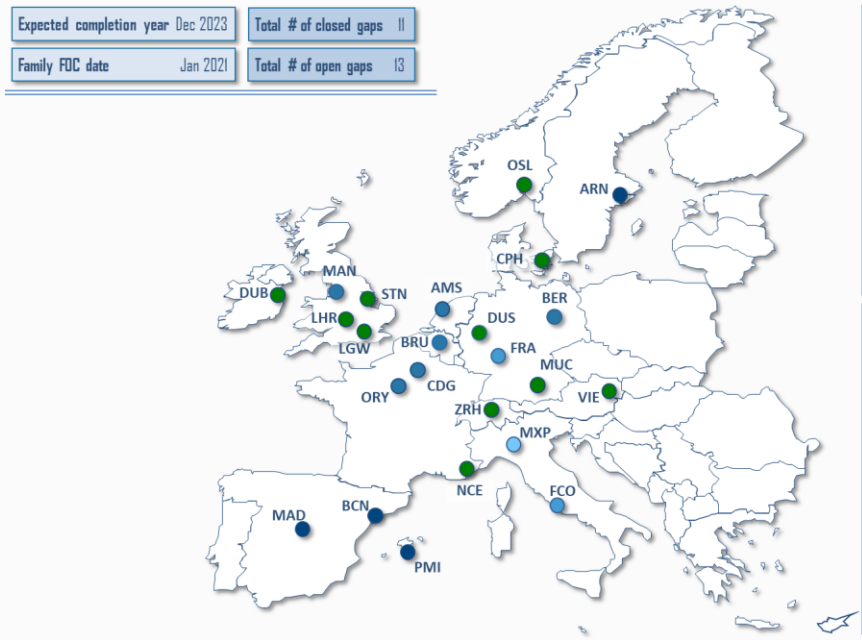


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

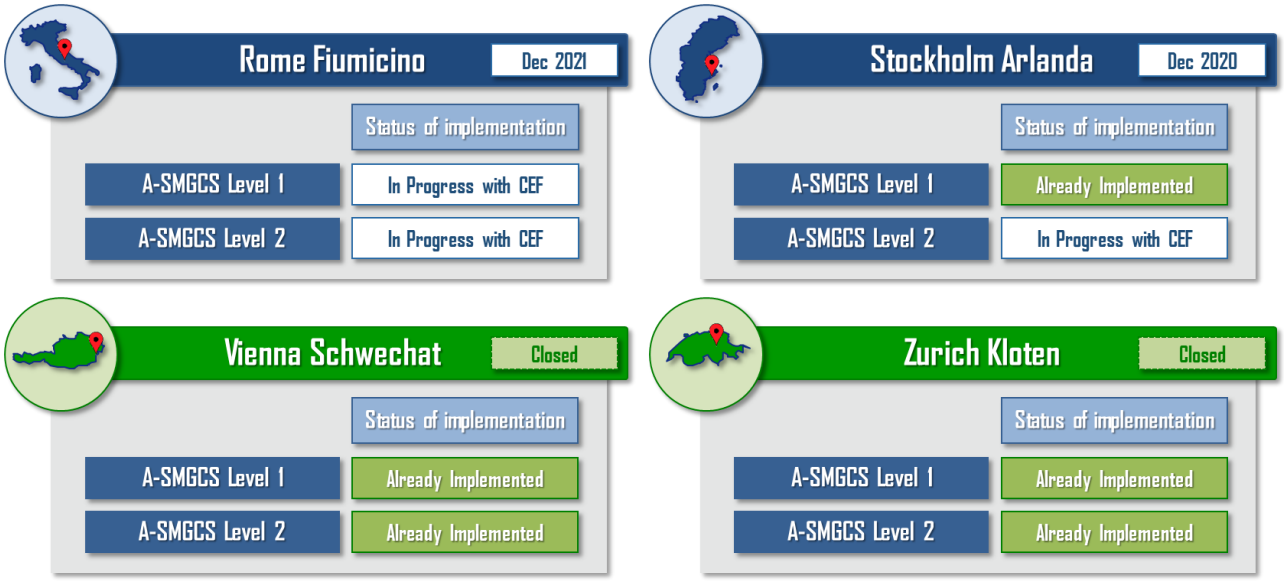
Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	55%	45%	0%	Dec 2021		
Barcelona El Prat	90%	10%	0%	Dec 2021		
Berlin Brandenburg Airport	70%	30%	0%	Dec 2021		
Brussels National	60%	40%	0%	Dec 2022		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Dusseldorf International	✓			✓		
Frankfurt International	50%	50%	0%	Dec 2021		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	✓			✓		
Madrid Barajas	90%	10%	0%	Dec 2021		
Manchester Ringway	60%	40%	0%	Dec 2020		
Milan Malpensa	20%	80%	0%	Dec 2023		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	90%	10%	0%	Dec 2021		
Paris Charles De Gaulle	70%	30%	0%	Jul 2021		
Paris Orly	75%	25%	0%	Jul 2021		
Rome Fiumicino	30%	70%	0%	Dec 2022		
Stockholm Arlanda	90%	10%	0%	Dec 2020		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

Focus on Advanced Surface Movement Guidance and Control System (A-SMGCS) Level 1 and Level 2

In order to gather additional details on the status of implementation of A-SMGCS within the 24 PCP airports and to build a clearer picture of the progress of the associated implementation activities, SDM requested Airport Operators and ANSPs to provide additional data and inputs for Family 2.2.1 during the 2020 Monitoring Exercise.

Considering the objective of ensuring the availability of both Level 1 and Level 2 in the PCP airports, it was deemed necessary to further deepen the granularity of the monitoring data: in particular, the following charts provides more detailed information about the status of implementation for each airport, clearly addressing whether A-SMGCS Level 1 and Level 2 are currently available in day-by-day ground operations.


London Gatwick
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
London Heathrow
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
London Stansted
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
Madrid Barajas
Dec 2021
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
In Progress with CEF
Manchester Ringway
Dec 2020
Status of implementation
A-SMGCS Level 1
In Progress with CEF
A-SMGCS Level 2
In Progress with CEF
Milan Malpensa
Dec 2023
Status of implementation
A-SMGCS Level 1
In Progress with CEF
A-SMGCS Level 2
In Progress with CEF
Munich Franz Josef Strauss
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
Nice Cote d'Azur
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
Oslo Gardermoen
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
Palma de Mallorca Son Sant Joan
Dec 2021
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
In Progress with CEF
Paris Charles De Gaulle
Jul 2021
Status of implementation
A-SMGCS Level 1
In Progress with CEF
A-SMGCS Level 2
In Progress with CEF
Paris Orly
Jul 2021
Status of implementation
A-SMGCS Level 1
In Progress with CEF
A-SMGCS Level 2
In Progress with CEF


Rome Fiumicino
Dec 2021
Status of implementation
A-SMGCS Level 1
In Progress with CEF
A-SMGCS Level 2
In Progress with CEF
Stockholm Arlanda
Dec 2020
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
In Progress with CEF
Vienna Schwechat
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented
Zurich Kloten
Closed
Status of implementation
A-SMGCS Level 1
Already Implemented
A-SMGCS Level 2
Already Implemented

H

2.3.1 Time Based Separation (TBS)

Expected completion year Dec 2024	Total # of closed gaps 1
Family FOC date Jan 2024	Total # of open gaps 15

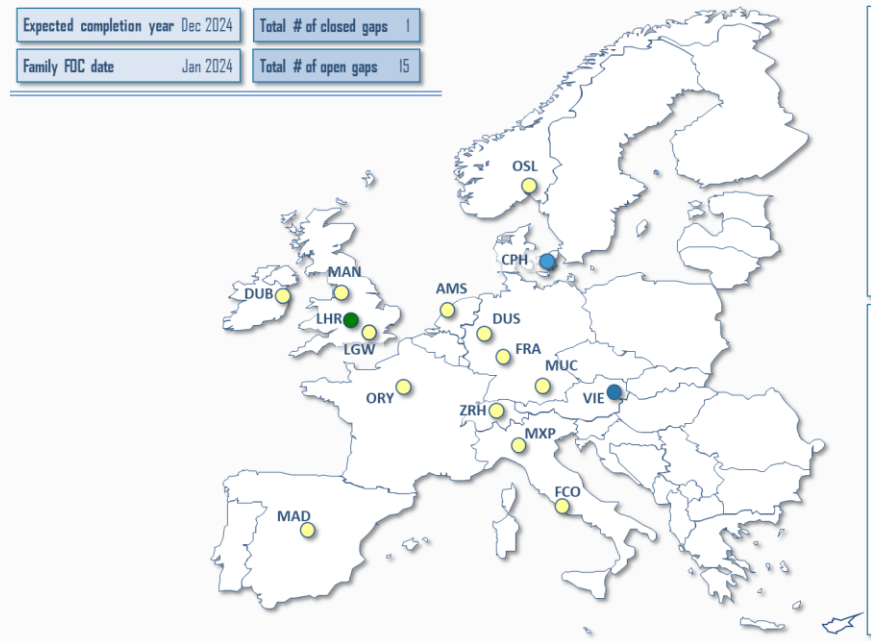


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved
					ANSPs	*Airport Operators*
Amsterdam Schiphol	0%	100%	0%	Jul 2021		
Copenhagen Kastrup	25%	75%	0%	May 2022		
Dublin Airport	0%	100%	0%	Dec 2023		
Dusseldorf International	0%	0%	100%	-		
Frankfurt International	0%	100%	0%	Jan 2024		
London Gatwick	0%	100%	0%	Dec 2023		
London Heathrow	✓			✓		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	0%	0%	100%	-		
Milan Malpensa	0%	100%	0%	-		
Munich Franz Josef Strauss	0%	0%	100%	-		
Oslo Gardermoen	0%	0%	100%	-		
Paris Orly	0%	0%	100%	-		
Rome Fiumicino	0%	100%	0%	-		
Vienna Schwechat	60%	40%	0%	Dec 2024		
Zurich Kloten	0%	100%	0%	Mar 2023		

H

2.4.1 A-SMGCS Routing and Planning Functions

Expected completion year Dec 2025	Total # of closed gaps 0
Family FOC date Jan 2024	Total # of open gaps 24

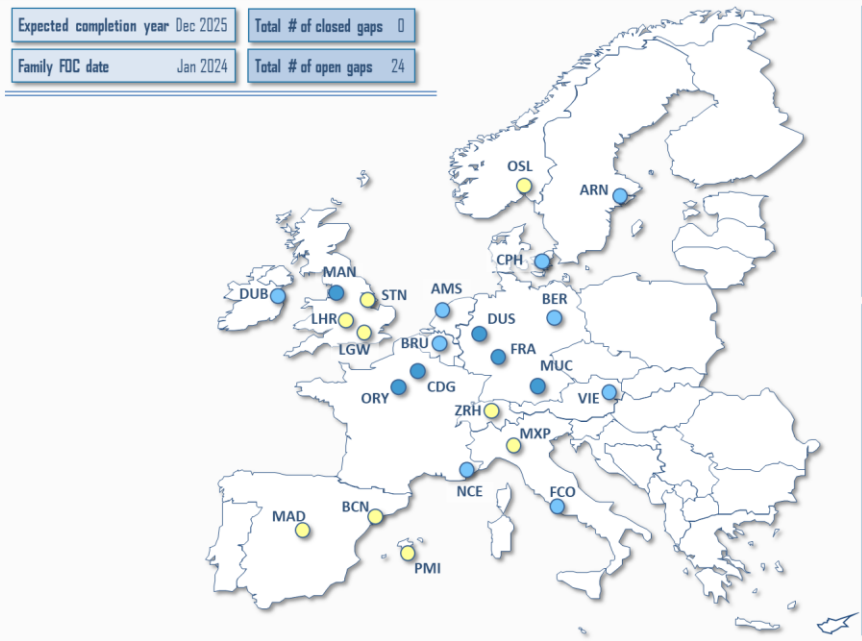


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: Airport Operators
Amsterdam Schiphol	20%	80%	0%	Dec 2025		
Barcelona El Prat	0%	100%	0%	Dec 2023		
Berlin Brandenburg Airport	15%	35%	50%	Dec 2023		
Brussels National	20%	30%	50%	Dec 2025		
Copenhagen Kastrup	20%	80%	0%	Dec 2024		
Dublin Airport	10%	90%	0%	Dec 2023		
Dusseldorf International	30%	70%	0%	Dec 2023		
Frankfurt International	40%	60%	0%	Dec 2023		
London Gatwick	0%	100%	0%	Dec 2023		
London Heathrow	0%	100%	0%	Dec 2023		
London Stansted	0%	0%	100%	-		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	30%	70%	0%	Dec 2023		
Milan Malpensa	0%	0%	100%	-		
Munich Franz Josef Strauss	35%	65%	0%	Dec 2023		
Nice Cote D'Azur	20%	80%	0%	Dec 2023		
Oslo Gardermoen	0%	100%	0%	Dec 2020		
Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	35%	65%	0%	Dec 2022		
Paris Orly	35%	65%	0%	Dec 2022		
Rome Fiumicino	15%	35%	50%	Dec 2023		
Stockholm Arlanda	25%	75%	0%	Dec 2023		
Vienna Schwechat	10%	40%	50%	Jan 2024		
Zurich Kloten	0%	100%	0%	Dec 2025		

H

2.5.1 Airport Safety Nets associated with A-SMGCS (Level 2)

Expected completion year Dec 2025 | Total # of closed gaps 2

Family FOC date Jan 2021 | Total # of open gaps 22

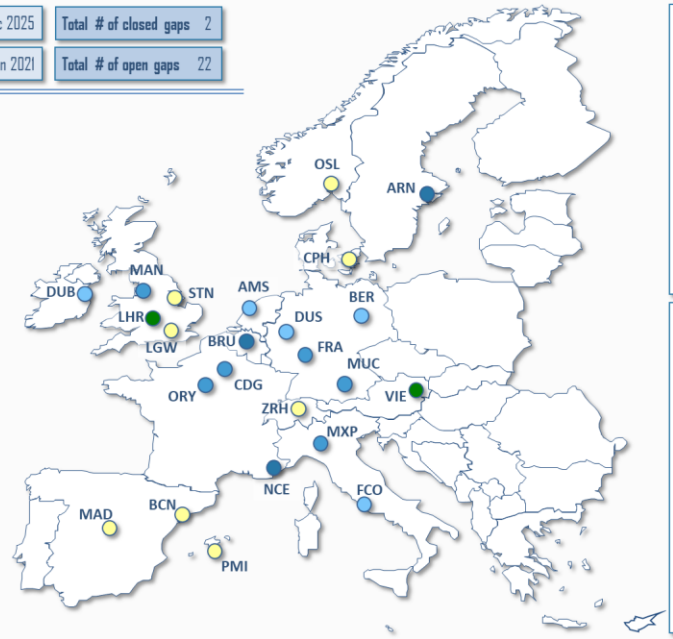


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	20%	80%	0%	Dec 2023		
Barcelona El Prat	0%	100%	0%	Dec 2023		
Berlin Brandenburg Airport	20%	80%	0%	Dec 2023		
Brussels National	60%	40%	0%	Dec 2025		
Copenhagen Kastrup	0%	100%	0%	Dec 2024		
Dublin Airport	5%	95%	0%	Dec 2020		
Dusseldorf International	10%	90%	0%	Dec 2023		
Frankfurt International	40%	60%	0%	Dec 2023		
London Gatwick	0%	100%	0%	Dec 2020		
London Heathrow	✓			✓		
London Stansted	0%	0%	100%	-		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	30%	70%	0%	Dec 2020		
Milan Malpensa	30%	70%	0%	Dec 2022		
Munich Franz Josef Strauss	35%	65%	0%	Dec 2022		
Nice Cote D'Azur	75%	25%	0%	Dec 2020		
Oslo Gardermoen	0%	100%	0%	Dec 2024		
Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	30%	70%	0%	Dec 2022		
Paris Orly	30%	70%	0%	Dec 2022		
Rome Fiumicino	5%	95%	0%	Dec 2022		
Stockholm Arlanda	75%	25%	0%	Dec 2022		
Vienna Schwechat	✓			✓		
Zurich Kloten	0%	50%	50%	Dec 2025		

H

2.5.2 Vehicle systems contributing to Airport Safety Nets (Part A)

Expected completion year Dec 2023	Total # of closed gaps 6
Family FDC date Jan 2021	Total # of open gaps 18

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

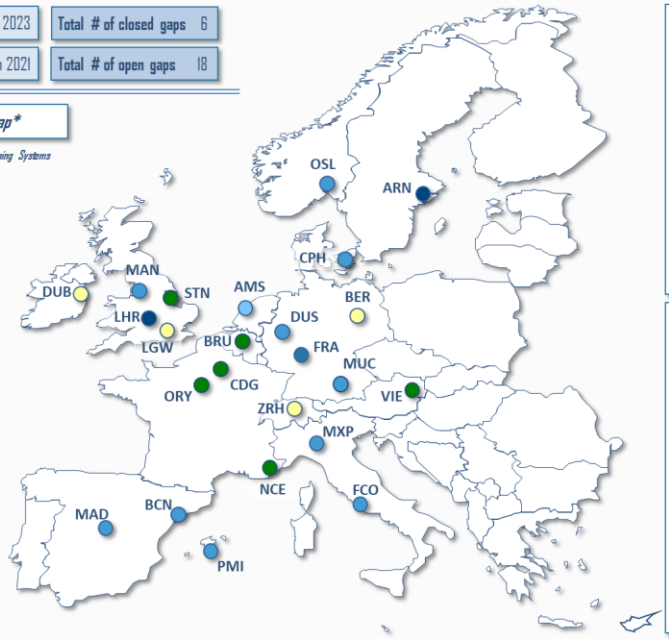


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators
Amsterdam Schiphol	20%	80%	0%	Dec 2023		
Barcelona El Prat	50%	50%	0%	Dec 2020		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2021		
Brussels National	✓			✓		
Copenhagen Kastrup	30%	70%	0%	Dec 2020		
Dublin Airport	0%	100%	0%	Dec 2020		
Dusseldorf International	50%	50%	0%	Dec 2020		
Frankfurt International	75%	25%	0%	Dec 2020		
London Gatwick	0%	0%	100%	-		
London Heathrow	95%	5%	0%	Dec 2021		
London Stansted	✓			✓		
Madrid Barajas	50%	50%	0%	Dec 2020		
Manchester Ringway	30%	70%	0%	Dec 2020		
Milan Malpensa	40%	60%	0%	Dec 2022		
Munich Franz Josef Strauss	50%	50%	0%	-		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	45%	55%	0%	Dec 2023		
Palma de Mallorca Son Sant Joan	50%	50%	0%	Dec 2020		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	40%	60%	0%	Dec 2022		
Stockholm Arlanda	80%	20%	0%	Dec 2022		
Vienna Schwechat	✓			✓		
Zurich Kloten	0%	0%	100%	-		

AF3 – Flexible ASM and Free Route

3.1.1 ASM Tool to support AFUA

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 26
Total # of open gaps: 3

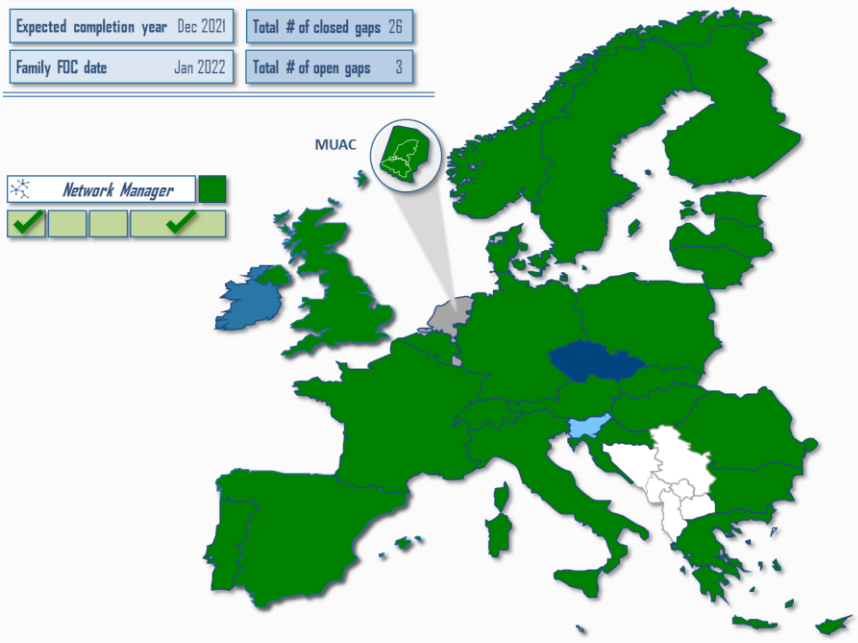


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	✓			✓			
Belgium	✓			✓			
Bulgaria	✓			✓			
Croatia	✓			✓			
Cyprus	✓			✓			
Czech Republic	80%	20%	0%	Dec 2021			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	✓			✓			
France	✓			✓			
Germany	✓			✓			
Greece	✓			✓			
Hungary	✓			✓			
Ireland	65%	35%	0%	Dec 2021			
Italy	✓			✓			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg							
Malta							
MUAC	✓			✓			
Netherlands							
Norway	✓			✓			
Poland	✓			✓			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	✓			✓			
Slovenia	20%	80%	0%	Dec 2021			
Spain	✓			✓			
Sweden	✓			✓			
Switzerland	✓			✓			
United Kingdom	✓			✓			

H

3.1.2 ASM Management of real time airspace data

Expected completion year Dec 2025	Total # of closed gaps 1
Family FOC date Jan 2022	Total # of open gaps 29

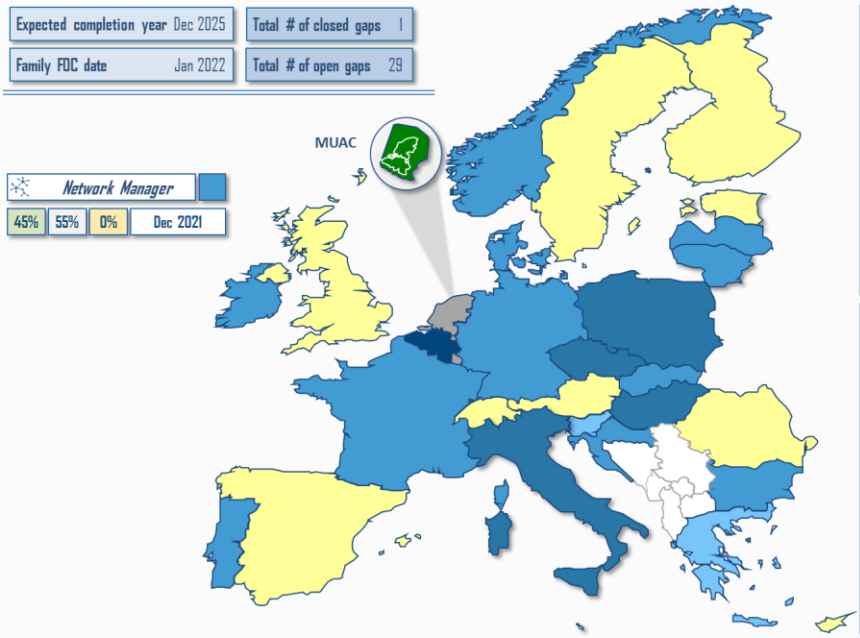


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	0%	100%	0%	Dec 2021			
Belgium	95%	5%	0%	Dec 2021			
Bulgaria	30%	70%	0%	Dec 2021			
Croatia	30%	70%	0%	Dec 2022			
Cyprus	0%	100%	0%	Dec 2021			
Czech Republic	75%	25%	0%	Dec 2021			
Denmark	30%	0%	70%	-			
Estonia	0%	100%	0%	Dec 2021			
Finland	0%	100%	0%	Dec 2020			
France	30%	70%	0%	Dec 2021			
Germany	30%	70%	0%	Dec 2023			
Greece	5%	95%	0%	Dec 2021			
Hungary	60%	40%	0%	Oct 2021			
Ireland	30%	70%	0%	Dec 2021			
Italy	55%	45%	0%	Dec 2021			
Latvia	30%	70%	0%	Dec 2021			
Lithuania	30%	70%	0%	Dec 2021			
Luxembourg							
Malta	0%	0%	100%	-			
MUAC	✓			✓			
Netherlands							
Norway	30%	70%	0%	Apr 2024			
Poland	75%	25%	0%	Dec 2021			
Portugal	45%	10%	45%	Dec 2021			
Romania	0%	100%	0%	Dec 2021			
Slovak Republic	30%	70%	0%	Dec 2021			
Slovenia	20%	80%	0%	Dec 2021			
Spain	0%	100%	0%	Dec 2022			
Sweden	0%	50%	50%	Dec 2025			
Switzerland	0%	10%	90%	-			
United Kingdom	0%	100%	0%	-			

H

3.1.3 Full rolling ASM/ATFCM process and ASM information sharing

Expected completion year Dec 2022 | Total # of closed gaps 23

Family FOC date Jan 2022 | Total # of open gaps 7

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

40% | 60% | 0% | Dec 2021

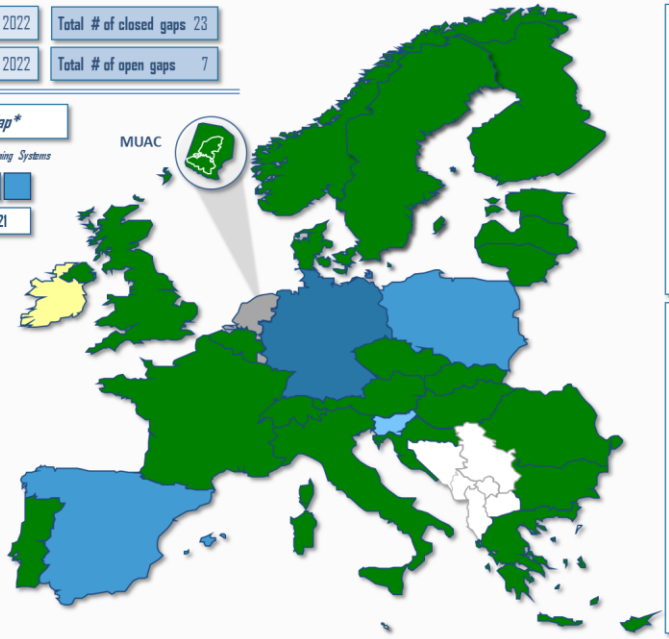


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	✓			✓			
Belgium	✓			✓			
Bulgaria	✓			✓			
Croatia	✓			✓			
Cyprus	✓			✓			
Czech Republic	✓			✓			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	✓			✓			
France	✓			✓			
Germany	70%	30%	0%	Dec 2021			
Greece	✓			✓			
Hungary	✓			✓			
Ireland	0%	100%	0%	Dec 2021			
Italy	✓			✓			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg							
Malta	0%	0%	100%	-			
MUAC	✓			✓			
Netherlands							
Norway	✓			✓			
Poland	35%	65%	0%	Dec 2022			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	✓			✓			
Slovenia	5%	95%	0%	Dec 2021			
Spain	35%	65%	0%	Dec 2022			
Sweden	✓			✓			
Switzerland	✓			✓			
United Kingdom	✓			✓			

3.1.4 Management of Dynamic Airspace Configurations

Expected completion year: Apr 2024	Total # of closed gaps: 5
Family FOC date: Jan 2022	Total # of open gaps: 25

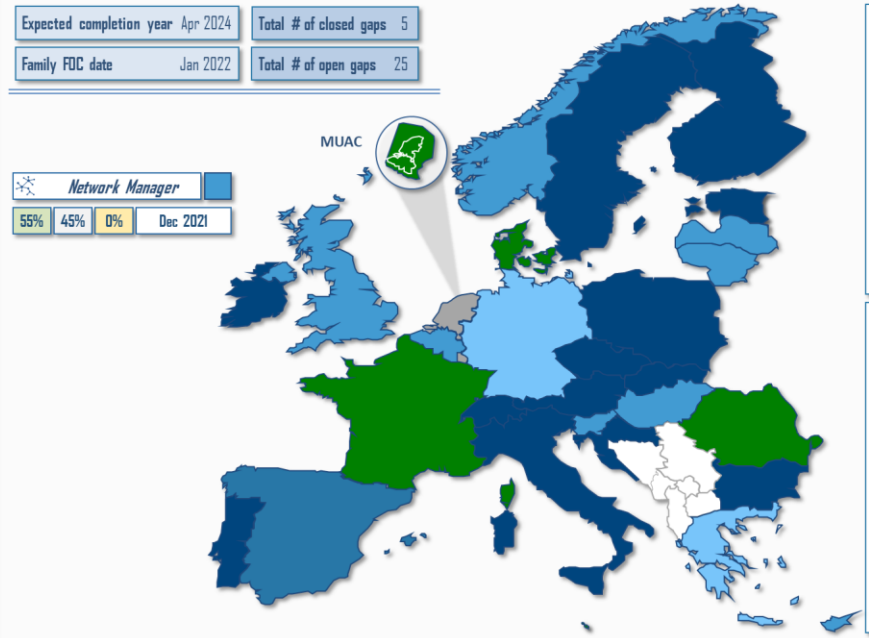


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	90%	10%	0%	Dec 2023		
Belgium	45%	10%	45%	Dec 2021		
Bulgaria	95%	5%	0%	Dec 2021		
Croatia	95%	5%	0%	Dec 2021		
Cyprus	45%	55%	0%	Dec 2021		
Czech Republic	80%	20%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	90%	10%	0%	Dec 2021		
Finland	85%	15%	0%	Dec 2021		
France	✓			✓		
Germany	25%	75%	0%	Dec 2021		
Greece	25%	75%	0%	Dec 2021		
Hungary	35%	65%	0%	Oct 2021		
Ireland	95%	5%	0%	Dec 2021		
Italy	90%	10%	0%	Dec 2022		
Latvia	50%	5%	45%	Dec 2020		
Lithuania	45%	55%	0%	Dec 2021		
Luxembourg*						
Malta	✓			✓		
MUAC	✓			✓		
Netherlands						
Norway	45%	55%	0%	Apr 2024		
Poland	90%	10%	0%	Dec 2021		
Portugal	90%	10%	0%	Dec 2020		
Romania	✓			✓		
Slovak Republic	90%	10%	0%	Dec 2021		
Slovenia	50%	50%	0%	Dec 2021		
Spain	60%	40%	0%	Dec 2022		
Sweden	90%	10%	0%	Dec 2023		
Switzerland	80%	20%	0%	Dec 2021		
United Kingdom	45%	55%	0%	-		

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

Expected completion year	Dec 2025
Family FOC date	Jan 2022
Total # of closed gaps	2
Total # of open gaps	28

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

70%	30%	0%	Dec 2021

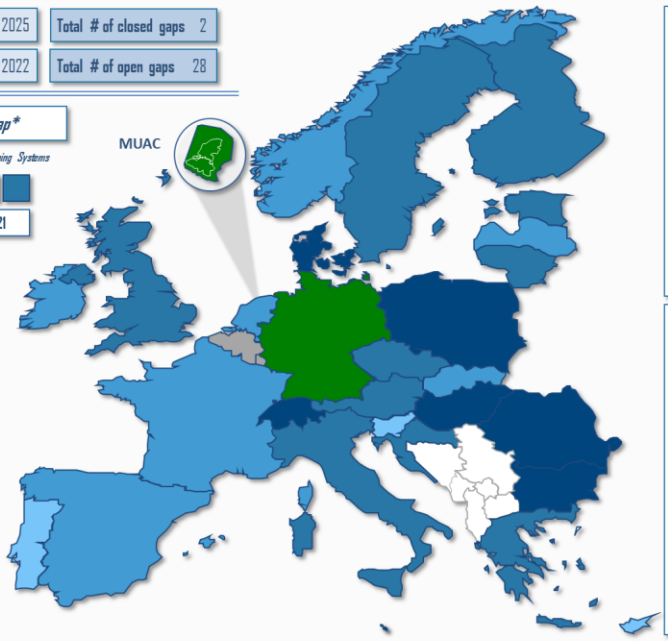


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	70%	30%	0%	Dec 2021			
Belgium							
Bulgaria	80%	20%	0%	Apr 2021			
Croatia	70%	15%	15%	Dec 2022			
Cyprus	15%	85%	0%	Dec 2021			
Czech Republic	55%	45%	0%	Dec 2021			
Denmark	80%	20%	0%	Dec 2025			
Estonia	70%	0%	30%	Dec 2021			
Finland	75%	5%	20%	Dec 2021			
France	35%	30%	35%	Dec 2023			
Germany	✓			✓			
Greece	55%	45%	0%	Dec 2021			
Hungary	85%	15%	0%	Dec 2021			
Ireland	45%	55%	0%	Dec 2021			
Italy	70%	30%	0%	Dec 2021			
Latvia	50%	15%	35%	Dec 2021			
Lithuania	55%	45%	0%	Dec 2021			
Luxembourg							
Malta	85%	5%	10%	Dec 2021			
MUAC	✓			✓			
Netherlands	40%	60%	0%	Dec 2022			
Norway	30%	70%	0%	Apr 2024			
Poland	95%	5%	0%	Dec 2022			
Portugal	15%	70%	15%	-			
Romania	85%	15%	0%	Dec 2021			
Slovak Republic	30%	60%	10%	Dec 2021			
Slovenia	15%	85%	0%	Dec 2021			
Spain	30%	70%	0%	Dec 2021			
Sweden	75%	25%	0%	Dec 2025			
Switzerland	80%	20%	0%	Dec 2021			
United Kingdom	60%	40%	0%	Dec 2021			

H

3.2.3 Implement Published Direct Routings (DCTs)

Fully Implemented

Expected completion year: Closed	Total # of closed gaps: 29
Family FOC date: Jan 2018	Total # of open gaps: 0

Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	✓			✓		
Belgium						
Bulgaria	✓			✓		
Croatia	✓			✓		
Cyprus	✓			✓		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	✓			✓		
France	✓			✓		
Germany	✓			✓		
Greece	✓			✓		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg						
Malta	✓			✓		
MUAC	✓			✓		
Netherlands						
Norway	✓			✓		
Poland	✓			✓		
Portugal	✓			✓		
Romania	✓			✓		
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

H

3.2.4 Implement Free Route Airspace

Expected completion year: Dec 2024 | Total # of closed gaps: 21

Family FOC date: Jan 2022 | Total # of open gaps: 8

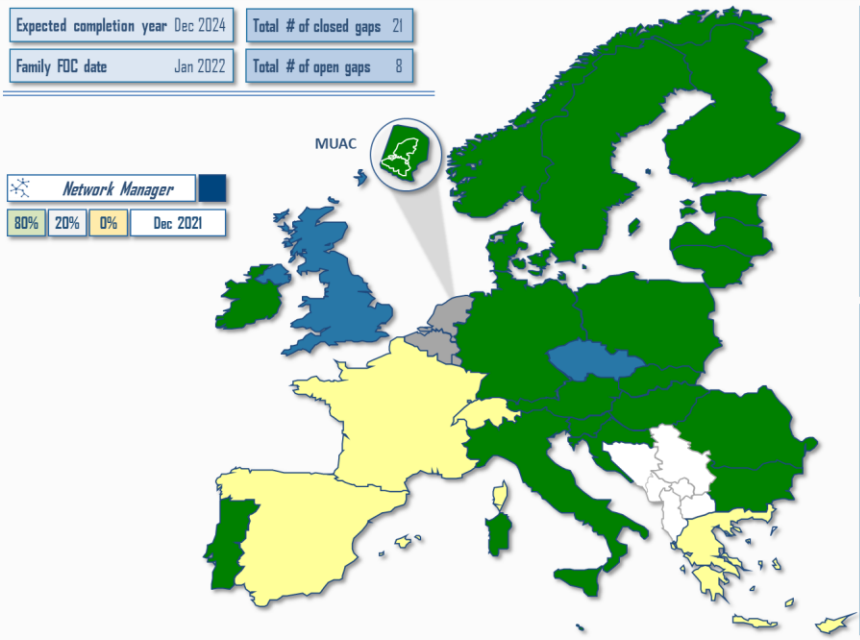


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	✓			✓		
Belgium						
Bulgaria	✓			✓		
Croatia	✓			✓		
Cyprus	0%	100%	0%	Dec 2021		
Czech Republic	65%	35%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	✓			✓		
France	0%	100%	0%	Dec 2023		
Germany	✓			✓		
Greece	0%	100%	0%	Dec 2021		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg						
Malta	✓			✓		
MUAC	✓			✓		
Netherlands						
Norway	✓			✓		
Poland	✓			✓		
Portugal	✓			✓		
Romania	✓			✓		
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	0%	100%	0%	Dec 2024		
Sweden	✓			✓		
Switzerland	0%	100%	0%	Dec 2021		
United Kingdom	65%	35%	0%	Dec 2021		

Focus on Free Route implementation

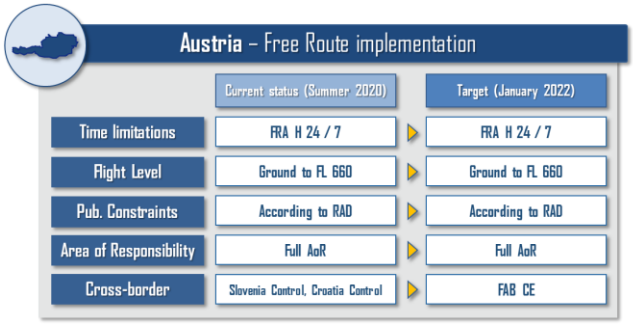
Due to the specific relevance of a **coordinated and synchronized implementation of Free Route** across Europe, the SESAR Deployment Manager has gathered additional information from the local Air Navigation Service Providers. This in-depth analysis, which is based on **data directly provided by ANSPs**, has been performed with a two-fold objective:

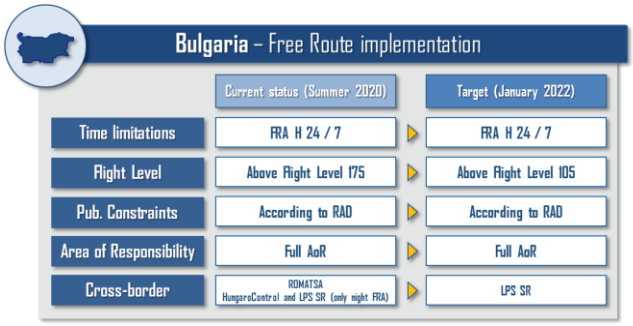
- Having a **clear picture of the Free Route deployment approach currently followed**;
- Identifying the stakeholders' planning **by January 1st, 2022**, the PCP Regulation target date for deploying and operating FRA.

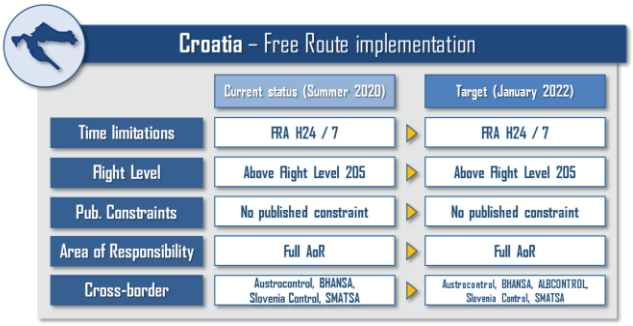
In the following pages, a specific table for each country within the PCP Geographical Scope is included, detailing the following information:

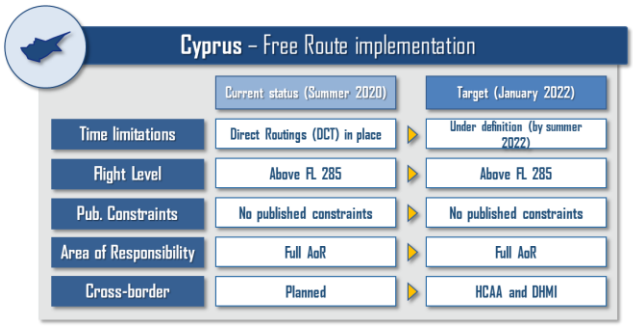
- The ***Time limitations*** set for the Free Route implementation;
- The ***Flight Level*** limit;
- The ***published constraints***;
- The ***Area of Responsibility (AoR)*** where Free Route is implemented;
- The ***cross-border***, indicating if the deployment of cross-border FRA initiatives has been completed or is planned.

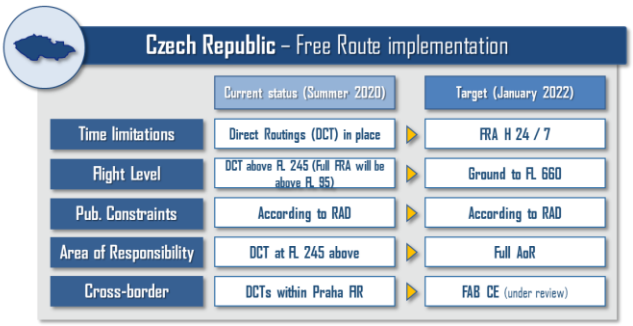
It has to be noted that the current text of Regulation (EU) No. 716/2014 does not explicitly include cross-border, neither specifies a clear requirement in terms of time implementation.

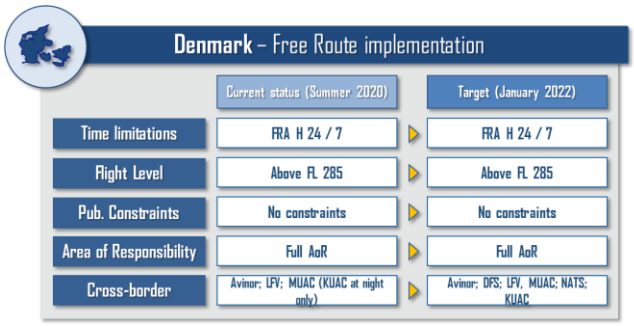


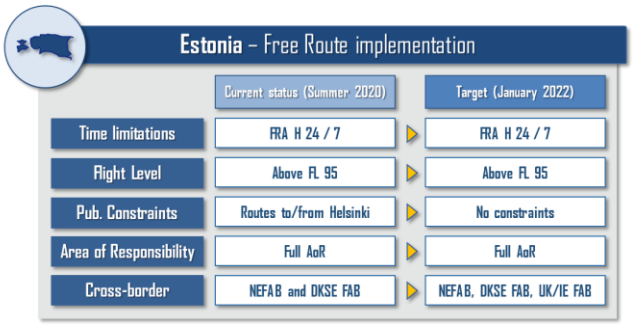


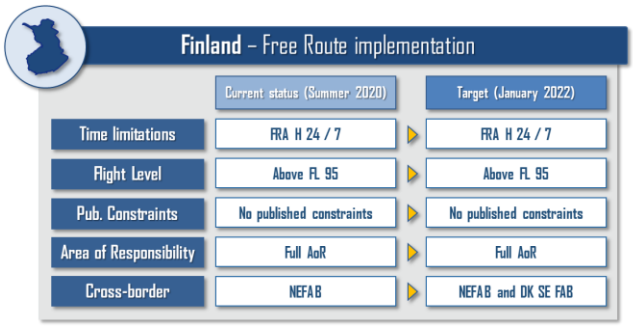


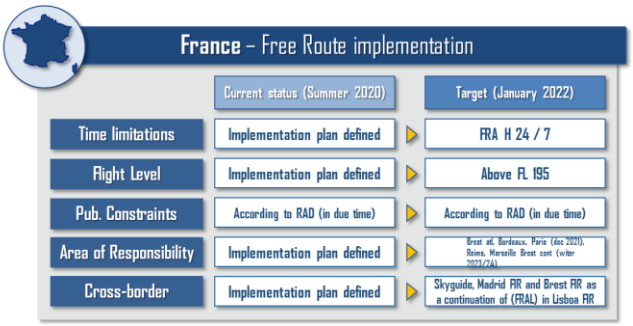

Cyprus – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Direct Routings (DCT) in place
Under definition (by summer 2022)
Flight Level
Above FL 285
Above FL 285
Pub. Constraints
No published constraints
No published constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
Planned
HCAA and DHMI

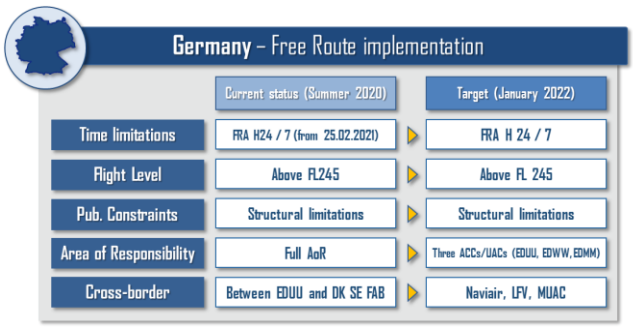

Czech Republic – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Direct Routings (DCT) in place
FRA H 24 / 7
Flight Level
DCT above FL 245 (Full FRA will be above FL 95)
Ground to FL 660
Pub. Constraints
According to RAD
According to RAD
Area of Responsibility
DCT at FL 245 above
Full AoR
Cross-border
DCTs within Praha FIR
FAB CE (under review)

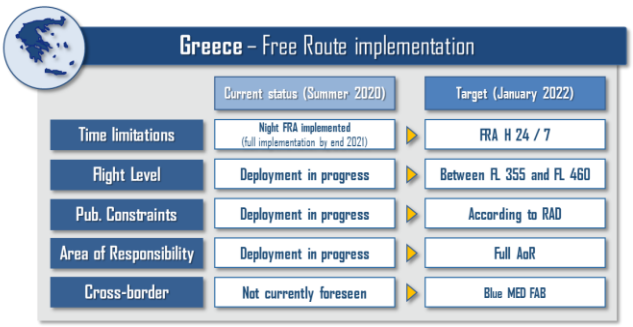

Denmark – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 285
Above FL 285
Pub. Constraints
No constraints
No constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
Avinor; LFV; MUAC (KUAC at night only)
Avinor; DFS; LFV, MUAC; NATS; KUAC

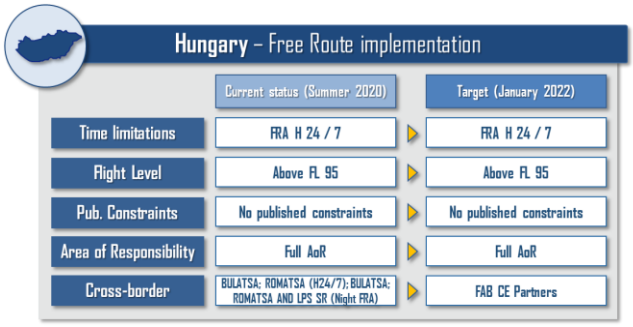

Estonia – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 95
Above FL 95
Pub. Constraints
Routes to/from Helsinki
No constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
NEFAB and DKSE FAB
NEFAB, DKSE FAB, UK/IE FAB

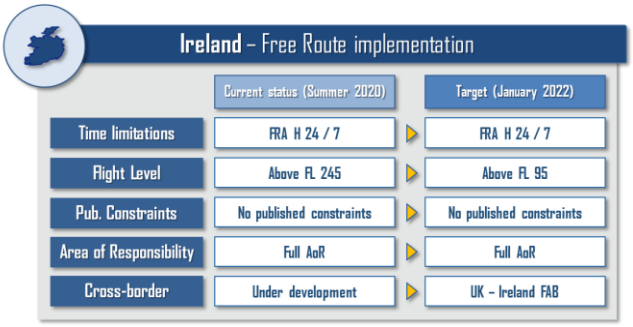

Finland – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 95
Above FL 95
Pub. Constraints
No published constraints
No published constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
NEFAB
NEFAB and DK SE FAB


France – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Implementation plan defined
FRA H 24 / 7
Flight Level
Implementation plan defined
Above FL 195
Pub. Constraints
According to RAD (in due time)
According to RAD (in due time)
Area of Responsibility
Implementation plan defined
Brest atl. Bordeaux, Paris (dec 2021), Reims, Marseille Brest cont (winter 2022/23A)
Cross-border
Implementation plan defined
Skyguide, Madrid FIR and Brest FIR as a continuation of (FRAL) in Lisboa FIR


Germany – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H24 / 7 (from 25.02.2021)
FRA H 24 / 7
Flight Level
Above FL245
Above FL 245
Pub. Constraints
Structural limitations
Structural limitations
Area of Responsibility
Full AoR
Three ACCs/UACs (EDUU, EDWW, EDMM)
Cross-border
Between EDUU and DK SE FAB
Naviair, LFV, MUAC


Greece – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Night FRA implemented (full implementation by end 2021)
FRA H 24 / 7
Flight Level
Deployment in progress
Between FL 355 and FL 460
Pub. Constraints
Deployment in progress
According to RAD
Area of Responsibility
Deployment in progress
Full AoR
Cross-border
Not currently foreseen
Blue MED FAB


Hungary – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 95
Above FL 95
Pub. Constraints
No published constraints
No published constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
BULATSA; ROMATSA (H24/7); BULATSA; ROMATSA AND LPS SR (Night FRA)
FAB CE Partners


Ireland – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 245
Above FL 95
Pub. Constraints
No published constraints
No published constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
Under development
UK – Ireland FAB

Italy – Free Route implementation

	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 305	Above FL 305
Pub. Constraints	According to RAD	To reduce to the minimum RAD restrictions
Area of Responsibility	Full AoR	Full AoR
Cross-border	Under development	All neighboring ANSPs

Latvia – Free Route implementation

	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 95	Above FL 95
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	ANS Finland, EANS, LFV	IAA, AVINOR,NATS, Iceland

Lithuania – Free Route implementation

	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 95	Above FL 95
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Baltic FAB framework	PANSA, DK/SE FAB, NEFAB (Latvia)

Luxembourg – Free Route implementation

Air Traffic Control in the upper airspace of the Benelux is managed by the Maastricht Upper Area Control Center (MUAC). Please see the dedicated table.

Malta – Free Route implementation

	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 305	Above FL 195
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	No	ENAV, HCAA

MUAC Region – Free Route implementation

	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	FL245/FL660	Above FL 245
Pub. Constraints	According to RAD	No published constraints
Area of Responsibility	MUAC AoR (except french del. Airspace)	MUAC AoR (except french del. Airspace)
Cross-border	DK SE FAB	KUAC, DK SE FAB, + other ANSPs when capable

Netherlands – Free Route implementation

Air Traffic Control in the upper airspace of the Benelux is managed by the Maastricht Upper Area Control Center (MUAC). Please see the dedicated table.

Norway – Free Route implementation

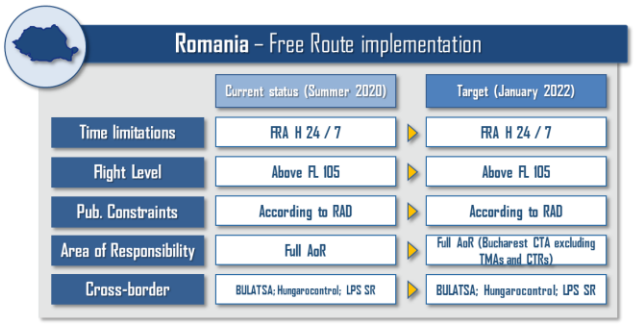
	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 310	Above FL 310
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	ANS Finland, EANS, LFV, LGS, Naviair	Borealis Alliance

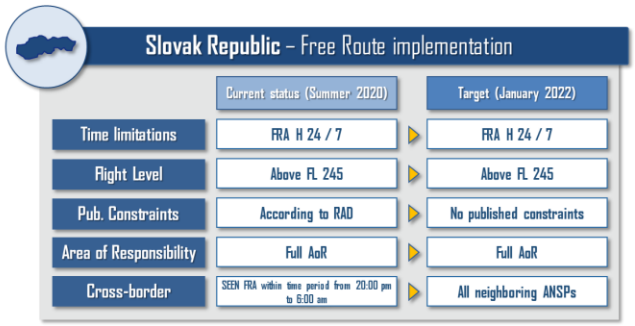
Poland – Free Route implementation

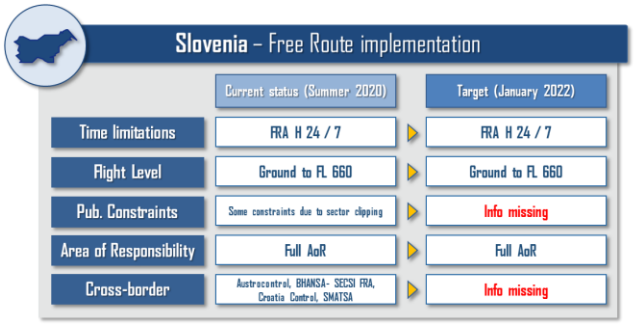
	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 95	Above FL 95
Pub. Constraints	Some constraints for a better distribution of traffic flows	Some constraints for a better distribution of traffic flows
Area of Responsibility	Full AoR (TMAs excluded)	Full AoR
Cross-border	Under development	Baltic FAB and FAB DK/SE

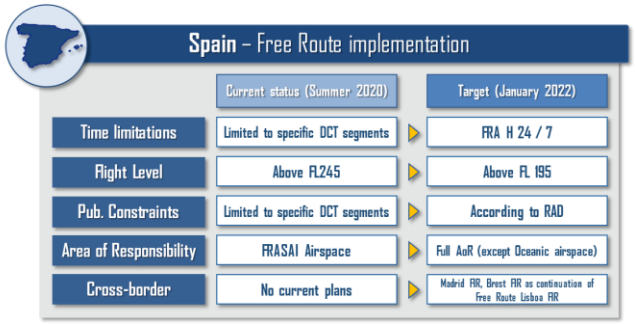
Portugal – Free Route implementation

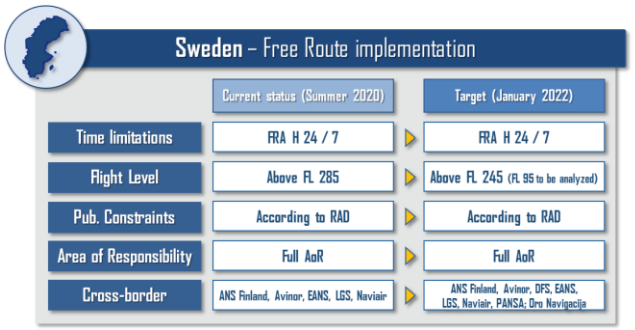
	Current status (Summer 2020)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 310	Above FL 310
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	ENAIRE (Madrid FIR) OSNA (Brest FIR)	ENAIRE (Madrid FIR)

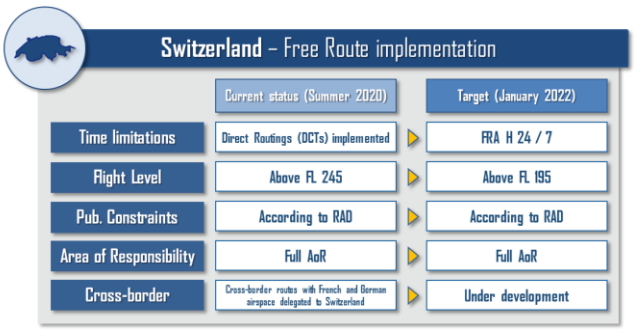

Romania – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 105
Above FL 105
Pub. Constraints
According to RAD
According to RAD
Area of Responsibility
Full AoR
Full AoR (Bucharest CTA excluding TMAs and CTRs)
Cross-border
BULATSA; Hungarocontrol; LPS SR
BULATSA; Hungarocontrol; LPS SR

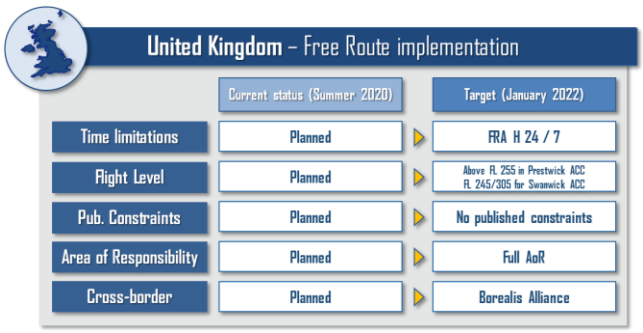

Slovak Republic – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 245
Above FL 245
Pub. Constraints
According to RAD
No published constraints
Area of Responsibility
Full AoR
Full AoR
Cross-border
SEEN FRA within time period from 20:00 pm to 6:00 am
All neighboring ANSPs


Slovenia – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Ground to FL 660
Ground to FL 660
Pub. Constraints
Some constraints due to sector clipping
Info missing
Area of Responsibility
Full AoR
Full AoR
Cross-border
Austrocontrol, BHANSA- SECSI FRA, Croatia Control, SMATSA
Info missing

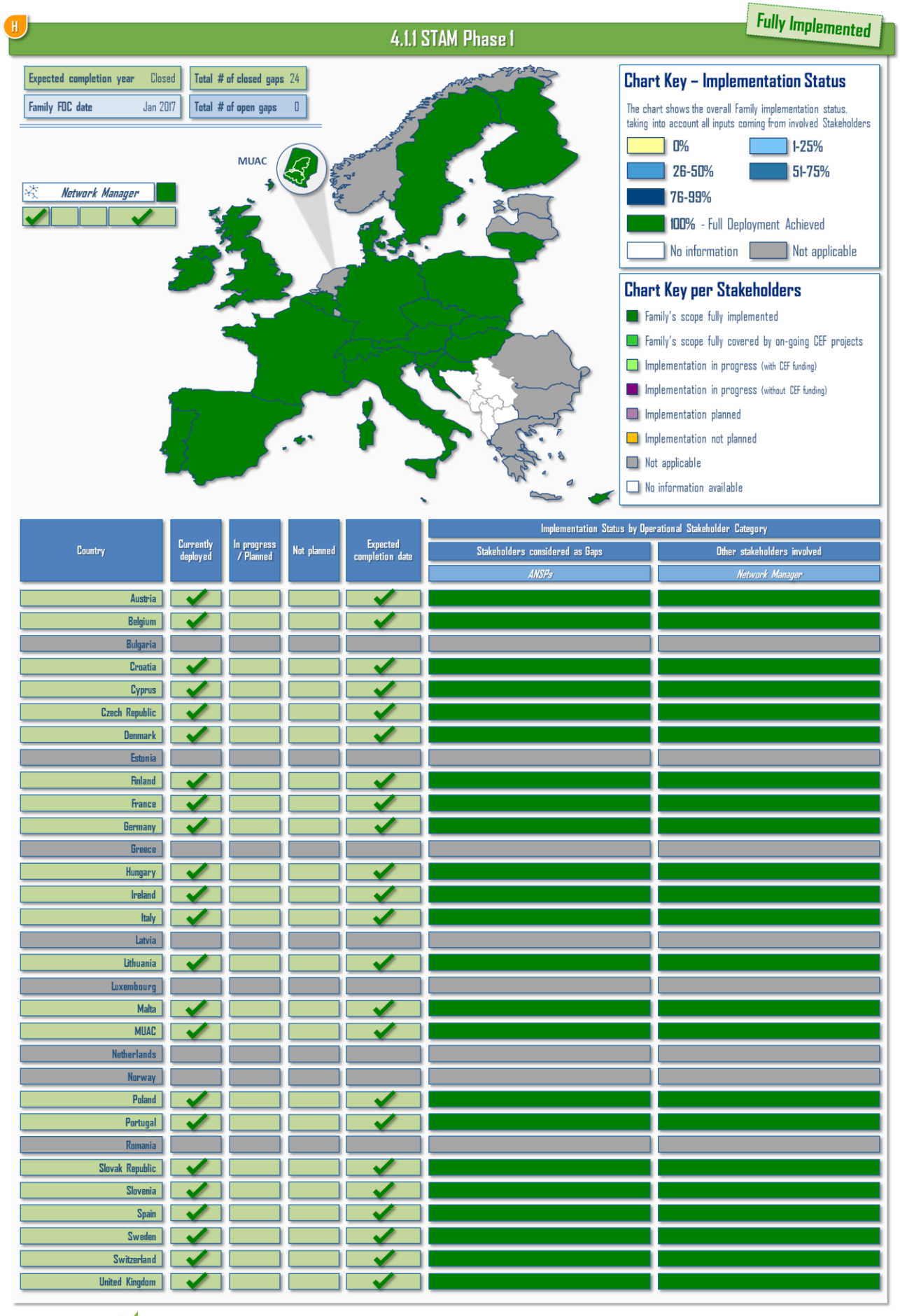

Spain – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Limited to specific DCT segments
FRA H 24 / 7
Flight Level
Above FL245
Above FL 195
Pub. Constraints
Limited to specific DCT segments
According to RAD
Area of Responsibility
FRASAI Airspace
Full AoR (except Oceanic airspace)
Cross-border
No current plans
Madrid FIR, Brest FIR as continuation of Free Route Lisboa FIR


Sweden – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 285
Above FL 245 (FL 95 to be analyzed)
Pub. Constraints
According to RAD
According to RAD
Area of Responsibility
Full AoR
Full AoR
Cross-border
ANS Finland, Avinor, EANS, LGS, Naviair
ANS Finland, Avinor, OFS, EANS, LGS, Naviair, PANSA; Oro Navigacija


Switzerland – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Direct Routings (DCTs) implemented
FRA H 24 / 7
Flight Level
Above FL 245
Above FL 195
Pub. Constraints
According to RAD
According to RAD
Area of Responsibility
Full AoR
Full AoR
Cross-border
Cross-border routes with French and German airspace delegated to Switzerland
Under development


United Kingdom – Free Route implementation
Current status (Summer 2020)
Target (January 2022)
Time limitations
Planned
FRA H 24 / 7
Flight Level
Planned
Above FL 255 in Prestwick ACC FL 245/305 for Swanwick ACC
Pub. Constraints
Planned
No published constraints
Area of Responsibility
Planned
Full AoR
Cross-border
Planned
Borealis Alliance

AF4 – Network Collaborative Management



Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved
					ANSPs	*Network Manager*
Austria	✓			✓		
Belgium	✓			✓		
Bulgaria						
Croatia	✓			✓		
Cyprus	✓			✓		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia						
Finland	✓			✓		
France	✓			✓		
Germany	✓			✓		
Greece						
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia						
Lithuania	✓			✓		
Luxembourg						
Malta	✓			✓		
MUAC	✓			✓		
Netherlands						
Norway						
Poland	✓			✓		
Portugal	✓			✓		
Romania						
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

4.1.2 STAM Phase 2

Expected completion year: Dec 2022
Family FOC date: Jan 2022
Total # of closed gaps: 2
Total # of open gaps: 30

Airspace User Gap*
* Through the update of Computer Flight Planning Systems

Network Manager: 55% | 45% | 0% | -

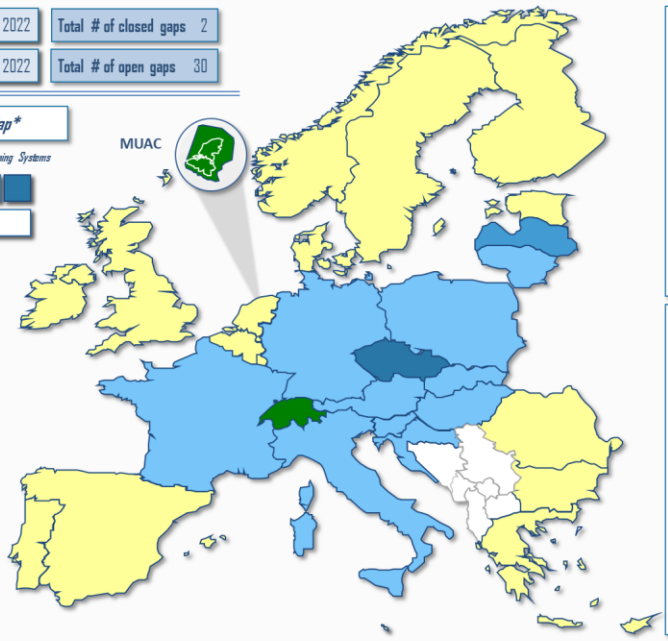


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager
Austria	10%	90%	0%	Dec 2021			
Belgium	0%	100%	0%	Dec 2021			
Bulgaria	0%	100%	0%	Dec 2021			
Croatia	10%	90%	0%	Dec 2022			
Cyprus	0%	100%	0%	Dec 2021			
Czech Republic	55%	45%	0%	Dec 2021			
Denmark	0%	85%	15%	Dec 2021			
Estonia	0%	100%	0%	Dec 2021			
Finland	0%	100%	0%	Dec 2021			
France	15%	85%	0%	Dec 2021			
Germany	10%	90%	0%	Dec 2021			
Greece	0%	100%	0%	Dec 2022			
Hungary	5%	80%	15%	Dec 2021			
Ireland	0%	100%	0%	Dec 2021			
Italy	5%	45%	50%	Dec 2021			
Latvia	45%	5%	50%	Dec 2021			
Lithuania	20%	80%	0%	Dec 2021			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	100%	0%	Dec 2021			
MUAC	✓			✓			
Netherlands	0%	50%	50%	Dec 2022			
Norway	0%	100%	0%	Dec 2021			
Poland	5%	95%	0%	Dec 2021			
Portugal	0%	100%	0%	Dec 2021			
Romania	0%	100%	0%	-			
Slovak Republic	5%	95%	0%	Dec 2021			
Slovenia	10%	90%	0%	Dec 2021			
Spain	0%	100%	0%	Dec 2021			
Sweden	0%	50%	50%	Dec 2022			
Switzerland	✓			✓			
United Kingdom	0%	75%	25%	Dec 2021			

4.2.2 Interactive Rolling NOP

Expected completion year Dec 2023 | Total # of closed gaps 0

Family FOC date Jan 2022 | Total # of open gaps 321

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

60% | 40% | 0% | Dec 2021

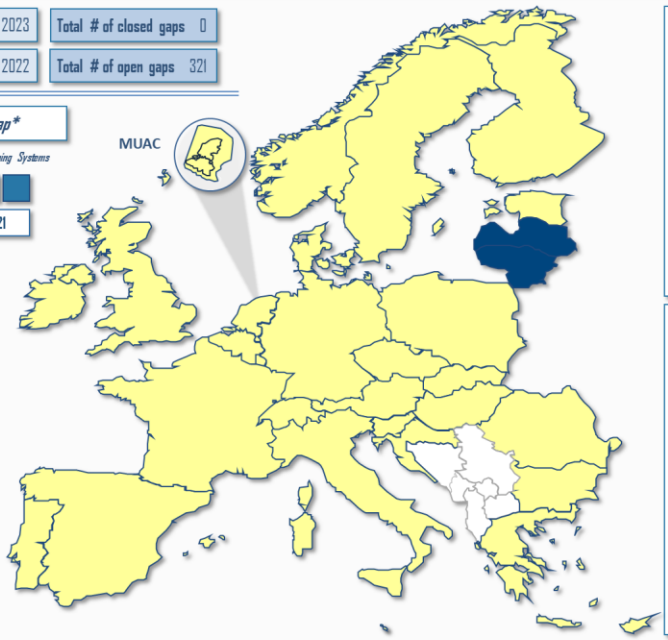


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Airport Operators
Austria	0%	100%	0%	Dec 2021			
Belgium	0%	100%	0%	Dec 2021			
Bulgaria	0%	100%	0%	Dec 2021			
Croatia	0%	100%	0%	Dec 2023			
Cyprus	0%	100%	0%	Dec 2021			
Czech Republic	0%	100%	0%	Dec 2021			
Denmark	0%	100%	0%	Dec 2021			
Estonia	0%	100%	0%	Dec 2021			
Finland	0%	100%	0%	Dec 2021			
France	0%	100%	0%	-			
Germany	0%	100%	0%	Dec 2021			
Greece	0%	100%	0%	Dec 2021			
Hungary	0%	100%	0%	Dec 2021			
Ireland	0%	100%	0%	Dec 2021			
Italy	0%	100%	0%	Dec 2021			
Latvia	95%	5%	0%	Dec 2021			
Lithuania	95%	5%	0%	Dec 2021			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	100%	0%	Dec 2021			
MUAC	0%	100%	0%	Dec 2021			
Netherlands	0%	100%	0%	Dec 2021			
Norway	0%	100%	0%	Dec 2021			
Poland	0%	100%	0%	Dec 2021			
Portugal	0%	100%	0%	Dec 2021			
Romania	0%	100%	0%	Dec 2021			
Slovak Republic	0%	100%	0%	Dec 2021			
Slovenia	0%	100%	0%	Dec 2021			
Spain	0%	100%	0%	Dec 2021			
Sweden	0%	100%	0%	Dec 2022			
Switzerland	0%	100%	0%	-			
United Kingdom	0%	100%	0%	-			

H

4.2.3 Interface ATM systems to NM systems

Expected completion year: Dec 2024 | Total # of closed gaps: 15

Family FOC date: Jan 2022 | Total # of open gaps: 17

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

60% | 40% | 0% | Dec 2021

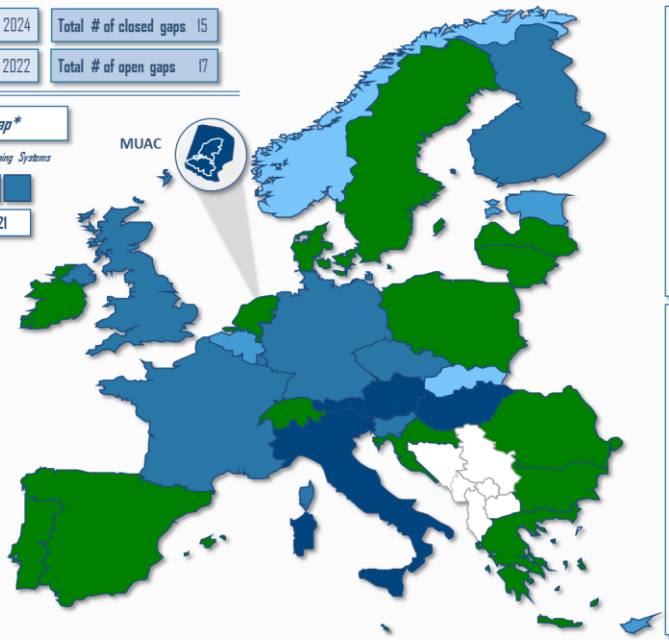


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	90%	10%	0%	Dec 2020		
Belgium	50%	0%	50%	Dec 2024		
Bulgaria	✓			✓		
Croatia	✓			✓		
Cyprus	50%	50%	0%	Dec 2021		
Czech Republic	65%	35%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	30%	70%	0%	Dec 2021		
Finland	75%	25%	0%	Dec 2021		
France	75%	25%	0%	Dec 2021		
Germany	75%	25%	0%	Dec 2021		
Greece	✓			✓		
Hungary	80%	20%	0%	Dec 2021		
Ireland	✓			✓		
Italy	95%	5%	0%	Dec 2020		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg	75%	25%	0%	Dec 2021		
Malta	✓			✓		
MUAC	90%	10%	0%	Dec 2021		
Netherlands	✓			✓		
Norway	25%	75%	0%	Apr 2024		
Poland	✓			✓		
Portugal	✓			✓		
Romania	✓			✓		
Slovak Republic	25%	50%	25%	Dec 2021		
Slovenia	75%	25%	0%	Dec 2021		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	75%	25%	0%	Dec 2021		

H

4.2.4 AOP/NOP information sharing

Expected completion year: Dec 2024
Family FOC date: Jan 2022
Total # of closed gaps: 0
Total # of open gaps: 25

Network Manager: 20% | 80% | 0% | Dec 2021

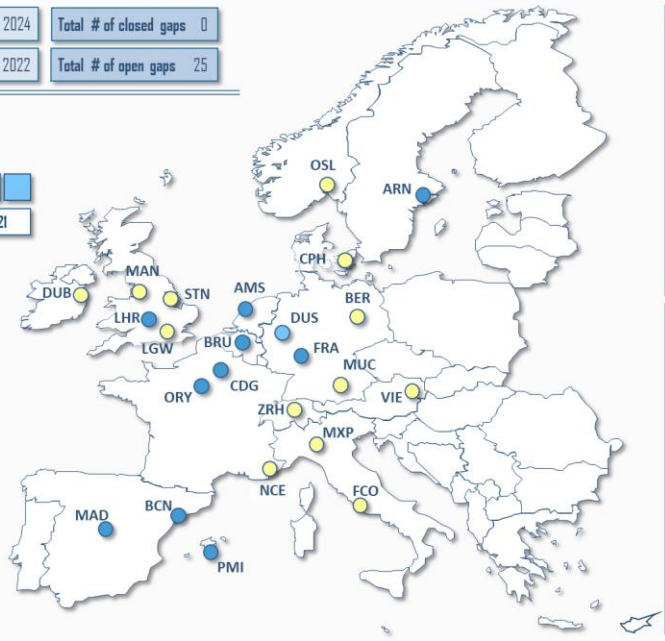


Chart Key – Implementation Status

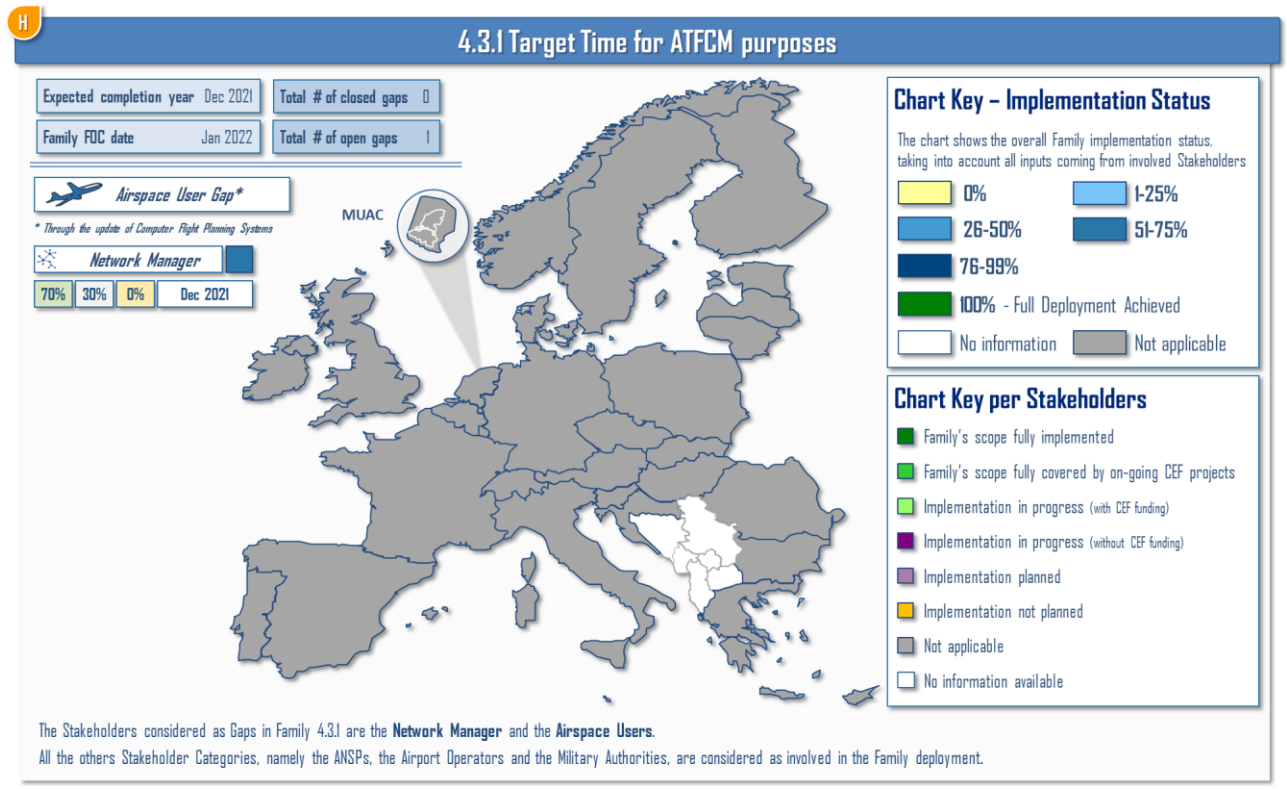
The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category			
					Stakeholders considered as Gaps		Other stakeholders involved	
					Network Manager	Airport Operators	ANSPs	MET Providers
Amsterdam Schiphol	45%	55%	0%	Dec 2021				
Barcelona El Prat	35%	65%	0%	Dec 2021				
Berlin Brandenburg Airport	0%	90%	10%	Oct 2021				
Brussels National	35%	65%	0%	Jun 2022				
Copenhagen Kastrup	0%	100%	0%	Dec 2022				
Dublin Airport	0%	0%	100%	-				
Dusseldorf International	5%	95%	0%	Dec 2021				
Frankfurt International	50%	50%	0%	Dec 2021				
London Gatwick	0%	0%	100%	-				
London Heathrow	45%	55%	0%	Dec 2021				
London Stansted	0%	100%	0%	Dec 2023				
Madrid Barajas	35%	65%	0%	Dec 2021				
Manchester Ringway	0%	100%	0%	Dec 2021				
Milan Malpensa	0%	100%	0%	Dec 2024				
Munich Franz Josef Strauss	0%	100%	0%	Dec 2021				
Nice Cote D'Azur	0%	100%	0%	Dec 2021				
Oslo Gardermoen	0%	0%	100%	-				
Palma de Mallorca Son Sant Joan	35%	65%	0%	Dec 2021				
Paris Charles De Gaulle	50%	50%	0%	Dec 2021				
Paris Orly	50%	50%	0%	Dec 2021				
Rome Fiumicino	0%	100%	0%	Dec 2022				
Stockholm Arlanda	35%	65%	0%	Mar 2022				
Vienna Schwechat	0%	100%	0%	Dec 2023				
Zurich Kloten	0%	100%	0%	Dec 2021				


H
4.3.1 Target Time for ATFCM purposes
Expected completion year Dec 2021
Total # of closed gaps 0
Family FOC date Jan 2022
Total # of open gaps 1
Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
70% 30% 0% Dec 2021
MUAC
Chart Key – Implementation Status
The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders
0%
1-25%
26-50%
51-75%
76-99%
100% - Full Deployment Achieved
No information
Not applicable
Chart Key per Stakeholders
Family's scope fully implemented
Family's scope fully covered by on-going CEF projects
Implementation in progress (with CEF funding)
Implementation in progress (without CEF funding)
Implementation planned
Implementation not planned
Not applicable
No information available
The Stakeholders considered as Gaps in Family 4.3.1 are the Network Manager and the Airspace Users.
All the others Stakeholder Categories, namely the ANSPs, the Airport Operators and the Military Authorities, are considered as involved in the Family deployment.

4.3.2 Reconciled target times for ATFCM and arrival sequencing

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 0
Total # of open gaps: 32

Airspace User Gap*
* Through the update of Computer Flight Planning Systems

Network Manager: 15% | 5% | 80% | -

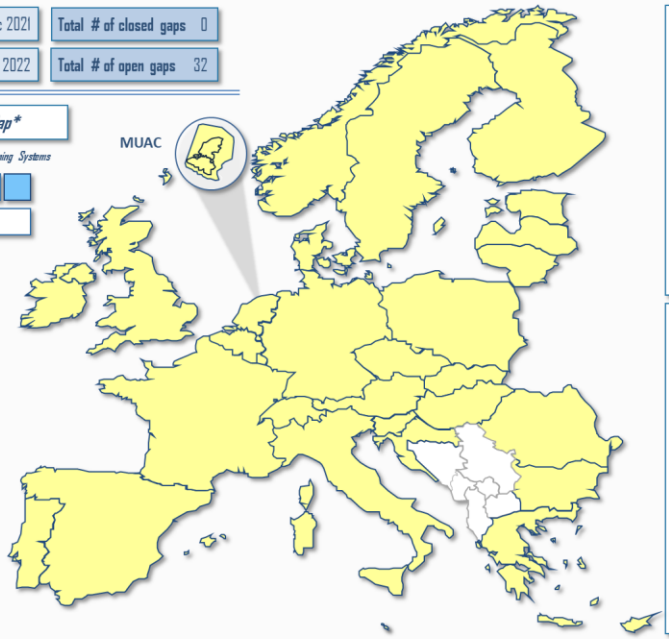


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager
Austria	0%	100%	0%	Dec 2021			
Belgium	0%	0%	100%	-			
Bulgaria	0%	100%	0%	Dec 2021			
Croatia	0%	0%	100%	-			
Cyprus	0%	100%	0%	Dec 2021			
Czech Republic	0%	100%	0%	Dec 2021			
Denmark	0%	100%	0%	Dec 2021			
Estonia	0%	0%	100%	-			
Finland	0%	100%	0%	Dec 2021			
France	0%	55%	45%	Dec 2021			
Germany	0%	0%	100%	-			
Greece	0%	100%	0%	Dec 2021			
Hungary	0%	100%	0%	Dec 2021			
Ireland	0%	0%	100%	-			
Italy	0%	50%	50%	Dec 2021			
Latvia	0%	0%	100%	-			
Lithuania	0%	100%	0%	Dec 2021			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	0%	100%	-			
MUAC	0%	100%	0%	Dec 2021			
Netherlands	0%	0%	100%	-			
Norway	0%	0%	100%	-			
Poland	0%	0%	100%	-			
Portugal	0%	100%	0%	Dec 2021			
Romania	0%	0%	100%	-			
Slovak Republic	0%	0%	100%	-			
Slovenia	0%	100%	0%	Dec 2021			
Spain	0%	50%	50%	Dec 2021			
Sweden	0%	0%	100%	-			
Switzerland	0%	100%	0%	Dec 2021			
United Kingdom	0%	100%	0%	Dec 2021			

H

4.4.2 Traffic Complexity tools

Expected completion year Dec 2024 | Total # of closed gaps 5

Family FOC date Jan 2022 | Total # of open gaps 27

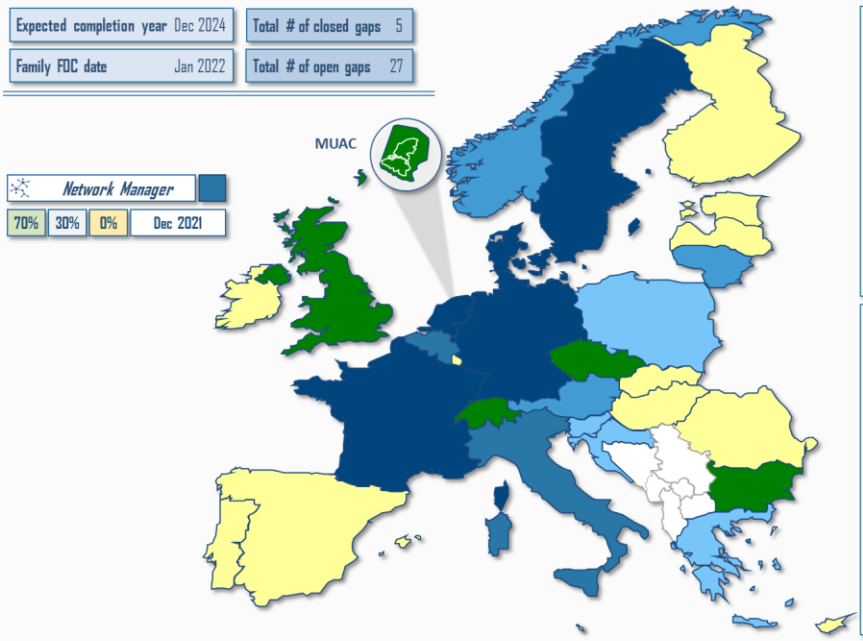


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

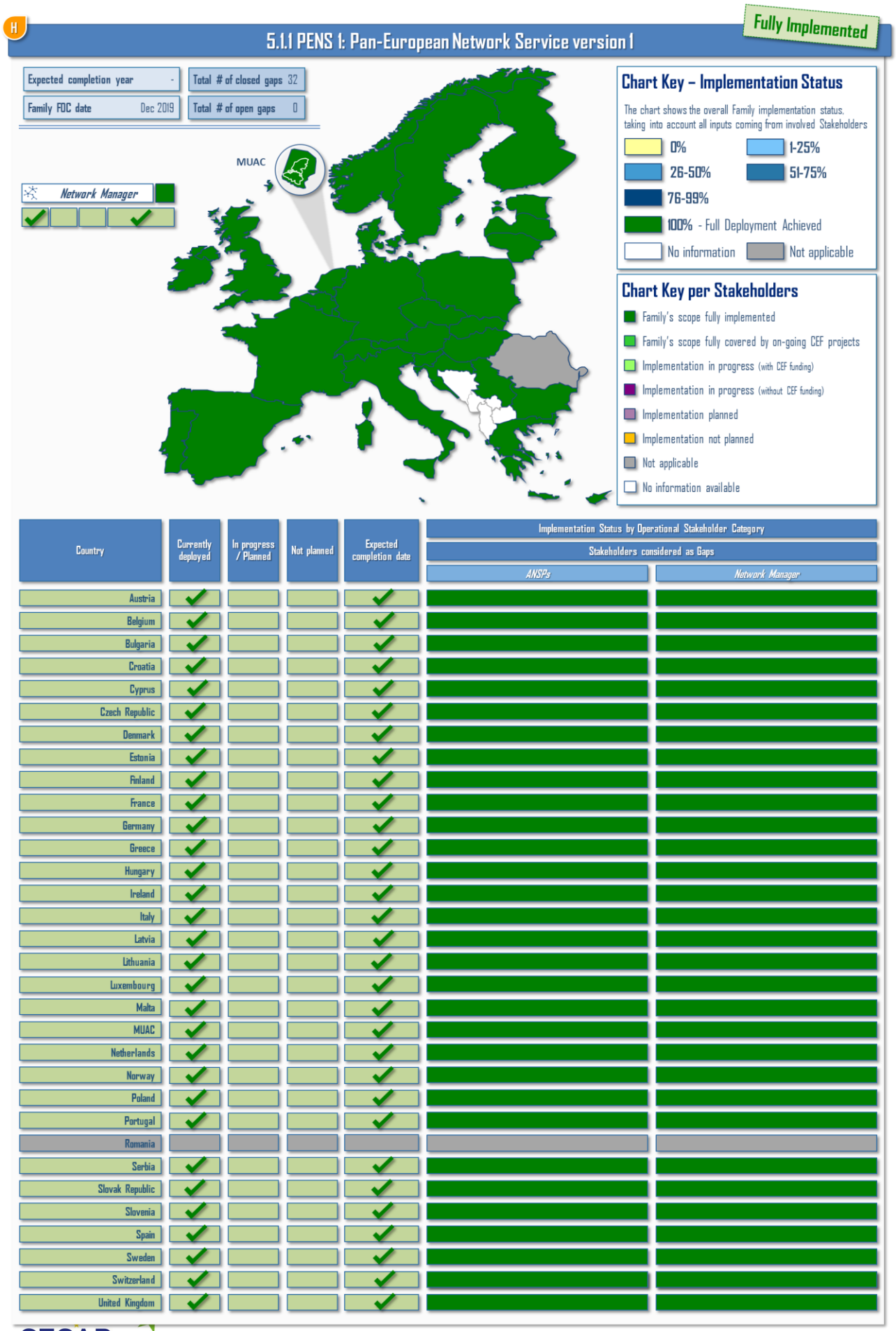
- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	30%	70%	0%	Dec 2024		
Belgium	55%	45%	0%	Dec 2020		
Bulgaria	✓			✓		
Croatia	10%	90%	0%	Dec 2022		
Cyprus	0%	100%	0%	Dec 2021		
Czech Republic	✓			✓		
Denmark	95%	5%	0%	Dec 2021		
Estonia	0%	100%	0%	Dec 2021		
Finland	0%	100%	0%	Dec 2021		
France	85%	15%	0%	Dec 2021		
Germany	80%	20%	0%	Dec 2021		
Greece	10%	90%	0%	Dec 2021		
Hungary	0%	100%	0%	Dec 2021		
Ireland	0%	100%	0%	Dec 2021		
Italy	70%	30%	0%	Dec 2021		
Latvia	0%	100%	0%	Dec 2021		
Lithuania	30%	70%	0%	Dec 2022		
Luxembourg	0%	0%	100%	-		
Malta	0%	100%	0%	Dec 2021		
MUAC	✓			✓		
Netherlands	95%	5%	0%	Dec 2022		
Norway	50%	50%	0%	Dec 2021		
Poland	20%	80%	0%	Dec 2021		
Portugal	0%	100%	0%	Dec 2021		
Romania	0%	100%	0%	Sep 2022		
Slovak Republic	0%	100%	0%	Dec 2021		
Slovenia	25%	75%	0%	Dec 2021		
Spain	0%	100%	0%	Jun 2022		
Sweden	95%	5%	0%	Dec 2024		
Switzerland	✓			✓		
United Kingdom	✓			✓		

AF5 – Initial SWIM



Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: Network Manager
Austria	✓			✓		
Belgium	✓			✓		
Bulgaria	✓			✓		
Croatia	✓			✓		
Cyprus	✓			✓		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	✓			✓		
France	✓			✓		
Germany	✓			✓		
Greece	✓			✓		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg	✓			✓		
Malta	✓			✓		
MUAC	✓			✓		
Netherlands	✓			✓		
Norway	✓			✓		
Poland	✓			✓		
Portugal	✓			✓		
Romania						
Serbia	✓			✓		
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

H

5.1.2 NewPENS: New Pan-European Network Service

Expected completion year Dec 2024 | Total # of closed gaps 28

Family FOC date Jan 2025 | Total # of open gaps 5

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	MET Providers
Austria	✓			✓				
Belgium	✓			✓				
Bulgaria	✓			✓				
Croatia	✓			✓				
Cyprus	30%	70%	0%	Dec 2021				
Czech Republic	✓			✓				
Denmark	✓			✓				
Estonia	✓			✓				
Finland	✓			✓				
France	✓			✓				
Germany	✓			✓				
Greece	10%	90%	0%	Dec 2020				
Hungary	✓			✓				
Ireland	✓			✓				
Italy	✓			✓				
Latvia	✓			✓				
Lithuania	✓			✓				
Luxembourg	10%	90%	0%	Dec 2020				
Malta	60%	40%	0%	Apr 2021				
MUAC	✓			✓				
Netherlands	✓			✓				
Norway	95%	0%	5%	Dec 2024				
Poland	✓			✓				
Portugal	✓			✓				
Romania	✓			✓				
Serbia	✓			✓				
Slovak Republic	✓			✓				
Slovenia	✓			✓				
Spain	✓			✓				
Sweden	✓			✓				
Switzerland	✓			✓				
United Kingdom	✓			✓				

SWIM Common Components: SWIM Governance (Family 5.1.3) and Public Key Infrastructure (Family 5.1.4)

Due to the specific features of the Families and their purpose of deploying SWIM Common components, the deployment activities are following a coordinated and EU-wide approach, rather than been steered by locally-based implementation initiatives. To this end, the following section reports on the latest developments and results stemming from two multi-stakeholder initiatives and other SWIM Common Components activities, coordinated by SDM under the Framework Partnership Agreement[17].

#073AF5 and 2015_319_AF5- SWIM Common Components

Both referred Projects are aimed at deploying a European Common SWIM Registry.

In line with the System Wide Information Management (SWIM) concept - the SWIM Registry' aims at improving the visibility and accessibility of ATM information and services available through SWIM. This enables service providers and consumers to share a common view on SWIM Services.

The SWIM Registry is the source of reference for service information in SWIM. It describes the complete set of services enabled by SWIM with qualitative, consolidated and structured information. The Registry enables the "provider" to "publish" information related to its services so that the "consumer" is able to "discover" them and obtain everything (e.g. interface information) required to ultimately use those services.

The SWIM Registry enables direct ATM business benefits to all of its stakeholders by:

- Allowing providers to increase visibility (and consequent adoption) of their services. This also stimulates the reusability of services by other providers.
- Improving the efficiency of consumers in identifying the right provider and reducing their effort in setting up everything required prior to start using a service.
- Facilitating a collaborative evolution of services by enabling all relevant stakeholders to share a common view and participate in the lifecycle of these.

The SWIM Registry is operational and available since the first quarter of 2020. (http://eur-registry.swim.aero)

2016_141_AF5 – Deploy SWIM Governance

This multi-stakeholder initiative tackles the issue of establishing a governance for SWIM in Europe ensuring a common starting point and a controlled evolution of the SWIM deployment. The entire project was completed on 30th of July 2020. The priorities of the project were Task 02, Task 04, Task 05 and Task 07.

Task 02, "to set up the SWIM Governance structure". The set of deliverables of this task have been successfully completed and the consultation process has started (SWIM Service Provisioning Policy):

- **SWIM Governance Structure** document, which defines the setup of the SWIM Governance, the tasks of the bodies involved as well as the Terms of Reference of these bodies.
- The **SWIM Service Provisioning Policy**, which contains detailed statements on the compliance assessment of services and the service registration applicable to service providers. These statements specify what is expected from service providers with regard to the provision of SWIM Services.

Task 04 "manage and execute SWIM governance" was concluded on the 30th of July 2020, notably thanks to the release of a deliverable so-called "SWIM Governance agreement" in which the Implementing Partners agreed on SWIM governance structure, tasks voting principles and decision-making.

Task 05 on "legal and financial aspect management" concluded its work notably through the article 11 of the SWIM Governance agreement.

Finally, Task 07 "common security requirements" released security requirements and, more importantly, drafted security guidelines.

[17] *For further information see contract No. MOVE/E2-2014-717/SESAR FPA*

2017_084_AF5 - SWIM Common PKI and policies & procedures for establishing a Trust framework

This multi-stakeholder initiative, awarded in 2017 CEF Transport Call, was kicked-off in November 2018.

The project aims to deploy a common framework for both integrating local Stakeholder PKI deployments in an interoperable manner, as well as providing interoperable digital certificates to the users of SWIM services. The resulting PKI and its associated trust framework, so-called European Aviation Common PKI (EACP), are required to sign, emit and maintain digital certificates and validation services as required by the PCP Regulation. Other exchanges of aviation information than SWIM services, will benefit from this EACP solution (e.g. surveillance, aeronautical information, document, maintenance).

The project has already developed:

- a high-level PKI architecture;
- an initial business model;
- an initial trust framework including internal governance;
- a plan and a platform to test the interoperability of the solution with the FAA test platform; and
- a first set of technical requirements for the Call For tenders (CFT) for the provision of the day-to-day operations by a well-established PKI provider under EACP governance.

By no later than end of 2021, the project must further develop the Trust Framework (e.g. membership criteria, internal governance procedures), the guidance material for users and the final CFT and conduct the test of interoperability with FAA. Additionally, decisions will have to be made in 2021 regarding the institutional framework that will embed the EACP solution as well as the funding and invoicing model to develop and operate the EACP solution.

H 5.2.1 Stakeholders Internet Protocol Compliance

Expected completion year Dec 2025 | Total # of closed gaps 12

Family FOC date Jan 2018 | Total # of open gaps 21

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

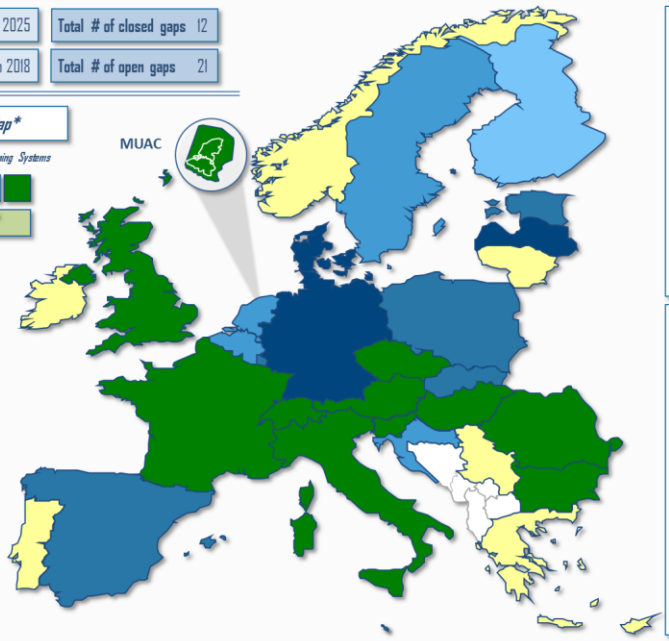


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	MET Providers
Austria	✓			✓				
Belgium	40%	60%	0%	Dec 2021				
Bulgaria	✓			✓				
Croatia	45%	55%	0%	Dec 2022				
Cyprus	0%	100%	0%	Dec 2020				
Czech Republic	✓			✓				
Denmark	95%	0%	5%	Dec 2024				
Estonia	60%	0%	40%	Dec 2024				
Finland	10%	85%	5%	Dec 2024				
France	✓			✓				
Germany	80%	15%	5%	Dec 2021				
Greece	0%	85%	15%	Dec 2022				
Hungary	✓			✓				
Ireland	0%	100%	0%	Dec 2020				
Italy	✓			✓				
Latvia	85%	15%	0%	Dec 2024				
Lithuania	0%	100%	0%	Dec 2021				
Luxembourg	65%	0%	35%	Dec 2022				
Malta	60%	0%	40%	Dec 2020				
MUAC	✓			✓				
Netherlands	30%	60%	10%	Mar 2022				
Norway	0%	0%	100%	-				
Poland	60%	40%	0%	Mar 2021				
Portugal	0%	65%	35%	Dec 2024				
Romania	✓			✓				
Serbia	0%	50%	50%	Dec 2021				
Slovak Republic	65%	35%	0%	Dec 2022				
Slovenia	✓			✓				
Spain	60%	40%	0%	Dec 2020				
Sweden	50%	45%	5%	Dec 2025				
Switzerland	✓			✓				
United Kingdom	✓			✓				

H/M

5.2.2 Stakeholders SWIM Infrastructures Components

Expected completion year Dec 2029 | Total # of closed gaps 0

Family FOC date Jan 2025 | Total # of open gaps 33

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

30% | 30% | 40% | Dec 2024

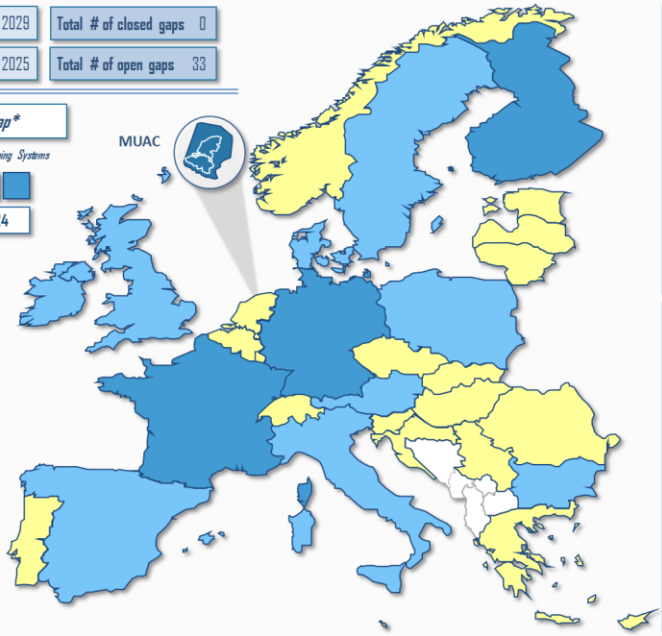


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	5%	65%	30%	Dec 2025					
Belgium	0%	65%	35%	Dec 2025					
Bulgaria	5%	55%	40%	Nov 2024					
Croatia	0%	100%	0%	Dec 2025					
Cyprus	0%	0%	100%	-					
Czech Republic	0%	100%	0%	Dec 2024					
Denmark	25%	40%	35%	Dec 2024					
Estonia	0%	60%	40%	Dec 2024					
Finland	50%	20%	30%	Dec 2024					
France	40%	55%	5%	Dec 2024					
Germany	30%	50%	20%	Oct 2023					
Greece	0%	80%	20%	Dec 2022					
Hungary	0%	100%	0%	Dec 2024					
Ireland	5%	95%	0%	Dec 2024					
Italy	5%	75%	20%	Dec 2024					
Latvia	0%	90%	10%	Dec 2024					
Lithuania	0%	100%	0%	Dec 2022					
Luxembourg	0%	70%	30%	Dec 2022					
Malta	0%	60%	40%	Dec 2020					
MUAC	60%	40%	0%	Dec 2029					
Netherlands	0%	85%	15%	Dec 2024					
Norway	0%	0%	100%	-					
Poland	5%	95%	0%	Dec 2024					
Portugal	0%	90%	10%	Dec 2024					
Romania	0%	100%	0%	Dec 2024					
Serbia	0%	60%	40%	Dec 2024					
Slovak Republic	0%	50%	50%	Dec 2023					
Slovenia	0%	10%	90%	-					
Spain	15%	85%	0%	Dec 2024					
Sweden	15%	75%	10%	Dec 2025					
Switzerland	0%	55%	45%	Dec 2025					
United Kingdom	5%	55%	40%	Dec 2024					

H

5.2.3 Stakeholders SWIM PKI and Cybersecurity

Expected completion year	Dec 2025
Family FOC date	Jan 2025
Total # of closed gaps	1
Total # of open gaps	32

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

80%	20%	0%	Dec 2024

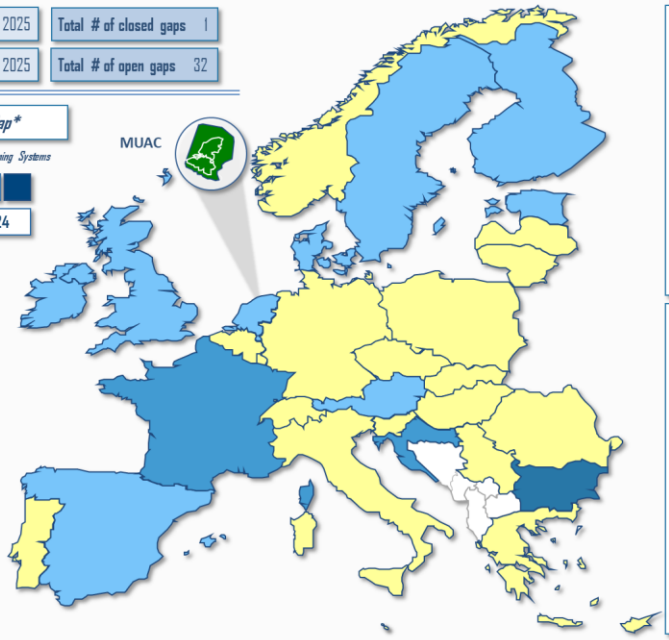


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	5%	55%	40%	Dec 2024					
Belgium	0%	100%	0%	Dec 2025					
Bulgaria	75%	25%	0%	Dec 2024					
Croatia	30%	70%	0%	Dec 2025					
Cyprus	0%	0%	100%	-					
Czech Republic	0%	100%	0%	Dec 2024					
Denmark	5%	90%	5%	Dec 2025					
Estonia	10%	25%	65%	Dec 2024					
Finland	10%	90%	0%	Dec 2024					
France	45%	50%	5%	Dec 2024					
Germany	0%	95%	5%	Dec 2024					
Greece	0%	80%	20%	Dec 2024					
Hungary	0%	100%	0%	Dec 2024					
Ireland	5%	90%	5%	Dec 2024					
Italy	0%	100%	0%	Dec 2024					
Latvia	0%	100%	0%	Dec 2024					
Lithuania	0%	100%	0%	Jan 2021					
Luxembourg	0%	100%	0%	Mar 2021					
Malta	0%	100%	0%	Dec 2024					
MUAC	✓			✓					
Netherlands	10%	75%	15%	Dec 2024					
Norway	0%	0%	100%	-					
Poland	0%	100%	0%	Dec 2024					
Portugal	0%	20%	80%	-					
Romania	0%	0%	100%	-					
Serbia	0%	100%	0%	Dec 2024					
Slovak Republic	0%	80%	20%	Dec 2024					
Slovenia	0%	100%	0%	Dec 2021					
Spain	25%	55%	20%	Dec 2024					
Sweden	5%	90%	5%	Dec 2025					
Switzerland	0%	80%	20%	-					
United Kingdom	20%	65%	15%	Dec 2024					

H

5.3.1 Upgrade / Implement Aeronautical Information Exchange system / service

Expected completion year	Dec 2025
Family FOC date	Jan 2025
Total # of closed gaps	1
Total # of open gaps	32

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

0%	60%	40%	Dec 2024

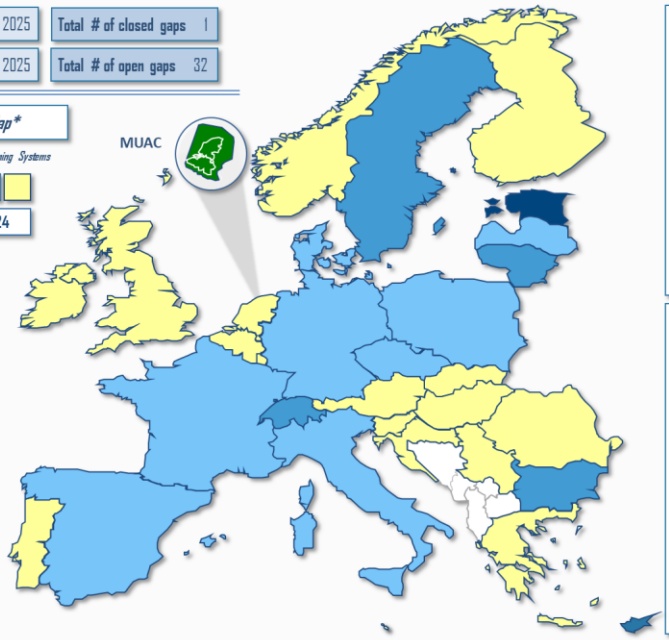


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities
Austria	0%	100%	0%	Dec 2025				
Belgium	0%	0%	100%	-				
Bulgaria	30%	70%	0%	Mar 2021				
Croatia	0%	100%	0%	Dec 2025				
Cyprus	70%	10%	20%	Dec 2024				
Czech Republic	10%	30%	60%	Dec 2024				
Denmark	5%	45%	50%	Dec 2024				
Estonia	80%	10%	10%	Mar 2021				
Finland	0%	100%	0%	Dec 2024				
France	10%	70%	20%	Dec 2024				
Germany	15%	50%	35%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	100%	0%	Dec 2024				
Italy	25%	75%	0%	Dec 2024				
Latvia	10%	70%	20%	Dec 2024				
Lithuania	45%	55%	0%	Dec 2024				
Luxembourg	0%	35%	65%	Dec 2024				
Malta	0%	10%	90%	Dec 2024				
MUAC	✓			✓				
Netherlands	0%	90%	10%	Dec 2025				
Norway	0%	0%	100%	-				
Poland	20%	50%	30%	Dec 2024				
Portugal	0%	100%	0%	Dec 2024				
Romania	0%	20%	80%	Dec 2025				
Serbia	0%	30%	70%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	10%	90%	Dec 2025				
Spain	5%	15%	80%	Dec 2024				
Sweden	45%	50%	5%	Dec 2024				
Switzerland	45%	0%	55%	Dec 2023				
United Kingdom	0%	70%	30%	Dec 2024				

H

5.4.1 Upgrade / Implement Meteorological Information Exchange system / service

Expected completion year: Dec 2025
Family FOC date: Jan 2025
Total # of closed gaps: 0
Total # of open gaps: 33

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
0% | 0% | 100% | -

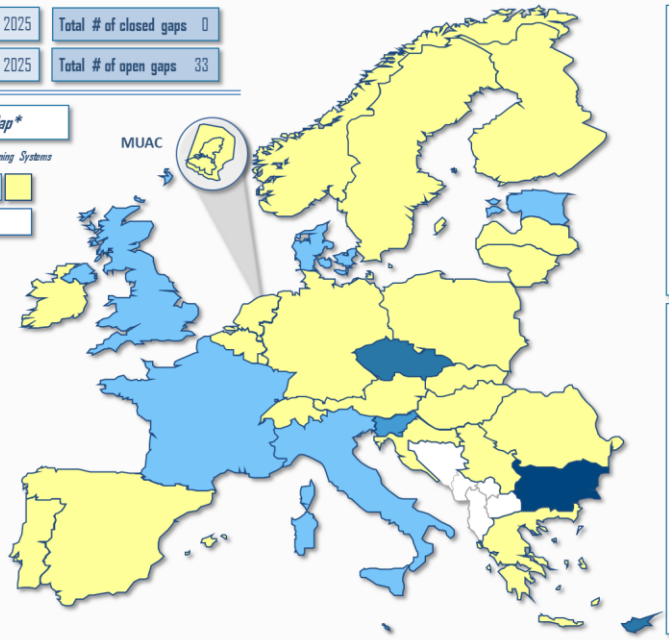


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	MET Providers
Austria	0%	100%	0%	Dec 2025				
Belgium	0%	35%	65%	Dec 2025				
Bulgaria	90%	0%	10%	Dec 2024				
Croatia	0%	90%	10%	Dec 2025				
Cyprus	70%	10%	20%	Dec 2024				
Czech Republic	60%	40%	0%	Dec 2024				
Denmark	10%	45%	45%	Dec 2024				
Estonia	5%	60%	35%	Dec 2024				
Finland	0%	90%	10%	Dec 2024				
France	5%	80%	15%	Dec 2024				
Germany	0%	65%	35%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	70%	30%	Dec 2024				
Italy	5%	40%	55%	Dec 2022				
Latvia	0%	85%	15%	Dec 2024				
Lithuania	0%	70%	30%	Dec 2024				
Luxembourg	0%	60%	40%	Dec 2024				
Malta	45%	30%	25%	Dec 2024				
MUAC	0%	100%	0%	Dec 2024				
Netherlands	0%	80%	20%	Dec 2025				
Norway	0%	0%	100%	-				
Poland	0%	80%	20%	Dec 2024				
Portugal	0%	60%	40%	-				
Romania	0%	60%	40%	Dec 2024				
Serbia	0%	100%	0%	Dec 2023				
Slovak Republic	0%	0%	100%	-				
Slovenia	40%	45%	15%	Dec 2025				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	100%	0%	Dec 2025				
Switzerland	0%	100%	0%	-				
United Kingdom	15%	45%	40%	Dec 2023				

H

5.5.1 Upgrade / Implement Cooperative Network Information Exchange system/service

Expected completion year Dec 2025 | Total # of closed gaps 1

Family FOC date Jan 2025 | Total # of open gaps 31

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

80% | 20% | 0% | Dec 2024

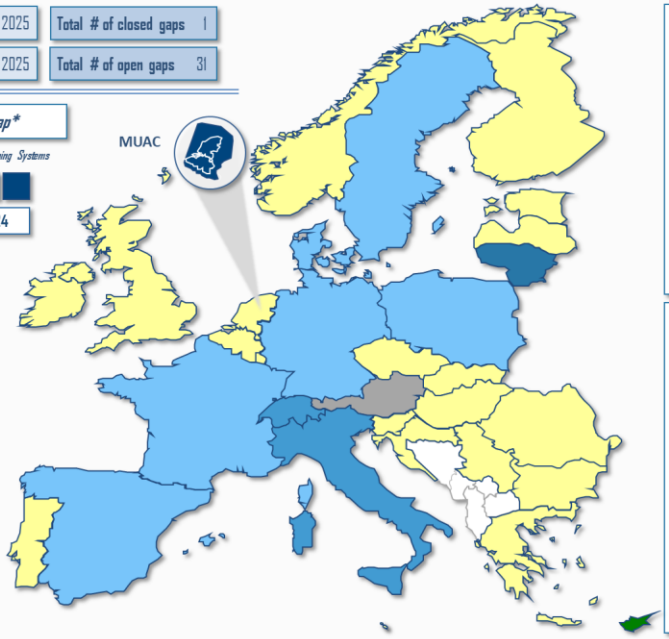


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities
Austria								
Belgium	0%	0%	100%	-				
Bulgaria	0%	0%	100%	-				
Croatia	0%	100%	0%	Dec 2025				
Cyprus	✓			✓				
Czech Republic	0%	100%	0%	Dec 2024				
Denmark	15%	25%	60%	Dec 2024				
Estonia	0%	0%	100%	-				
Finland	0%	100%	0%	Dec 2024				
France	25%	25%	50%	Dec 2024				
Germany	25%	45%	30%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	100%	0%	Dec 2024				
Italy	35%	65%	0%	Dec 2020				
Latvia	0%	0%	100%	-				
Lithuania	60%	40%	0 %	Dec 2021				
Luxembourg	0%	40%	60%	Dec 2024				
Malta	0%	5%	95%	Dec 2020				
MUAC	95%	5%	0%	Dec 2024				
Netherlands	0%	100%	0%	Dec 2025				
Norway	0%	10%	90%	Dec 2025				
Poland	10%	75%	15%	Dec 2024				
Portugal	0%	0%	100%	-				
Romania	0%	0%	100%	-				
Serbia	0%	0%	100%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	0%	100%	-				
Spain	5%	75%	20%	Dec 2024				
Sweden	15%	85%	0%	Dec 2024				
Switzerland	50%	0%	50%	-				
United Kingdom	0%	60%	40%	Dec 2024				

H

5.6.1 Upgrade / Implement Flights Information Exchange system / service supported by Yellow Profile

Expected completion year: Dec 2025
Family FOC date: Jan 2025
Total # of closed gaps: 1
Total # of open gaps: 32

Airspace User Gap*
* Through the update of Computer Flight Planning Systems

Network Manager: 60% | 40% | 0% | Dec 2024

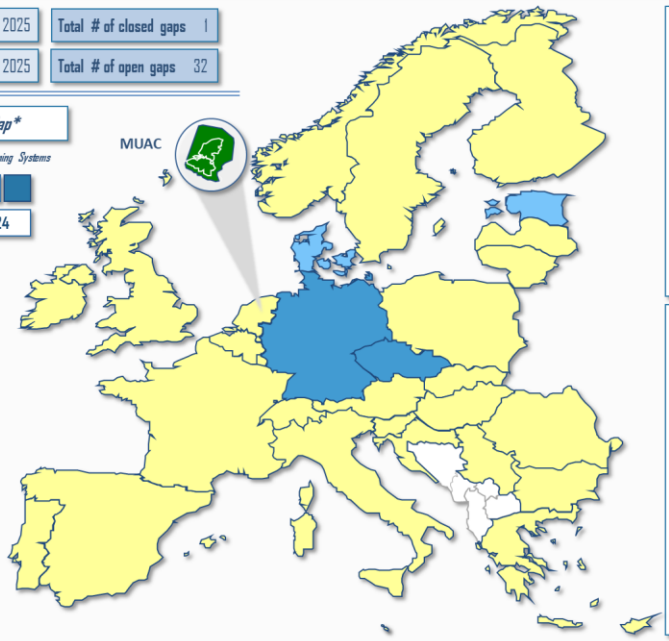


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities
Austria	0%	100%	0%	Dec 2025				
Belgium	0%	0%	100%	-				
Bulgaria	0%	100%	0%	Dec 2024				
Croatia	0%	100%	0%	Dec 2025				
Cyprus	0%	0%	100%	-				
Czech Republic	50%	25%	25%	-				
Denmark	5%	0%	95%	-				
Estonia	20%	0%	80%	Dec 2024				
Finland	0%	0%	100%	-				
France	0%	5%	95%	Dec 2024				
Germany	50%	25%	25%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	20%	80%	Dec 2024				
Italy	0%	100%	0%	Dec 2022				
Latvia	0%	0%	100%	-				
Lithuania	0%	100%	0%	Dec 2024				
Luxembourg	0%	40%	60%	Dec 2024				
Malta	0%	0%	100%	-				
MUAC	✓			✓				
Netherlands	0%	100%	0%	Dec 2025				
Norway	0%	0%	100%	-				
Poland	0%	60%	40%	Dec 2024				
Portugal	0%	0%	100%	-				
Romania	0%	0%	100%	-				
Serbia	0%	100%	0%	-				
Slovak Republic	0%	100%	0%	Dec 2023				
Slovenia	0%	0%	100%	-				
Spain	0%	100%	0%	Dec 2025				
Sweden	0%	100%	0%	Dec 2025				
Switzerland	0%	100%	0%	Dec 2025				
United Kingdom	0%	95%	5%	Dec 2024				

5.6.2 Upgrade / Implement Flights Information Exchange system / service supported by Blue Profile

Expected completion year: Dec 2029
Family FOC date: Jan 2025
Total # of closed gaps: 0
Total # of open gaps: 33

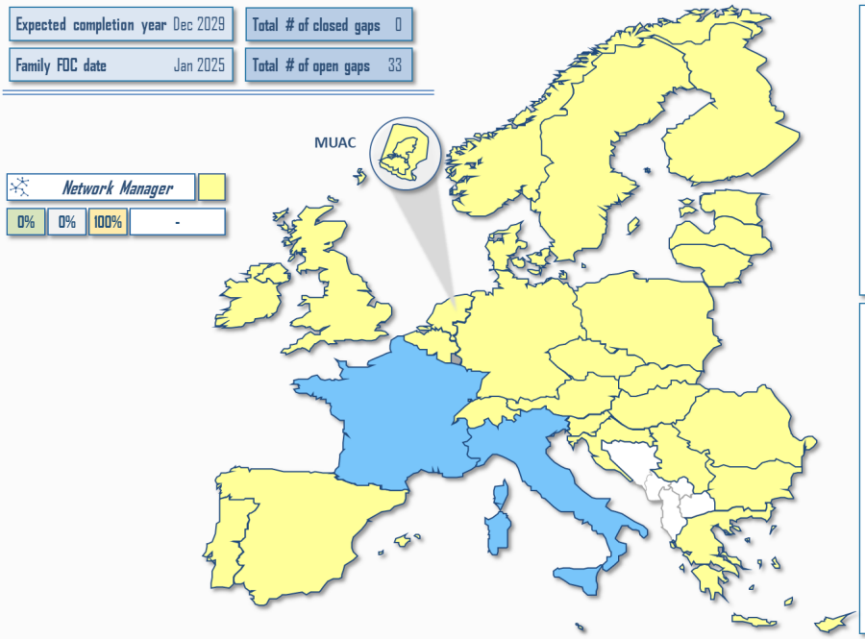


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	0%	0%	100%	-		
Belgium	0%	0%	100%	-		
Bulgaria	0%	0%	100%	-		
Croatia	0%	0%	100%	-		
Cyprus	0%	0%	100%	-		
Czech Republic	0%	100%	0%	Dec 2024		
Denmark	0%	0%	100%	-		
Estonia	0%	0%	100%	-		
Finland	0%	100%	0%	Dec 2024		
France	10%	90%	0%	Dec 2026		
Germany	0%	0%	100%	-		
Greece	0%	100%	0%	Dec 2022		
Hungary	0%	100%	0%	Dec 2024		
Ireland	0%	0%	100%	-		
Italy	10%	90%	0%	Dec 2024		
Latvia	0%	0%	100%	-		
Lithuania	0%	100%	0%	Dec 2024		
Luxembourg	0%	0%	100%	-		
Malta	0%	0%	100%	-		
MUAC	0%	100%	0%	Dec 2029		
Netherlands	0%	100%	0%	Dec 2029		
Norway	0%	0%	100%	-		
Poland	0%	100%	0%	Dec 2024		
Portugal	0%	0%	100%	-		
Romania	0%	0%	100%	-		
Serbia	0%	100%	0%	-		
Slovak Republic	0%	0%	100%	-		
Slovenia	0%	0%	100%	-		
Spain	0%	100%	0%	Dec 2027		
Sweden	0%	100%	0%	Dec 2027		
Switzerland	0%	0%	100%	-		
United Kingdom	0%	100%	0%	-		

SWIM Services Implementation – Overview of deployment activities

Over the recent period, Implementing Partners has focused on implementing the prerequisites for actual Service implementation, e.g. stakeholders Internet Protocol (IP) infrastructure and middleware. This explains why the progress in AF5 seams slower than compared to other AF's, as the end objective in AF5 is the services. Many operational stakeholders report ongoing or even concluded planning of SWIM service implementations, which are expected to transition to actual service implementation initiatives in the coming years.

Recently, several foundations for the implementation of SWIM services, namely the:

- Eurocontrol SWIM specifications;
- NM B2B Services;
- EUROCAE ED-254 standard "Arrival Sequence Service Performance Specification";
- SWIM Service Provisioning Policy (delivered through SWIM Governance IPP and consulted through SDM SCP) providing grounds for SWIM implementation.
- EUROCAE WG104 is paving the way to ease the future standardization activities providing EUROCAE working groups with even more
  reliable and useful support material in form of an improved template and a comprehensive methodology to accomplish their SWIM Service standardisation activities. It is envisaged that the outcome produced will be immediately useable in the European SWIM context.

This increases the confidence of the operational stakeholders, which consistently report the drafting of roadmaps for the implementation of SWIM (services) and a planning that goes into more detail.

The above-mentioned foundations provide a starting point for drafting implementation plans, the Implementing Partners are expected to engage with SWIM Governance and release service specifications to the SWIM Registry.

Besides the overall improving picture, differences between the various families dealing with SWIM services can be observed:

- Families 5.3.1, 5.4.1, 5.5.1 and 5.6.1 are mature. This translates into more numerous and more concrete planning of service implementations or even in on-going implementation initiatives, which cover at least part of the services;
- In Family 5.5.1, this maturity is owed to the advanced stage of NM service implementation. Implementation initiatives in this Family are primarily based on NM B2B services and NM support all operational stakeholders in exchanging data electronically for cooperative network management activities.
- Family 5.6.1 is linked to FF ICE Release 1. Family 5.6.1 has been partially deployed and implementation is planned by many stakeholders.
- Family 5.6.2 Implementation here is the least advanced due to the ongoing R&D activities in SESAR 2020 where it is planned to deliver a TRL6 solution Q4 2020. Progresses have been made on the standardisation, resulting in an initial version of ED133 delivered Q1 2020. Final version planned for Q2 2021.

AF6 – Initial Trajectory Information Sharing

H

6.1.1 ATN B1 based services in ATSP domain

Expected completion year Apr 2024 | Total # of closed gaps 20

Family FOC date Feb 2018 | Total # of open gaps 8

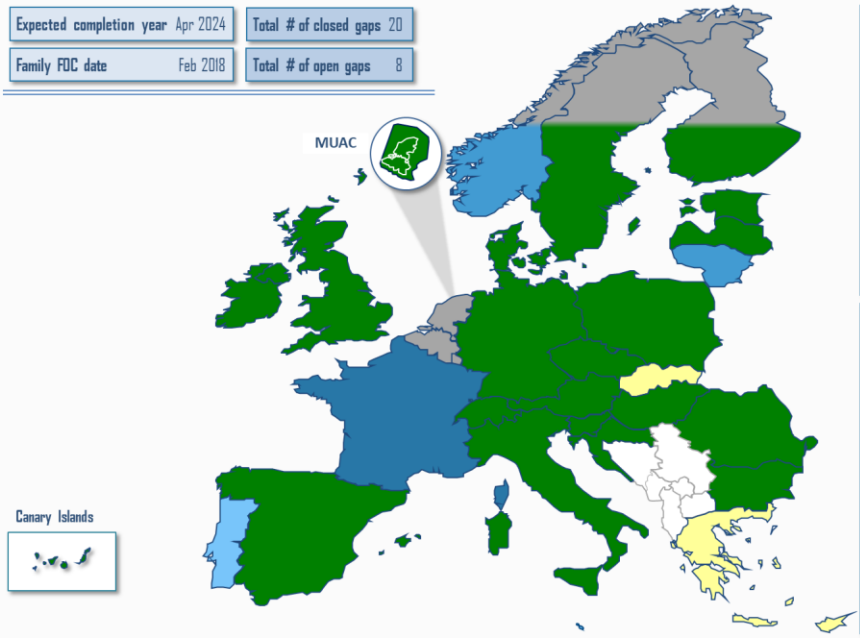


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category / Stakeholders considered as Gaps / ANSPs
Austria	✓			✓	
Belgium					
Bulgaria	✓			✓	
Croatia	✓			✓	
Cyprus	0%	100%	0%	Sep 2021	
Czech Republic	✓			✓	
Denmark	✓			✓	
Estonia	✓			✓	
Finland	✓			✓	
France	60%	40%	0%	Dec 2021	
Germany	✓			✓	
Greece	0%	100%	0%	Dec 2022	
Hungary	✓			✓	
Ireland	✓			✓	
Italy	✓			✓	
Latvia	✓			✓	
Lithuania	35%	65%	0%	Dec 2020	
Luxembourg					
Malta	20%	0%	80%	-	
MUAC	✓			✓	
Netherlands					
Norway	10%	90%	0%	Apr 2024	
Poland	✓			✓	
Portugal	20%	80%	0%	Mar 2022	
Romania	✓			✓	
Slovak Republic	0%	100%	0%	Dec 2022	
Slovenia	✓			✓	
Spain	✓			✓	
Sweden	✓			✓	
Switzerland	✓			✓	
United Kingdom	✓			✓	

For Malta data refers to the information provided through the DLS questionnaire collected in previous years

For Slovenia the data of the full deployment derives from an additional email received by the SDM and not from the result of the DP monitoring questionnaire 2020

6.1.2 ATN B2 based services in ATSP domain

Expected completion year: Mar 2022*
Family FOC date: Jan 2025
Total # of closed gaps: 0
Total # of open gaps: 29

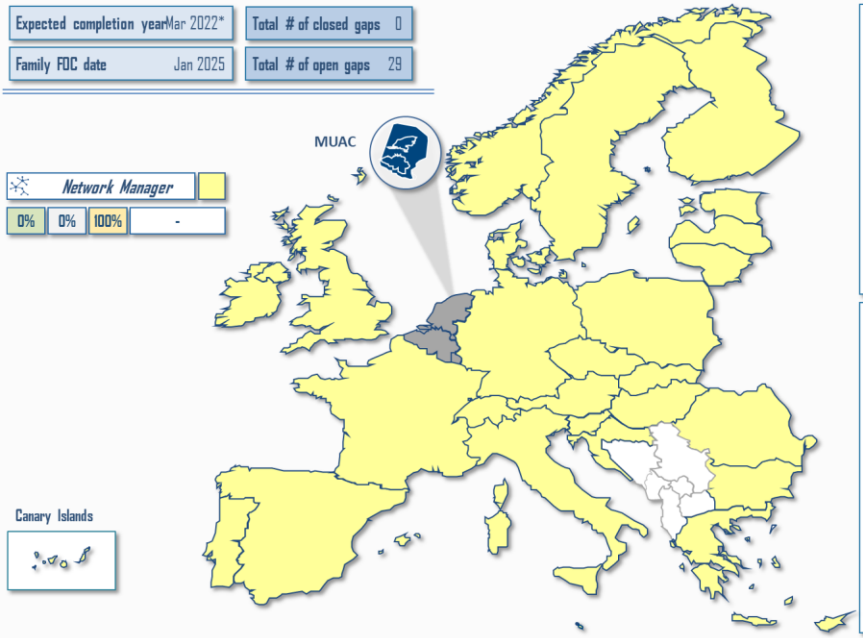


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	0%	0%	100%	-		
Belgium						
Bulgaria	0%	0%	100%	-		
Croatia	0%	0%	100%	-		
Cyprus	0%	0%	100%	-		
Czech Republic	0%	0%	100%	-		
Denmark	0%	0%	100%	-		
Estonia	0%	0%	100%	-		
Finland	0%	0%	100%	-		
France	0%	0%	100%	-		
Germany	0%	0%	100%	-		
Greece	0%	0%	100%	-		
Hungary	0%	0%	100%	-		
Ireland	0%	0%	100%	-		
Italy	0%	0%	100%	-		
Latvia	0%	0%	100%	-		
Lithuania	0%	0%	100%	-		
Luxembourg						
Malta	0%	0%	100%	-		
MUAC	95%	5%	0%	Mar 2022*		
Netherlands						
Norway	0%	0%	100%	-		
Poland	0%	0%	100%	-		
Portugal	0%	0%	100%	-		
Romania	0%	0%	100%	-		
Slovak Republic	0%	0%	100%	-		
Slovenia	0%	0%	100%	-		
Spain	0%	0%	100%	-		
Sweden	0%	0%	100%	-		
Switzerland	0%	0%	100%	-		
United Kingdom	0%	0%	100%	-		

*MUAC has planned a full implementation for early 2022..

For Malta data refers to the information provided through the DLS questionnaire collected in previous years

H

6.1.3 A/G and G/G Multi Frequency DL Network in defined European Service Areas (Country Level)

Expected completion year Apr 2024	Total # of closed gaps 21
Family FOC date Dec 2022	Total # of open gaps 7

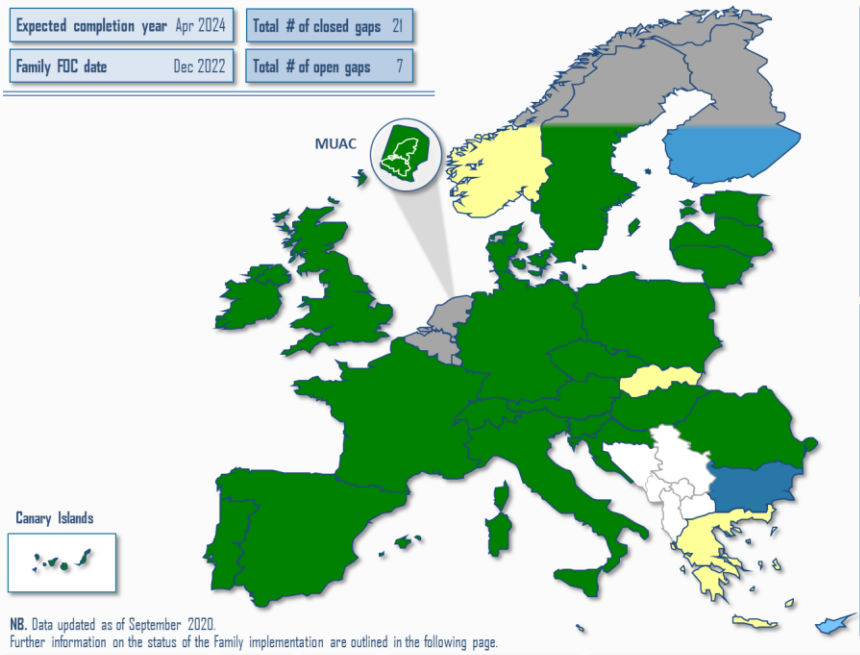


Chart Key – Implementation Status

The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

NB. Data updated as of September 2020.
Further information on the status of the Family implementation are outlined in the following page.

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps – ANSPs
Austria	✓			✓	
Belgium					
Bulgaria	65%	35%	0%	Jun 2021	
Croatia	✓			✓	
Cyprus	15%	85%	0%	Sep 2021	
Czech Republic	✓			✓	
Denmark	✓			✓	
Estonia	✓			✓	
Finland	50%	50%	0%	Mar 2021	
France	✓			✓	
Germany	✓			✓	
Greece	0%	100%	0%	Dec 2022	
Hungary	✓			✓	
Ireland	✓			✓	
Italy	✓			✓	
Latvia	✓			✓	
Lithuania	✓			✓	
Luxembourg					
Malta	0%	0%	100%	-	
MUAC	✓			✓	
Netherlands					
Norway	0%	100%	0%	Apr 2024	
Poland	✓			✓	
Portugal	✓			✓	
Romania	✓			✓	
Slovak Republic	0%	100%	0%	Dec 2022	
Slovenia	✓			✓	
Spain	✓			✓	
Sweden	✓			✓	
Switzerland	✓			✓	
United Kingdom	✓			✓	

For Malta data refers to the information provided through the DLS questionnaire collected in previous years
For Slovenia the data of the full deployment derives from an additional email received by the SDM and not from the result of the DP monitoring questionnaire 2020

Family 6.1.3 regards the Air/Ground and Ground/Ground Multi Frequency (MF) DL Network in defined European Service Areas, consisting in the European implementation of the A/G and G/G Network based on European Service Areas and VDL Mode 2 as part of ATN COM (COMmunication) domain; in particular, this is expected to be achieved through a stepwise approach, which envisages – in a first step – the deployment of a transitional solution (Model B or C/MF) and – subsequently – the implementation of the European target solution (Architecture 2).

The implementation process has been suitably designed in three levels of implementation:

- at Country Level, where local ANSPs are directly responsible of designing, developing and putting into operation the technical infrastructure, or responsible of managing the design and development through the Communication Service Providers;
- at Service Area level, i.e. within "*portions of airspace, homogeneous in terms of operational and technical needs, to provide data link services in a safe, secure, and efficient way*"[18], which goes beyond national borders;
- at European level, i.e. through the implementation of the DLS target solution in a single Service Area including all EU Member States, plus Norway and Switzerland.

Whilst the implementation activities at Country Level are progressing swiftly, the integration at Service Areas first, and European Level then, is expected to be performed in a coordinated way, based on the outcomes stemming from the so-called "Path II framework" that aims at identifying the activities needed for the definition of the technical aspects for the future DLS architecture. The "Path II framework" has been supported by two EU-funded Multi-stakeholder projects coordinated by SDM, aiming at defining the technical aspects of the future DLS infrastructure. The projects involve most European ANSPs, the two main Communication Service Providers, as well as the Airspace Users and manufacturing industries.

In light of above, the previous map provides only the implementation status of Family 6.1.3 at Country Level, building on the data provided by the involved stakeholders in response to the targeted DLS Survey released by SDM in late July 2020.

Based on the outcomes of the SDM-coordinated initiatives and the contribution from local stakeholders, future releases of the Monitoring View will also feature an overview of the implementation status of the technical infrastructure at Service Areas and European Level, in order to reach the full operational capability by the FOC date of the Family itself (December 2022).

[18] *Report on Service Areas and DLS overall architecture*, produced by SESAR Deployment Manager, September 2017

Outlook on PCP deployment per Family – Airspace Users gaps

Since the establishment of dedicated SDM surveys in 2015, a wide number of airlines – including all major European hub carriers and point-to-point carriers – have provided targeted and up-to-date feedback on the alignment of their fleet capabilities and of their flight planning systems with the PCP requirements. Due to the Covid-19 crisis and the difficulties faced by the Airspace Users in providing relevant information to the survey, a different approach was followed this year to alleviate their reporting efforts. More information on the specificities of the analysis is provided under each AF subject to assessment.

Due to the complexity of the different types, ages, operational roles, and quantities of military aircraft, it is not possible to provide an accurate percentage of aircraft equipage levels for PCP AF capabilities, also due to the difficulties in aggregating capabilities from different Sub-AFs.

However, SDM plans to constantly keep updating this database through the continuous synchronization activities and monitoring of the Programme implementation, also taking into duly account the inputs stemming from the military side, gathered through the support of EDA.

On the basis of Regulation (EU) n. 716/2014 and in accordance with the constantly updated operational outlook provided within the Planning View, Airspace Users have to be considered as significantly affected by the implementation activities associated to the following families:

- **1.2.1** RNP Approaches with vertical guidance
- **1.2.4** RNP1 operations in high density TMAs (aircraft capabilities)
- **2.5.2** Vehicle and aircraft systems contributing to Airport Safety Nets
- **3.1.3** Full rolling ASM/ATFCM process and ASM information sharing
- **3.2.1** Upgrade of ATM systems to support Direct Routings (DCT) and Free Route Airspace (FRA)
- **4.1.2** STAM Phase 2
- **4.2.2** Interactive Rolling NOP
- **4.2.3** Interface ATM systems to NM systems
- **4.3.1** Target Time for ATCFM purposes
- **4.3.2** Reconciled Target Times for ATFCM and Arrival Sequencing
- **5.1.2** NewPENS: New Pan-European Network Service
- **5.1.3** Common SWIM Infrastructure Components
- **5.1.4** Common SWIM PKI and Cybersecurity
- **5.2.1** Stakeholders Internet Protocol Compliance
- **5.2.2** Stakeholders SWIM Infrastructures Components
- **5.2.3** Stakeholders SWIM PKI and Cybersecurity
- **5.3.1** Upgrade/Implement Aeronautical Information Exchange System/Service
- **5.4.1** Upgrade/Implement Meteorological Information Exchange System/Service
- **5.5.1** Upgrade/Implement Cooperative Network Information Exchange System/Service
- **5.6.1** Upgrade/Implement Flight Information Exchange System/Service supported by Yellow Profile
- **6.1.4** ATN B1 capability in Multi Frequency environment in aircraft domain
- **6.1.5** ATN B2 in aircraft domain

ATM Functionality #1 – Airborne domain equipage rate

With specific regard to the AF1-related airborne capabilities, the following chart indicates the percentage of fleet operated by Airlines headquartered within Europe, Norway and Switzerland which is already compliant with the PCP regulatory framework, in terms of aircraft equipage.

The data has been gathered by the Network Manager and facilitated to the SDM for the elaboration of this report. The information is based on capability declarations in the filled flight plans between March 2019 and February 2020, which is considered the last year of representative traffic data, due to the Covid-19 pandemic.

The chart reports, for each capability, the proportion of equipped aircraft with regard to the total number of flights and the estimated total number of aircraft operated by EU-headquartered airlines, obtained by aggregation of data from flight plans and data from the EUROCONTROL aircraft database (PRISME fleet).

Such input is considered as resulting into a representative snapshot of the current state-of-play on Airspace Users' side and helps better defining and clarifying the magnitude of the associated existing gaps towards the full deployment. As the methodology of the data gathering has changed from previous years, which were based on the information provided by Airspace Users in the dedicated SDM survey, the assessment on the evolution of equipage is not considered to be feasible. This year the data source is much wider and extracted from flight plans filed by commercial, military and general aviation airspace users.

Since European standards for RNP1 airworthiness certification have been made available only recently, RNP1 flight capability declaration underestimate the actual level of fleet capability. Therefore, GNSS-based RNAV1 capability declared in flight plans is considered as a better estimate of this capability.

The synchronized approach between ground and airborne side, enabling the achievement of operational improvements and the realization of the associated performance benefits, continues to be a must.

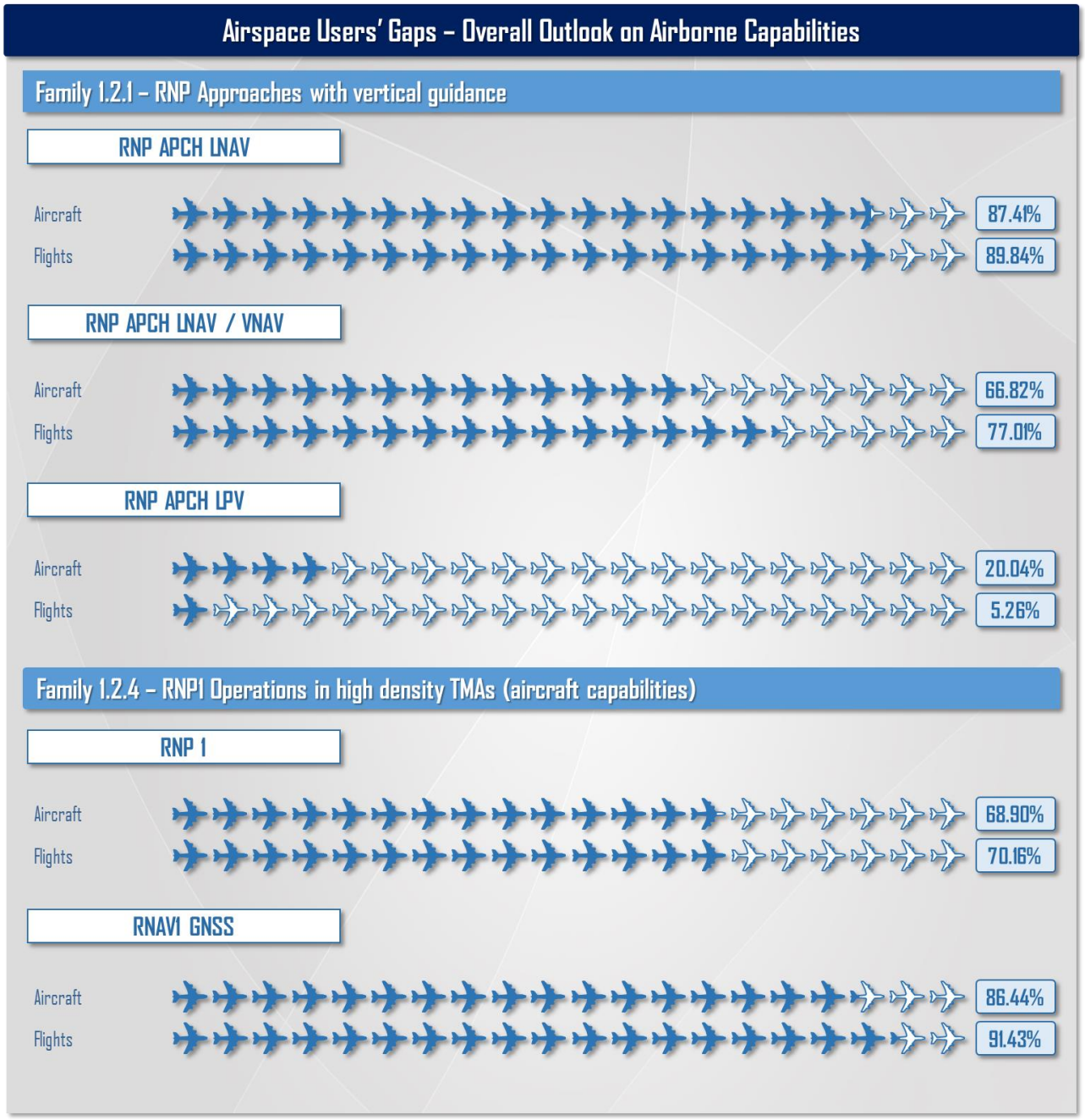


Figure 26 - Airspace Users' Gaps - Overall Outlook on Airborne Capabilities

DLS Update – Airborne domain equipage rate

Due to the limited number of feedbacks received within the 2020 DP monitoring exercise, as a result of the Covid-19 crisis, the preliminary analysis performed by SDM concluded that the **sample is not representative of the current overall EU Airborne implementation status**. However, the SDM, in order to provide a clear picture of the current situation in 2020, has performed two additional actions:

1. **A compared analysis** between the data received in the 2020 DP monitoring exercise and the 2020 forecasted data included in the 2018 DP monitoring. The result of this analysis is that the figures are **aligned**, meaning that the current 2020 DP monitoring data is consistent, even if stemming from a limited sample.
2. **A consistency check**, with the figures of the logon list provided by Network Manager (NM).

In addition, the 2020 DP monitoring exercise results in combination with the Synchronisation and Coordination role of the SDM for CEF funded initiatives towards PCP deployment, have confirmed the **successful completion** of the **projects submitted within the CEF framework,** whose main aim was the "Best in Class" (BIC) avionics implementation, ensuring good performances in the network.

Below the airborne implementation status is provided, based on the data gathered from the SDM survey filled-in in September 2020 by Airspace Users headquartered in EU/ECAC area:

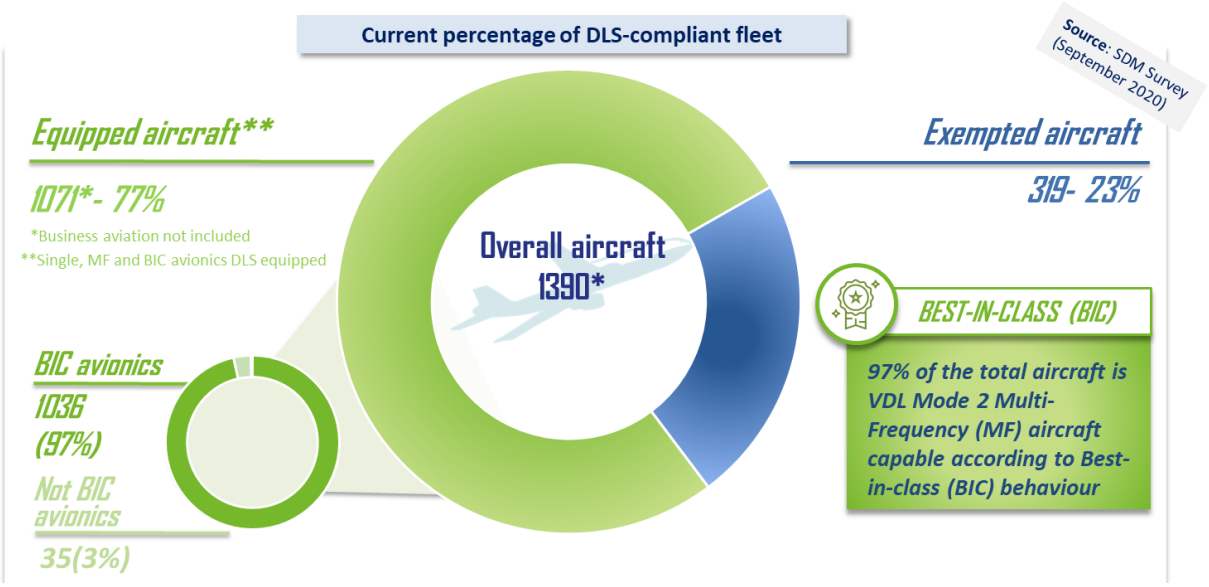


Figure 27 – Current Percentage of DLS-Compliant fleet with IR (EU) No 310/2015

As shown in figure 27, the overall number of equipped aircraft is 1.071, corresponding to the 77% of the overall aircraft, while the 97% (1.036 aircraft) of the total aircraft is VDL Mode 2 Multi-frequency (MF) aircraft capable according to Best-in-class (BIC) behaviour.

Moreover, to provide also an overview based on the flight length, the SDM has classified aircraft according to this criterion, as follow:

1. **Short and medium haul:** when the flight length was shorter than 4,000 km;
2. **Long haul:** when the flight length was longer than 4,000 km.

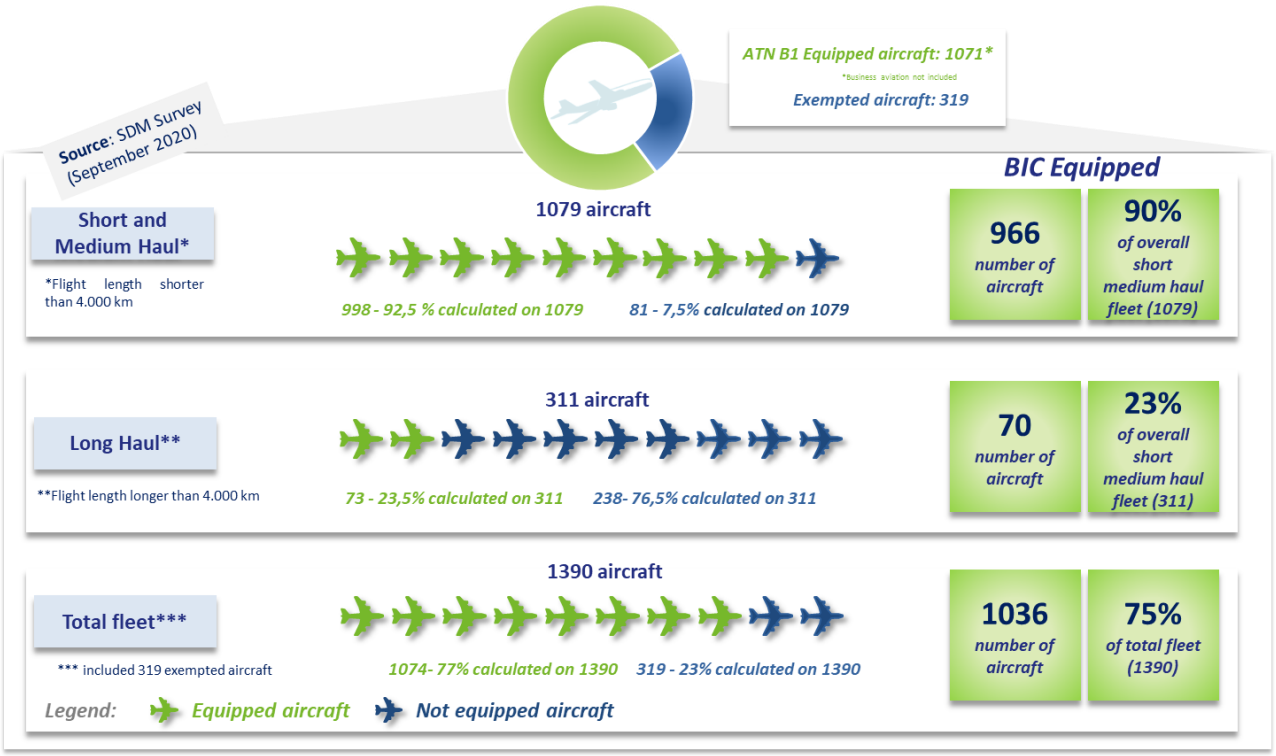


Figure 28 – Breakdown per flight length

As shown in Figure 28, the overall fleet of 1.390 aircraft can be divided in 1.079 short/medium haul fleet and 311 long-haul fleet. Regarding the short/medium-haul aircraft, it results that the 90% (966 aircraft) of the overall short/medium-haul fleet is VDL Mode 2 Multi-frequency (MF) aircraft capable according to Best-in-class (BIC) behavior. Regarding the long-haul aircraft, it results that the 23% (70 aircraft) of the overall long-haul fleet is VDL Mode 2 Multi-frequency (MF) aircraft capable according to Best-in-class (BIC) behavior.

Moreover, in terms of data consistency, the figures stemming from 2020 DP monitoring survey **are consistent with the** 2020 forecast (**number of equipped aircraft**) included in the 2018 DP monitoring survey. In particular, regarding the short/medium-haul fleet, the 2020 forecast (included in 2018 DP monitoring survey) indicating a percentage of BIC equipped aircraft of 85% is slightly improved with the 2020 data (stemming from 2020 DP monitoring survey) indicating the 90%. Regarding the Long-Haul fleet, the 2020 forecast indicating a percentage of BIC equipped aircraft of 26% is aligned with the 2020 data indicating the 23%. Taking into account also the positive consistency check which has been performed with the logon list provided by NM, the SDM considers the 2020 DP monitoring data valid to represent the **current overall EU Airborne implementation status**. The figure below summarises the short-medium & long fleet based on 2020 DP monitoring results and 2020 forecast data including in the 2018 DP monitoring survey:

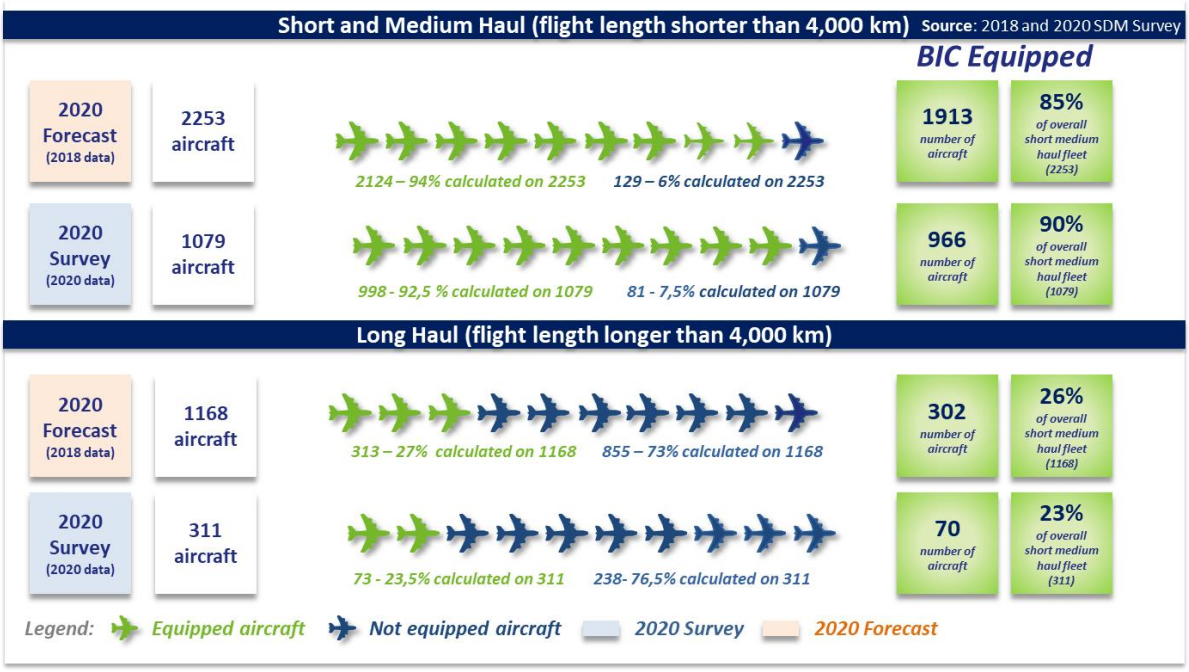


Figure 29 – 2020 Forecast performed in 2018 VS 2020 Survey

Additionally, considering the airborne mandate, it seems relevant to split Long Haul (FANS) versus Medium Haul fleet for monitoring purpose, since they have **completely different exemption** rules as displayed in the figure below:

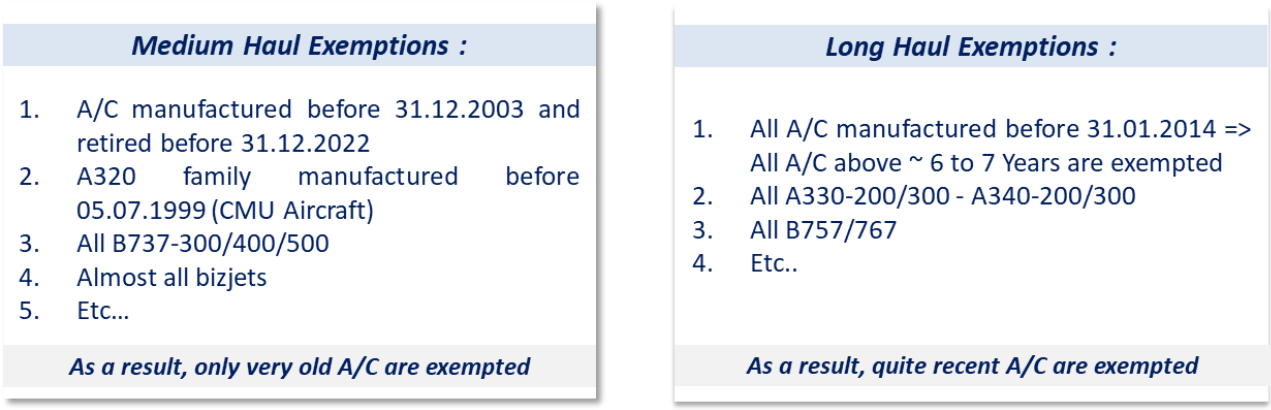


Figure 30 – Medium and Long exemptions

As shown in the figure above, there is a significant number of long-haul A/C exempted (e.g. all A/C manufactured before January 2014, all A330-200/300 – A340-200/300, All B757/767, etc.) compared to Medium haul (A/C manufactured before December 2003 and retired before December 2022, A320 family manufactured before 05.07.1999, all B737-300/400/500, almost all business jets, etc.). For this reason, it should be noted that the **retirement of old A/C models** will naturally reduce the number of A/C exempted, especially long haul. In this sense, **Covid-19 crisis** is expected to **accelerate the retirement process**, since a consistent number of airlines are proceeding in retiring **old A/C models** and consequently it is expected also a slight improvement of the airborne equipage rate.

Appendix - Current status of PCP deployment – View by State

The present Appendix aims at illustrating within a single snapshot all relevant information concerning the current status of the Pilot Common Project deployment within each of the countries included in the geographical scope defined within Regulation (EU) n. 716/2014. As the AF1 and AF2 are not directly linked to States but to the 25[19] PCP airports, for the relevant countries, the appropriate airports will be explicitly listed and mentioned, as in Regulation (EU) n. 716/2014.

This Appendix is fed by the same data and information included within Section 2, gathered from operational stakeholders through the yearly SDM Monitoring Exercise, as well as by information stemming from the SDM coordination activities and oversight on CEF-funded Implementation Projects.

The following pages encompass dedicated tables per each Country included within the geographical scope of the Pilot Common Project, illustrating the following information:

- Overview of the status of the implementation gaps for the country, differentiating between those which have already been closed, those whose closure is in progress or planned, and those for which no specific plans have been elaborated by the relevant stakeholders;

- Status of coverage for each gap associated to a Family of the Deployment Programme, encompassing the following percentages and information:
  - *Current percentage of implementation*, i.e. what has been already deployed (green box);
  - *In progress / planned*, i.e. the percentage of the Family covered by on-going activities and planned to be covered by future initiatives (grey box);
  - *Not planned*, i.e. the percentage of the Family for which no specific plan has been elaborated (yellow box).
  - *Expected date of completion* of the Family deployment;
  - *CEF projects (Yes/No)*, illustrating whether one or more SDM-coordinated projects contribute to the Deployment of the Family.

Furthermore, the table at the bottom of each chart lists the SDM-coordinated and EU-funded Implementation Projects which directly involve Stakeholders operating within the relevant Country (plus MUAC). The completed projects are also duly highlighted.

[19] The scope of the SDM Monitoring Exercise encompasses all 24 PCP airports but Istanbul Ataturk

Austria

Number of gaps: 40

Current status of implementation

Already implemented	In progress / Planned	Not planned
17	21	2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	80%	20%	0%	Dec 2024	Yes
1.2.1	✓			✓	
1.2.2	✓			✓	
1.2.3	45%	55%	0%	Dec 2023	Yes
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	40%	60%	0%	Jun 2021	Yes
2.1.4	0%	100%	0%	Dec 2023	
2.2.1	✓			✓	
2.3.1	60%	40%	0%	Dec 2024	Yes
2.4.1	10%	40%	50%	Jan 2024	Yes
2.5.1	✓			✓	
2.5.2	✓			✓	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2023	Yes
3.2.1	70%	30%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	10%	90%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	90%	10%	0%	Dec 2020	Yes
4.2.4	0%	100%	0%	Dec 2023	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	30%	70%	0%	Dec 2024	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	5%	65%	30%	Dec 2025	Yes
5.2.3	5%	55%	40%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2025	Yes
5.4.1	0%	100%	0%	Dec 2025	Yes
5.5.1					
5.6.1	0%	100%	0%	Dec 2025	Yes
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

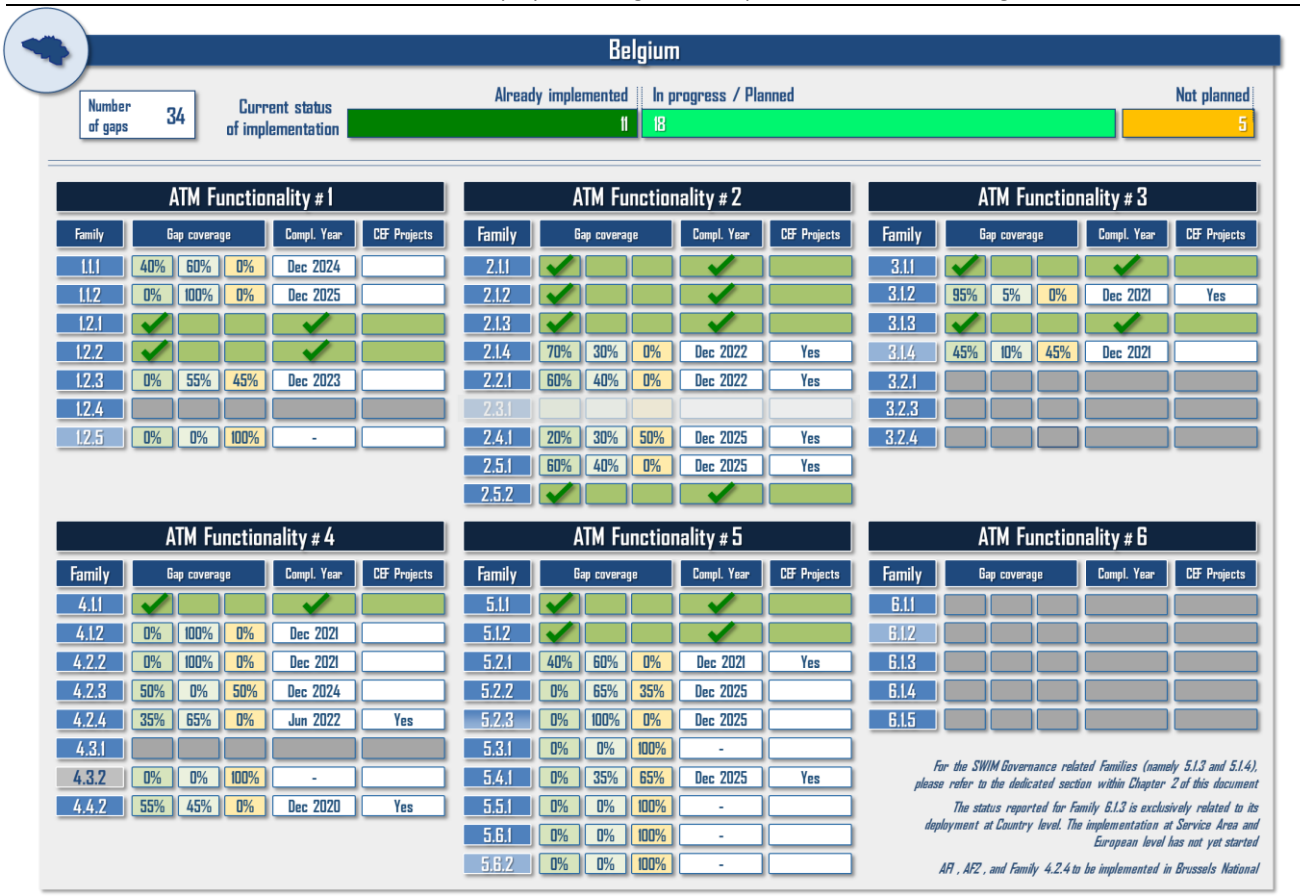
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Vienna Schwechat

List of CEF-funded initiatives awarded to Austrian Stakeholders

✓ Completed project

✓	#006AF5	ATM Data Quality (ADQ)	Austro Control		2016_008_AF4	Right evolution and upgrade of interfaces with NM stakeholders	Austrian Airlines
✓	#007AF1	Performance Based Navigation (PBN) implementation in Vienna (LOWW)	Austro Control		2016_010_AF4	STAM Phase 2	Austrian Airlines
✓	#008AF2	External Gateway System (EGS) implementation	Austro Control	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	Austro Control
✓	#009AF5	Integrated Briefing System New (IBSN)	Austro Control	✓	2016_075_AF3_A	FAB CE wide Study of DAM and STAM General Call	Austro Control
	#011AF2	Decision Management (CDM) fully implemented	Austro Control		2016_134_AF3	Implementation of rolling ASM/ATFCM	Sabre
✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	Austro Control	✓	2016_141_AF5	Deploy SWIM governance	Austrian Airlines, Austro Control
✓	2015_021_AF4	Slot Manager for PCP airports	Sabre	✓	2016_147_AF1	RNP APCH RWY 29 Vienna	Austro Control
	2015_106_AF4	Right evolution and upgrade of interfaces with NM stakeholders	Sabre		2016_149_AF5	Austro Control iSWIM Capability Infrastructure	Austro Control
	2015_107_AF3	NM Systems upgrades in support of DCTs and FRA	Sabre		2016_159_AF6	DLS Implementation Project – Path 2	Austro Control
	2015_110_AF4	STAM Phase 2 (NM)	Sabre	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Austro Control
	2015_114_AF4	Implementation of Target Times for ATFCM purposes (NM)	Sabre		2016_165_AF6	Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics	Austrian Airlines
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Austro Control		2017_004_AF1	Flight Crew Training for RNP1 Operations	Austrian Airlines
	2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	Austro Control		2017_052_AF4	AOP-NOP Integration - Extended Implementation	Vienna Schwechat
	2015_220_AF2	AF2_MET-Compliance-Programme	Austro Control		2017_053_AF3	Implementation of rolling ASM/ATFCM	Sabre
	2015_230_AF5	AF5 AIM Compliance Program	Austro Control		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Sabre
	2015_231_AF5	METSW-DB PCP Evolution	Austro Control	✓	2017_058_AF2	ITWP4LOWW (Integrated Tower Working Position for Vienna Schwechat)	Austro Control
	2015_232_AF2	TBS4LOWW (Time Based Separation for Vienna Airport)	Austro Control		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	Austro Control
✓	2015_234_AF1_A	AMAN LOWW initial	Austro Control		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Austro Control
✓	2015_234_AF1_B	AMAN LOWW initial	Austro Control	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	Austro Control, University of Salzburg
	2015_236_AF3	VHF Concept Implementation 2020	Austro Control				



Belgium

Number of gaps: 34

Current status of implementation

Already implemented	In progress / Planned	Not planned
11	18	5

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	40%	60%	0%	Dec 2024	
1.1.2	0%	100%	0%	Dec 2025	
1.2.1	✓			✓	
1.2.2	✓			✓	
1.2.3	0%	55%	45%	Dec 2023	
1.2.4					
1.2.5	0%	0%	100%	-	

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	70%	30%	0%	Dec 2022	Yes
2.2.1	60%	40%	0%	Dec 2022	Yes
2.3.1					
2.4.1	20%	30%	50%	Dec 2025	Yes
2.5.1	60%	40%	0%	Dec 2025	Yes
2.5.2	✓			✓	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	95%	5%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	45%	10%	45%	Dec 2021	
3.2.1					
3.2.3					
3.2.4					

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	50%	0%	50%	Dec 2024	
4.2.4	35%	65%	0%	Jun 2022	Yes
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	55%	45%	0%	Dec 2020	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	40%	60%	0%	Dec 2021	Yes
5.2.2	0%	65%	35%	Dec 2025	
5.2.3	0%	100%	0%	Dec 2025	
5.3.1	0%	0%	100%	-	
5.4.1	0%	35%	65%	Dec 2025	Yes
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1					
6.1.2					
6.1.3					
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Brussels National

Belgium

Number of gaps: 35

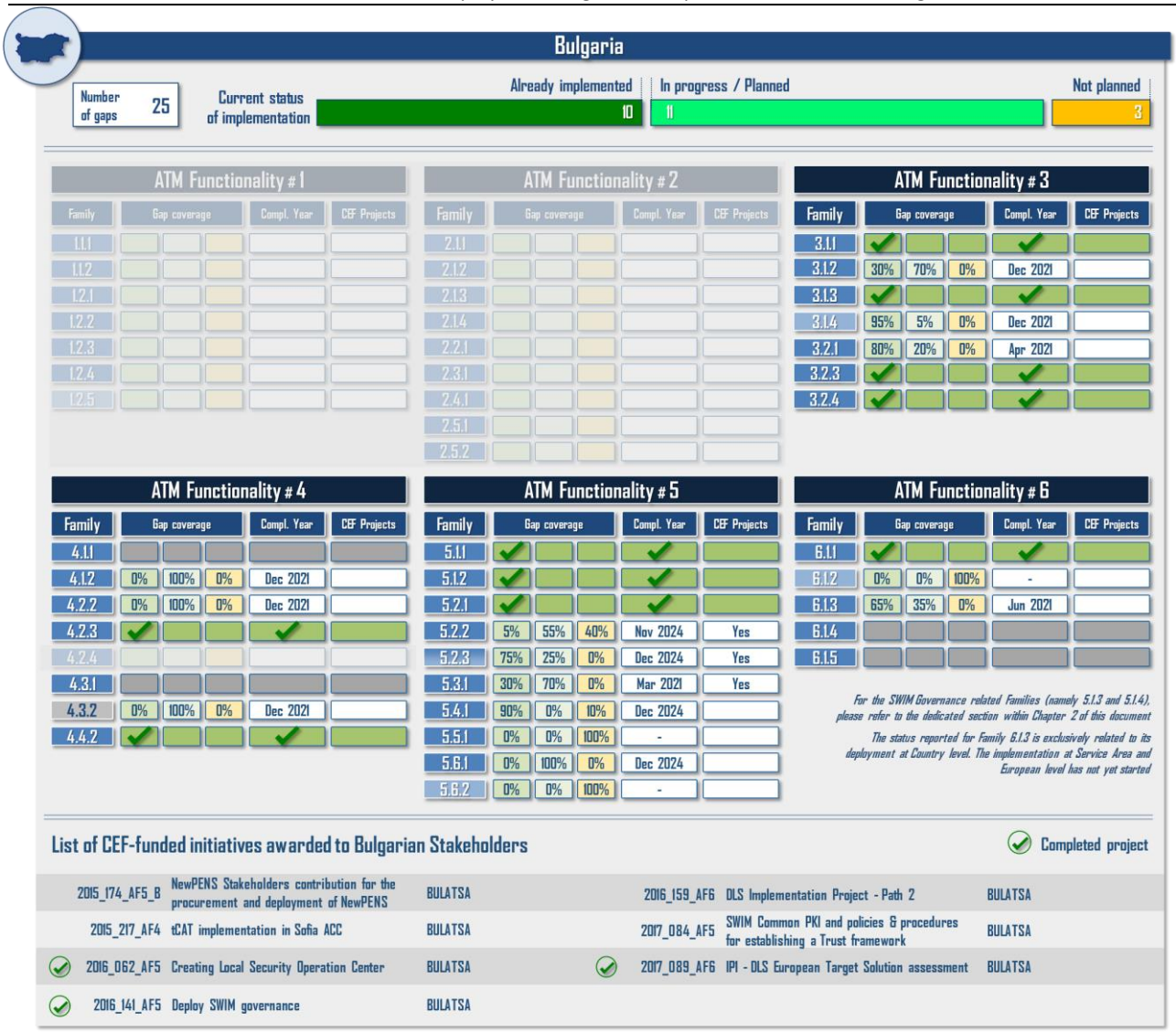
Current status of implementation

Already implemented	In progress / Planned	Not planned
11	18	5

List of CEF-funded initiatives awarded to Belgian Stakeholders

✓ Completed project

✓	#013AF1	RNP Approach with Vertical Guidance at the Belgian civil aerodromes within the Brussels TMA	Belgocontrol		2015_145_AF5_B	AIM Deployment Toolkit	ECTL / Network Manager
	#014AF5	MPLS WAN Project	Belgocontrol		2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager, ECTL / MUAC, Belgocontrol
✓	#015AF3	LARA integration in CANAC 2	Belgocontrol		2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager
✓	#016AF5	Initial WXXM Implementation on Belgocontrol systems	Belgocontrol		2015_196_AF1_A	XMAN - Cross-centre arrival management	ECTL / MUAC
✓	#018AF2	Enhancement of Airport Safety Nets for Brussels Airport (EBBR)	Belgocontrol		2015_232_AF2	TBS4LOWW (Time Based Separation for Vienna Airport)	ECTL / Network Manager
✓	#022AF2	Vehicle Tracking System (VTS)	Brussels National	✓	2015_244_AF2	APOC implementation	Brussels National
	#073AF5	SWIM Common Components	ECTL / Network Manager	✓	2015_245_AF2	AIRSTAT	Brussels National
✓	#077AF4	Interactive Rolling NOP	ECTL / Network Manager		2015_319_AF5	SWIM Common Components - Phase 2	ECTL / Network Manager
✓	#078AF4	ATFCM measures (STAM)	ECTL / Network Manager		2016_023_AF1	XMAN - Cross-center arrival management - Part 2	ECTL / MUAC
✓	#079AF4	Trajectory accuracy and traffic complexity	ECTL / Network Manager	✓	2016_027_AF5	European Deployment Roadmap for Flight Object	ECTL / Network Manager, ECTL / MUAC
✓	#080AF3	ASM and AFUA Implementation	ECTL / Network Manager		2016_100_AF4	Provision of EFPL data and initial FF-ICE/ 1	ECTL / Network Manager
✓	#081AF3	NM DCT/FRA Implementation and support	ECTL / Network Manager		2016_129_AF5	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager
✓	#082AF5	SWIM compliance of NM systems	ECTL / Network Manager		2016_131_AF4	AOP-NOP Integration - Extended Implementation	ECTL / Network Manager, Brussels National
✓	#083AF1	AMAN extended to en-route	ECTL / Network Manager	✓	2016_133_AF3	NM system management of real time airspace data	ECTL / Network Manager
✓	2015_021_AF4	Slot Manager for PCP airports	Brussels Airlines		2016_134_AF3	Implementation of rolling ASM/ATFCM	ECTL / Network Manager
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	EUMETNET EIG, ECTL / Network Manager		2016_135_AF3	Implementation of pre-defined airspace configuration	ECTL / Network Manager
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	EUMETNET EIG, ECTL / Network Manager	✓	2016_141_AF5	Deploy SWIM governance	EUMETNET EIG, Eurocontrol
	2015_069_AF5	European MET Information Exchange (MET-GATE)	EUMETNET EIG, ECTL / Network Manager		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Brussels National
	2015_101_AF1	Network Support to extended Arrival Management	ECTL / Network Manager		2016_159_AF6	DLS Implementation Project – Path 2	ECTL / MUAC
	2015_105_AF4	Interactive Rolling Network Operations Planning	ECTL / Network Manager		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Brussels National, Belgocontrol
	2015_106_AF4	Flight evolution and upgrade of interfaces with NM stakeholders	ECTL / Network Manager		2017_037_AF2	TBS deployment at Paris CDG	ECTL
	2015_107_AF3	NM Systems upgrades in support of DCTs and FRA	ECTL / Network Manager		2017_052_AF4	AOP-NOP Integration - Extended Implementation	ECTL / Network Manager
	2015_110_AF4	STAM Phase 2 (NM)	ECTL / Network Manager		2017_053_AF3	Implementation of rolling ASM/ATFCM	ECTL / Network Manager
	2015_112_AF5	Integrate the Aeronautical Information Exchange Services in NM Systems	ECTL / Network Manager		2017_054_AF4	Network Collaborative Management	ECTL / Network Manager
	2015_113_AF4	AOP-NOP Integration	ECTL / Network Manager		2017_055_AF3	NM Systems upgrades in support of FRA	ECTL / Network Manager
	2015_114_AF4	Implementation of Target Times for ATFCM purposes (NM)	ECTL / Network Manager		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	ECTL / Network Manager
	2015_115_AF4	Traffic Complexity Management	ECTL / Network Manager	✓	2017_058_AF2	ITWP4LOWW (Integrated Tower Working Position for Vienna Schwechat)	ECTL
	2015_117_AF5	Improve NM SWIM Infrastructure	ECTL / Network Manager		2017_062_AF4	Traffic Complexity Assessment and Simulations Tool - TCAST	Belgocontrol
	2015_141_AF5	Improve NM Flight Information Exchange Services	ECTL / Network Manager		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ECTL, Belgocontrol
	2015_143_AF5	Improve Cooperative Network Information Exchange Services	ECTL / Network Manager	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	ECTL / Network Manager
	2015_145_AF5_A	AIM Deployment Toolkit	ECTL / Network Manager				


Bulgaria
Number of gaps 25
Current status of implementation
Already implemented 10
In progress / Planned 11
Not planned 3
ATM Functionality # 1
Family | Gap coverage | Compl. Year | CEF Projects
1.1.1
1.1.2
1.2.1
1.2.2
1.2.3
1.2.4
1.2.5
ATM Functionality # 2
Family | Gap coverage | Compl. Year | CEF Projects
2.1.1
2.1.2
2.1.3
2.1.4
2.2.1
2.3.1
2.4.1
2.5.1
2.5.2
ATM Functionality # 3
Family | Gap coverage | Compl. Year | CEF Projects
3.1.1
3.1.2 30% 70% 0% Dec 2021
3.1.3
3.1.4 95% 5% 0% Dec 2021
3.2.1 80% 20% 0% Apr 2021
3.2.3
3.2.4
ATM Functionality # 4
Family | Gap coverage | Compl. Year | CEF Projects
4.1.1
4.1.2 0% 100% 0% Dec 2021
4.2.2 0% 100% 0% Dec 2021
4.2.3
4.2.4
4.3.1
4.3.2 0% 100% 0% Dec 2021
4.4.2
ATM Functionality # 5
Family | Gap coverage | Compl. Year | CEF Projects
5.1.1
5.1.2
5.2.1
5.2.2 5% 55% 40% Nov 2024 Yes
5.2.3 75% 25% 0% Dec 2024 Yes
5.3.1 30% 70% 0% Mar 2021 Yes
5.4.1 90% 0% 10% Dec 2024
5.5.1 0% 0% 100% -
5.6.1 0% 100% 0% Dec 2024
5.6.2 0% 0% 100% -
ATM Functionality # 6
Family | Gap coverage | Compl. Year | CEF Projects
6.1.1
6.1.2 0% 0% 100% -
6.1.3 65% 35% 0% Jun 2021
6.1.4
6.1.5
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Bulgarian Stakeholders
Completed project
2015_174_AF5_B NewPENS Stakeholders contribution for the procurement and deployment of NewPENS BULATSA
2015_217_AF4 tCAT implementation in Sofia ACC BULATSA
2016_062_AF5 Creating Local Security Operation Center BULATSA
2016_141_AF5 Deploy SWIM governance BULATSA
2016_159_AF6 DLS Implementation Project - Path 2 BULATSA
2017_084_AF5 SWIM Common PKI and policies & procedures for establishing a Trust framework BULATSA
2017_089_AF6 IP1 - DLS European Target Solution assessment BULATSA

Croatia

Number of gaps: 26

Current status of implementation: Already implemented: 9 | In progress / Planned: 14 | Not planned: 3

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2022	
3.1.3	✓			✓	
3.1.4	95%	5%	0%	Dec 2021	Yes
3.2.1	70%	15%	15%	Dec 2022	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	10%	90%	0%	Dec 2022	Yes
4.2.2	0%	100%	0%	Dec 2023	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	10%	90%	0%	Dec 2022	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	45%	55%	0%	Dec 2022	Yes
5.2.2	0%	100%	0%	Dec 2025	Yes
5.2.3	30%	70%	0%	Dec 2025	Yes
5.3.1	0%	100%	0%	Dec 2025	
5.4.1	0%	90%	10%	Dec 2025	
5.5.1	0%	100%	0%	Dec 2025	
5.6.1	0%	100%	0%	Dec 2025	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

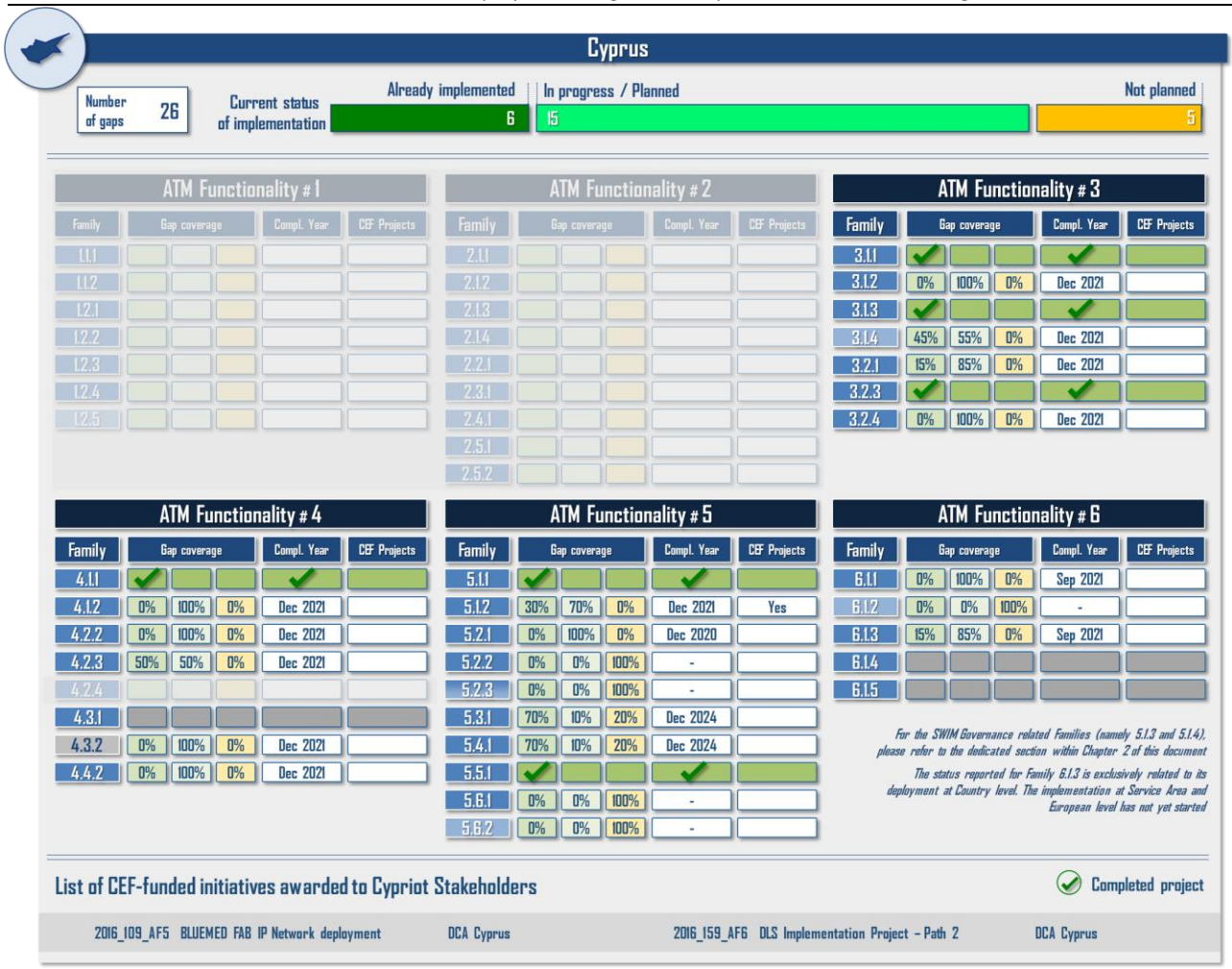
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Croatian Stakeholders

✓ Completed project

✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	Croatia Control		2016_043_AF3	VCS-IP - Upgrade of Voice Communication Systems to support ATM VoIP communications	Croatia Control
✓	2015_047_AF5	Modernisation of IP based G/G Data Network in CCL - CaRT/iWAN-NG	Croatia Control		2016_044_AF5	Modernization of IP based G/G Data Network in CCL - CaRT/iWAN-NG - Phase II	Croatia Control
✓	2015_049_AF5	CCL cyber security architecture - ExCO-NG	Croatia Control	✓	2016_075_AF3_B	FAB CE wide Study of DAM and STAM – Cohesion Call	Croatia Control
✓	2015_050_AF3	Simulation and Implementation of SEAFRA H24	Croatia Control		2016_159_AF6	DLS Implementation Project – Path 2	Croatia Control
	2015_051_AF3	VARP - VoIP ATC Radio Project	Croatia Control	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Croatia Control
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Croatia Control		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	Croatia Control
	2015_207_AF3_B	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	Croatia Control	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	Croatia Control
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	Croatia Control				



Cyprus

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
6	15	5

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	
3.2.1	15%	85%	0%	Dec 2021	
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	50%	50%	0%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	30%	70%	0%	Dec 2021	Yes
5.2.1	0%	100%	0%	Dec 2020	
5.2.2	0%	0%	100%	-	
5.2.3	0%	0%	100%	-	
5.3.1	70%	10%	20%	Dec 2024	
5.4.1	70%	10%	20%	Dec 2024	
5.5.1	✓			✓	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	0%	100%	0%	Sep 2021	
6.1.2	0%	0%	100%	-	
6.1.3	15%	85%	0%	Sep 2021	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Cypriot Stakeholders

✓ Completed project

2016_109_AF5 BLUEMED FAB IP Network deployment	DCA Cyprus	2016_159_AF6 DLS Implementation Project – Path 2	DCA Cyprus

Czech Republic

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	17	1

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	80%	20%	0%	Dec 2021	Yes
3.1.2	75%	25%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	80%	20%	0%	Dec 2021	Yes
3.2.1	55%	45%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	65%	35%	0%	Dec 2021	Yes

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	55%	45%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	65%	35%	0%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	✓			✓	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	10%	30%	60%	Dec 2024	Yes
5.4.1	60%	40%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	Yes
5.6.1	50%	25%	25%	-	Yes
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Czech Stakeholders

✓ Completed project

✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	ANS CR	2015_241_AF5	Meteorological Information Exchange Service	ANS CR, CHMI
	2015_145_AF5_B	AIM Deployment Toolkit	ANS CR	2015_242_AF3	Free Route implementation into ATM system of ANS CR	ANS CR
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ANS CR	2015_243_AF5	Aeronautical Information Distribution Service	ANS CR
✓	2015_196_AF1_B	Extended AMAN in Czech Airspace	ANS CR	2016_064_AF5	AIMSIL - AIM Systems Integration Layer	ANS CR
✓	2015_234_AF1_B	AMAN LOWW initial	ANS CR	2016_065_AF5	SWIM implementation into ATS INFO/ARO System of ANS CR	ANS CR
	2015_239_AF3	Flexible ASM and Free Route	ANS CR	✓ 2016_075_AF3_B	FAB CE wide Study of DAM and STAM - Cohesion Call	ANS CR
✓	2015_240_AF4	Traffic Complexity Tools	ANS CR			

Denmark

Number of gaps: 41

Current status of implementation: Already implemented 16 | In progress / Planned 23 | Not planned 2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	70%	0%	30%	Dec 2024	Yes
1.2.1	55%	45%	0%	Dec 2021	Yes
1.2.2	✓			✓	
1.2.3	55%	45%	0%	Dec 2021	Yes
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	55%	45%	0%	Dec 2022	Yes
2.2.1	✓			✓	
2.3.1	25%	75%	0%	May 2022	Yes
2.4.1	20%	80%	0%	Dec 2024	Yes
2.5.1	0%	100%	0%	Dec 2024	Yes
2.5.2	30%	70%	0%	Dec 2020	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	0%	70%	-	
3.1.3	✓			✓	
3.1.4	✓			✓	
3.2.1	80%	20%	0%	Dec 2025	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	85%	15%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4	0%	100%	0%	Dec 2022	
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	95%	5%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	95%	0%	5%	Dec 2024	Yes
5.2.2	25%	40%	35%	Dec 2024	Yes
5.2.3	5%	90%	5%	Dec 2025	Yes
5.3.1	5%	45%	50%	Dec 2024	Yes
5.4.1	10%	45%	45%	Dec 2024	Yes
5.5.1	15%	25%	60%	Dec 2024	Yes
5.6.1	5%	0%	95%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

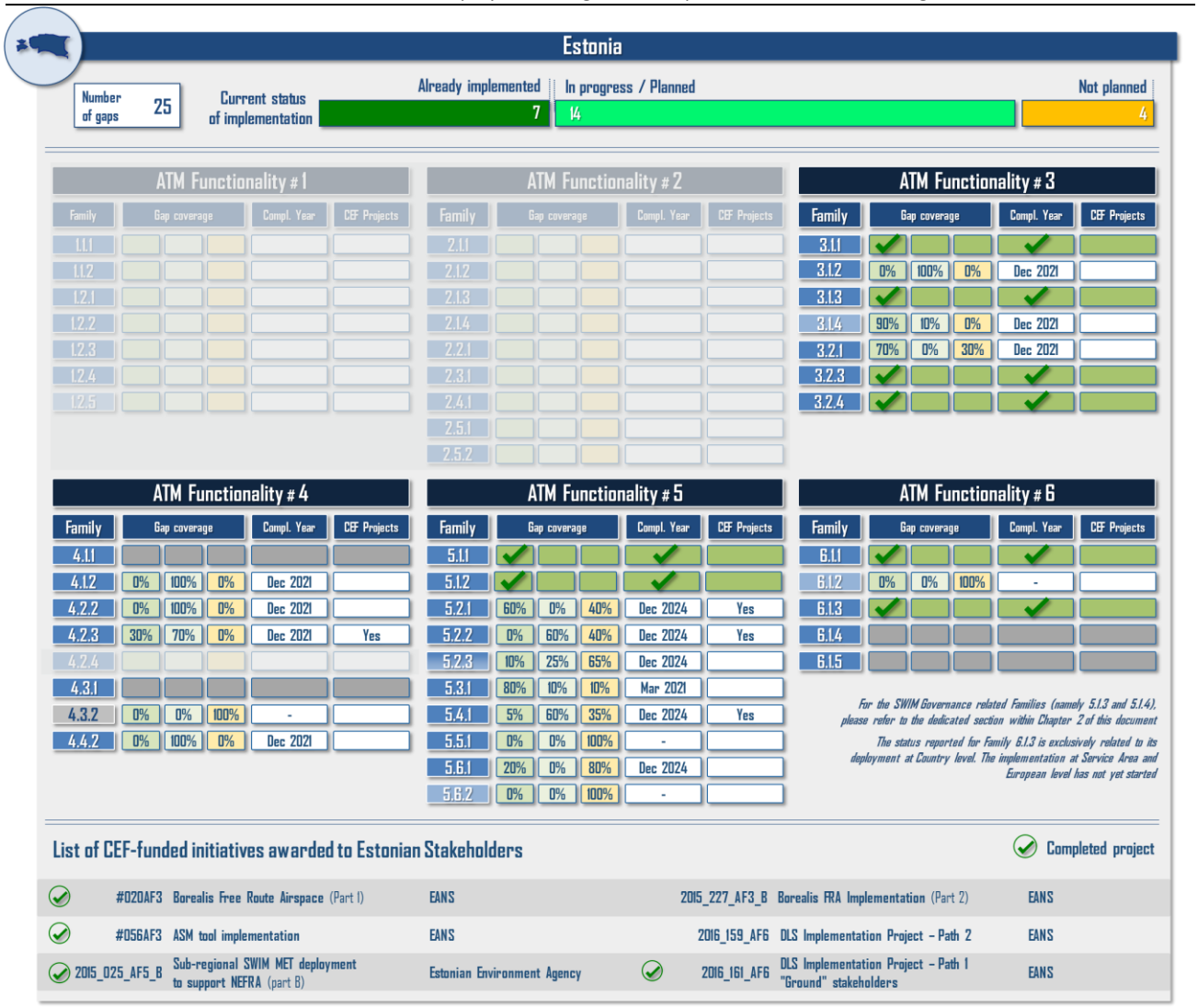
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Copenhagen Kastrup

List of CEF-funded initiatives awarded to Danish Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part 1)	Naviair		2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	Naviair
✓	#103AF2	Standardization of A-SMGCS	Copenhagen Airports AS, Naviair		2015_227_AF3_A	Borealis FRA Implementation (Part 2)	Naviair
✓	#127AF5	National WAN Infrastructure – CANDI-IP preparation project	Naviair		2016_012_AF1	Synchronised PBN Implementation	Copenhagen Airports AS, Naviair
✓	2015_025_AF5_A	Sub-regional SWIM MET deployment to support NEFRA (part A)	Danish Meteorological Institute (DM)	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	Naviair
	2015_043_AF2	AF2.4 A-SMGCS - Routing & Planning	Copenhagen Airports AS, Naviair	✓	2016_141_AF5	Deploy SWIM governance	Copenhagen Airports
✓	2015_044_AF2	Implementation of initial DMAN and AOP at Copenhagen Airport	Copenhagen Airports AS, Naviair		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Copenhagen Airports AS, Naviair
	2015_045_AF5	AF5 iSWIM	Copenhagen Airports AS		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Copenhagen Airports AS
	2015_046_AF2	AF 2.5 A-SMGCS - Safety Nets	Copenhagen Airports AS, Naviair		2017_026_AF5	PKI and Cybersecurity	Copenhagen Airports AS
✓	2015_099_AF5	DK-SE FAB Aeronautical Data Quality (ADQ)	Naviair		2017_060_AF5	ADQ Components in the SWIM Infrastructure - upstream data inclusion in the full data chain	Naviair
✓	2015_131_AF5	CANDI-IP (Execution phase)	Naviair		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	Naviair
✓	2015_132_AF3	VoIP Programme	Naviair		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Copenhagen Airports AS, Naviair
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Naviair				


Estonia
Number of gaps 25
Current status of implementation
Already implemented 7
In progress / Planned 14
Not planned 4
ATM Functionality # 1
ATM Functionality # 2
ATM Functionality # 3
ATM Functionality # 4
ATM Functionality # 5
ATM Functionality # 6
Family
Gap coverage
Compl. Year
CEF Projects
3.1.2 0% 100% 0% Dec 2021
3.1.4 90% 10% 0% Dec 2021
3.2.1 70% 0% 30% Dec 2021
4.1.2 0% 100% 0% Dec 2021
4.2.2 0% 100% 0% Dec 2021
4.2.3 30% 70% 0% Dec 2021 Yes
4.3.2 0% 0% 100% -
4.4.2 0% 100% 0% Dec 2021
5.2.1 60% 0% 40% Dec 2024 Yes
5.2.2 0% 60% 40% Dec 2024 Yes
5.2.3 10% 25% 65% Dec 2024
5.3.1 80% 10% 10% Mar 2021
5.4.1 5% 60% 35% Dec 2024 Yes
5.5.1 0% 0% 100% -
5.6.1 20% 0% 80% Dec 2024
5.6.2 0% 0% 100% -
6.1.2 0% 0% 100% -
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Estonian Stakeholders
Completed project
#020AF3 Borealis Free Route Airspace (Part 1) EANS
2015_227_AF3_B Borealis FRA Implementation (Part 2) EANS
#056AF3 ASM tool implementation EANS
2016_159_AF6 DLS Implementation Project – Path 2 EANS
2015_025_AF5_B Sub-regional SWIM MET deployment to support NEFRA (part B) Estonian Environment Agency
2016_161_AF6 DLS Implementation Project – Path 1 "Ground" stakeholders EANS

Finland

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	16	2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2020	
3.1.3	✓			✓	
3.1.4	85%	15%	0%	Dec 2021	Yes
3.2.1	75%	5%	20%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	75%	25%	0%	Dec 2021	Yes
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	10%	85%	5%	Dec 2024	
5.2.2	50%	20%	30%	Dec 2024	
5.2.3	10%	90%	0%	Dec 2024	
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	90%	10%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	0%	100%	-	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	50%	50%	0%	Mar 2021	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Finnish Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	Finavia	✓ 2016_027_AF5	European Deployment Roadmap for Flight Object — ANS Finland
	2015_025_AF5_A	Sub-regional SWIM MET deployment to support NEFRA (part A)	Finnish Meteorological Institute	✓ 2016_141_AF5	Deploy SWIM governance — ANS Finland
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	Finnish Meteorological Institute	2016_159_AF6	DLS Implementation Project – Path 2 — ANS Finland
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Finavia	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework — ANS Finland
	2015_227_AF3_A	Borealis FRA Implementation (Part 2)	Finavia		

France

Number of gaps	69

Current status of implementation	Already implemented	In progress / Planned	Not planned
	27	37	5

ATM Functionality # 1

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		✓			✓	
1.1.2	55%	15%	30%	Dec 2023	Yes	60%	10%	30%	Dec 2023	Yes	50%	10%	40%	Dec 2023	Yes
1.2.1	✓			✓		✓			✓		✓			✓	
1.2.2	50%	50%	0%	Dec 2022	Yes	50%	50%	0%	Dec 2022	Yes	0%	0%	100%	-	
1.2.3	0%	80%	20%	-		0%	0%	100%	-		0%	0%	100%	-	
1.2.4															
1.2.5	0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-	

ATM Functionality # 2

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		✓			✓	
2.1.2	✓			✓		✓			✓		✓			✓	
2.1.3	✓			✓		✓			✓		✓			✓	
2.1.4	45%	55%	0%	Jun 2022	Yes	45%	55%	0%	Jun 2022	Yes	0%	100%	0%	Dec 2020	Yes
2.2.1	70%	30%	0%	Jul 2021	Yes	75%	25%	0%	Jul 2021	Yes	✓			✓	
2.3.1						0%	0%	100%	-						
2.4.1	35%	65%	0%	Dec 2022	Yes	35%	65%	0%	Dec 2022	Yes	20%	80%	0%	Dec 2023	Yes
2.5.1	30%	70%	0%	Dec 2022	Yes	30%	70%	0%	Dec 2022	Yes	75%	25%	0%	Dec 2020	Yes
2.5.2	✓			✓		✓			✓		✓			✓	

ATM Functionality # 4 (Airport Gaps)

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	50%	50%	0%	Dec 2021	Yes	50%	50%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	✓			✓	
3.2.1	35%	30%	35%	Dec 2023	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2023	

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	15%	85%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	-	
4.2.3	75%	25%	0%	Dec 2021	Yes
4.3.1					
4.3.2	0%	55%	45%	Dec 2021	
4.4.2	85%	15%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	40%	55%	5%	Dec 2024	Yes
5.2.3	45%	50%	5%	Dec 2024	Yes
5.3.1	10%	70%	20%	Dec 2024	Yes
5.4.1	5%	80%	15%	Dec 2024	Yes
5.5.1	25%	25%	50%	Dec 2024	Yes
5.6.1	0%	5%	95%	Dec 2024	Yes
5.6.2	10%	90%	0%	Dec 2026	Yes

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	60%	40%	0%	Dec 2021	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

France

Number of gaps: 69

Current status of implementation

Already implemented	In progress / Planned	Not planned
27	37	5

List of CEF-funded initiatives awarded to French Stakeholders

✓ Completed project

	#023AF2	SMAN-Vehicle	Aéroports De Paris	✓	2015_196_AF1_A	XMAN - Cross-centre arrival management	DSNA
✓	#024AF2	SAIGA	Aéroports De Paris		2015_247_AF3	4Flight deployment in military En-route ACC (CMCC)	French MOD
✓	#025AF2	TSAT to the Gate	Aéroports De Paris		2015_249_AF5	PATRUS (Secured real time gateway) for data exchange between civil and military systems	French MOD
✓	#026AF2	Evolutions CDM-CDG	Aéroports De Paris		2016_023_AF1	XMAN - Cross-center arrival management - Part 2 (CEF2016)	DSNA
✓	#027AF2	SMAN-Airport	Aéroports De Paris	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	DSNA
✓	#030AF2	Equipment of ground vehicles to supply the A-SMGCS	Aéroports de la Côte d'Azur		2016_055_AF3	Upgrade of French Military CRCs for civil- military interoperability	French MOD
✓	#031AF2	Data exchanges with the Air Navigation Service Provider	Aéroports de la Côte d'Azur		2016_100_AF4	Provision of EFPL data and initial FF-ICE/ 1 readiness	Air France
✓	#032AF2	Data exchanges with the Network Manager Operations Center	Aéroports de la Côte d'Azur		2016_121_AF3	Free Route	Air France
	#033AF2	Data exchanges with COHOR	Aéroports de la Côte d'Azur		2016_123_AF4	STAM Phase 2 in combination with Target Times	Air France
	#048AF2	SYSAT@CDG	DSNA		2016_134_AF3	Implementation of rolling ASM/ATFCM	Air France, Sabre France SARL
	#049AF2	SYSAT@NCE	DSNA	✓	2016_141_AF5	Deploy SWIM governance	DSNA, Air France, French MOD
	#050AF2	SYSAT@ORY	DSNA		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	ADP, Aéroports de la Côte d'Azur, Air France, DSNA
✓	#051AF1a	RNP Approaches at CDG Airport with vertical guidance (Part A)	DSNA, Air France		2016_159_AF6	DLS Implementation Project – Path 2	DSNA, ESSP
✓	#051AF1b	RNP Approaches at CDG Airport with vertical guidance (Part B)	Air France	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	DSNA
	#053AF3	4-Flight deployment in DSNA pilot ACCs	DSNA		2016_165_AF6	Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics	Air France, HOP
✓	#054AF2	CDG 2020 Step 1	DSNA, Air France		2017_002_AF5	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	Air France
✓	#067AF5	Coflight-eFDP System Development	DSNA		2017_008_AF6	Air France Group Datalink upgrade to best in class avionics - Lot2	Air France, Transavia
✓	#129AF2	CDM-ORLY	Aéroports De Paris		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Aéroports De Paris, Aéroports de la Côte d'Azur
✓	#130AF2	BOREAL-Orly	Aéroports De Paris		2017_034_AF5	Deploying Cyber Infrastructure at DSNA	DSNA
✓	2015_062_AF3_Ph_I	4-Flight Deployment in PARIS Area - Phase I	DSNA		2017_035_AF5	Deploying SWIM infrastructure at DSNA	DSNA
	2015_062_AF3_Phase_II	4-Flight Deployment in PARIS Area, Upgrade in Marseille and Aix ACCs - Phase II	DSNA		2017_037_AF2	TBS deployment at Paris CDG	DSNA, Meteo France
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	Meteo France		2017_038_AF4	Enablers of Network Collaborative Management for En Route and Airports at DSNA	Aéroports De Paris, Air France, DSNA
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	Meteo France		2017_039_AF5	SEPIA - Deploying SWIM based AIM services in French Airspace	DSNA
	2015_069_AF5	European MET Information Exchange (MET-GATE)	Meteo France	✓	2017_043_AF3	Coflight-eFDP Development (Step 2)	DSNA
✓	2015_073_AF1	AMAN upgrade for extended horizon at DSNA airports	DSNA, Aéroports De Paris, Air France		2017_052_AF4	ADP-NOP Integration - Extended Implementation	Aéroports de la Côte d'Azur
	2015_083_AF2	iADP implementation	Aéroports de la Côte d'Azur		2017_053_AF3	Implementation of rolling ASM/ATFCM	Air France, Sabre France SARL
✓	2015_085_AF2	DMAN and Pre-departure sequence (PDS) implementations for the CDM implementation	Aéroports de la Côte d'Azur, DSNA		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Sabre France SARL
	2015_113_AF4	ADP-NOP Integration	Aéroports De Paris		2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	Air France
✓	2015_133_AF2	Initial AirPort Operational Centre (iAPOC)	Aéroports de Paris, Air France, DSNA		2017_080_AF5	PATRUS niveau 2 - Gateway Updgrade for 4Flight compliance	French MOD
	2015_135_AF2	CDG and ORLY - Initial Airport Operational Plan (AOP)	Aéroports de Paris, Air France		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Aéroports De Paris, Air France, DSNA, French MOD
	2015_139_AF1	Geographic Database – AIM TOOL	DSNA, Aéroports de Paris	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	ALTYS, DNSA, ESSP, SITA IT Services France, Thales
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Aéroports De Paris, DSNA				

Germany

Number of gaps	85

Current status of implementation

Already implemented	In progress / Planned	Not planned
28	52	5

ATM Functionality # 1

Family	Berlin Brandenburg Airport					Dusseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		✓			✓		✓			✓	
1.1.2	60%	40%	0%	Dec 2023	Yes	60%	25%	15%	Dec 2023	Yes	85%	15%	0%	Dec 2023	Yes	90%	10%	0%	Dec 2023	Yes
1.2.1	0%	100%	0%	Dec 2023		50%	50%	0%	Dec 2023	Yes	50%	50%	0%	Dec 2023	Yes	✓			✓	
1.2.2	✓			✓		✓			✓		✓			✓		✓			✓	
1.2.3	35%	65%	0%	Dec 2023	Yes	35%	65%	0%	Dec 2023	Yes	35%	65%	0%	Dec 2023	Yes	35%	65%	0%	Dec 2023	Yes
1.2.4																				
1.2.5	0%	20%	80%	-	Yes	0%	20%	80%	-	Yes	0%	20%	80%	-	Yes	0%	20%	80%	-	Yes

ATM Functionality # 2

Family	Berlin Brandenburg Airport					Dusseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	40%	60%	0%	Dec 2020		✓			✓		✓			✓		✓			✓	
2.1.2	95%	5%	0%	Dec 2020		✓			✓		✓			✓		✓			✓	
2.1.3	95%	5%	0%	Dec 2020		✓			✓		✓			✓		✓			✓	
2.1.4	85%	15%	0%	-		80%	20%	0%	Dec 2020	Yes	55%	45%	0%	Dec 2021	Yes	20%	80%	0%	Dec 2022	Yes
2.2.1	70%	30%	0%	Dec 2021		✓			✓		50%	50%	0%	Dec 2021	Yes	✓			✓	
2.3.1						0%	0%	100%	-		0%	100%	0%	Jan 2024		0%	0%	100%	-	
2.4.1	15%	35%	50%	Dec 2023	Yes	30%	70%	0%	Dec 2023	Yes	40%	60%	0%	Dec 2023	Yes	35%	65%	0%	Dec 2023	Yes
2.5.1	20%	80%	0%	Dec 2023	Yes	10%	90%	0%	Dec 2023	Yes	40%	60%	0%	Dec 2023	Yes	35%	65%	0%	Dec 2022	Yes
2.5.2	0%	100%	0%	Dec 2021		50%	50%	0%	Dec 2020	Yes	75%	25%	0%	Dec 2020	Yes	50%	50%	0%	-	

ATM Functionality # 4 (Airport Gaps)

Family	Berlin Brandenburg Airport					Dusseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	90%	10%	Oct 2021		5%	95%	0%	Dec 2021	Yes	50%	50%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2021	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2023	Yes
3.1.3	70%	30%	0%	Dec 2021	Yes
3.1.4	25%	75%	0%	Dec 2021	Yes
3.2.1	✓			✓	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	10%	90%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	75%	25%	0%	Dec 2021	
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	80%	20%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	80%	15%	5%	Dec 2021	Yes
5.2.2	30%	50%	20%	Oct 2023	Yes
5.2.3	0%	95%	5%	Dec 2024	
5.3.1	15%	50%	35%	Dec 2024	Yes
5.4.1	0%	65%	35%	Dec 2024	Yes
5.5.1	25%	45%	30%	Dec 2024	Yes
5.6.1	50%	25%	25%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

Germany

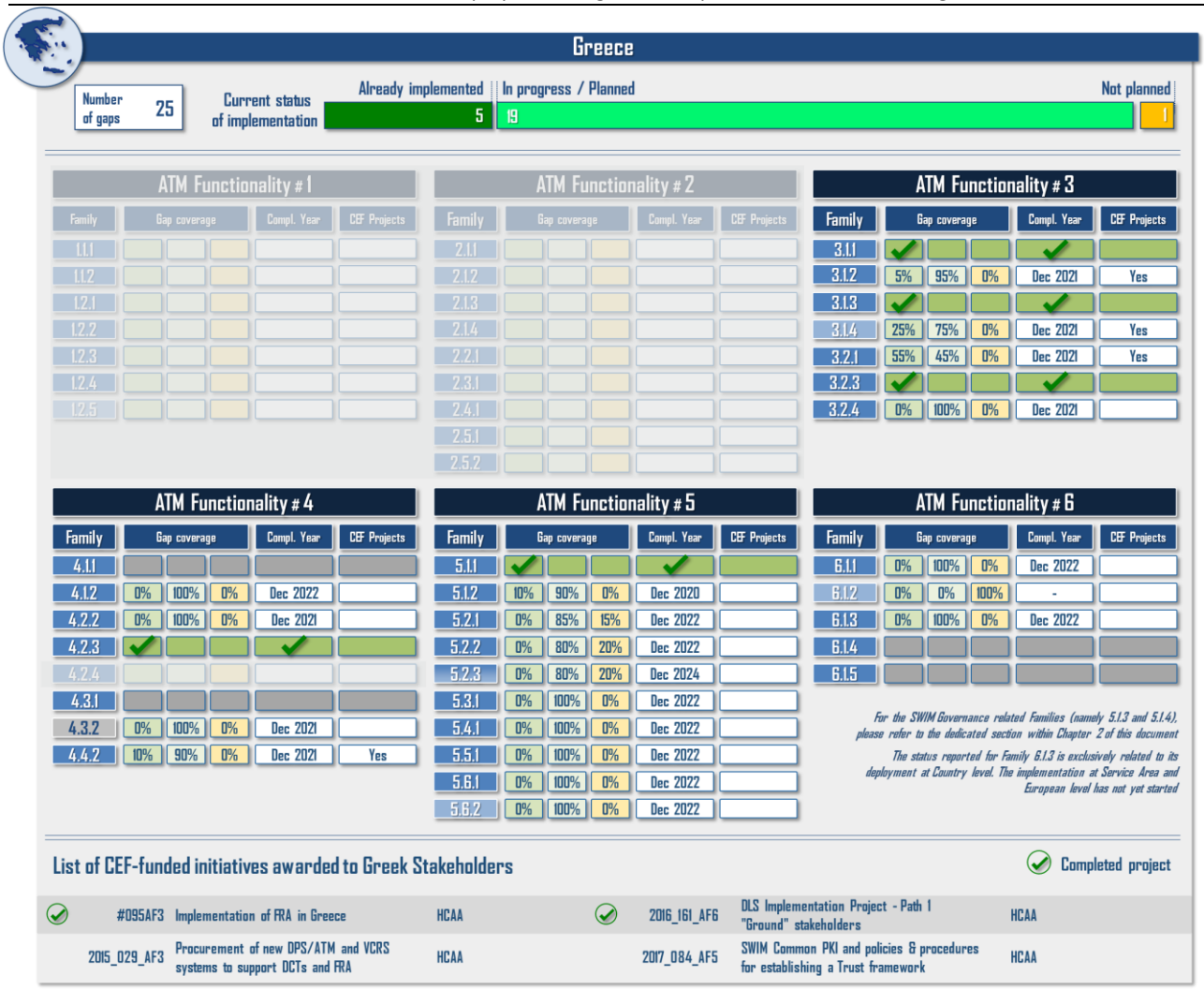
Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
85		28	52	5

List of CEF-funded initiatives awarded to German Stakeholders

✓ Completed project

✓	#040AF5	ADQ – Aeronautical Data Quality	DFS
✓	#041AF5	EASI – EAD AIM System Integration	DFS
✓	#042AF2a	A-SMGCS Düsseldorf	DFS, Düsseldorf International
✓	#084AF5	Prerequisites for the Provision of Aerodrome Mapping Data and Airport Maps	Fraport
✓	#086AF2	A-CDM Extension	Fraport
✓	#087AF2	Apron Controller Working Position	Fraport
✓	#088AF2	Airport Safety Net Mobile Detection of Air Crash Tenders	Fraport
✓	#115AF2	A-SMGCS Renewal of the Surface Movement Radar (BORA)	Munich Airport
✓	2015_031_AF2	Vehicle Transponder A-SMGCS Düsseldorf	Düsseldorf International
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	DWD
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	DWD
	2015_069_AF5	European MET Information Exchange (MET-GATE)	DFS, DWD
	2015_113_AF4	AOP-NOP Integration	Fraport
✓	2015_188_AF1	Deploy AMAN - Arrival Management at Düsseldorf and Berlin International	DFS
	2015_189_AF3	Deploy Free Route Airspace (Full FRA) in German Airspace	DFS
	2015_190_AF3	Deployment of ATC System iCAS: Implementation of ATM PCP Funct. at LVNL and DFS	DFS
✓	2015_192_AF5	RAPNET NG	DFS
	2015_193_AF1	RNP Based Departure Operations in High Density TMAs in FRA, DUS, BER and MUC	DFS, Fraport, Deutsche Lufthansa
	2015_194_AF5	STANLY_ACOS iSWIM for Free-Route and NM	DFS
✓	2015_195_AF3	Deployment of next Generation and VoIP Capable Centre Voice Communication System	DFS
	2015_196_AF1_A	XMAN - Cross-centre arrival management	DFS
✓	2015_197_AF5	Centralized DFS "Yellow Profile" SWIM Node	DFS
✓	2015_222_AF2	Advanced Airport Moving Map (AAMM) Prototype Implementation	Fraport, Deutsche Lufthansa
✓	2015_225_AF2	Initial Airport Operations Plan @ FRA	Fraport
✓	2015_226_AF2	Airport Safety Net: Mobile Detection of Marshaller Vehicles	Fraport
✓	2015_282_AF2	Initial APOC and AOP	Munich Airport
	2016_008_AF4	Flight evolution and upgrade of interfaces with NM stakeholders	Deutsche Lufthansa
	2016_010_AF4	STAM Phase 2	Deutsche Lufthansa
✓	2016_021_AF2	TANGe (Tower ATS-System Next Generation) Phase I	DFS
	2016_023_AF1	XMAN - Cross-center arrival management - Part 2 (CEF2016)	DFS
	2016_024_AF4	Deployment of an Automated Support Tool for Traffic Complexity Assessment at DFS	DFS
	2016_026_AF3	System Procurement for Deployment of PCP Air Traffic Control System iCAS at DFS and LVNL	DFS
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	DFS
	2016_100_AF4	Provision of EFPL data and initial FF-ICE/ 1 readiness	Deutsche Lufthansa, LH Systems
	2016_121_AF3	Free Route	Deutsche Lufthansa, LH Systems
	2016_123_AF4	STAM Phase 2 in combination with Target Times	Deutsche Lufthansa, LH Systems
	2016_134_AF3	Implementation of rolling ASM/ATFCM	Deutsche Lufthansa, LH Systems
	2016_137_AF2	Initial AOP DUS	DFS, Düsseldorf International
✓	2016_141_AF5	Deploy SWIM governance	Deutsche Lufthansa, DFS, Munich Airport
✓	2016_147_AF1	RNP APCH RWY 29 Vienna	Deutsche Lufthansa
	2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Fraport, Munich Airport
	2016_159_AF6	DLS Implementation Project – Path 2	Deutsche Lufthansa, DFS
✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	DFS
	2016_165_AF6	Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics	Lufthansa Group *
	2017_002_AF5	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	Deutsche Lufthansa, LH Systems
	2017_004_AF1	Flight Crew Training for RNPI Operations	Lufthansa Group *
	2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Fraport, Munich Airport
	2017_029_AF3	Deployment of Centralized Interoperable Center Information Service (Step 1)	DFS
	2017_031_AF3	Procurement and Deployment of PCP ATC System iCAS at DFS Munich and Bremen and LVNL Amsterdam	DFS
	2017_032_AF2	TANGe (Tower ATS-System Next Generation) Phase 1+ incl. Service Architecture	DFS
	2017_052_AF4	AOP-NOP Integration - Extended Implementation	Düsseldorf International
	2017_053_AF3	Implementation of rolling ASM/ATFCM	Deutsche Lufthansa, LH Systems, Sabre GmbH
	2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Deutsche Lufthansa, LH Systems, Sabre GmbH
	2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	Deutsche Lufthansa, LH Systems
	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Deutsche Lufthansa, DFS
✓	2017_089_AF6	IPI - DLS European Target Solution assessment	DFS

(*) as Deutsche Lufthansa, Eurowings Europe, Eurowings GmbH, Germanwings, Lufthansa Cargo, Lufthansa Cityline, Lufthansa Systems GmbH



Greece

Number of gaps: 25

Current status of implementation: Already implemented 5 | In progress / Planned 19 | Not planned 1

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	5%	95%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	25%	75%	0%	Dec 2021	Yes
3.2.1	55%	45%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	Dec 2022	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	10%	90%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	10%	90%	0%	Dec 2020	
5.2.1	0%	85%	15%	Dec 2022	
5.2.2	0%	80%	20%	Dec 2022	
5.2.3	0%	80%	20%	Dec 2024	
5.3.1	0%	100%	0%	Dec 2022	
5.4.1	0%	100%	0%	Dec 2022	
5.5.1	0%	100%	0%	Dec 2022	
5.6.1	0%	100%	0%	Dec 2022	
5.6.2	0%	100%	0%	Dec 2022	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	0%	100%	0%	Dec 2022	
6.1.2	0%	0%	100%	-	
6.1.3	0%	100%	0%	Dec 2022	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Greek Stakeholders

✓ Completed project

✓	#095AF3	Implementation of FRA in Greece	HCAA	✓	2016_161_AF6	DLS Implementation Project - Path 1 "Ground" stakeholders	HCAA
	2015_029_AF3	Procurement of new DPS/ATM and VCRS systems to support DCTs and FRA	HCAA		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	HCAA

Hungary

Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
26		9	16	1

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	60%	40%	0%	Oct 2021	Yes
3.1.3	✓			✓	
3.1.4	35%	65%	0%	Oct 2021	Yes
3.2.1	85%	15%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	5%	80%	15%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	80%	20%	0%	Dec 2021	Yes
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Hungarian Stakeholders

✓ Completed project

✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	Hungaro Control	2016_159_AF6	DLS Implementation Project – Path 2	Hungaro Control
✓	2015_034_AF3	ATM System (MATIAS) upgrade for cross-border free route operation	Hungaro Control	✓ 2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Hungaro Control
✓	2015_234_AF1_B	AMAN LOWW initial	Hungaro Control	2017_074_AF3	Hungarian ATM system upgrade for AF3-AF4	Hungaro Control
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	Hungaro Control	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Hungaro Control
✓	2016_075_AF3_B	FAB CE wide Study of DAM and STAM – Cohesion Call	Hungaro Control	✓ 2017_089_AF6	IP1 - DLS European Target Solution assessment	Hungaro Control
✓	2016_141_AF5	Deploy SWIM governance	Hungaro Control			

Ireland

Number of gaps: 41

Current status of implementation

Already implemented	In progress / Planned	Not planned
14	23	4

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	0%	100%	0%	Mar 2023	Yes
1.2.1	✓			✓	
1.2.2	✓			✓	
1.2.3	0%	100%	0%	Dec 2023	
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	10%	90%	0%	Dec 2020	Yes
2.2.1	✓			✓	
2.3.1	0%	100%	0%	Dec 2023	
2.4.1	10%	90%	0%	Dec 2023	Yes
2.5.1	5%	95%	0%	Dec 2020	Yes
2.5.2	0%	100%	0%	Dec 2020	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	65%	35%	0%	Dec 2021	
3.1.2	30%	70%	0%	Dec 2021	
3.1.3	0%	100%	0%	Dec 2021	
3.1.4	95%	5%	0%	Dec 2021	Yes
3.2.1	45%	55%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4	0%	0%	100%	-	
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	0%	100%	0%	Dec 2020	Yes
5.2.2	5%	95%	0%	Dec 2024	Yes
5.2.3	5%	90%	5%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	70%	30%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	Yes
5.6.1	0%	20%	80%	Dec 2024	Yes
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Dublin Airport

List of CEF-funded initiatives awarded to Irish Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	IAA		2015_227_AF3_A	Borealis FRA Implementation (Part 2)	IAA, Ryanair
✓	#135AF2a	Ryanair RAAS Programme (Part A)	Ryanair	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	IAA
✓	#135AF2b	Ryanair RAAS Programme (Part B)	Ryanair		2016_033_AF5	Use SWIM methods to replace AFTN feeds for A-CDM	Dublin Airport
✓	2015_074_AF2	Display TOBT TSAT at the Gate	DAA		2016_034_AF5	Upgrade/Replace Infrastructure to facilitate SWIM	Dublin Airport
✓	2015_076_AF2	Aerial Visual Display A-CDM Phase 2	DAA		2016_148_AF5	Implementation of Automated Meteorological Information Exchange	IAA, Irish Meteorological Service (Met Eireann)
✓	2015_077_AF2	Universal Mobile Display System (UMDS) solutionto support A-CDM Implementation	DAA		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Dublin Airport
✓	2015_078_AF2	A-CDM Enhancements EDW	DAA		2016_159_AF6	DLS Implementation Project – Path 2	Ryanair
	2015_159_AF3	IP/VOIP technology to enable Management of Dynamic Airspace Configurations	IAA	✓	2016_164_AF6	RYR Upgrade to ATN BI to "best in class"	Ryanair
	2015_160_AF5	Aeronautical Information exchange and management	IAA		2017_018_AF5	SWIM-enabled OCC	Ryanair
✓	2015_161_AF2	Initial implementation of DMAN	IAA		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Dublin Airport
✓	2015_162_AF2	Electronic Flight Strip (EFS) Implementation	IAA		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	IAA
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	IAA		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Ryanair
	2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	IAA	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	Airtel

Italy

Number of gaps	56

Current status of implementation

Already implemented	In progress / Planned	Not planned
16	38	2

ATM Functionality # 1

Family	Milan Malpensa					Rome Fiumicino				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	
1.1.2	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	
1.2.1	✓			✓		✓			✓	
1.2.2	✓			✓		✓			✓	
1.2.3	50%	50%	0%	Dec 2023	Yes	60%	40%	0%	Dec 2023	Yes
1.2.4										
1.2.5	0%	100%	0%	Mar 2023	Yes	0%	100%	0%	Mar 2023	Yes

ATM Functionality # 2

Family	Milan Malpensa					Rome Fiumicino				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	
2.1.2	✓			✓		35%	65%	0%	Dec 2022	Yes
2.1.3	✓			✓		✓			✓	
2.1.4	25%	75%	0%	Dec 2024	Yes	25%	75%	0%	Dec 2024	Yes
2.2.1	20%	80%	0%	Dec 2023	Yes	30%	70%	0%	Dec 2022	Yes
2.3.1	0%	100%	0%	-		0%	100%	0%	-	
2.4.1	0%	0%	100%	-		15%	35%	50%	Dec 2023	Yes
2.5.1	30%	70%	0%	Dec 2022	Yes	5%	95%	0%	Dec 2022	Yes
2.5.2	40%	60%	0%	Dec 2022	Yes	40%	60%	0%	Dec 2022	Yes

ATM Functionality # 4 (Airport Gaps)

Family	Milan Malpensa					Rome Fiumicino				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	100%	0%	Dec 2024	Yes	0%	100%	0%	Dec 2022	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	55%	45%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2022	
3.2.1	70%	30%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	5%	45%	50%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	95%	5%	0%	Dec 2020	Yes
4.3.1					
4.3.2	0%	50%	50%	Dec 2021	
4.4.2	70%	30%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	5%	75%	20%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	25%	75%	0%	Dec 2024	Yes
5.4.1	5%	40%	55%	Dec 2022	Yes
5.5.1	35%	65%	0%	Dec 2020	Yes
5.6.1	0%	100%	0%	Dec 2022	
5.6.2	10%	90%	0%	Dec 2024	Yes

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

Italy

Number of gaps	56

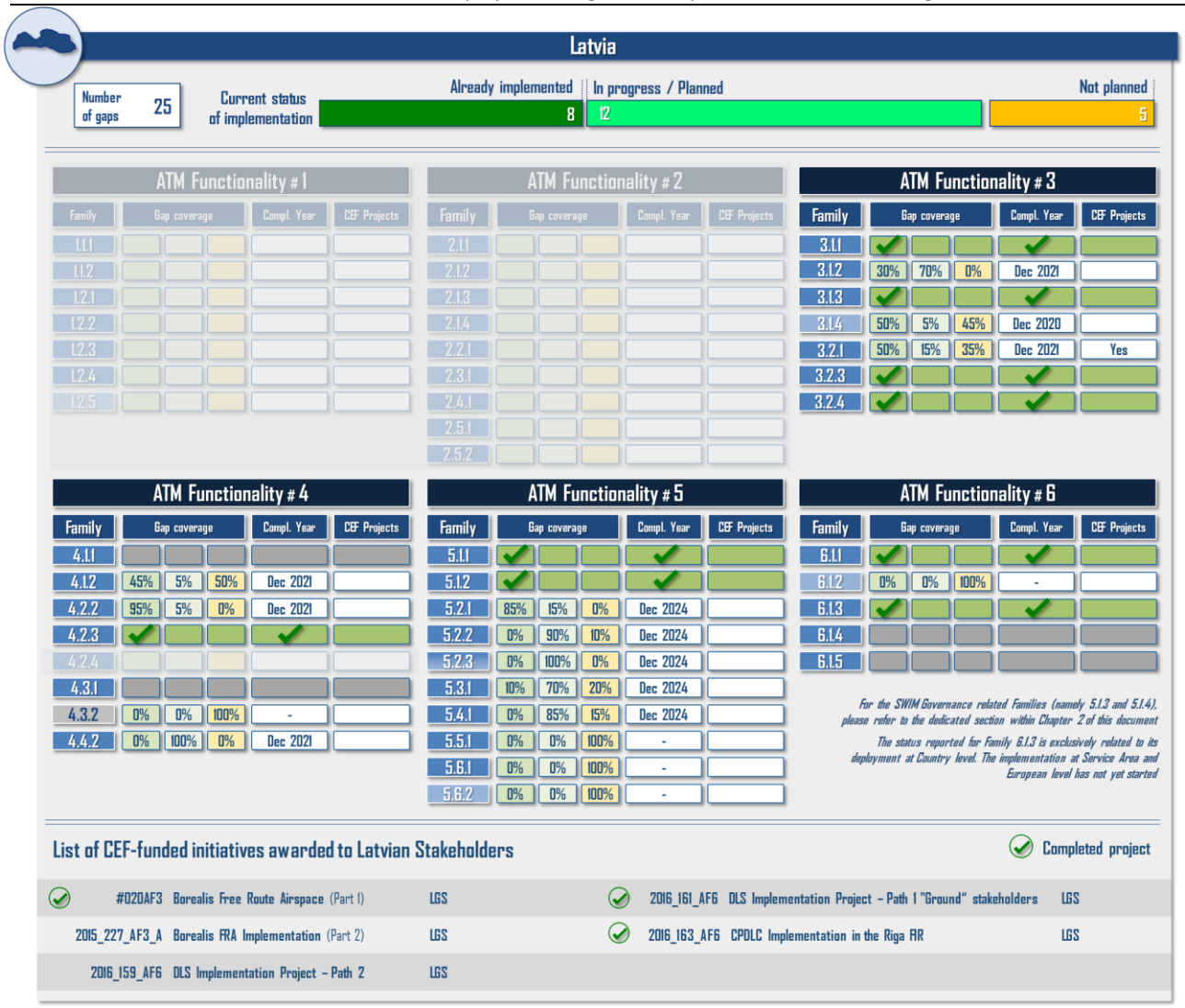
Current status of implementation

Already implemented	In progress / Planned	Not planned
16	38	2

List of CEF-funded initiatives awarded to Italian Stakeholders

✓ Completed project

✓	#004AF3	Traffic flow Restriction (TFR) – LIDO planning system	Alitalia		2016_116_AF5	ENAV Security Operational Centre (iSOC) Upgrade	ENAV
✓	#005AF3	Free Flight – Direct Optimization	Alitalia		2016_117_AF2	ENAV Implementation of A-SMGCS Level 1 and 2 with Safety Nets in MXP and FCO	ENAV, Rome Fiumicino, SEA Milano Airports
✓	#062AF4	ENAV initiative for the identification of Network Collaborative Management requirements	ENAV	✓	2016_118_AF5	ENAV Network enhancement toward NewPENS	ENAV
✓	#063AF3	ENAV implementation of Free Route	ENAV		2016_119_AF5	ENAV Airport MET System and UPM-MET database upgrade	ENAV
✓	#064AF2	ENAV Airport System upgrade	ENAV		2016_120_AF1	ENAV Introduction of RNPI+RF and APV procedures in MXP and FCO	ENAV
✓	#065AF1	ENAV Geographic DB for Procedure Design	ENAV	✓	2016_141_AF5	Deploy SWIM governance	ENAV
✓	#066AF5	ENAV AIS system Upgrade to support AIXM 5.1	ENAV		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Rome Fiumicino
✓	#067AF5	Coflight-eFDP System Development	ENAV		2016_159_AF6	DLS Implementation Project – Path 2	ENAV
	2015_198_AF5	Implementation of ENAV "LAN Servizi"	ENAV	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	ENAV
	2015_201_AF5	Transition of current Aeronautical Information Management System to EAD	ENAV		2017_004_AF1	Flight Crew Training for RNPI Operations	Air Dolomiti
✓	2015_202_AF3	ASM tool Implementation	ENAV		2017_020_AF5	Initial SWIM security deployment	Rome Fiumicino
	2015_203_AF1	AMAN Extended Horizon	ENAV		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	ENAV, Rome Fiumicino, SEA Milano Airports
✓	2015_204_AF3	4-Flight deployment in Italy 2016-2017 (Phase I)	ENAV		2017_040_AF5	AERONET/ENET2 Interoperability	ENAV, Italian MOD
	2015_204_AF3	4-Flight deployment in Italy 2019-2020 (Phase II)	ENAV		2017_041_AF3	ASM - LARA Enhancement – Implementation in Italy	ENAV, Italian MOD
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	ENAV		2017_042_AF3	Automatic Tactical Controller Tool implementation	ENAV, Italian MOD
✓	2016_089_AF6	2016_089_AF6_IT_ITAF ATC Control Systems to i4D	Italian MOD, ENAV	✓	2017_043_AF3	Coflight-eFDP Development (Step 2)	ENAV
	2016_092_AF5	2016_092_AF5_ITAF WAN	Italian MOD		2017_045_AF4	ENAV Deployment of traffic complexity tool and STAM phase 2	ENAV
	2016_108_AF5	ENAV ADQ – Aeronautical Data Quality system interface evolution (ADQ2)	ENAV		2017_052_AF4	AOP-NOP Integration - Extended Implementation	Rome Fiumicino, SEA Milano Airports
	2016_109_AF5	BLUEMED FAB IP Network deployment	ENAV		2017_069_AF5	Italian Air Force Integrated Briefing	Italian MOD
✓	2016_110_AF3	ENAV Automated ENV Data Interchange for FDP/ERATO	ENAV		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ENAV
	2016_114_AF4	ENAV Traffic Complexity Tool Implementation	ENAV	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	ENAV, Leonardo – Finmeccanica
✓	2016_115_AF3	ENAV 4-Flight Deployment in Italy – Third Stage 2017-2018	ENAV				



Latvia

Number of gaps: 25

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	12	5

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	50%	5%	45%	Dec 2020	
3.2.1	50%	15%	35%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	45%	5%	50%	Dec 2021	
4.2.2	95%	5%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	85%	15%	0%	Dec 2024	
5.2.2	0%	90%	10%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	10%	70%	20%	Dec 2024	
5.4.1	0%	85%	15%	Dec 2024	
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

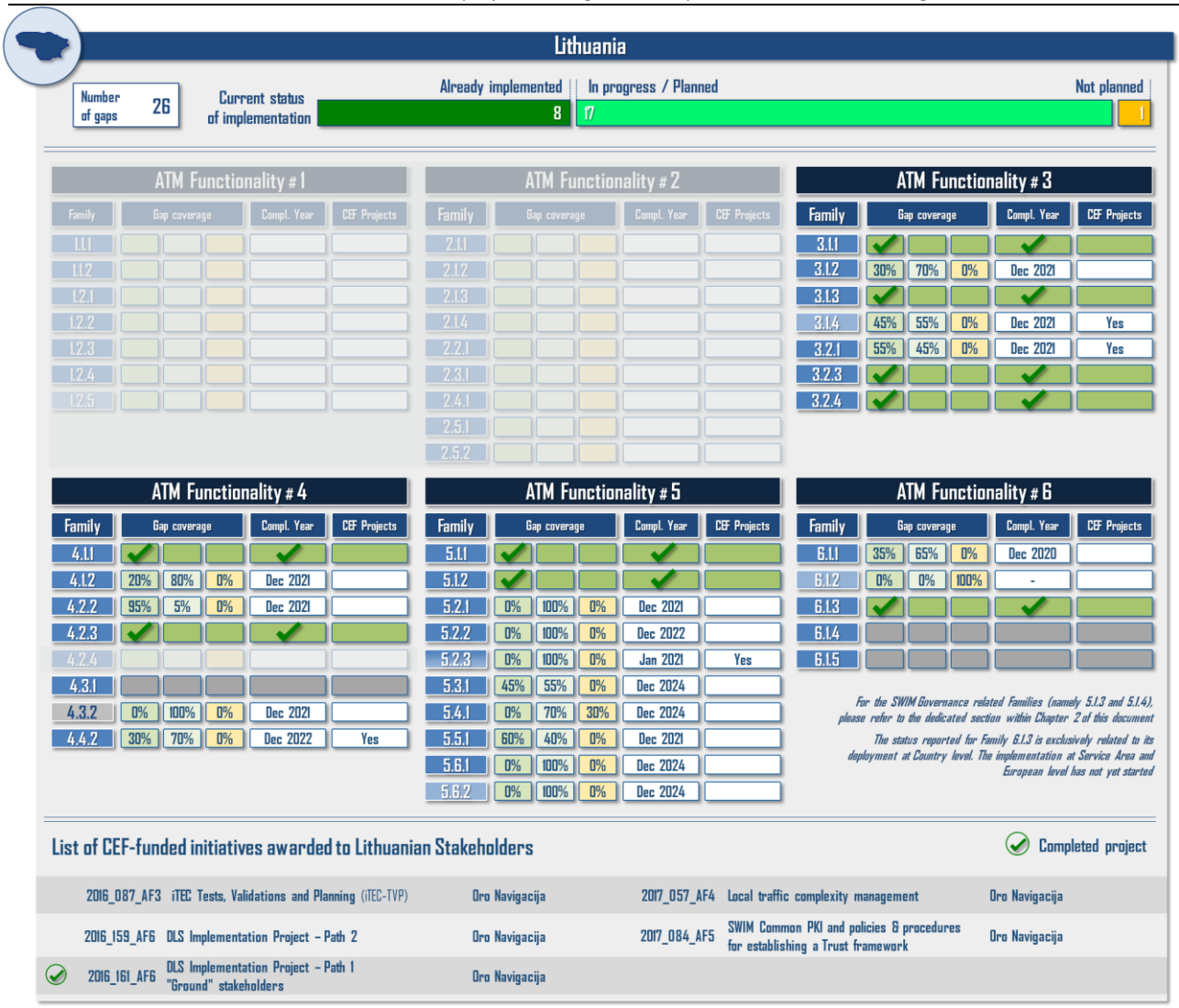
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

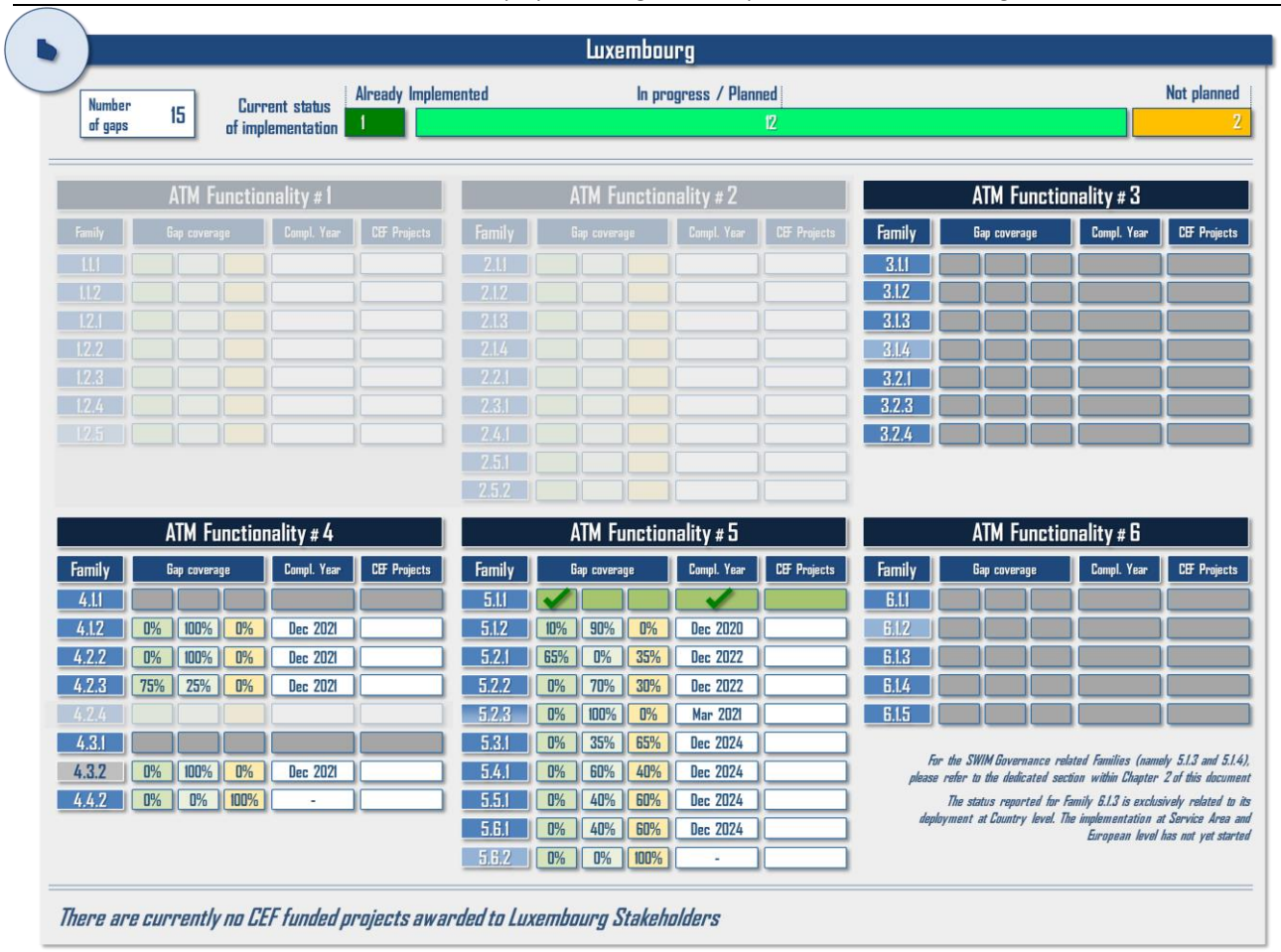
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Latvian Stakeholders

✓ Completed project

✓	#020AF3 Borealis Free Route Airspace (Part I)	LGS	✓	2016_161_AF6 DLS Implementation Project – Path 1 "Ground" stakeholders	LGS
	2015_227_AF3_A Borealis FRA Implementation (Part 2)	LGS	✓	2016_163_AF6 CPDLC Implementation in the Riga FIR	LGS
	2016_159_AF6 DLS Implementation Project – Path 2	LGS			


Lithuania
Number of gaps 26
Current status of implementation
Already implemented 8
In progress / Planned 17
Not planned 1
ATM Functionality # 1
ATM Functionality # 2
ATM Functionality # 3
ATM Functionality # 4
ATM Functionality # 5
ATM Functionality # 6
Family
Gap coverage
Compl. Year
CEF Projects
3.1.2 30% 70% 0% Dec 2021
3.1.4 45% 55% 0% Dec 2021 Yes
3.2.1 55% 45% 0% Dec 2021 Yes
4.1.2 20% 80% 0% Dec 2021
4.2.2 95% 5% 0% Dec 2021
4.3.2 0% 100% 0% Dec 2021
4.4.2 30% 70% 0% Dec 2022 Yes
5.2.1 0% 100% 0% Dec 2021
5.2.2 0% 100% 0% Dec 2022
5.2.3 0% 100% 0% Jan 2021 Yes
5.3.1 45% 55% 0% Dec 2024
5.4.1 0% 70% 30% Dec 2024
5.5.1 60% 40% 0% Dec 2021
5.6.1 0% 100% 0% Dec 2024
5.6.2 0% 100% 0% Dec 2024
6.1.1 35% 65% 0% Dec 2020
6.1.2 0% 0% 100% -
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Lithuanian Stakeholders
Completed project
2016_087_AF3 iTEC Tests, Validations and Planning (iTEC-TVP) Oro Navigacija
2016_159_AF6 DLS Implementation Project – Path 2 Oro Navigacija
2016_161_AF6 DLS Implementation Project – Path 1 "Ground" stakeholders Oro Navigacija
2017_057_AF4 Local traffic complexity management Oro Navigacija
2017_084_AF5 SWIM Common PKI and policies & procedures for establishing a Trust framework Oro Navigacija



Luxembourg

Number of gaps: 15

Current status of implementation: Already Implemented 1 | In progress / Planned 12 | Not planned 2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1					
3.1.2					
3.1.3					
3.1.4					
3.2.1					
3.2.3					
3.2.4					

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	75%	25%	0%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	0%	100%	-	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	10%	90%	0%	Dec 2020	
5.2.1	65%	0%	35%	Dec 2022	
5.2.2	0%	70%	30%	Dec 2022	
5.2.3	0%	100%	0%	Mar 2021	
5.3.1	0%	35%	65%	Dec 2024	
5.4.1	0%	60%	40%	Dec 2024	
5.5.1	0%	40%	60%	Dec 2024	
5.6.1	0%	40%	60%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1					
6.1.2					
6.1.3					
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

There are currently no CEF funded projects awarded to Luxembourg Stakeholders

Malta

Number of gaps: 25

Current status of implementation: Already implemented 6 | In progress / Planned 12 | Not planned 7

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1					
3.1.2	0%	0%	100%	-	
3.1.3	0%	0%	100%	-	
3.1.4	✓			✓	
3.2.1	85%	5%	10%	Dec 2021	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	60%	40%	0%	Apr 2021	
5.2.1	60%	0%	40%	Dec 2020	
5.2.2	0%	60%	40%	Dec 2020	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	10%	90%	Dec 2024	
5.4.1	45%	30%	25%	Dec 2024	
5.5.1	0%	5%	95%	Dec 2020	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	20%	0%	80%	-	
6.1.2	0%	0%	100%	-	
6.1.3	0%	0%	100%	-	
6.1.4					
6.1.5					

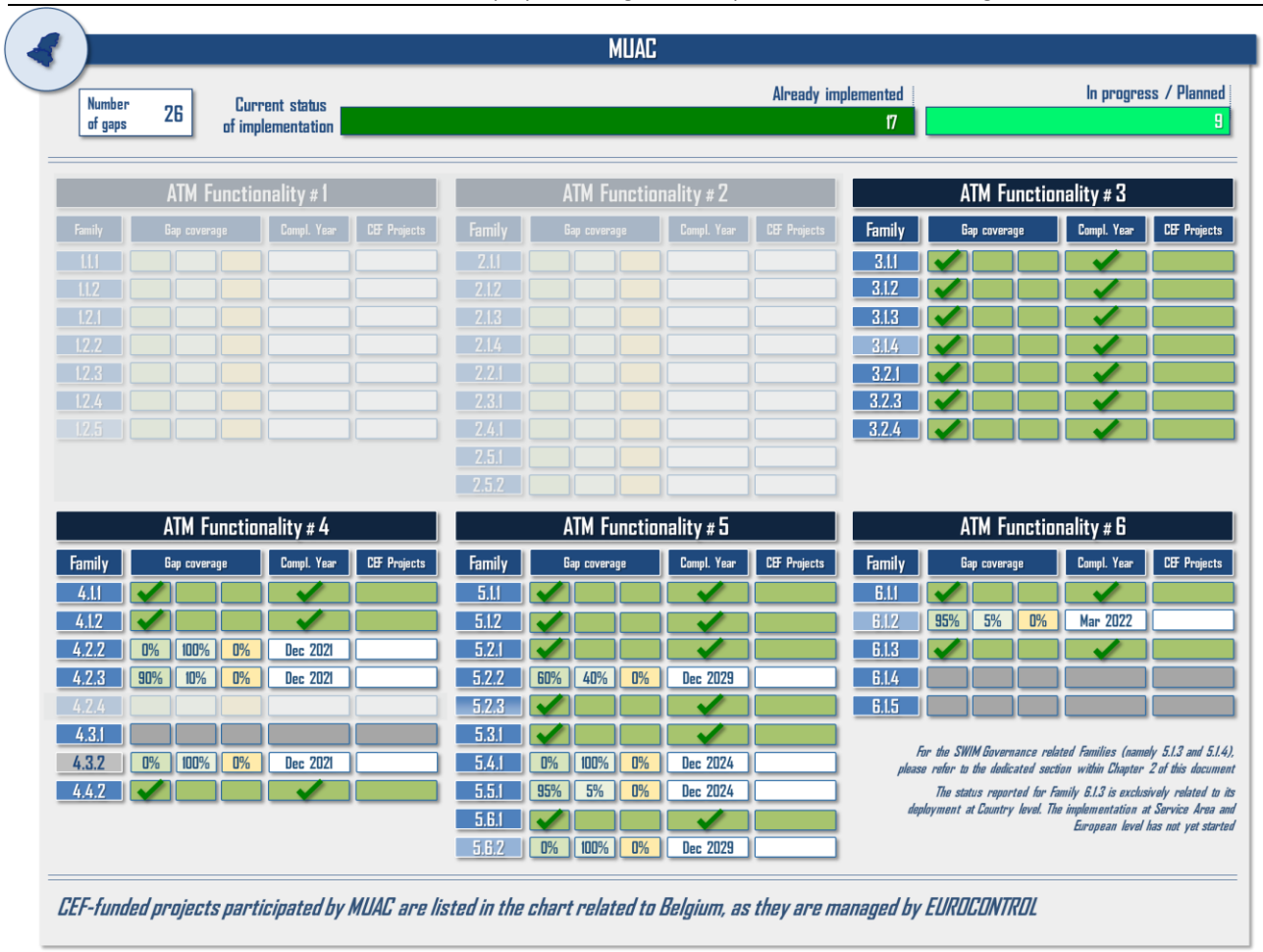
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Maltese Stakeholders

✓ Completed project

2016_109_AF5	BLUEMED FAB IP Network deployment	MATS	✓ 2016_161_AF6	DLS Implementation Project - Path 1 "Ground" stakeholders	MATS
2016_159_AF6	DLS Implementation Project – Path 2	MATS	✓ 2017_089_AF6	IPI - DLS European Target Solution assessment	MATS


MUAC
Number of gaps 26
Current status of implementation
Already implemented 17
In progress / Planned 9
ATM Functionality # 1
Family | Gap coverage | Compl. Year | CEF Projects
1.1.1
1.1.2
1.2.1
1.2.2
1.2.3
1.2.4
1.2.5
ATM Functionality # 2
Family | Gap coverage | Compl. Year | CEF Projects
2.1.1
2.1.2
2.1.3
2.1.4
2.2.1
2.3.1
2.4.1
2.5.1
2.5.2
ATM Functionality # 3
Family | Gap coverage | Compl. Year | CEF Projects
3.1.1
3.1.2
3.1.3
3.1.4
3.2.1
3.2.3
3.2.4
ATM Functionality # 4
Family | Gap coverage | Compl. Year | CEF Projects
4.1.1
4.1.2
4.2.2 0% 100% 0% Dec 2021
4.2.3 90% 10% 0% Dec 2021
4.2.4
4.3.1
4.3.2 0% 100% 0% Dec 2021
4.4.2
ATM Functionality # 5
Family | Gap coverage | Compl. Year | CEF Projects
5.1.1
5.1.2
5.2.1
5.2.2 60% 40% 0% Dec 2029
5.2.3
5.3.1
5.4.1 0% 100% 0% Dec 2024
5.5.1 95% 5% 0% Dec 2024
5.6.1
5.6.2 0% 100% 0% Dec 2029
ATM Functionality # 6
Family | Gap coverage | Compl. Year | CEF Projects
6.1.1
6.1.2 95% 5% 0% Mar 2022
6.1.3
6.1.4
6.1.5
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
CEF-funded projects participated by MUAC are listed in the chart related to Belgium, as they are managed by EUROCONTROL

Netherlands

Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
31		6	24	1

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	85%	15%	0%	Jul 2021	Yes
1.1.2	15%	85%	0%	Dec 2024	Yes
1.2.1	50%	50%	0%	Dec 2023	Yes
1.2.2	✓			✓	
1.2.3	0%	100%	0%	Dec 2023	Yes
1.2.4					
1.2.5	0%	20%	80%	-	Yes

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	40%	60%	0%	Dec 2021	Yes
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	70%	30%	0%	Dec 2020	Yes
2.2.1	55%	45%	0%	Dec 2021	Yes
2.3.1	0%	100%	0%	Jul 2021	
2.4.1	20%	80%	0%	Dec 2025	Yes
2.5.1	20%	80%	0%	Dec 2023	Yes
2.5.2	20%	80%	0%	Dec 2023	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1					
3.1.2					
3.1.3					
3.1.4					
3.2.1	40%	60%	0%	Dec 2022	Yes
3.2.3					
3.2.4					

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	50%	50%	Dec 2022	
4.2.2	0%	100%	0%	Dec 2021	Yes
4.2.3	✓			✓	
4.2.4	45%	55%	0%	Dec 2021	Yes
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	95%	5%	0%	Dec 2022	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	30%	60%	10%	Mar 2022	Yes
5.2.2	0%	85%	15%	Dec 2024	Yes
5.2.3	10%	75%	15%	Dec 2024	Yes
5.3.1	0%	90%	10%	Dec 2025	Yes
5.4.1	0%	80%	20%	Dec 2025	Yes
5.5.1	0%	100%	0%	Dec 2025	
5.6.1	0%	100%	0%	Dec 2025	
5.6.2	0%	100%	0%	Dec 2029	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1					
6.1.2					
6.1.3					
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

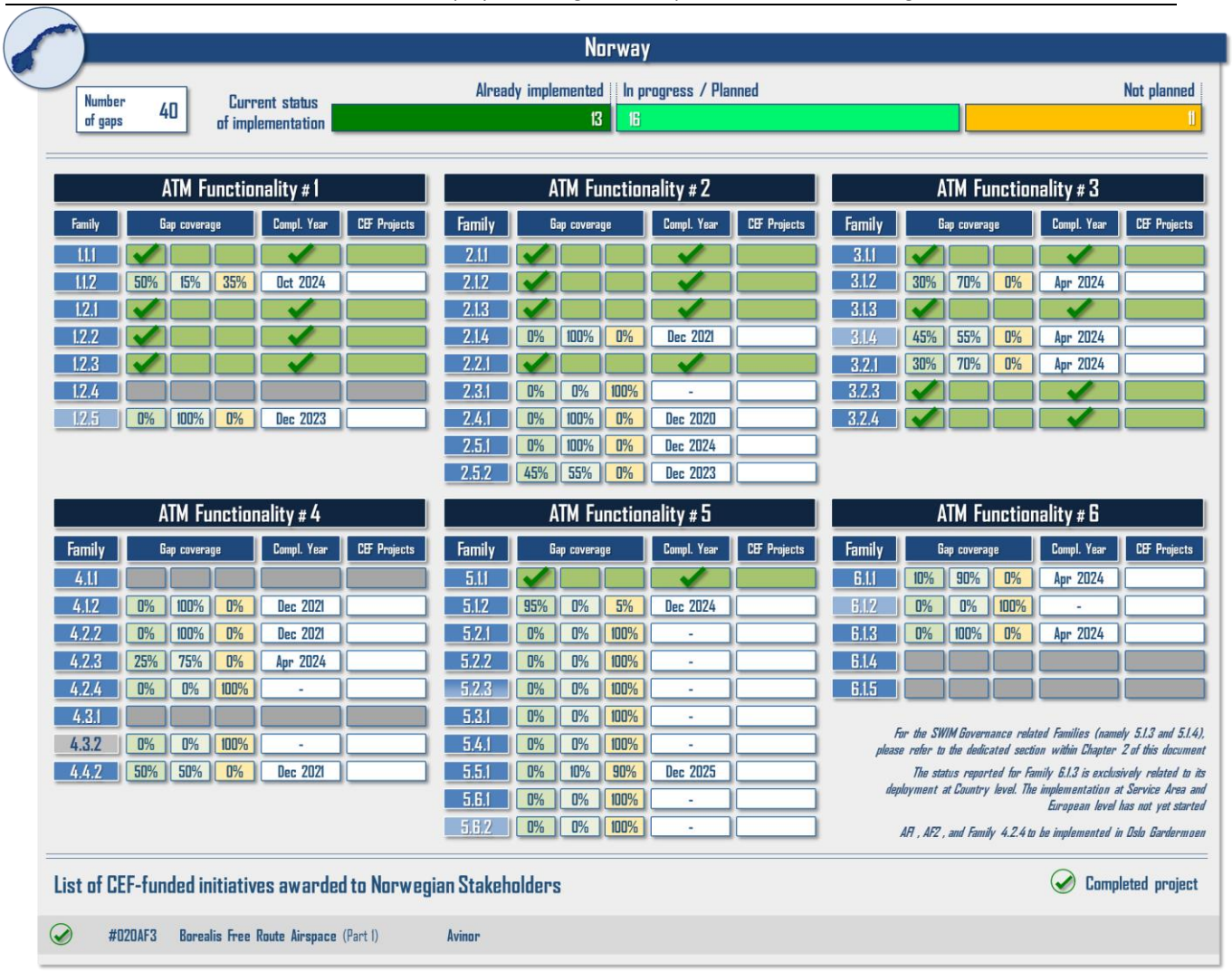
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Amsterdam Schiphol

List of CEF-funded initiatives awarded to Dutch Stakeholders

✓ Completed project

	#107AF1	First phase of RNAV1 and RNP-APCH approaches Amsterdam Schiphol (EHAM)	LVNL	✓	2015_253_AF1_A_AIR	RNP 1.0, RNP 0.3 & SBAS for E3A AWACS for CEF eligible Nations and third party	NAPMA
✓	#108AF2	Electronic Flight Strips at Schiphol TWR	LVNL	✓	2015_253_AF1_A_GND	RNP 1.0, RNP 0.3 & SBAS for E3A AWACS for CEF eligible Nations and third party	NAPMA
✓	#109AF2	Airport CDM implementation Schiphol	Amsterdam Schiphol, KLM, LVNL	✓	2015_253_AF1_B	RNP 1.0, RNP 0.3 & SBAS for E3A AWACS for Cohesion eligible States	NAPMA
	#110AF5	Meteorological Information Exchange by MET ANSP KNMI	KNMI		2016_023_AF1	XMAN - Cross-center arrival management - Part 2	LVNL
	2015_137_AF5	European Meteorological Aircraft Derived Data Center (EMADDC)	KNMI		2016_026_AF3	System Procurement for Deployment of PCP Air Traffic Control System iCAS at DFS and LVNL	LVNL
✓	2015_165_AF1	Amsterdam Schiphol AMAN 1.0	LVNL	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	LVNL
	2015_166_AF1	Amsterdam Schiphol AMAN 2.0	LVNL		2016_131_AF4	AOP-NOP Integration - Extended Implementation	Amsterdam Schiphol
	2015_167_AF4	Workload model for Amsterdam Area Control and Approach Control operations	LVNL		2016_143_AF5	ATM Network 2.0 Amsterdam	LVNL
✓	2015_168_AF5	Implementation of Aeronautical Data Quality (ADQ) at LVNL	LVNL		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Amsterdam Schiphol
✓	2015_169_AF5	Initial (I)WXXM implementation on CCIS Amsterdam ACC and Schiphol	LVNL		2016_159_AF6	DLS Implementation Project – Path 2	SITA
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LVNL	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	SITA
✓	2015_178_AF2	Implementation of AOP Schiphol Airport	Amsterdam Schiphol, KNMI		2017_031_AF3	Procurement and Deployment of PCP ATC System iCAS at DFS Munich and Bremen and LVNL Amsterdam	LVNL
	2015_179_AF4	Implementation of APOC Schiphol Airport	Amsterdam Schiphol, KNMI		2017_063_AF2	A-SMGCS High Performance Surveillance enhancement to support routing & planning functions	LVNL
✓	2015_186_AF1	RNP approaches to three main landing runways Amsterdam Schiphol	LVNL		2017_064_AF1	Final phase RNP APCH procedures Amsterdam Schiphol	LVNL
	2015_187_AF2	TWR System at Amsterdam Schiphol	LVNL		2017_065_AF5	LVNL Nation wide managed network supporting SWIM	LVNL
	2015_190_AF3	Deployment of ATC System iCAS: Implementation of ATM PCP Funct. at LVNL and DFS	LVNL		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LVNL
	2015_196_AF1_A	XMAN - Cross-Centre arrival management	LVNL	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	SITA INC BV Netherlands



Norway

Number of gaps: 40

Current status of implementation: Already implemented 13 | In progress / Planned 16 | Not planned 11

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	50%	15%	35%	Oct 2024	
1.2.1	✓			✓	
1.2.2	✓			✓	
1.2.3	✓			✓	
1.2.4					
1.2.5	0%	100%	0%	Dec 2023	

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	0%	100%	0%	Dec 2021	
2.2.1	✓			✓	
2.3.1	0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2020	
2.5.1	0%	100%	0%	Dec 2024	
2.5.2	45%	55%	0%	Dec 2023	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Apr 2024	
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Apr 2024	
3.2.1	30%	70%	0%	Apr 2024	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	25%	75%	0%	Apr 2024	
4.2.4	0%	0%	100%	-	
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	50%	50%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	95%	0%	5%	Dec 2024	
5.2.1	0%	0%	100%	-	
5.2.2	0%	0%	100%	-	
5.2.3	0%	0%	100%	-	
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
5.5.1	0%	10%	90%	Dec 2025	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	10%	90%	0%	Apr 2024	
6.1.2	0%	0%	100%	-	
6.1.3	0%	100%	0%	Apr 2024	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Oslo Gardermoen

List of CEF-funded initiatives awarded to Norwegian Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	Avinor

Poland

Number of gaps	26	Current status of implementation	Already implemented	In progress / Planned	Not planned
			8	16	2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	75%	25%	0%	Dec 2021	
3.1.3	35%	65%	0%	Dec 2022	
3.1.4	90%	10%	0%	Dec 2021	
3.2.1	95%	5%	0%	Dec 2022	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	5%	95%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	20%	80%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	60%	40%	0%	Mar 2021	Yes
5.2.2	5%	95%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	20%	50%	30%	Dec 2024	
5.4.1	0%	80%	20%	Dec 2024	
5.5.1	10%	75%	15%	Dec 2024	Yes
5.6.1	0%	60%	40%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Polish Stakeholders

✓ Completed project

✓	#13IAF3	1st part of the upgrade of the P_21 PEGASUS system to SESAR functionalities	PANSA	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	PANSA
	2015_035_AF5	LAN network upgrade	PANSA	✓	2016_162_AF6	Implementation off Data Link Services for the ATM in the RR Warsaw	PANSA
	2015_038_AF5	The ECG Communication System upgrade	PANSA		2017_002_AF5	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	LH Systems Poland
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	PANSA		2017_053_AF3	Implementation of rolling ASM/ATFCM	LH Systems Poland, SABRE Polska SP Z.o.o
✓	2016_085_AF3	ATM System Upgrade Towards Free Route Airspace	PANSA		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	LH Systems Poland, SABRE Polska SP Z.o.o
	2016_087_AF3	iTEC Tests, Validations and Planning (iTEC - TVP)	PANSA		2017_057_AF4	Local traffic complexity management	PANSA
	2016_129_AF5	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	PANSA		2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	LH Systems Poland
✓	2016_141_AF5	Deploy SWIM governance	PANSA		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	PANSA
	2016_159_AF6	DLS Implementation Project – Path 2	PANSA	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	PANSA

Portugal

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	14	4

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	45%	10%	45%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2020	
3.2.1	15%	70%	15%	-	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	0%	65%	35%	Dec 2024	Yes
5.2.2	0%	90%	10%	Dec 2024	
5.2.3	0%	20%	80%	-	
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	0%	60%	40%	-	
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	20%	80%	0%	Mar 2022	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Portuguese Stakeholders

✓ Completed project

	#122AF3	FT 3.1.1 NAV Portugal – Initial ASM tool to support AFUA	NAV Portugal	2016_069_AF2	Runway Overrun Prevention System (ROPS) bundled application for TAP Portugal	TAP Portugal
✓	#123AF4	FT 4.2.3 NAV Portugal Interface to NMS AFP	NAV Portugal	✓ 2016_071_AF5	2016_071_AF5_PT_Implement a PT Air Force IP Backbone connected into NewPENS	PT MOD
	2015_138_AF5	Implementation of a solution for electronic Terrain and Obstacle Data management	NAV Portugal	✓ 2016_141_AF5	Deploy SWIM governance	NAV Portugal
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	NAV Portugal	2016_159_AF6	DLS Implementation Project – Path 2	NAV Portugal, TAP Portugal
✓	2015_262_AF5	Aeronautical Data Quality and Exchange	PT MOD	✓ 2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	NAV Portugal
	2015_278_AF1	C-130H RNP-1 Avionics Upgrade for 5 A/C	PT MOD	✓ 2017_083_AF6	Portugalia E195 - Deployment of ATN B1 capability	PGA – Portugália Airlines
	2015_279_AF1	Falcon 50 RNP-1 Avionics Upgrade for 3 A/C	PT MOD	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	NAV Portugal
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	NAV Portugal	✓ 2017_089_AF6	IP1 - DLS European Target Solution assessment	NAV Portugal
	2016_061_AF6	Deployment of ATN B1 capability within TAP Group	TAP Portugal, PGA – Portugália Airlines			

Romania

Number of gaps: 24

Current status of implementation

Already implemented	In progress / Planned	Not planned
9	9	6

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	✓			✓	
3.2.1	85%	15%	0%	Dec 2021	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	-	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Sep 2022	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1					
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	0%	100%	-	
5.3.1	0%	20%	80%	Dec 2025	
5.4.1	0%	60%	40%	Dec 2024	
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

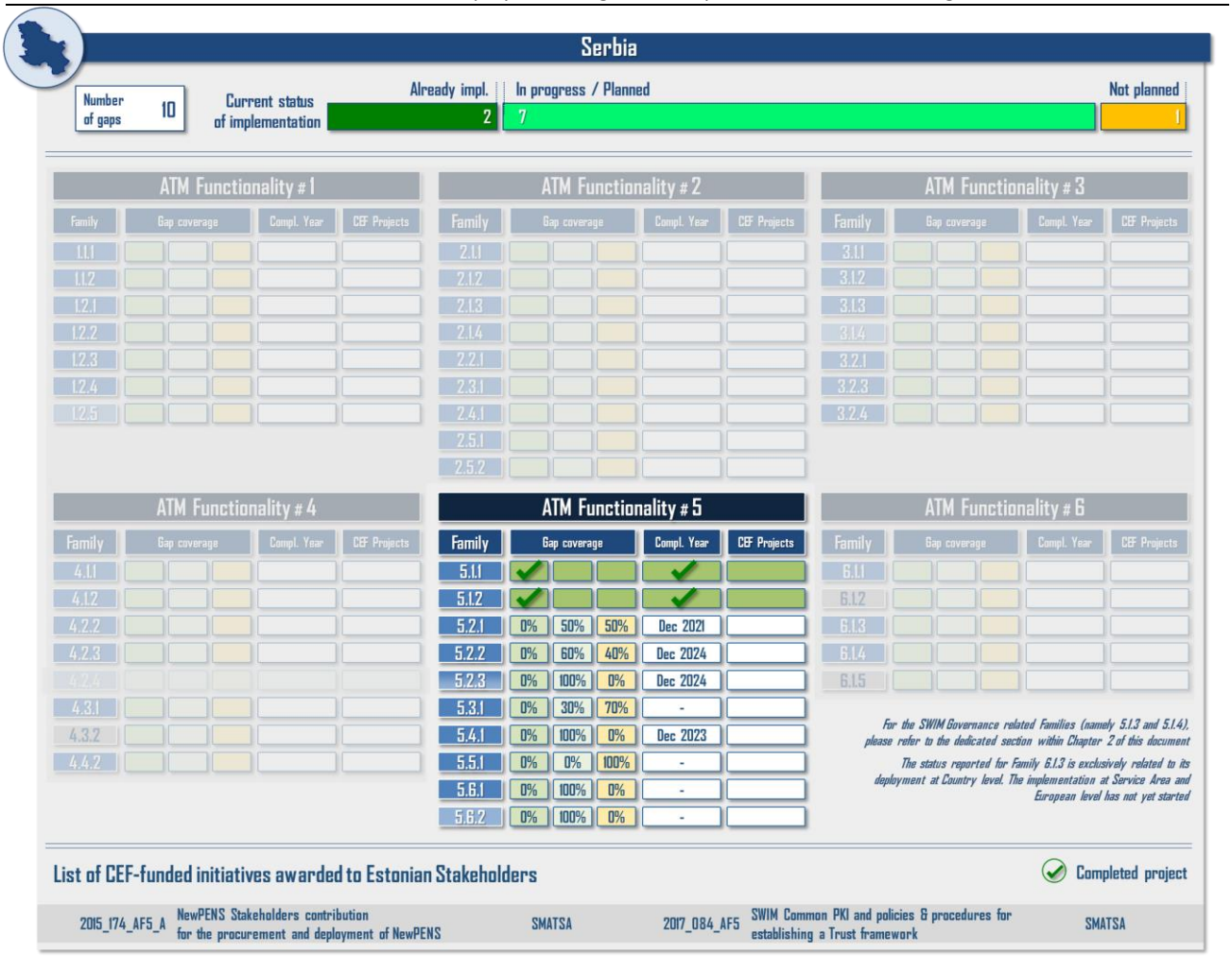
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

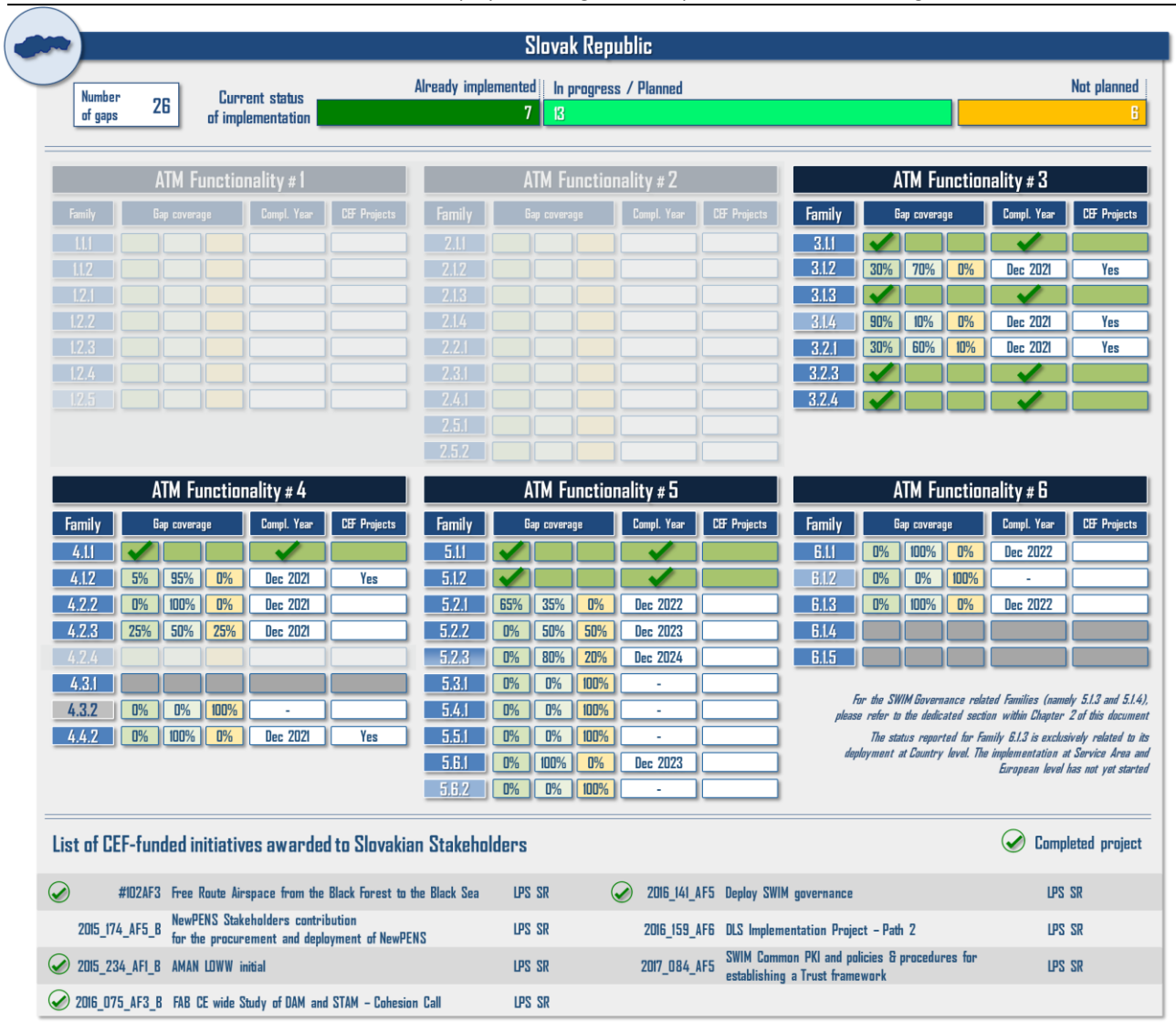
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Romanian Stakeholders

✓ Completed project

✓	#134AF5	PILOT PLATFORM for access services to OPMET data (METAR, TAF, SIGMET) in WXXM format	ROMATSA	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ROMATSA
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ROMATSA			


Serbia
Number of gaps 10
Current status of implementation
Already impl. 2
In progress / Planned 7
Not planned 1
ATM Functionality # 1
Family | Gap coverage | Compl. Year | CEF Projects
1.1.1
1.1.2
1.2.1
1.2.2
1.2.3
1.2.4
1.2.5
ATM Functionality # 2
Family | Gap coverage | Compl. Year | CEF Projects
2.1.1
2.1.2
2.1.3
2.1.4
2.2.1
2.3.1
2.4.1
2.5.1
2.5.2
ATM Functionality # 3
Family | Gap coverage | Compl. Year | CEF Projects
3.1.1
3.1.2
3.1.3
3.1.4
3.2.1
3.2.3
3.2.4
ATM Functionality # 4
Family | Gap coverage | Compl. Year | CEF Projects
4.1.1
4.1.2
4.2.2
4.2.3
4.2.4
4.3.1
4.3.2
4.4.2
ATM Functionality # 5
Family | Gap coverage | Compl. Year | CEF Projects
5.1.1 ✓ ✓
5.1.2 ✓ ✓
5.2.1 0% 50% 50% Dec 2021
5.2.2 0% 60% 40% Dec 2024
5.2.3 0% 100% 0% Dec 2024
5.3.1 0% 30% 70% -
5.4.1 0% 100% 0% Dec 2023
5.5.1 0% 0% 100% -
5.6.1 0% 100% 0% -
5.6.2 0% 100% 0% -
ATM Functionality # 6
Family | Gap coverage | Compl. Year | CEF Projects
6.1.1
6.1.2
6.1.3
6.1.4
6.1.5
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Estonian Stakeholders
Completed project
2015_174_AF5_A NewPENS Stakeholders contribution for the procurement and deployment of NewPENS SMATSA
2017_084_AF5 SWIM Common PKI and policies & procedures for establishing a Trust framework SMATSA



Slovak Republic

Number of gaps: 26

Current status of implementation: Already implemented 7 | In progress / Planned 13 | Not planned 6

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1					
1.1.2					
1.2.1					
1.2.2					
1.2.3					
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1					
2.1.2					
2.1.3					
2.1.4					
2.2.1					
2.3.1					
2.4.1					
2.5.1					
2.5.2					

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	30%	60%	10%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	5%	95%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	25%	50%	25%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	65%	35%	0%	Dec 2022	
5.2.2	0%	50%	50%	Dec 2023	
5.2.3	0%	80%	20%	Dec 2024	
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
5.5.1	0%	0%	100%	-	
5.6.1	0%	100%	0%	Dec 2023	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	0%	100%	0%	Dec 2022	
6.1.2	0%	0%	100%	-	
6.1.3	0%	100%	0%	Dec 2022	
6.1.4					
6.1.5					

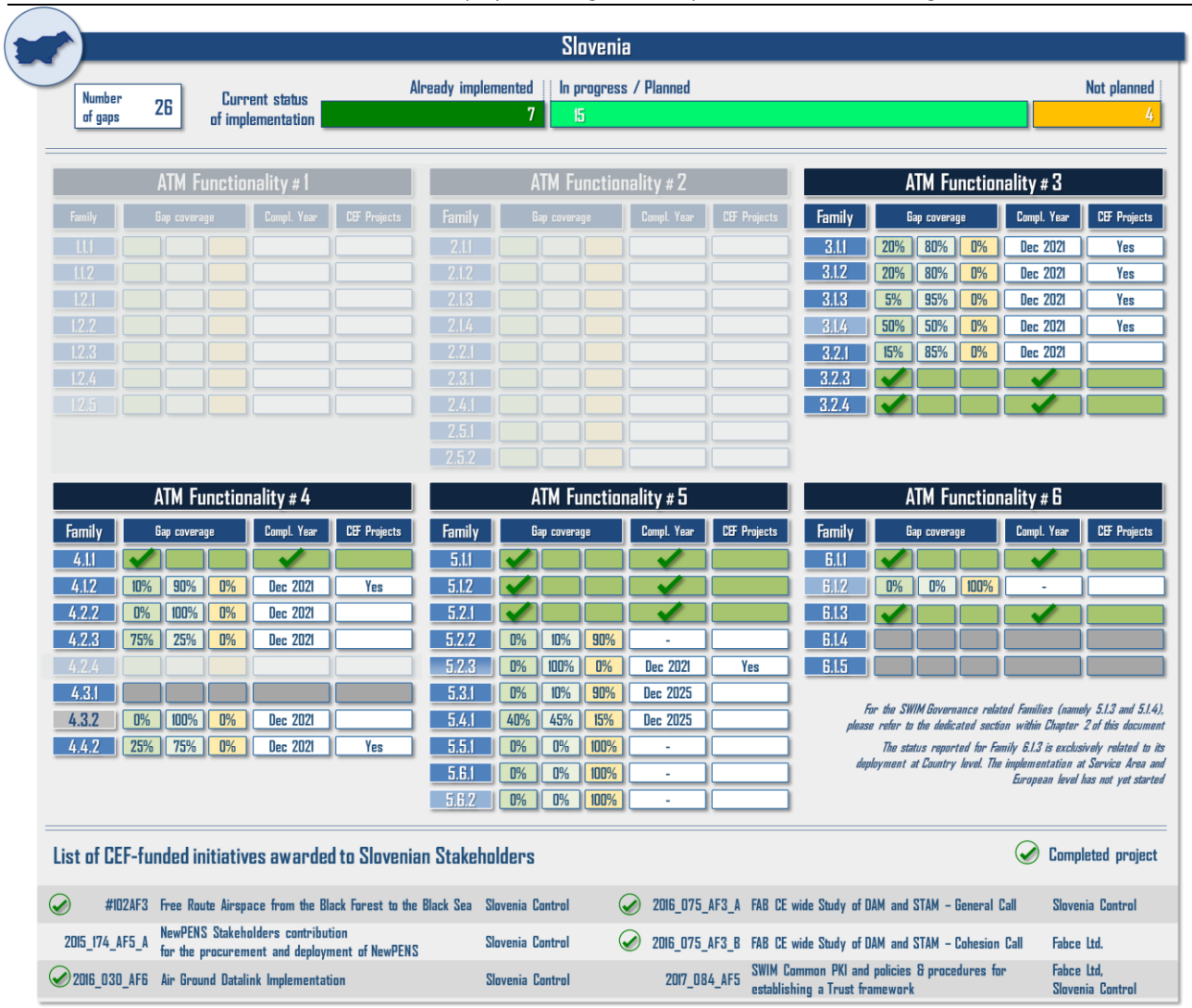
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

List of CEF-funded initiatives awarded to Slovakian Stakeholders

✓ Completed project

✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	LPS SR	✓	2016_141_AF5	Deploy SWIM governance	LPS SR
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LPS SR		2016_159_AF6	DLS Implementation Project – Path 2	LPS SR
✓	2015_234_AF1_B	AMAN LOWW initial	LPS SR		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LPS SR
✓	2016_075_AF3_B	FAB CE wide Study of DAM and STAM – Cohesion Call	LPS SR				


Slovenia
Number of gaps 26
Current status of implementation
Already implemented 7
In progress / Planned 15
Not planned 4
ATM Functionality # 1
Family | Gap coverage | Compl. Year | CEF Projects
1.1.1
1.1.2
1.2.1
1.2.2
1.2.3
1.2.4
1.2.5
ATM Functionality # 2
Family | Gap coverage | Compl. Year | CEF Projects
2.1.1
2.1.2
2.1.3
2.1.4
2.2.1
2.3.1
2.4.1
2.5.1
2.5.2
ATM Functionality # 3
Family | Gap coverage | Compl. Year | CEF Projects
3.1.1 20% 80% 0% Dec 2021 Yes
3.1.2 20% 80% 0% Dec 2021 Yes
3.1.3 5% 95% 0% Dec 2021 Yes
3.1.4 50% 50% 0% Dec 2021 Yes
3.2.1 15% 85% 0% Dec 2021
3.2.3
3.2.4
ATM Functionality # 4
Family | Gap coverage | Compl. Year | CEF Projects
4.1.1
4.1.2 10% 90% 0% Dec 2021 Yes
4.2.2 0% 100% 0% Dec 2021
4.2.3 75% 25% 0% Dec 2021
4.2.4
4.3.1
4.3.2 0% 100% 0% Dec 2021
4.4.2 25% 75% 0% Dec 2021 Yes
ATM Functionality # 5
Family | Gap coverage | Compl. Year | CEF Projects
5.1.1
5.1.2
5.2.1
5.2.2 0% 10% 90% -
5.2.3 0% 100% 0% Dec 2021 Yes
5.3.1 0% 10% 90% Dec 2025
5.4.1 40% 45% 15% Dec 2025
5.5.1 0% 0% 100% -
5.6.1 0% 0% 100% -
5.6.2 0% 0% 100% -
ATM Functionality # 6
Family | Gap coverage | Compl. Year | CEF Projects
6.1.1
6.1.2 0% 0% 100% -
6.1.3
6.1.4
6.1.5
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Slovenian Stakeholders
Completed project
#102AF3 Free Route Airspace from the Black Forest to the Black Sea Slovenia Control
2015_174_AF5_A NewPENS Stakeholders contribution for the procurement and deployment of NewPENS Slovenia Control
2016_030_AF6 Air Ground Datalink Implementation Slovenia Control
2016_075_AF3_A FAB CE wide Study of DAM and STAM – General Call Slovenia Control
2016_075_AF3_B FAB CE wide Study of DAM and STAM – Cohesion Call Fabce Ltd.
2017_084_AF5 SWIM Common PKI and policies & procedures for establishing a Trust framework Fabce Ltd. Slovenia Control

Spain

Number of gaps	69

Current status of implementation

Already implemented	In progress / Planned	Not planned
22	46	1

ATM Functionality # 1

Family	Barcelona El Prat					Madrid Barajas					Palma de Mallorca Son Sant Joan				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		✓			✓	
1.1.2	60%	40%	0%	Dec 2024	Yes	75%	25%	0%	Dec 2024	Yes	75%	25%	0%	Dec 2024	Yes
1.2.1	35%	65%	0%	May 2021	Yes	30%	70%	0%	Nov 2022	Yes	✓			✓	
1.2.2	✓			✓		✓			✓		✓			✓	
1.2.3	15%	85%	0%	Dec 2022		15%	85%	0%	Dec 2022		0%	100%	0%	Dec 2023	
1.2.4															
1.2.5															

ATM Functionality # 2

Family	Barcelona El Prat					Madrid Barajas					Palma de Mallorca Son Sant Joan				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		✓			✓	
2.1.2	✓			✓		90%	10%	0%	Feb 2021	Yes	✓			✓	
2.1.3	✓			✓		✓			✓		✓			✓	
2.1.4	0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2021	
2.2.1	90%	10%	0%	Dec 2021	Yes	90%	10%	0%	Dec 2021	Yes	90%	10%	0%	Dec 2021	Yes
2.3.1						0%	100%	0%	Dec 2023						
2.4.1	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	
2.5.1	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	
2.5.2	50%	50%	0%	Dec 2020		50%	50%	0%	Dec 2020		50%	50%	0%	Dec 2020	

ATM Functionality # 4 (Airport Gaps)

Family	Barcelona El Prat					Madrid Barajas					Palma de Mallorca Son Sant Joan				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	35%	65%	0%	Dec 2021	Yes	35%	65%	0%	Dec 2021	Yes	35%	65%	0%	Dec 2021	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2022	Yes
3.1.3	35%	65%	0%	Dec 2022	
3.1.4	60%	40%	0%	Dec 2022	Yes
3.2.1	30%	70%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2024	

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.3.1					
4.3.2	0%	50%	50%	Dec 2021	
4.4.2	0%	100%	0%	Jun 2022	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	60%	40%	0%	Dec 2020	Yes
5.2.2	15%	85%	0%	Dec 2024	Yes
5.2.3	25%	55%	20%	Dec 2024	Yes
5.3.1	5%	15%	80%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	5%	75%	20%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2025	
5.6.2	0%	100%	0%	Dec 2027	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

Spain

Number of gaps	69	Current status of implementation	Already implemented	In progress / Planned	Not planned
			22	46	1

List of CEF-funded initiatives awarded to Spanish Stakeholders

✓ Completed project

✓	#057AF2a	Fulfillment of the prerequisite EFS: Airport Integration and Throughput (Phase A)	ENAIRE		2016_037_AF3	Deployment of LARA System in Spain	ENAIRE, Spanish Air Force
✓	#058AF2a	Fulfillment of the prerequisite A-SMGCS 2: Airport Integration and Throughput (Phase A)	ENAIRE		2016_038_AF5	Implementation of an IP-based G/G data communication network in ENAIRE (REDAN)	ENAIRE
	#059AF5	Implementation and operation of an IP-based G/G data communication network in ENAIRE	ENAIRE	✓	2016_039_AF4	STAM Phase 1 Implementation in Spain	ENAIRE
✓	#060AF1	ENAIRE reference geographic database (FT I.2.2)	ENAIRE		2016_040_AF3	Upgrade of trajectory management in SACTA-iTEC	ENAIRE
✓	#061AF1a	RNP APCH Implementation in Palma de Mallorca	ENAIRE		2016_077_AF1	2016_077_AF1_ES_FALCON 900 compliance with RNP 1 and RNP APCH	Spanish Air Force
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ENAIRE		2016_125_AF6	2016_125_AF6_ES_Airbus A310 ATN VDL2 Compliance	Spanish Air Force
✓	2015_210_AF5	AMHS/SWIM gateway	ENAIRE		2016_126_AF6	2016_126_AF6_ES_FALCON 900 compliance with Air Ground ATN VDL2 Data Link	Spanish Air Force
	2015_211_AF2	Fulfillment of the prerequisite A-SMGCS 2: Airport Integration and Throughput (2017-2019)	ENAIRE		2016_131_AF4	AOP-NOP Integration - Extended Implementation	AENA
	2015_212_AF2	Fulfillment of the prerequisite EFS: Airport Integration and Throughput (2017-2019)	ENAIRE	✓	2016_141_AF5	Deploy SWIM governance	ENAIRE
	2015_215_AF1	RNP APCH Implementation in Madrid and Barcelona	ENAIRE		2016_159_AF6	DLS Implementation Project – Path 2	ENAIRE
	2015_221_AF3	Implementation of Voice over IP (VoIP) systems and services in ENAIRE	ENAIRE	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	ENAIRE
	2015_271_AF1	CECAF RNP Procedures Design	Spanish Air Force		2017_400_BLD	Implementation of Voice over IP (VoIP) in Barcelona ACC	ENAIRE
	2015_272_AF1_AIR	CECAF RNP Procedures Implementation (Pilots and Flight operators courses)	Spanish Air Force		2017_018_AF5	SWIM-enabled OCC	Boeing
✓	2015_272_AF1_GND	CECAF RNP Procedures Implementation (Pilots and Flight operators courses)	Spanish Air Force		2017_049_AF3	Electronic Flight Strip (EFS) in En-Route and TMA in SACTA system	ENAIRE
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	ENAIRE		2017_050_AF3	Controller Working Position (CWP) upgrade	ENAIRE
	2016_035_AF5	ENAIRE exchange of Aeronautical Information Data in AIXM5.1	ENAIRE		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Spanish Air Force
	2016_036_AF3	Deployment of SACTA-iTEC	ENAIRE	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	ENAIRE

Sweden

Number of gaps: 40

Current status of implementation: Already implemented 13 | In progress / Planned 25 | Not planned 2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	50%	0%	50%	Dec 2024	Yes
1.2.1	95%	5%	0%	Dec 2023	Yes
1.2.2	0%	100%	0%	Dec 2022	
1.2.3	90%	10%	0%	Dec 2024	Yes
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	75%	25%	0%	Dec 2022	Yes
2.2.1	90%	10%	0%	Dec 2020	Yes
2.3.1					
2.4.1	25%	75%	0%	Dec 2023	Yes
2.5.1	75%	25%	0%	Dec 2022	Yes
2.5.2	80%	20%	0%	Dec 2022	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	50%	50%	Dec 2025	
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2023	Yes
3.2.1	75%	25%	0%	Dec 2025	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	50%	50%	Dec 2022	
4.2.2	0%	100%	0%	Dec 2022	
4.2.3	✓			✓	
4.2.4	35%	65%	0%	Mar 2022	Yes
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	95%	5%	0%	Dec 2024	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	50%	45%	5%	Dec 2025	Yes
5.2.2	15%	75%	10%	Dec 2025	Yes
5.2.3	5%	90%	5%	Dec 2025	Yes
5.3.1	45%	50%	5%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2025	
5.5.1	15%	85%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2025	Yes
5.6.2	0%	100%	0%	Dec 2027	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

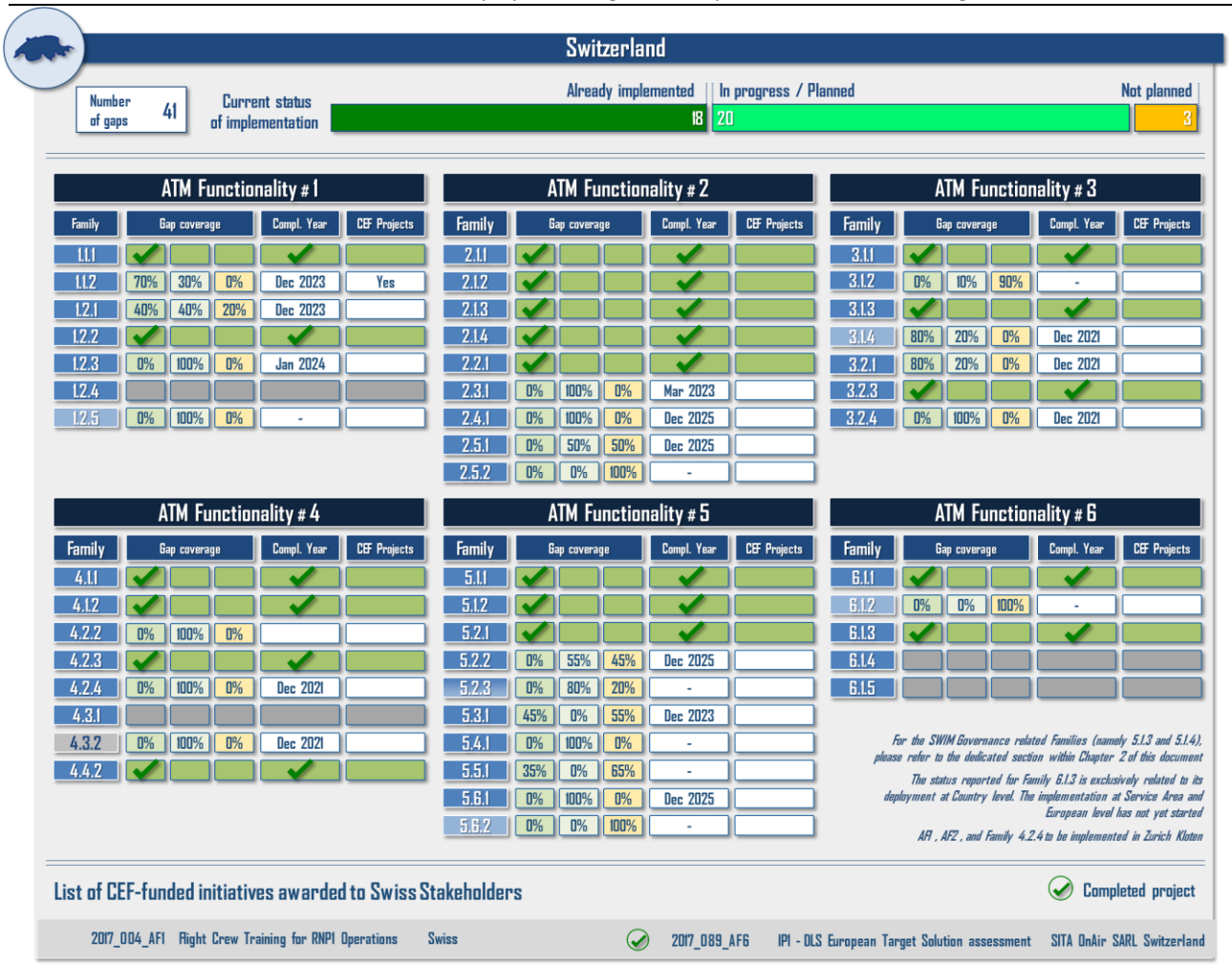
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Stockholm Arlanda

List of CEF-funded initiatives awarded to Swedish Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	LFV	✓	2015_309_AF1_GND	Implementation of GBAS (operation in the Flights Operations Dept and training of flight crew)	Nova Airlines AB
✓	#104AF1	Lower Airspace Optimization	LFV		2015_320_AF3	Implementation of VoIP	LFV
✓	#136AF2	A-CDM Optimization	Swedavia	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	LFV
✓	#137AF2	Enhancement of Airport Safety Nets at Stockholm Arlanda Airport	Swedavia		2016_131_AF4	AOP-NOP Integration - Extended Implementation	Swedavia
✓	2015_025_AF5_A	Sub-regional SWIM MET deployment to support NEFRA (part A)	SMHI	✓	2016_141_AF5	Deploy SWIM governance	LFV
	2015_098_AF5	Implementing redundant WAN	LFV		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Swedavia
✓	2015_099_AF5	DK-SE FAB Aeronautical Data Quality (ADQ)	LFV		2016_159_AF6	DLS Implementation Project – Path 2	LFV
✓	2015_118_AF5	More efficient Flight Planning	LFV	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	LFV
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LFV		2016_166_AF1	Stockholm Arlanda Airport RNP Project (SAARP)	Swedavia, Nova Airlines AB
	2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	LFV		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Swedavia
	2015_227_AF3_A	Borealis FRA Implementation (Part 2)	LFV		2017_060_AF5	ADQ Components in the SWIM Infrastructure - upstream data inclusion in the full data chain	LFV, Swedavia
✓	2015_288_AF5	ADQ implementation Stockholm Arlanda	Swedavia		2017_061_AF5	Application of cyber security to ANSP and SWIM services at LFV	LFV
✓	2015_290_AF2	Initial AOP	Swedavia		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	LFV
	2015_291_AF2	A-SMGCS Level 2 implementation	Swedavia		2017_075_AF5	SWIMARN - SWIM with Cyber Security at Stockholm Arlanda Airport	Swedavia
✓	2015_292_AF2	DMAN Stockholm Arlanda Airport	Swedavia		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LFV
✓	2015_294_AF2	Implementation of OTP	Swedavia	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	LFV
✓	2015_309_AF1_AIR	Implementation of GBAS (operation in the Flights Operations Dept and training of flight crew)	Nova Airlines AB				



Switzerland

Number of gaps: 41

Current status of implementation

Already implemented	In progress / Planned	Not planned
18	20	3

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	70%	30%	0%	Dec 2023	Yes
1.2.1	40%	40%	20%	Dec 2023	
1.2.2	✓			✓	
1.2.3	0%	100%	0%	Jan 2024	
1.2.4					
1.2.5	0%	100%	0%	-	

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	✓			✓	
2.2.1	✓			✓	
2.3.1	0%	100%	0%	Mar 2023	
2.4.1	0%	100%	0%	Dec 2025	
2.5.1	0%	50%	50%	Dec 2025	
2.5.2	0%	0%	100%	-	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	10%	90%	-	
3.1.3	✓			✓	
3.1.4	80%	20%	0%	Dec 2021	
3.2.1	80%	20%	0%	Dec 2021	
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	✓			✓	
4.2.2	0%	100%	0%		
4.2.3	✓			✓	
4.2.4	0%	100%	0%	Dec 2021	
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	✓			✓	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	0%	55%	45%	Dec 2025	
5.2.3	0%	80%	20%	-	
5.3.1	45%	0%	55%	Dec 2023	
5.4.1	0%	100%	0%	-	
5.5.1	35%	0%	65%	-	
5.6.1	0%	100%	0%	Dec 2025	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

AF1 , AF2 , and Family 4.2.4 to be implemented in Zurich Kloten

List of CEF-funded initiatives awarded to Swiss Stakeholders

✓ Completed project

2017_004_AF1 Right Crew Training for RNP1 Operations Swiss

✓ 2017_089_AF6 IPI - DLS European Target Solution assessment SITA OnAir SARL Switzerland

United Kingdom

Number of gaps	85	Current status of implementation	Already implemented	In progress / Planned	Not planned
			30	49	6

ATM Functionality # 1

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		0%	100%	0%	-		0%	100%	0%	-	
1.1.2	85%	15%	0%	-		85%	15%	0%	-		0%	100%	0%	-		0%	100%	0%	-	
1.2.1	50%	0%	50%	-		50%	0%	50%	-		50%	50%	0%	Dec 2026		15%	85%	0%	May 2023	Yes
1.2.2	✓			✓		✓			✓		✓			✓		✓			✓	
1.2.3	0%	80%	20%	Dec 2023	Yes	55%	35%	10%	Dec 2026	Yes	30%	70%	0%	Dec 2026	Yes	15%	85%	0%	Dec 2023	Yes
1.2.4																				
1.2.5	0%	100%	0%	-		0%	100%	0%	-		0%	100%	0%	-		0%	100%	0%	-	

ATM Functionality # 2

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2021	
2.1.2	✓			✓		✓			✓		✓			✓		✓			✓	
2.1.3	✓			✓		✓			✓		30%	70%	0%	Dec 2021	Yes	0%	100%	0%	Jun 2021	Yes
2.1.4	0%	100%	0%	Dec 2020	Yes	✓			✓		10%	90%	0%	Dec 2023	Yes	10%	90%	0%	Dec 2021	Yes
2.2.1	✓			✓		✓			✓		✓			✓		60%	40%	0%	Dec 2020	Yes
2.3.1	0%	100%	0%	Dec 2023	Yes	✓			✓							0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023		0%	0%	100%	-		30%	70%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes	✓			✓		0%	0%	100%	-		30%	70%	0%	Dec 2020	Yes
2.5.2	0%	0%	100%	-		95%	5%	0%	Dec 2021		✓			✓		30%	70%	0%	Dec 2020	Yes

ATM Functionality # 4 (Airport Gaps)

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	0%	100%	-		45%	55%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	0%	100%	0%	-	
3.1.3	✓			✓	
3.1.4	45%	55%	0%	-	
3.2.1	60%	40%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	65%	35%	0%	Dec 2021	Yes

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	75%	25%	Dec 2021	
4.2.2	0%	100%	0%	-	
4.2.3	75%	25%	0%	Dec 2021	
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	✓			✓	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	✓			✓	
5.2.1	✓			✓	
5.2.2	5%	55%	40%	Dec 2024	Yes
5.2.3	20%	65%	15%	Dec 2024	Yes
5.3.1	0%	70%	30%	Dec 2024	
5.4.1	15%	45%	40%	Dec 2023	Yes
5.5.1	0%	60%	40%	Dec 2024	
5.6.1	0%	95%	5%	Dec 2024	
5.6.2	0%	100%	0%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

United Kingdom

Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
85		30	49	6

List of CEF-funded initiatives awarded to British Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	NATS		2015_227_AF3_A	Borealis FRA Implementation (Part 2)	NATS
	#091AF1	Enhanced Terminal Airspace (TMA) using RNP- Based Operations	London Gatwick		2015_269_AF3	Mil MTCD Advanced Controller Tools (FOURSIGHT)	UK MOD
✓	#092AF2	Enhanced Departure Management integrating airfield surface assets	London Gatwick	✓	2015_286_AF2	Introduction of Electronic Flight Strips	NATS
✓	#094AF2	Time-based separation for final Approach	London Gatwick		2015_298_AF2	A-SMGCS upgrade to provide airport safety nets and routing & planning functions	London Gatwick
✓	#097AF2	Time Based Separation	London Heathrow, British Airways, NATS		2015_299_AF2	Integrated Ground Management (GMAN)	London Gatwick
✓	#099AF2	Initial Airport Operational Plan (AOP)	London Heathrow	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	NATS
✓	#100AF2	Airport Safety Nets associated with A-SMGCS Level 2 – Preparation for SMAN	London Heathrow		2016_041_AF2	Basic A-CDM implementation at London Stansted Airport	London Stansted
	#117AF5	Implementation of Initial SWIM Capability (AF5) across NATS	NATS		2016_042_AF1	Enhanced Terminal Airspace using RNP Based Operations at STN	London Stansted
	#119AF1	Manchester TMA Re-Development	NATS	✓	2016_141_AF5	Deploy SWIM governance	NATS
✓	#120AF1a	London Airspace Management Programme (LAMP) (Part A)	NATS, London Heathrow		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	London Stansted, Manchester Ringway
✓	#120AF1b	London Airspace Management Programme (LAMP) (Part B)	British Airways		2016_159_AF6	DLS Implementation Project – Path 2	Arinc, NATS
	2015_016_AF2	ASMGCS Level 1 & 2	London Heathrow	✓	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Arinc
✓	2015_060_AF2	Airport Operating Plan AOP	London Heathrow		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	London Stansted, Manchester Ringway
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	UK Met Office		2017_023_AF1	Enhanced Terminal Airspace using RNP Based Operations at Manchester Ringway Airport	Manchester Ringway
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather (Icing, Turbulence, Convection and Winter weather)	UK Met Office		2017_024_AF1	RNP approaches to landing runways (23R, 05L and 05R) at Manchester Ringway Airport	Manchester Ringway
	2015_069_AF5	European MET Information Exchange (MET-GATE)	UK Met Office		2017_025_AF5	Stakeholders' SWIM PKI and cyber security	Manchester Ringway
	2015_113_AF4	AOP-NOP Integration	London Heathrow		2017_052_AF4	AOP-NOP Integration - Extended Implementation	London Stansted, Manchester Ringway
	2015_137_AF5	European Meteorological Aircraft Derived Data Center (EMADDC)	UK Met Office		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Manchester Ringway, NATS
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	NATS	✓	2017_089_AF6	IPI - DLS European Target Solution assessment	Arinc, Inmarsat, NATS

List of Acronyms

Acronym	Meaning
A-CDM	Airport – Collaborative Decision Making
ACC	Area Control Center
AF	ATM Functionality
AFUA	Advanced Flexible Use of Airspace
AMAN	Arrival Manager
ANSP	Air Navigation Service Provider
AoR	Area of Responsibility
ASM	AirSpace Management
A-SMGCS	Advanced Surface Movement Guidance and Control Systems
ATFCM	Air Traffic Flow and Capacity Management
ATM	Air Traffic Management
ATN	Aeronautical Telecommunication Network
ATSP	Air Traffic Service Provider
AU	Airspace Users
CEF	Connecting Europe Facility
CP1	Common Project 1
DCT	Direct Routings
DLS	Data Link Services
DMAN	Departure Management
ECAC	European Civil Aviation Conference
EDA	European Defence Agency
EFS	Electronic Flight Strips
EPP	Extended Project Profile
ERNIP	European Route Network Improvement Plan
EU	European Union
FOC	Full Operational Capability
FPA	Framework Partnership Agreement
FRA	Free Route Airspace
iAOP	Initial Airport Operations Plan
INEA	Innovation and Networks Executive Agency
IDP	Interim Deployment Programme
IRE	Instrument Runway End
MUAC	Maastricht Upper Area Control
NM	Network Manager
NOP	Network Operations Plan
PBN	Performance Based Navigation
PCP	Pilot Common Project
PENS	Pan European Network Service
PKI	Public Key Infrastructure
RNP	Required Navigation Performance
SDM	SESAR Deployment Manager
SDP	SESAR Deployment Programme
SESAR	Single European Sky ATM Research
SJU	SESAR Joint Undertaking
STAM	Short Term ATFCM Measures
SWIM	System Wide Information Management
TMA	Terminal Manoeuvring Area

Notes