



Guidance Material for SESAR Deployment Programme Implementation

Monitoring View 2019

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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 the real start of the Deployment Phase of SESAR.

More than five years after the beginning of this Phase, the modernization of the European ATM systems and infrastructure is more and more becoming an operational reality after its planning and progress towards an adequate level of technological maturity. More importantly, it is starting to deliver its expected performance benefits to the Aviation community, to its stakeholders and in turn to European passengers.

Since its inception, this modernization initiative entailed a coordinated effort from all operational stakeholders impacted by the PCP Regulation, which are required to get organized to ensure a synchronized, timely and performance-driven deployment of the ATM Functionalities included in the PCP.

In order to better streamline and synchronize the implementation activities across Europe, the SESAR Deployment Programme therefore 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 oversight and monitoring of all implementation initiatives activated by operational stakeholders impacted by the Pilot Common Project: such oversight 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.

The technical/operational elements to be deployed, as well as the geographical location (e.g. airport or country¹) 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.

As the deployment phase of SESAR is now advancing at full speed, 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 Monitoring View 2019 provides such updated view, building on a dedicated *Monitoring Exercise* involving all impacted operational stakeholders. This view is updated on a yearly basis, so as to make sure that all progresses in the implementation are duly taken into account, helping to develop a common reference for all involved actors, to identify areas where further activities are still needed and to steer the subsequent phase of the PCP deployment.



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

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.

Considering its role as monitoring and reporting instrument for all PCP-related activities performed by operational stakeholders, the Monitoring View is organized into the following sections:

- **Section 1**, which provides for 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 be tackled by ATM stakeholders, with the objective to avoid significant gaps in the SDP's implementation. 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;
- **Section 2**, which provides the full detailed picture of the implementation status of PCP-related elements – clustered by Family – in each airport or country, whilst also presenting a dedicated view per stakeholder category, both for ground stakeholders and the Airspace Users;

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 laid down by 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 in 2016, 2017, and 2018, 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, NM² 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.

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 Implementation Actions directly contributing to the deployment of the Pilot Common Project under the SESAR Deployment Framework Partnership Agreement,

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.

SDM is also in the position of complementing the data gathered from stakeholders with information and updates stemming from around 350 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 stakeholders³.

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 scope⁴. 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.

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
 - o **5.3.1** – Upgrade / Implement Aeronautical Information Exchange system / service
 - o **5.4.1** – Upgrade / Implement Meteorological Information Exchange system / service
 - o **5.5.1** – Upgrade / Implement Cooperative Network Information Exchange system/service
 - o **5.6.1** – Upgrade / Implement Flights Information Exchange system / service supported by Yellow Profile
 - o **5.6.2** – Upgrade / Implement Flights Information Exchange system / service supported by Blue Profile

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

³ 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.

⁴ 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.

Performance benefits delivered by SDM-coordinated Implementation Projects

In order to enhance the reliability of the monitoring picture, the present document is built upon data collected from the stakeholders and enhanced with the detailed information that the SESAR Deployment Manager has on the Implementation Projects (PCP projects supported by EU public funding under the CEF Framework), thanks to its role of Action coordinator.

SDM currently coordinates the execution of **349 Implementation Projects** (115 already closed at the current date), spread over all 6 ATM functionalities of the Pilot Common Projects. The deployment activities engage **94 beneficiaries**, across 27 EU Member States and 5 Third Countries, as depicted in Figure 2.

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. All projects coordinated by the SESAR Deployment Manager are expected to generate **performance improvements** that can be monetised **for around € 10 billion** in the timeframe 2014-2030.

In particular, the SDM measured the **performance improvements stemming from the first 105 Implementation Projects closed under its own coordination**, in particular with regard to 6 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 capacity, environment and operational efficiency.

Action coordinator

Coordinating **8 Actions** with:

94 ACTION BENEFICIARIES IN

27 EU MEMBER STATES AND

5 THIRD COUNTRIES.



Figure 2 - SDM as Action coordinator: key figures

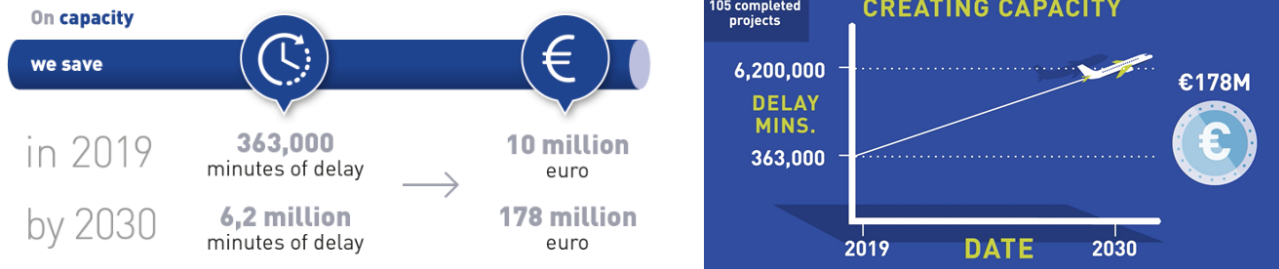


Figure 4 - First 105 SDM-coordinated completed Projects: capacity benefits

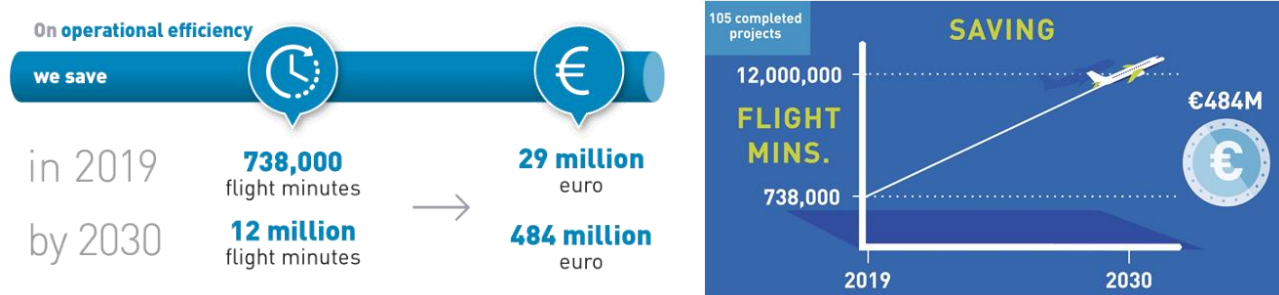


Figure 3 - First 105 SDM-coordinated completed Projects: operational efficiency benefits

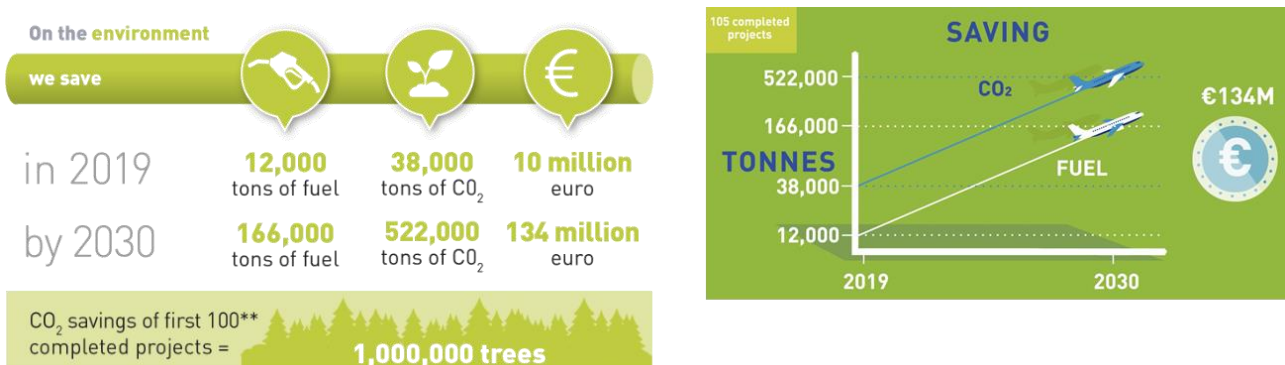


Figure 5 - First 105 SDM-coordinated completed Projects: environment benefits

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 (airport⁵ 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 considered⁶.

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 (further detail is reported in the last section of Chapter 2);
- 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 Chapter 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 1160. This number has been slightly reviewed from the 2018 edition, where a total number of 1152 of ground gaps were considered. Following bilateral exchanges with the involved local stakeholders, it was agreed that – from an operational point of view – the status of the following gaps would be reconsidered:

- Family 3.1.1 – ASM tool to support AFUA is not required to be deployed within the airspace of Malta, as such tool is not required considering the nature and complexity of air traffic to be managed;
- Family 3.1.4 – Management of Dynamic Airspace Configurations is not applicable for Luxembourg, as – according to local arrangements all ASM / ATFCM processes and information sharing are handled by the Belgian ANSP and by the Network Manager.

Moreover, considering the specific geographical scope of SWIM – in accordance to the dedicated Appendix included in the PCP Regulation – the implementation gaps linked to deployment of AF5 within Serbia have been first discussed and consulted with SMATSA and therefore added in the overall gaps’ computation.

⁵ The scope of the SDM Monitoring Exercise encompasses all 25 PCP airports but Istanbul Ataturk.

⁶ 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 1160 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

Five years after the formal launch of the SESAR Deployment Phase, the implementation of the Pilot Common Project can be considered well underway: **322 of the 1160 gaps composing the SESAR Deployment Programme scope are already closed**, which in turn 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, **a positive trend can 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, up to 27,8% in 2019**.

It is worth mentioning that the closed gaps are spread **across all 6 ATM Functionalities** and distributed **amongst 25 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 compared to 2018, when closed gaps were only associated to 24 Families.

Overview of the current PCP implementation status

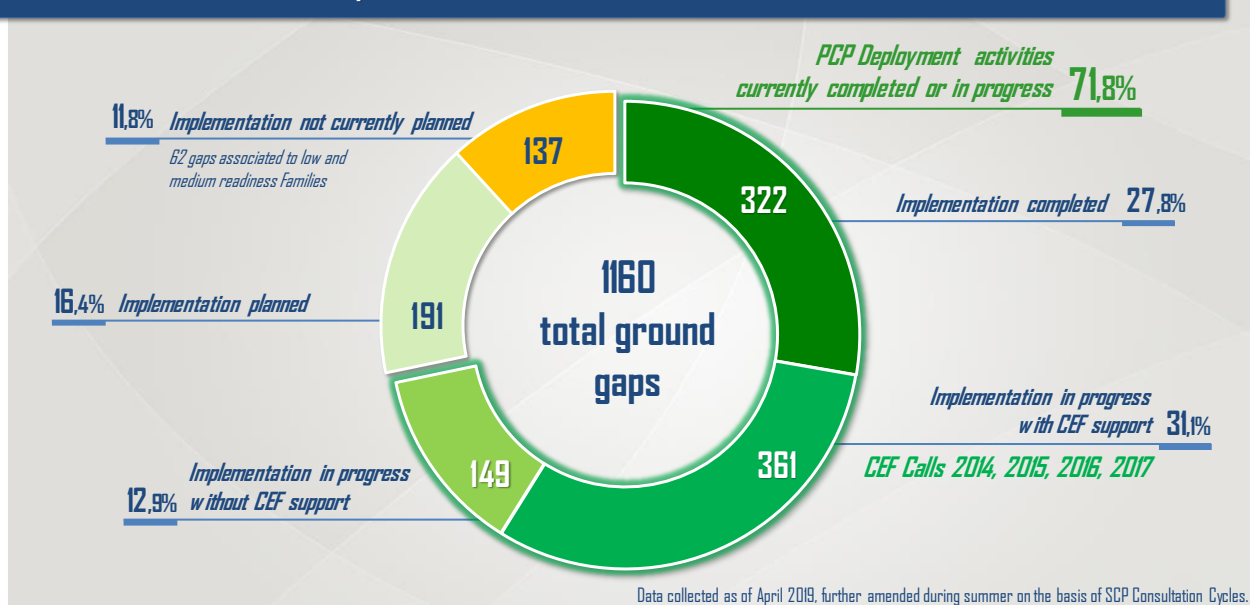


Figure 6 - Current PCP Implementation Status - Overview

Figure 6 further illustrates that the **implementation activities are progressing well, as they are addressing additional 510 gaps, which amounts to around 44% of the total**. More specifically, operational stakeholders are in the progress of closing 361 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 149 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 72% 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 2 percentage points from 2018 and around 6 percentage points from 2017). 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 300 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, almost 17% 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 1023, above 88% of the total SESAR Deployment Programme scope**. Conversely, there is a lack of specific plans only for the remaining 11,8%, slightly decreasing from 2018 figures.

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 more or less stable compared to 2018 outlook, but it remains firmly below 30% 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 the **SESAR deployment is steadily moving forward and delivering the expected performance improvements, already translating the Pilot Common Project into an operational reality⁷**.

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

- in some cases, Families have not yet achieved the appropriate level of maturity to start the deployment activities, or to allow elaborating concrete implementation plans: this is the case for Family 4.3.2 (11 gaps with no dedicated plans), Family 5.6.2 (18 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. For 70 gaps linked to AF5, no targeted plan has been identified by local stakeholders;
- 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 require 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).

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.

⁷ For further information on the performance improvements directly linked to PCP implementation, please see the "Performance View" included in the SDP Execution Progress Report, as yearly delivered to European Commission.

Detailed view per ATM Functionality

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

PCP implementation status – View per ATM Functionality

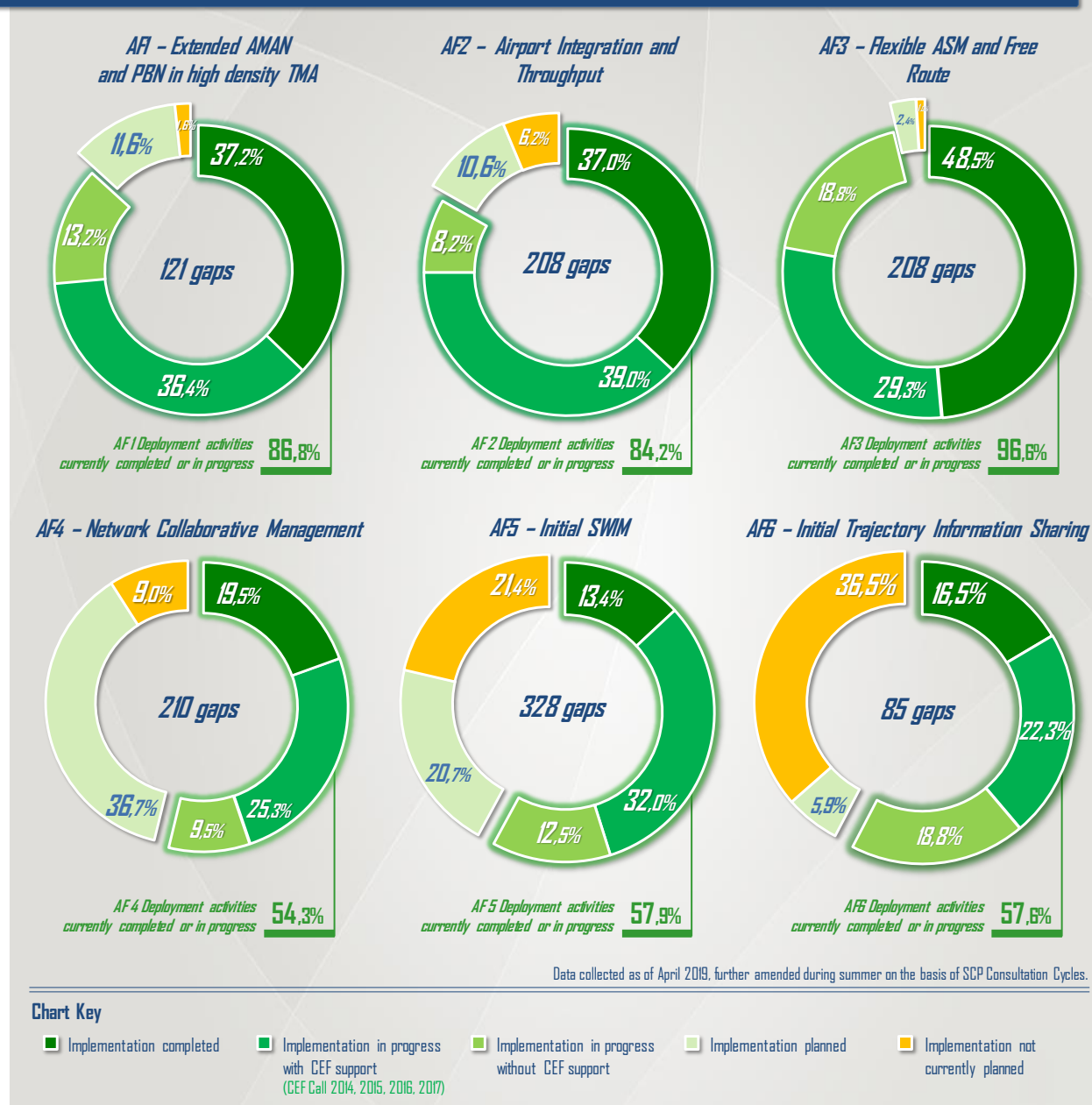


Figure 7 - PCP Implementation Status: view per AF

AF 1 – Extended AMAN and Performance Based Navigation in the High-Density TMAs

More than one third of the existing implementation gaps associated to AF1 Families have already been closed by local stakeholders, with a significant improvement in compared to the results from 2018 (from 30,6% to almost 37,2%). Additional 50% 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 13.2% of the cases, with only 2 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 2018 in deploying Family 1.2.1 (RNP APCH with vertical guidance), now fully implemented within 9 of the TMAs listed in the Regulation. 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 most cases already overcoming 50% of the implementation activities scope). Furthermore, RNP approaches with vertical guidance are deployed for at least one of the landing runways from 20 out of the 24 PCP airports, and in 4 of them some elements associated to RNP1 operations are already available.

AF 2 – Airport Integration and Throughput

Around 83% 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 2018 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 6% 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 8 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.

The implementation of Families 2.1.1, 2.1.2, 2.1.3 and 2.2.1⁸ is well progressing, as the number of fully or partially covered gaps amounts respectively to 20, 24, 22 and 23 gaps out of the 24 airports, for a slight but steady increase vis-à-vis 2018 and more than a 10% improvement vis-à-vis 2017. Implementation is successfully progressing within all of these Families and considerable progress is still expected for the near future.

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. However, the deployment activities have already been launched and are on-going in the majority of the PCP geographical scope.

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 is on-going in 17 of the PCP airports.

In parallel, a multi-stakeholder initiative launched in the Framework of the CEF Call 2017 has brought the number of airports currently working to deploy the Initial Airport Operations Plan to 20 (out of which the 80% will benefit from the synchronization efforts and the direct coordination of SDM).

⁸ 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.

AF 3 – Flexible ASM and Free Route Airspace

Almost 50% 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.

Information collected from operational stakeholders demonstrate considerable improvements from the 2018 outlook (an increase of around 10 percentage points), which already marked a significant step forward from the situation outlined in the Monitoring View 2017.

Direct Routings (DCTs) – addressed by Family 3.2.3 – remains implemented throughout Europe, in accordance to Regulation (EU) n. 716/2014 and with the associated target date. In addition, significant results have been obtained in Families 3.1.1, which is now implemented in 24 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: with the implementation in Poland and Slovak Republic, the number of countries having implemented FRA now amounts to 19, with remaining countries in most cases fully committed to a timely deployment.

100 gaps (around 48% 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 everywhere, and within almost all countries, 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 11 cases going above 70%.

Only less than 4% 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. This is a significant improvement from previous outlooks, considering that in 2017 the percentage of gaps without any associated deployment activity on-going amounted to around 20% of AF3.

AF 4 – Network Collaborative Management

Around 20% of AF4 gaps has been already closed by operational stakeholders, which is around two percentage points higher than in 2018.

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 has now been completed in all applicable countries, making it the second Family of the SDP to be fully implemented by operational stakeholders. Positive results are also linked to Family 4.2.3 (i.e. the deployment of Interfaces between ATM systems and NM systems), where 11 ANSPs are already compliant with the existing requirements.

The currently on-going implementation activities roughly cover 35% 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 37% of the total number of existing gaps, leaving only around 9% of the AF-related gaps without any associated specific implementation plans (a decrease of one percentage point vis-à-vis last year).

AF 5 – Initial SWIM

The overall implementation of the ATM Functionality #5 is progressing and slightly improving compared to 2018, although it needs to be considered that some key enabling activities are currently being ramped up through two multi-Stakeholder initiatives:

- Building on the preparatory work supported by SDM in 2016, the implementation project aimed at establishing a common SWIM Governance officially started its deployment activities two years ago, benefitting of EU funding through its award under the 2016 CEF Call framework, and is now closer to its completion, expected for late 2019;
- An initiative on the SWIM Common Public Key Infrastructure has been awarded by INEA within the 2017 CEF Call for Proposals and was successfully started right afterwards, demonstrating and supporting a cooperative effort from local stakeholders to set-up the necessary elements to enable the full implementation of AF5.

Even though due consideration needs to be given to the points highlighted above, it is worth noting that only 58% of the AF5 gaps have been addressed by the operational stakeholders, either through their full closure or through deployment activities currently on going. More in detail, 44 out of the 328 gaps 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 and 5.2.1), 146 are in the process of being addressed, and 68 are associated with future plans of the Operational Stakeholders to achieve the full PCP compliance.

Finally, around 21% of the gaps are not currently covered by any plans for future implementation, as some technological elements are not yet fully mature, and others will be ready for their implementation and subsequent full PCP compliance after the implementation of common components supporting SWIM adoption across Europe.

The figures remain very close to the results stemming from the analysis carried out in 2017 and 2018. However, the global 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.

AF 6 – 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 14 countries having the ATN B1 based services implemented and provided in full compliance with the appropriate Regulatory framework (with additional 4 countries coming closer to full implementation). On the other hand, for 35 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 almost 30 gaps (mostly spread across Family 6.1.1 and 6.1.3).

Family 6.1.2, associated to ATN B2 based services, is still a low readiness family: that means that almost no gaps can be closed yet. 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. It is however worth noting that a pioneer implementation of the Family has been recently completed within MUAC.

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, Service Area, 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 at Country level has been currently achieved in 16 countries (plus the MUAC area, i.e. the upper airspace of Belgium, north-west Germany, Luxembourg and the Netherlands), whilst 6 are in the process of reaching this first milestone. Looking at the global picture, instead, it is worth noting that more than 20 stakeholders are successfully progressing with the implementation of the entire Family 6.1.3, the wide majority being involved in SDM-coordinated large-scale initiatives awarded under the framework of previous CEF Calls.

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 geographic 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.

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 8 and are further illustrated in the following paragraphs.

Following on from the status of implementation reported in the Monitoring View 2017 and 2018 (specifically highlighted in orange) Figure 8 illustrates through the green curve the expected progress in the implementation of the Pilot Common Project.

It is worth noting that for around 16% of the 1160 gaps that compose the SESAR Deployment Programme scope, no targeted date of completion has been identified: that is mostly due to a low level of maturity of the elements to be deployed, and in a smaller set of cases due to lack of defined plans to steer the implementation at local level by the relevant stakeholders. It is worth noting that the percentage has slightly decreased from last exercise: in 2018, it was not possible to assign a specific target date to around 17% of implementation gaps.

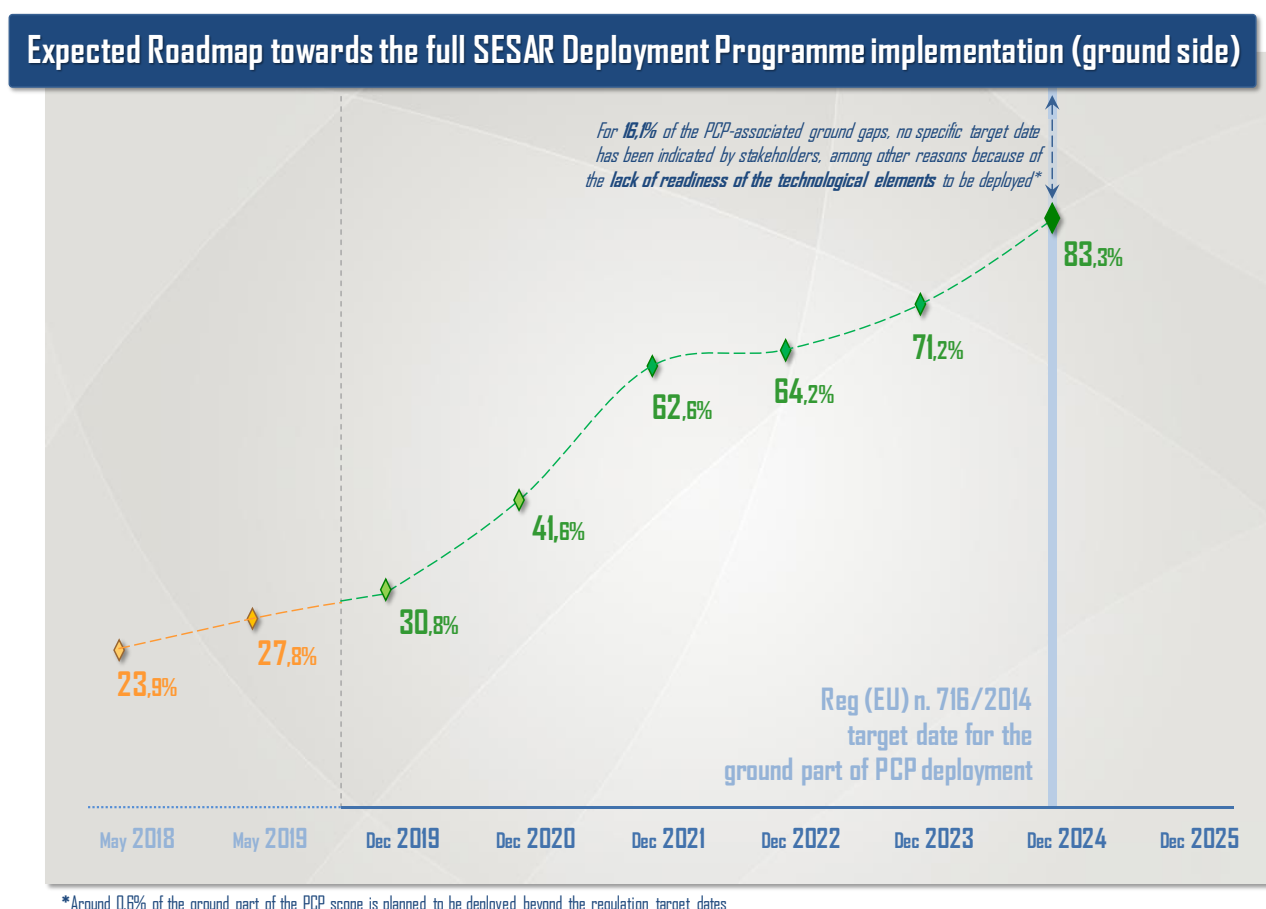


Figure 8 - Expected Roadmap towards the Full PCP implementation

As illustrated within Section 1, the current⁹ status of implementation of the Pilot Common Project includes 322 gaps fully covered, amounting to 27,8% of the total number of 1160 implementation gaps.

That marks a significant step forward from May 2018, when less than 24% of the gaps were already closed, and May 2017, where the percentage amounted to 19%; that is mostly due to stakeholders' efforts in closing additional gaps in AF1 (i.e. especially with regard to the design and adoption of RNP APCH procedures), AF2 (e.g. with the significant progress in the wide-spread implementation of Initial DMAN, A-SMGCS L1 and L2 and Electronic Flight Strips across the PCP airports) and in AF3 (especially thanks to the progress in the implementation of Family 3.1.1, now getting closer to full completion).

By the end of 2019, an additional set of 35 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 Arrival Manager (Family 1.1.1) in Dublin airport, which – together with the final implementation in Brussels, Rome and Milan Malpensa – would bring the total number of PCP airports operating AMAN to 20, further building the path for the wide-scale implementation of Extended AMAN;
- The progress in the implementation of RNP APCH procedures (covered by Family 1.2.1) in London Stansted and Milan Malpensa across all local applicable runways used for landings, building on the positive momentum granted by the deployment in Brussels, Dublin, Rome Fiumicino and Vienna Schwechat, occurred in the last months;
- The implementation of A-SMGCS Level 1 and 2 in some of the busiest European airports, highly increasing the safety and operational efficiency of large hubs such as London Heathrow and Stockholm Arlanda;
- The completion of some wide-ranging ATM system upgrades that would bring to the closure of gaps associated both to AF3 and to AF4 (such as the Management of Dynamic Airspace Configuration in France, the full implementation of Free Route in the MUAC area, the development of all necessary interfaces between ATM systems and NM systems in Austria, Italy and Poland, etc.);
- The early deployment of NewPENS in a limited set of countries, which would open the way for the full-scale adoption at European level during 2020.

In 2020, given the closure of around 100 EU-funded initiatives and the first approaching PCP Regulation target dates, the implementation activities are expected to significantly accelerate, as the percentage of closed gaps will spike to around 42%, thanks to the closure of additional 126 gaps, leading to a total number of 483.

The acceleration in the deployment progress will be significantly pushed by the closure of implementation activities, covering around than 80 gaps from AF1 and especially AF2, spread across almost all identified Families, including the full implementation of the Geographic databases or Procedure Design (Family 1.2.2) within all Europe and the closure of almost 69 gaps associated to Sub-AF 2.1, Family 2.2.1 and Sub-AF 2.5 (the latter accounting for 28 gaps).

Additional progress will be reached in the implementation of AOP/NOP integration (to be deployed between December 2019 and December 2020 in 6 PCP airports) and especially by the implementation of NewPENS (Family 5.1.2) within additional 24 countries (plus Network Manager), benefitting from the multi-stakeholder initiative funded in the framework of CEF Calls 2015 and 2016.

By the beginning of 2022, the number of closed gaps is expected to arise to 726, topping 63% of the overall implementation of the Pilot Common Project: the constant growth (with 243 gaps closed during 2021) is explicitly led by the progress in the implementation of AF3, with 48 gaps to be closed within Sub-AF 3.1 *Airspace Management and Advanced Flexible Use of Airspace* and 32 gaps spread across Family 3.2.1 and 3.2.4, targeting the almost complete implementation of Free Route Airspace across Europe. More specifically, by the end of 2021, in compliance with the deployment target dates stated within the PCP Regulation, Free Route will be almost implemented at and above Flight Level 310 in all applicable European countries (plus Maastricht Upper Area); this implementation might however be subject to certain operational limitations (such as time, entry-exit point and cross-border limitations, etc.).

⁹ Such status corresponds to the status of PCP implementation as in May 2019, when the monitoring data and associated information has been submitted by the relevant ATM operational stakeholders. Data have been then refined and amended, in accordance to the Stakeholders' Consultation process until September 2019.

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 2025) the progress in PCP deployment will continue at a steady pace, allowing for the closure of above 200 gaps in total, with a significant increase in covered gaps from AF4, AF5 and AF6.

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.

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 slightly less than 190 gaps. A specific focus is needed for AF5 and AF6 implementation, as no completion date has been indicated for around 140 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 – in accordance to the dedicated SWIM Governance Action Plan published in 2016 and whose progress is detailed within the Planning View 2018 – 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, in accordance to the DLS Recovery Plan, will support 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.

Detailed views per ATM Functionality

AF 1 – Extended AMAN and Performance Based Navigation in the High-Density TMAs

The implementation activities associated to AF #1 are very well-advanced and already started delivering their first results in terms of operational benefits and of related performance improvements: more than 37% 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.

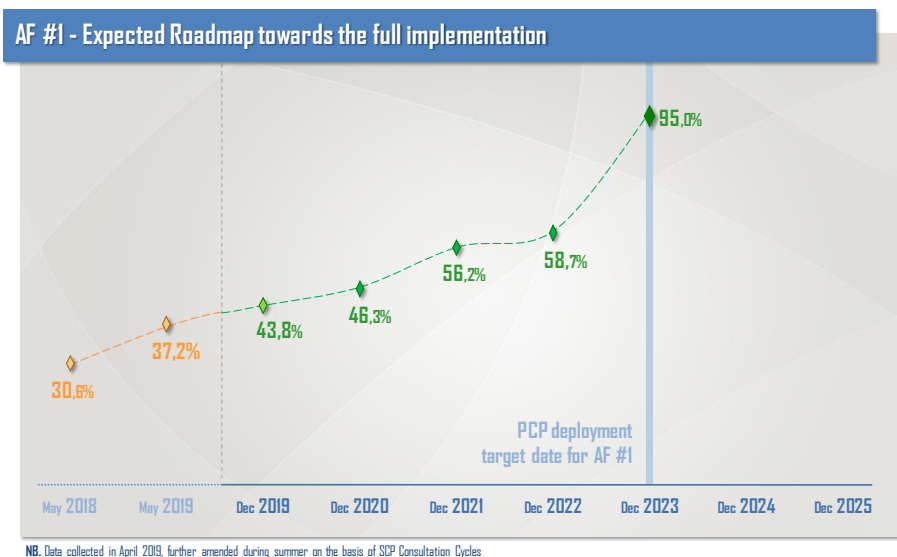


Figure 9 - AF1 Expected Roadmap for Implementation

It is also worth mentioning that the progress in the implementation is expected to keep a steady pace in 2019, closing additional 8 gaps and allowing for the implementation of around 45% of the ATM Functionality.

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 115 (around 95%). No specific date has been indicated for just a small set of implementation gaps.

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 16 and 19 airports each.

The progress achieved within the implementation of these families is of utmost importance; Basic AMAN would 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 18 out of the 24 PCP Airports, although without any fully closed gap yet. In most cases, local stakeholders already upgraded the relevant AMAN planning tool, but are 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 for almost all implementation gaps associated to Family 1.2.1 and 1.2.3, operational stakeholders have declared plans that would lead to the implementation completion in line with the deployment target dates listed in the PCP regulation and with the FOC dates specifically identified for each Family in the SESAR Deployment Programme. However, some earlier implementations are foreseen, with a potential early achievement of the associated performance benefits: the implementation efforts from local ANSPs and Airport Operators already led to the adoption of RNP APCH approach with vertical guidance (Family 1.2.1) in 20 of the 24 PCP airports, although not yet across all the applicable runways. More importantly, RNP APCH procedures are already available for Airspace Users for all runways used for landings within Brussels, Dublin, Munich, Nice, Oslo Gardermoen, Palma de Mallorca, Paris CDG, Rome Fiumicino and Vienna Schwechat: additional implementation are expected by the end 2019 in relevant hubs such as London Stansted and Milan Malpensa. 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.

AF 2 – Airport Integration and Throughput

The implementation of AF2 currently registers 77 gaps closed out of a total of 208, accounting for around 37% of the overall ATM Functionality, a significant improvement from the 2018 outlook. 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.

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 146, amounting to 70,2% 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 2024 to 188, amounting to 90,4% of the total existing implementation gaps.

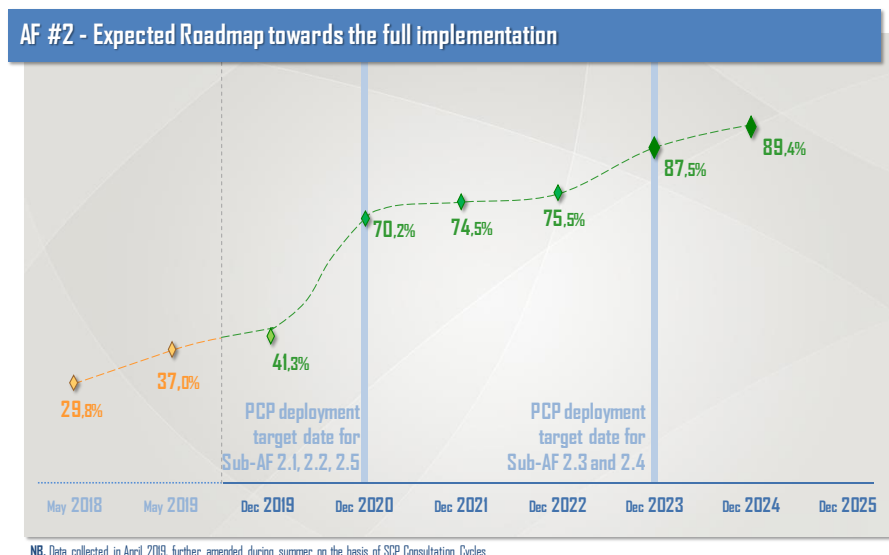


Figure 10 - AF2 Expected Roadmap for Implementation

For 20 gaps, no specific date has been identified by the stakeholders, due to lack of detailed plans towards the full implementation: the widest number of gaps for which a target date has not been identified are associated to 2.3.1 Time Based Separation, due to uncertainty and reservations from involved stakeholders with regard to the associated performance benefits.

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 16, 20 and 19 airports across the PCP geographical scope. The implementation efforts from operational stakeholders is expected to lead to the almost complete closure of the Families in line with the FOC dates listed in the SESAR Deployment Programme, derived from the deployment target dates stated in the Pilot Common Project. Early implementations are already being completed in 2019, with the implementation of Initial DMAN in Nice and Stockholm, as well as with the full implementation A-SMGCS Level 1 and 2 in two additional PCP airports.

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) is 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) has already started across several airports, 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, Paris Charles De Gaulle, Paris Orly and Vienna Schwechat, with almost all other airports expected to be compliant by December 2020.

AF 3 – 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 just shy of 50% of the identified implementation gaps already fully completed by operational stakeholders (mostly by the ANSPs in cooperation with the Network Manager, with the potential involvement of Military Authorities).

By the end of 2019, the overall number of closed gaps is expected to raise at 106, reaching 51% of the total.

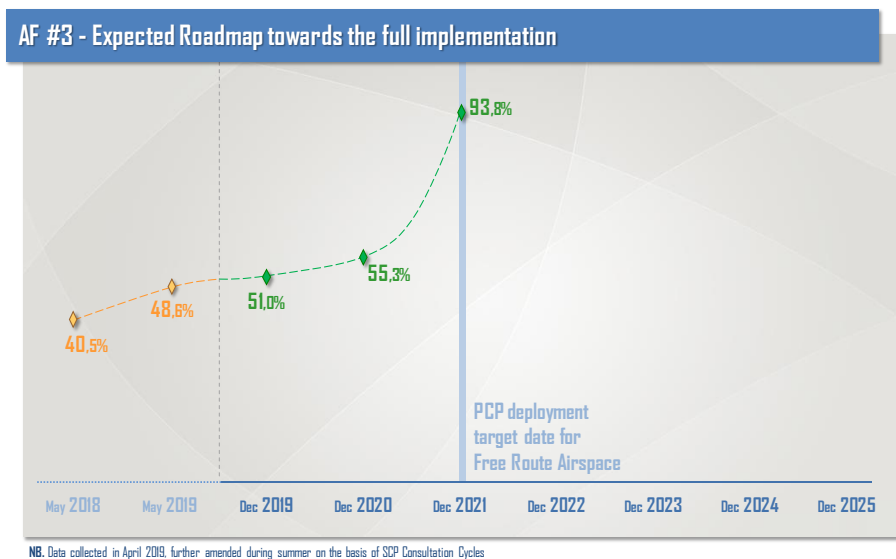


Figure 11 - AF3 Expected Roadmap for Implementation

The progress of AF#3 implementation is expected to grow stable in the upcoming months, leading to the coverage of around 55% of the identified gaps by the end of 2020, thanks to the almost full completion of Family 3.1.1 (ASM Tool to support AFUA), complemented by significant progresses in the deployment of Family 3.1.2 (ASM Management of real time airspace data) and Family 3.1.4 (Management of Dynamic Airspace configurations).

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 80 gaps by the end of 2021, pushing the total to almost 200 closed gaps (around 94%) 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 almost 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.

Within 28 of the 29 applicable countries included in the PCP geographical scope, at least one of the tools required by the Regulation has already been implemented and is in operational use. Furthermore, the effort from ANSPs and Network Manager, often supported by Implementation Projects coordinated by SDM and supported by EU funding is expected to proceed steadily in the upcoming years.

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, which is also progressing at fast pace: starting from the 19 currently closed gaps (Poland and Slovak Republic reached this milestone in the last months), the full implementation of the Family above Flight Level 310 will be achieved in almost all applicable countries (including MUAC) by the end of 2021, featuring also some relevant earlier implementations across some of the busiest European areas (e.g. Maastricht Upper Area and United Kingdom, scheduled to be completed by 2020). 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 (less than 4% 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 to the case of activities linked to the full deployment of Sub-AF 3.1, whilst on the other hand the operational deployment of Free Route is already in progress (either with or without the support of public funding) in 25 out of the 28 European countries.

AF 4 – Network Collaborative Management

The implementation activities associated to ATM Functionality #4 are progressing at a slower pace, in comparison with AF #1, AF #2 and AF#3.

Only 19,5% of the identified implementation gaps have been closed until May 2019, and just a very limited progress rate could be expected in the upcoming years (only 14 gaps expected to be closed in the 2019-2020 framework).

A significant step forward will be experienced during 2021, with the closure of around 60% of the existing gaps linked to AF4, thus bringing the percentage of completion of the Family just below 90% in January 2022, deployment target date of the AF in accordance to PCP Regulation.

This sudden increase in the number of closed gaps – and in the associated progress of the implementation of the ATM functionality – is closely connected with the specific features of AF #4, and in particular with the specific role of the Network Manager into its deployment.

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 currently on-going by NM. Once the platform will be completed and entered 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.

AF #4 - Expected Roadmap towards the full implementation

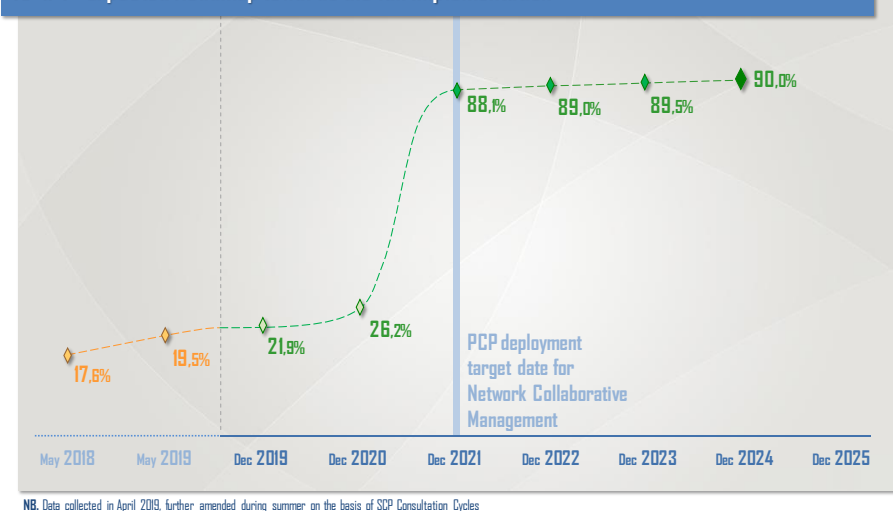


Figure 12 - AF4 Expected Roadmap for Implementation

It has however to be noted that no specific date of completion has been identified by operational stakeholders for around 10% of the total number of gaps. That is 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.

During the first months 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 the Families. However, it has to be noted that the vast majority of stakeholders has implemented some of the building blocks that are included within Family 4.2.3 scope, as 20 ANSPs have already deployed and put into operational use at least one of them (in 18 cases, the implementation has already covered more than 50% of the gap).

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 target date, completing the implementation by the end of December 2021.

Finally, the deployment of Family 4.4.2 has already achieved some preliminary results, with the Traffic Complexity Tools already deployed and fully operational within Czech Republic, Switzerland, MUAC and United Kingdom. The implementation will continue at a regular pace, with a notable earlier Family completion in Belgium and France within 2019. The deployment efforts from local stakeholders are in several cases (15 out of the 28 open gaps) supported by SDM-coordinated and EU-funded implementation projects.

AF 5 – Initial System Wide Information Management

As for AF #4, 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.

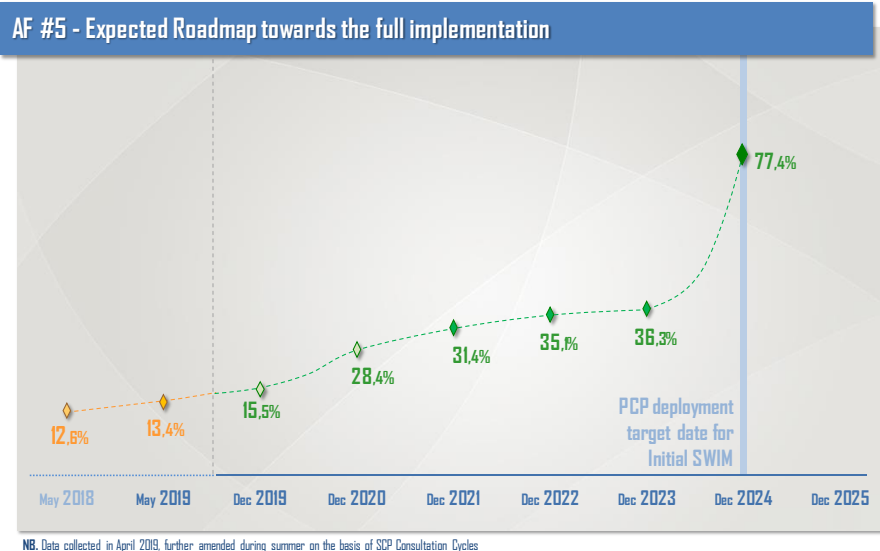


Figure 13 - AF5 Expected Roadmap for Implementation

More specifically, successful implementation of Families 5.3.1, 5.4.1, 5.5.1, 5.6.1 and 5.6.2, 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 line with the results presented in the Monitoring View 2018, only 13,4% of the total number of AF5-related gaps are currently covered, and a limited number of additional gaps is expected to be covered in the upcoming months. However, the situation is expected to improve from 2020 onwards, with more than 40 additional gaps that will be closed by January 2021 (mostly linked to the EU-wide expected implementation of the NewPENS) and a regular growth in the following years.

Coming closer to the deployment target dates, it is expected that a spike in closed gaps will occur, bringing the total number of closed gaps to around 77% of the total by the end of December 2024.

Stakeholders did not provide a specific target date for the completion and full implementation of around 20% 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). 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 within 28 of the 30 applicable countries in the PCP geographical scope (including MUAC) and the implementation of Family 5.1.2 (NewPENS) is proceeding at fast pace, with the widest majority of countries participating to a dedicated multi-stakeholder Implementation Project, targeting the full deployment in additional 24 countries by December 2020.

In parallel, the activities associated to the establishment of a SWIM Governance Framework (according to Family 5.1.3) have started and are progressing with the contribution of several stakeholders, benefitting of EU funding and in accordance to the specifically developed Action Plan. 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.

The implementation status of Family 5.2.1 – Stakeholders' IP Compliance – already encompasses a significant number of closed gaps (i.e. Austria, Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Latvia, MUAC, the Network Manager, Romania, Slovenia, Switzerland, and United Kingdom) and a stable progress rate is expected in the upcoming years. No other gap has been closed yet within any Family besides 5.1.1 and 5.2.1.

AF 6 – 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.

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.

AF #6 - Expected Roadmap towards the full implementation

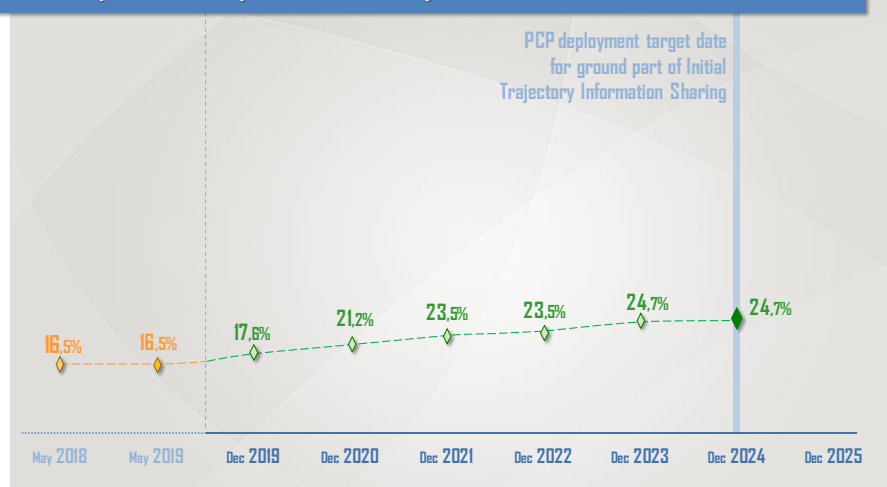


Figure 14 - AF6 Expected Roadmap for Implementation

In accordance to the afore-mentioned elements, around 80% of the gaps included in the AF6 do not feature a specific target date for their implementation. The only 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 14 out of the 28 applicable gaps (Austria, Croatia, Czech Republic, Estonia, Germany, Hungary, Ireland, Italy, MUAC, Poland, Spain, Sweden, Switzerland and United Kingdom). Intermediate results have been also achieved in other 11 countries across Europe.

For Family 6.1.3, although the implementation is still limited to the progress at country level, intermediate results have already been achieved within 16 countries (plus Maastricht Upper Area, operating DLS services within Belgium, Netherlands and Luxembourg airspaces), in several cases with the support of EU public funding.

The implementation of this Family is also benefitting 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.

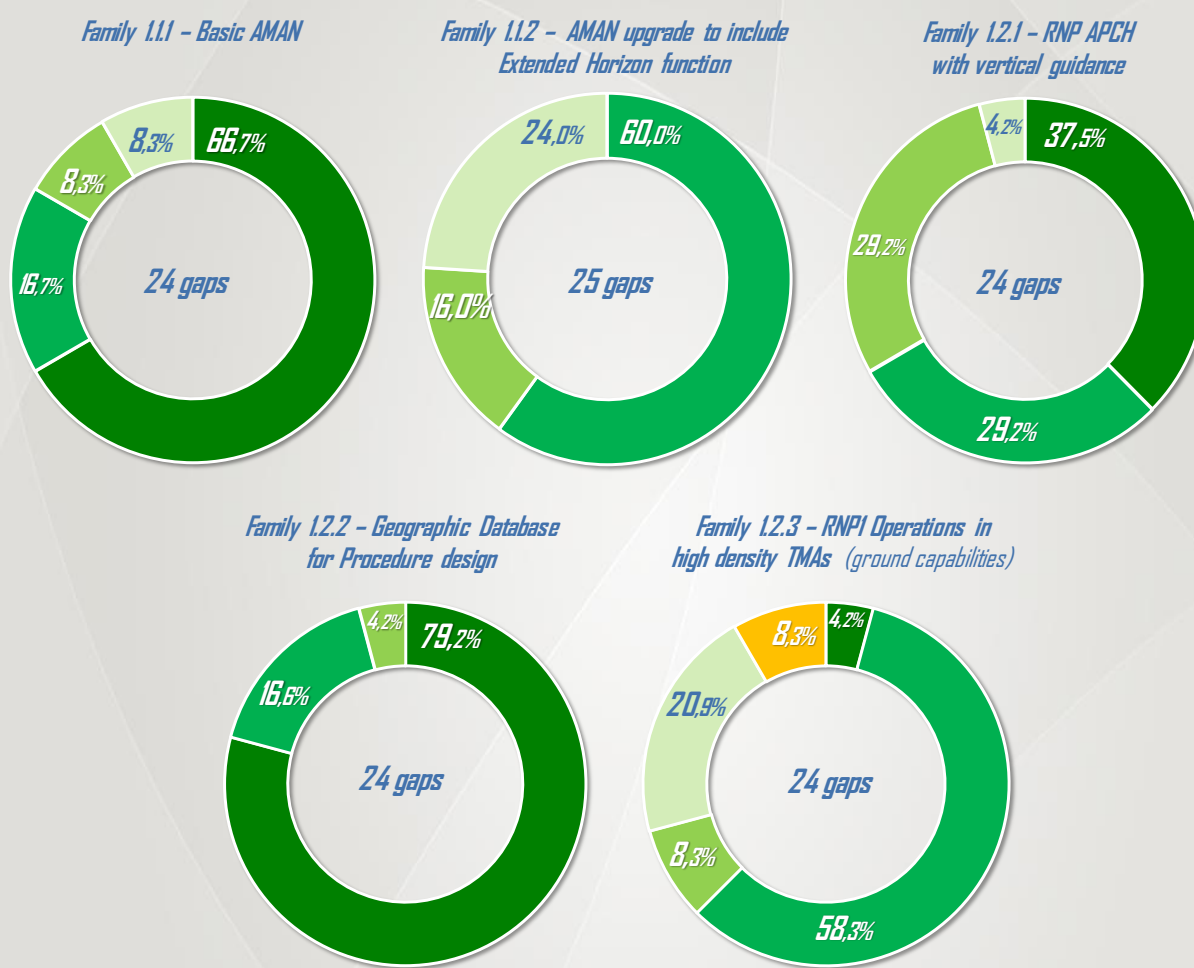
Finally, the implementation activities associated to Family 6.1.2 have not started yet, with the only exception of MUAC. In fact, the implementation is highly depending from the progress in the implementation of the other two families. In this perspective, no specific planned date has been provided by 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 explained in the introductory charts, thus breaking down the gaps associated to each Family into the 5 categories.

AF #1 – Extended AMAN and PBN in high density TMA

ATM Functionality #1 – Current implementation status per Family



Data collected as of April 2019, further amended during summer on the basis of SCP Consultation Cycles.

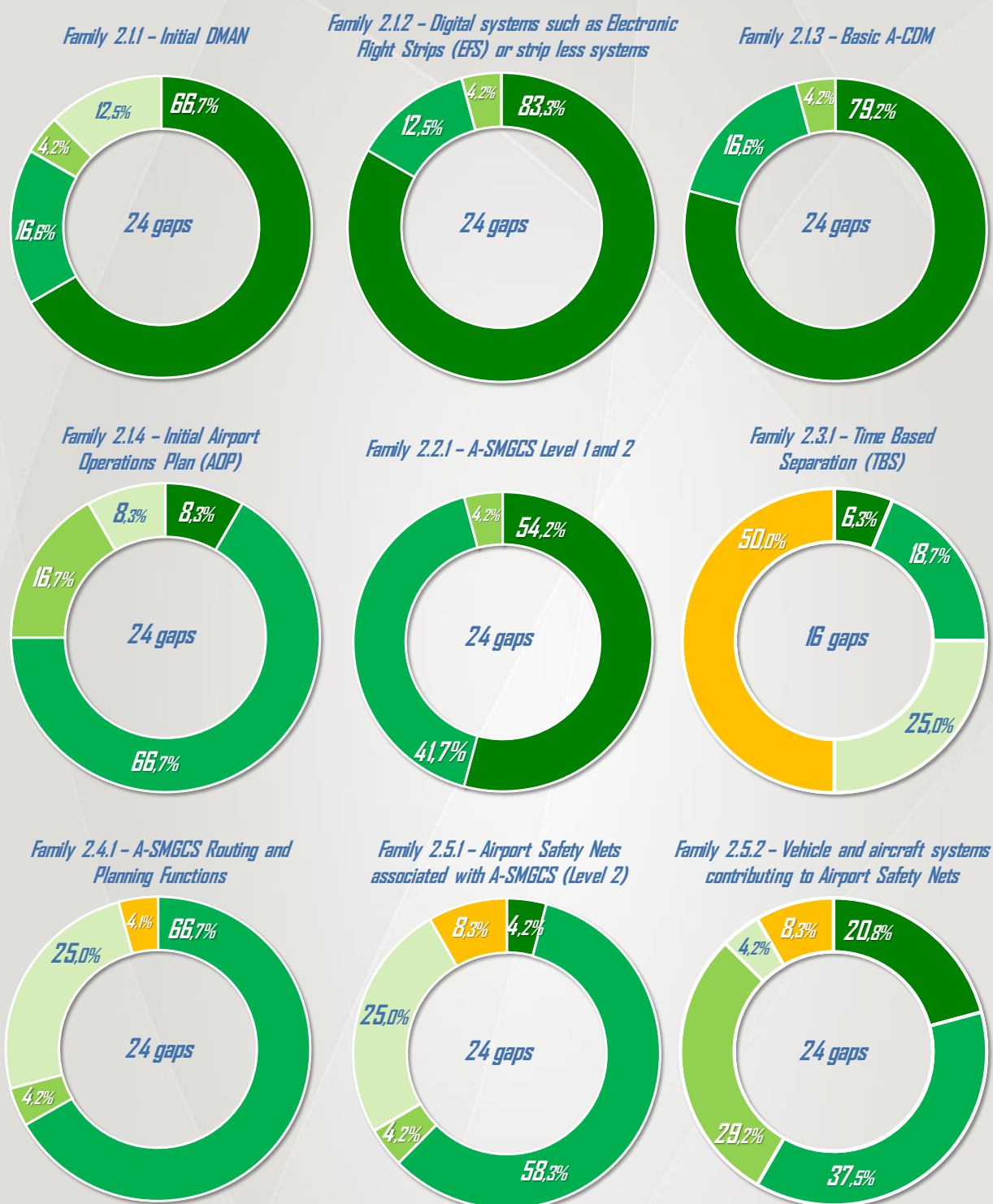
Chart Key

- Implementation completed
- Implementation in progress with CEF support (CEF Call 2014, 2015, 2016, 2017)
- Implementation in progress without CEF support
- Implementation planned
- Implementation not currently planned

Figure 15 - AF1: current implementation status per Family

AF #2 – Airport Integration and Throughput

ATM Functionality #2 – Current implementation status per Family



Data collected as of April 2019, further amended during summer on the basis of SCP Consultation Cycles.

Chart Key



Figure 16 - AF2: current implementation status per Family

AF #3 – Flexible ASM and Free Route

ATM Functionality #3 – Current implementation status per Family

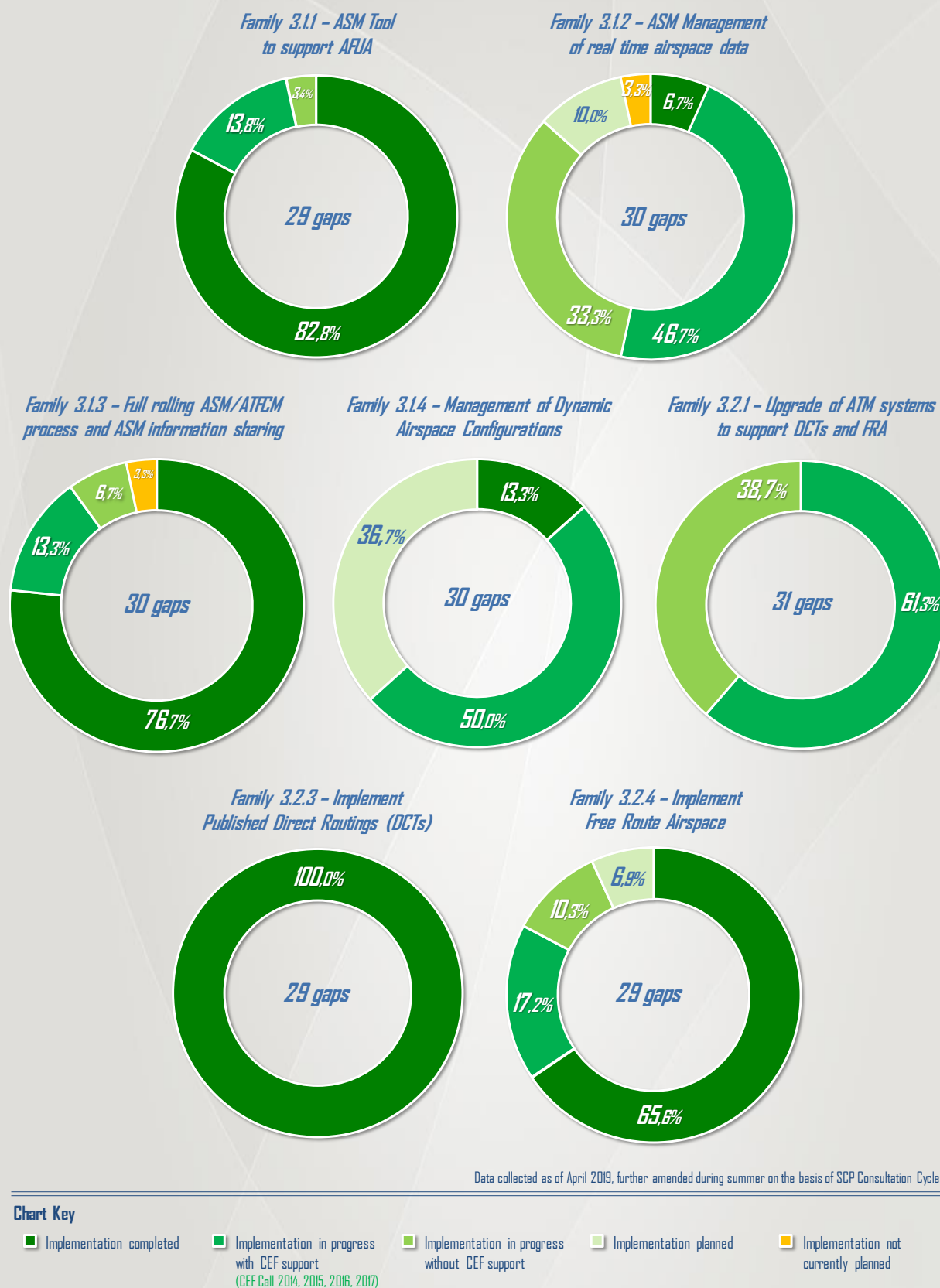
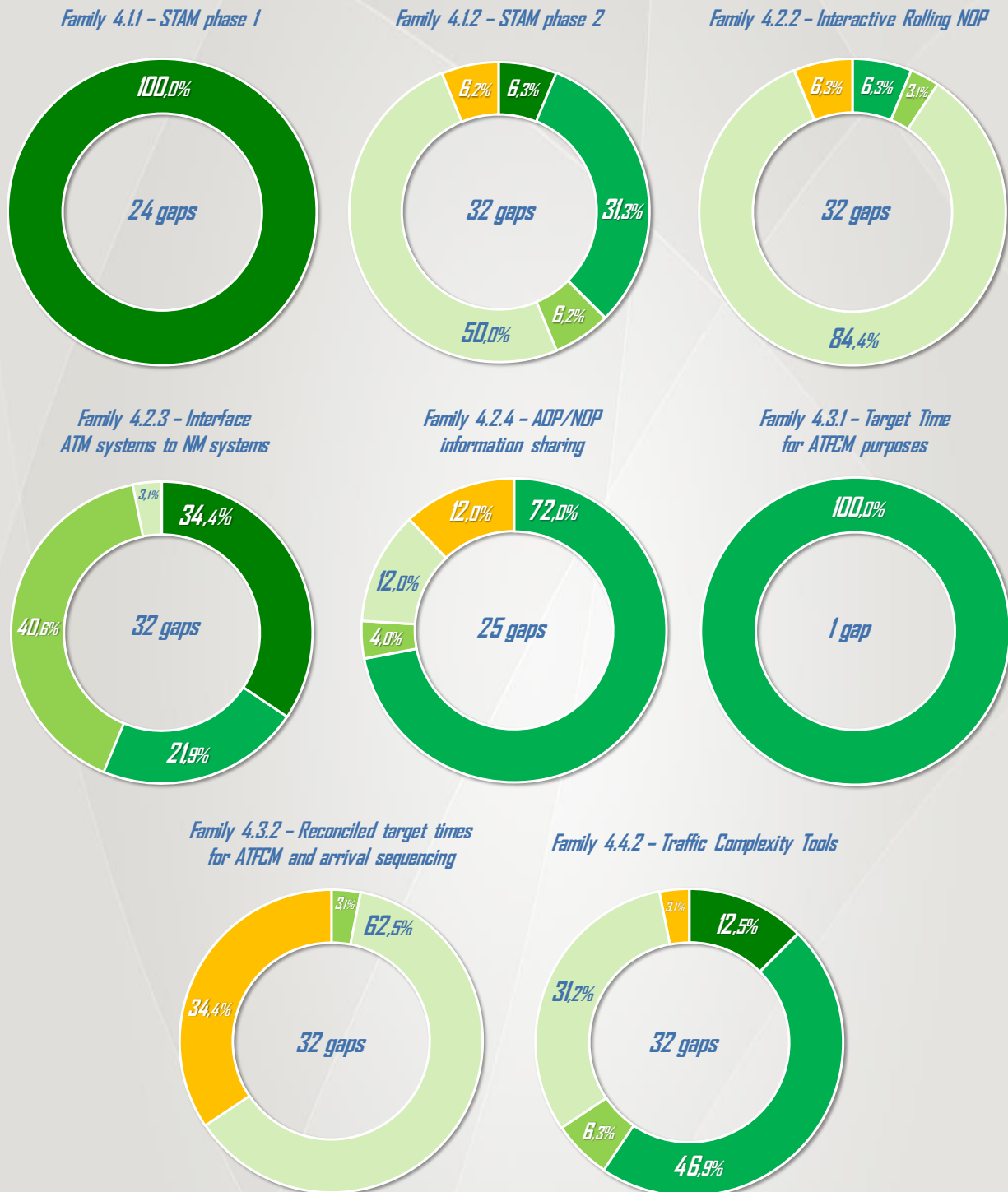


Figure 17 - AF3: current implementation status per Family

AF #4 – Network Collaborative Management

ATM Functionality #4 – Current implementation status per Family



Data collected as of April 2019, further amended during summer on the basis of SCP Consultation Cycles.

Chart Key

- Implementation completed
- Implementation in progress with CEF support (CEF Call 2014, 2015, 2016, 2017)
- Implementation in progress without CEF support
- Implementation planned
- Implementation not currently planned

Figure 18 – AF4: current implementation status per Family

AF #5 – Initial SWIM

ATM Functionality #5 – Current implementation status per Family

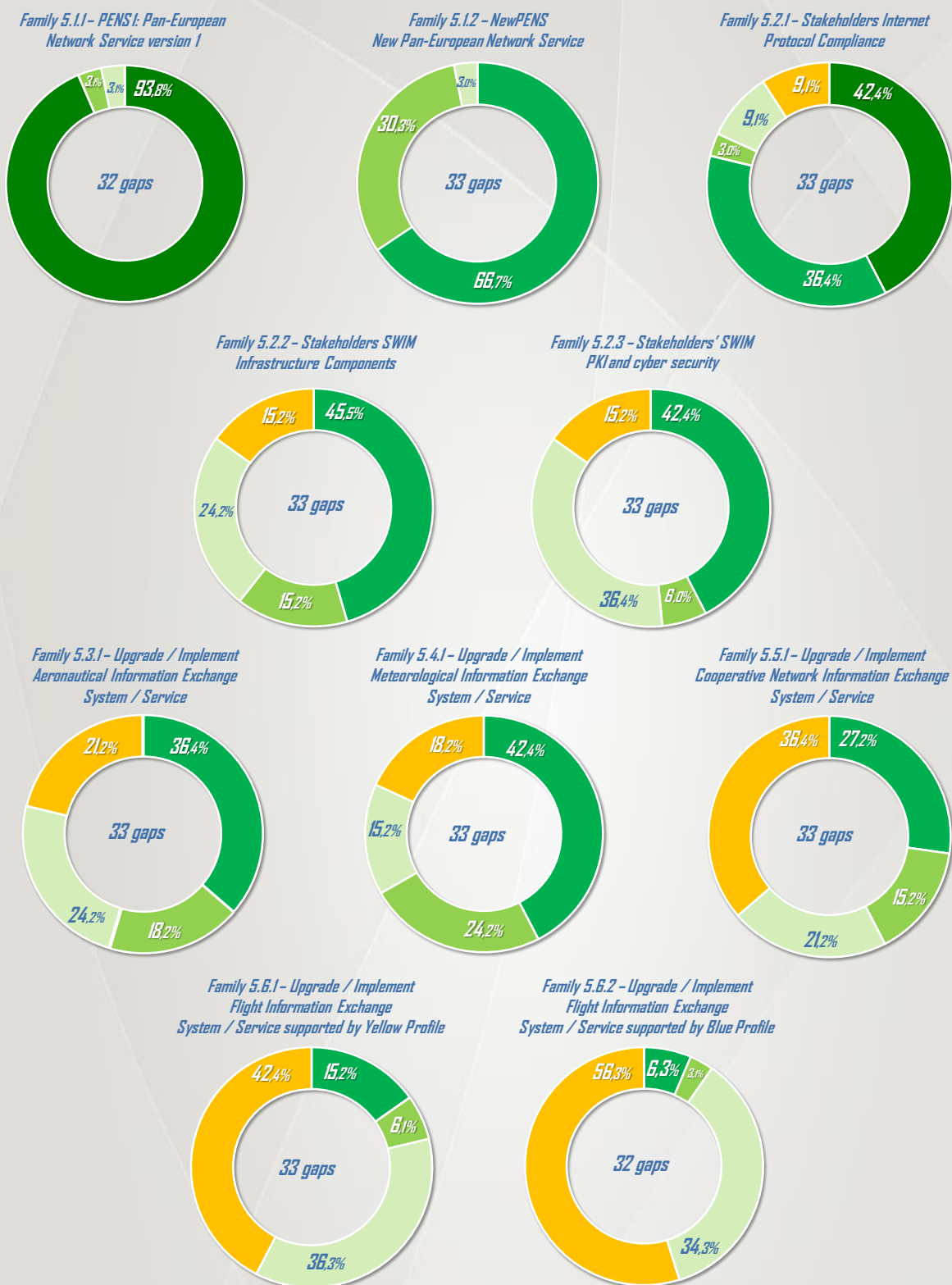


Chart Key

- Implementation completed
- Implementation in progress with CEF support (CEF Call 2014, 2016, 2017)
- Implementation in progress without CEF support
- Implementation planned
- Implementation not currently planned

Figure 19 - AF5: current implementation status per Family

AF #6 – Initial Trajectory Information Sharing

ATM Functionality #6 – Current implementation status per Family

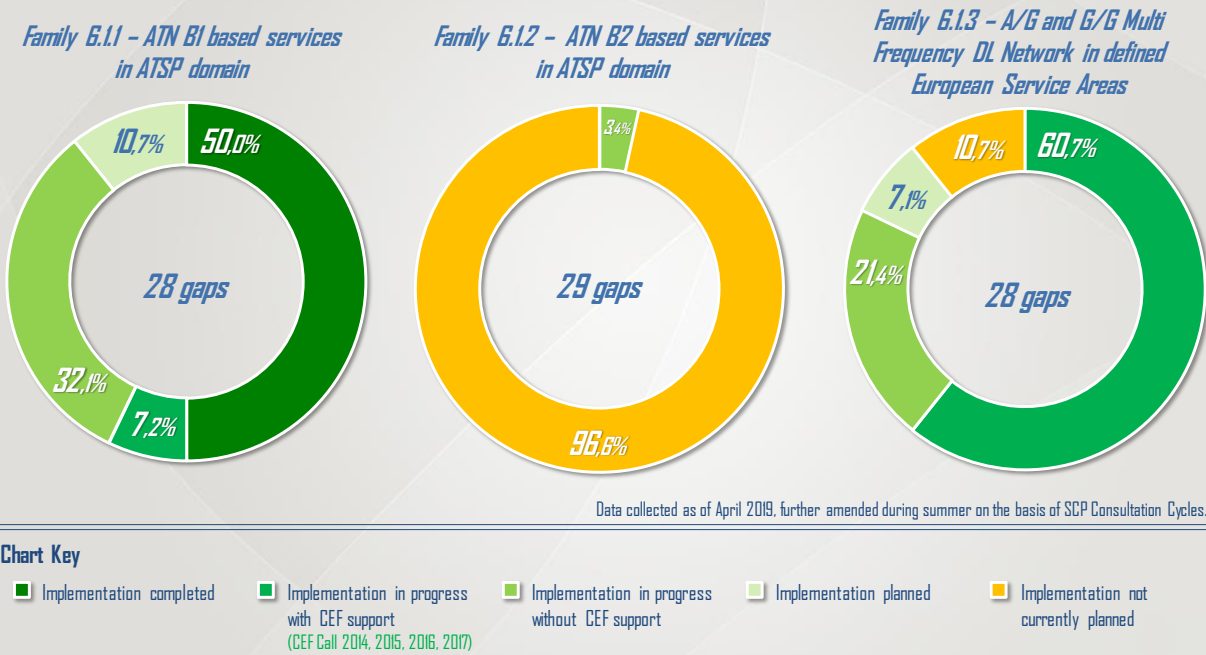


Figure 20 - AF6: current implementation status per Family

2. Detailed Views per Family

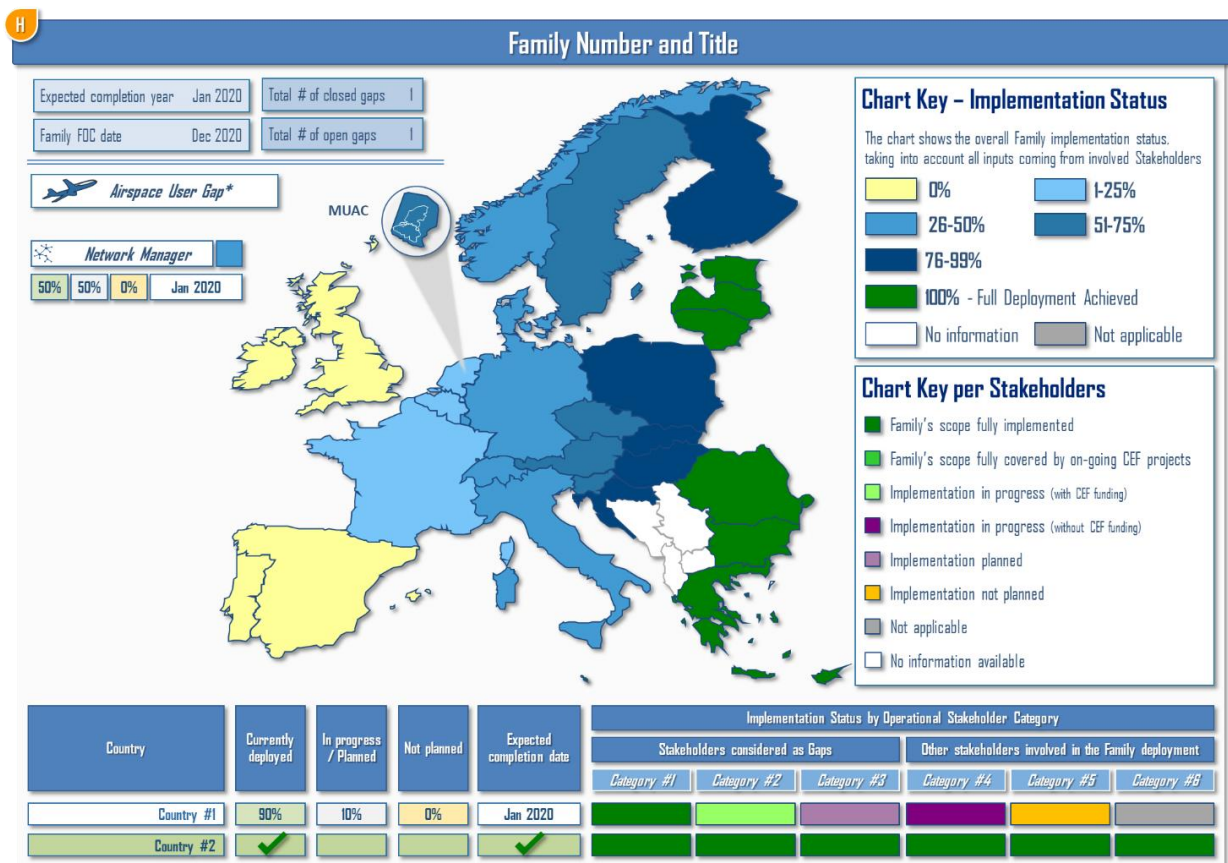
Complementing the overall picture of the deployment at global level, the specific structure of the SDM Monitoring Exercise (and especially its engagement of all operational stakeholders impacted by Regulation (EU) n. 716/2014) also allows to outline detailed views at local level, providing an accurate 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 Chapter 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.

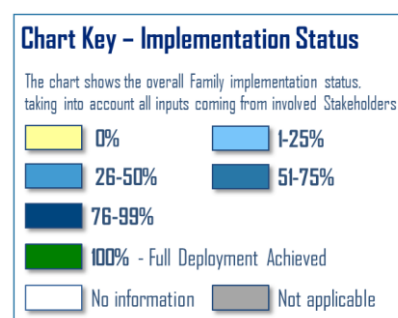


The structure of the chart has been developed with the specific objective of providing the reader with a wide set of data and information within a single snapshot: the following paragraphs include an overall explanation on how the information is presented.

H **Family Number and Title** 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” families¹⁰).

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 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).



Country	Currently deployed	In progress / Planned	Not planned	Expected completion date
Country #1	70%	20%	10%	Jan 2020
Country #2	✓			✓

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 coordination¹¹);
- 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.

¹⁰ 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;

¹¹ 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:

Expected completion year	Total # of closed gaps
Family FOC date	Total # of open gaps

- 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.

Implementation Status by Operational Stakeholder Category	
Stakeholders considered as Gaps	Other stakeholders involved in the Family deployment

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.

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 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.

Furthermore, the proposed charts also mark those implementation initiatives / gaps which are deemed crucial for the improvement of the current performance levels at Network level, 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.



The relevance of such specific implementation gaps – labelled with a dedicated "N" symbol - has been identified by applying a family-tailored approach, aiming at ascertaining which technological and/or operational elements shall be deployed and where, in order to positively impact on the overall performance of the Network.

AF #1– Extended AMAN and PBN in high density TMA

H

1.1.1 Basic AMAN

Expected completion year Dec 2023

Total # of closed gaps 16

Family FOC date Jan 2020

Total # of open gaps 8

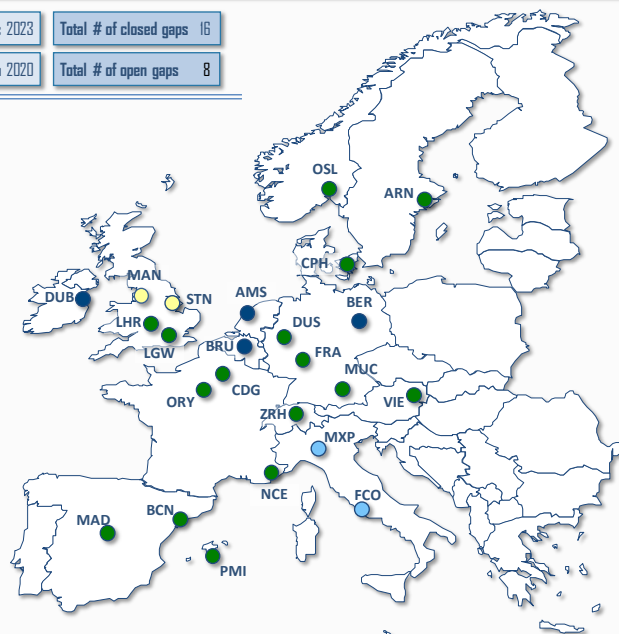


Chart Key – Implementation Status

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

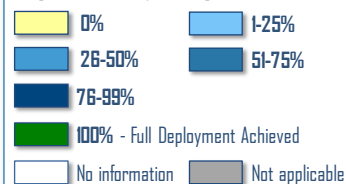
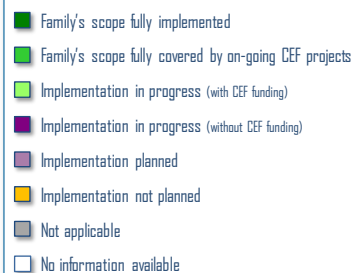


Chart Key per Stakeholders



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	80%	20%	0%	Dec 2019		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	95%	5%	0%	Oct 2020		
Brussels National	95%	5%	0%	Dec 2019		
Copenhagen Kastrup	✓			✓		
Dublin Airport	95%	0%	5%	Dec 2019		
Düsseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	0%	100%	0%	Dec 2023		
Madrid Barajas	✓			✓		
Manchester Ringway	0%	100%	0%	Dec 2021		
Milan Malpensa	20%	80%	0%	Dec 2019		
Munich Franz Josef Strauss	✓			✓		
Nice Côte d'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	20%	80%	0%	Dec 2019		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	✓			✓		
Zürich Kloten	✓			✓		

1.1.2 AMAN Upgrade to include Extended Horizon function

Expected completion year Dec 2023

Total # of closed gaps 0

Family FOC date Jan 2024

Total # of open gaps 25

Network Manager

30% 55% 15% Dec 2023

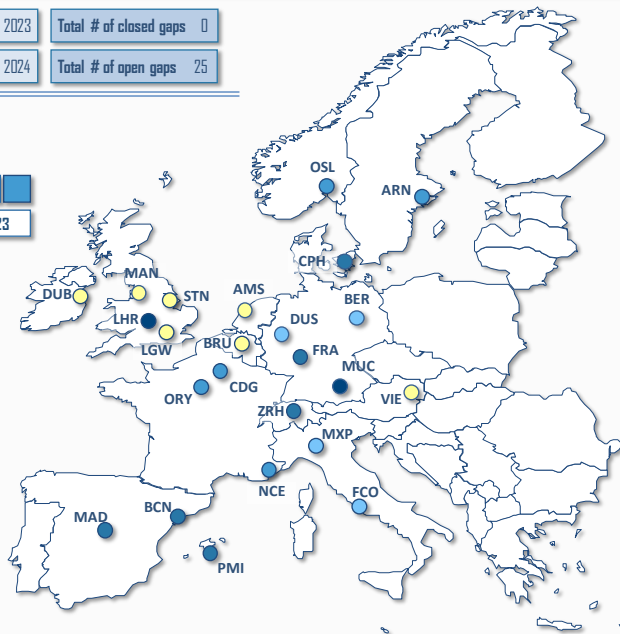


Chart Key – Implementation Status

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

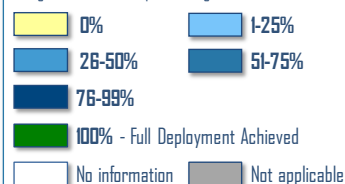
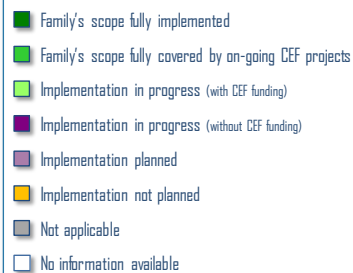


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Amsterdam Schiphol	0%	100%	0%	Dec 2023			
N Barcelona El Prat	60%	40%	0%	Dec 2023			
N Berlin Brandenburg Airport	10%	90%	0%	Dec 2023			
N Brussels National	0%	100%	0%	Dec 2023			
N Copenhagen Kastrup	70%	0%	30%	Dec 2023			
Dublin Airport	0%	100%	0%	Mar 2023			
N Dusseldorf International	10%	80%	10%	Dec 2023			
N Frankfurt International	75%	25%	0%	Dec 2023			
N London Gatwick	0%	100%	0%	Dec 2021			
N London Heathrow	85%	15%	0%	Dec 2019			
N London Stansted	0%	100%	0%	Dec 2023			
N Madrid Barajas	65%	35%	0%	Dec 2023			
Manchester Ringway	0%	100%	0%	Dec 2021			
N Milan Malpensa	10%	90%	0%	Dec 2023			
N Munich Franz Josef Strauss	90%	10%	0%	Dec 2021			
N Nice Cote D'Azur	50%	5%	45%	Dec 2023			
N Oslo Gardermoen	50%	0%	50%	Dec 2023			
N Palma de Mallorca Son Sant Joan	60%	40%	0%	Dec 2023			
N Paris Charles De Gaulle	50%	35%	15%	Dec 2023			
N Paris Orly	50%	30%	20%	Dec 2023			
N Rome Fiumicino	15%	85%	0%	Dec 2023			
N Stockholm Arlanda	50%	0%	50%	Dec 2023			
N Vienna Schwechat	0%	75%	25%	Dec 2023			
N Zurich Kloten	65%	35%	0%	-			

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 2019 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.

Furthermore, in the tables, the capacity-constrained ACCs – as identified in the latest edition of the Network Operations Plan – are clearly indicated with a green “N” symbol, as they represent “Network Relevant Gaps”, thus deemed crucial for the improvement of the current performance levels at Network level.



Amsterdam Schiphol

Dec 2023

Status of implementation

Amsterdam ACC

In Progress with CEF

Maastricht UAC

Planned

Karlsruhe UAC

Planned

Brussels ACC

Planned

London ACC

Planned

Reims ACC

Planned



Barcelona El Prat

Dec 2023

Status of implementation

Barcelona ACC

Already Implemented

Seville ACC

In Progress with CEF

Palma de Mallorca ACC

Already Implemented

Madrid ACC

In Progress with CEF

Bordeaux ACC

In Progress with CEF

Marseille ACC

In Progress with CEF



Berlin Brandenburg Airport

Dec 2023

Status of implementation

Bremen ACC

In progress with CEF

Karlsruhe UAC

In progress with CEF

Munich ACC

In progress with CEF

Warsaw ACC

Planned

Copenhagen ACC

Planned

Maastricht UAC

In progress with CEF

Prague ACC

Planned

Malmo ACC

Planned



Brussels National

Dec 2023

Status of implementation

Brussels ACC

Planned

Maastricht UAC

Planned

Amsterdam ACC

Planned

Brest ACC

Planned

Langen ACC

Planned

Karlsruhe UAC

Planned

Paris ACC

Planned

Reims ACC

Planned

London ACC

Planned



Copenhagen Kastrup

Dec 2023

Status of implementation

Copenhagen ACC

Already Implemented

Malmo ACC

Already Implemented

Maastricht UAC

Not Planned

Bremen ACC

Not Planned



Dublin Airport

Mar 2023

Status of implementation

Dublin ACC

Planned

Shannon ACC

Planned

Prestwick ACC


Planned

London ACC


Planned




Dusseldorf International		Dec 2023
Status of implementation		
(N)	Langen ACC	In progress with CEF
(N)	Bremen ACC	In progress with CEF
(N)	Karlsruhe UAC	In progress with CEF
(N)	Maastricht UAC	In progress with CEF
	Amsterdam ACC	Planned
	Brussels ACC	Planned
(N)	Reims ACC	Not Planned
	London ACC	Not Planned




Frankfurt International		Dec 2023
Status of implementation		
(N)	Bremen ACC	Already Implemented
(N)	Karlsruhe UAC	Already Implemented
	Munich ACC	Already Implemented
(N)	Langen ACC	Already Implemented
(N)	Maastricht UAC	In progress with CEF
	Brussels ACC	In progress with CEF
(N)	Reims ACC	In progress with CEF



London Gatwick		Dec 2021
Status of implementation		
	London ACC	Planned
(N)	Maastricht UAC	Planned
(N)	Brest ACC	Planned
(N)	Reims ACC	Planned




London Heathrow		Dec 2019
Status of implementation		
	London ACC	Already Implemented
	Shannon ACC	Already Implemented
	Prestwick ACC	Already Implemented
(N)	Maastricht UAC	Already Implemented
(N)	Reims ACC	Already Implemented
(N)	Brest ACC	In progress with CEF




London Stansted		Dec 2023
Status of implementation		
	London ACC	Planned
(N)	Brest ACC	Planned
(N)	Reims ACC	Planned




Madrid Barajas		Dec 2023
Status of implementation		
	Madrid ACC	Already Implemented
(N)	Barcelona ACC	In progress with CEF
	Seville ACC	Already Implemented
	Lisboa ACC	In Progress with CEF
(N)	Bordeaux ACC	In Progress with CEF



Manchester Ringway		Dec 2021
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 with CEF
	Rome ACC	In Progress with CEF
	Padua ACC	In Progress with CEF
(N)	Zurich and Geneva ACCs	In Progress with CEF
(N)	Vienna ACC	In Progress with CEF
	Zagreb ACC	In Progress with CEF
	Ljubljana ACC	In Progress with CEF
(N)	Marseille ACC	In Progress with CEF
(N)	Reims ACC	In Progress with CEF
(N)	Karlsruhe UAC	In Progress with CEF
	Munich ACC	In Progress with CEF
(N)	Langen ACC	In Progress with CEF



Munich Franz Josef Strauss		Dec 2023
Status of implementation		
	Munich ACC	Already Implemented
(N)	Langen ACC	Already Implemented
(N)	Prague ACC	Already Implemented
(N)	Zurich ACC	Already Implemented
	Wien ACC	Already Implemented
(N)	Karlsruhe UAC	Already implemented
	Padua ACC	In progress with CEF




Nice Cote d'Azur		Dec 2023
Status of implementation		
(N)	Marseille ACC	Already Implemented
(N)	Bordeaux ACC	Not Planned
(N)	Barcelona ACC	Not Planned
	Palma de Mallorca ACC	Not Planned
	Milan ACC	In progress with CEF
	Padua ACC	Not Planned
	Rome ACC	Not Planned
(N)	Zurich and Geneva ACCs	Not Planned



Oslo Gardermoen		Dec 2023
Status of implementation		
	Oslo, Stevanger and Bodo ACCs	Already Implemented
(N)	Malmö and Stockholm ACCs	Not Planned
	Copenhagen ACC	Not Planned



Palma de Mallorca Son Sant Joan		Dec 2023
Status of implementation		
	Palma de Mallorca ACC	Already Implemented
	Madrid ACC	In Progress with CEF
(N)	Barcelona ACC	Already Implemented
(N)	Bordeaux ACC	In Progress with CEF
(N)	Marseille ACC	In Progress with CEF
	Alger ACC	In Progress with CEF




Paris Charles De Gaulle		Dec 2023
Status of implementation		
Paris ACC	Already Implemented	
(N) Bordeaux ACC	In progress without CEF	
(N) Brest ACC	In progress without CEF	
(N) Marseille ACC	In progress with CEF	
(N) Reims ACC	In progress without CEF	
Brussels ACC	Not Planned	
(N) Maastricht UAC	In progress without CEF	
Amsterdam ACC	Not Planned	
(N) Langen ACC	Not Planned	
(N) Karlsruhe UAC	Planned	
London ACC	Planned	



Paris Orly		Dec 2023
Status of implementation		
Paris ACC	Already Implemented	
(N) Bordeaux ACC	In progress without CEF	
(N) Brest ACC	In progress without CEF	
(N) Marseille ACC	In progress with CEF	
(N) Reims ACC	In progress without CEF	
Brussels ACC	Not Planned	
(N) Maastricht UAC	In progress without CEF	
Amsterdam ACC	Not Planned	
(N) Langen ACC	Not Planned	
(N) Karlsruhe UAC	Planned	
London ACC	Planned	




Rome Fiumicino		Dec 2023
Status of implementation		
Rome ACC	In Progress with CEF	
Milan ACC	In Progress with CEF	
Padua ACC	In Progress with CEF	
(N) Marseille ACC	In Progress with CEF	
Zagreb ACC	In Progress with CEF	



Stockholm Arlanda		Dec 2023
Status of implementation		
(N) Malmo and Stockholm ACCs	Already Implemented	
Oslo ACC	Not Planned	
Helsinki ACC	Not Planned	
Tallinn ACC	Not Planned	
Riga ACC	Not Planned	



Vienna Schwechat		Dec 2023
Status of implementation		
(N) Vienna ACC	Planned	
(N) Padua ACC	Not Planned	
(N) Prague ACC	Planned	
(N) Bratislava ACC	Planned	
(N) Budapest ACC	Planned	
Zagreb ACC	Planned	
Ljubljana ACC	Planned	
Munich ACC	Not Planned	



Zurich Kloten		-
Status of implementation		
(N) Zurich ACC	Already Implemented	
Geneva ACC	Planned	
Milan ACC	Planned	
(N) Maastricht UAC	Planned	
(N) Marseille ACC	Planned	
(N) Reims ACC	Already Implemented	
(N) Karlsruhe UAC	Planned	
(N) Langen ACC	Already Implemented	
Munich ACC	Already Implemented	

1.2.1 RNP APCH with vertical guidance

Expected completion year Dec 2023

Total # of closed gaps 9

Family FOC date Jan 2021

Total # of open gaps 15



Airspace User Gap*

* Through the update of Computer Flight Planning Systems

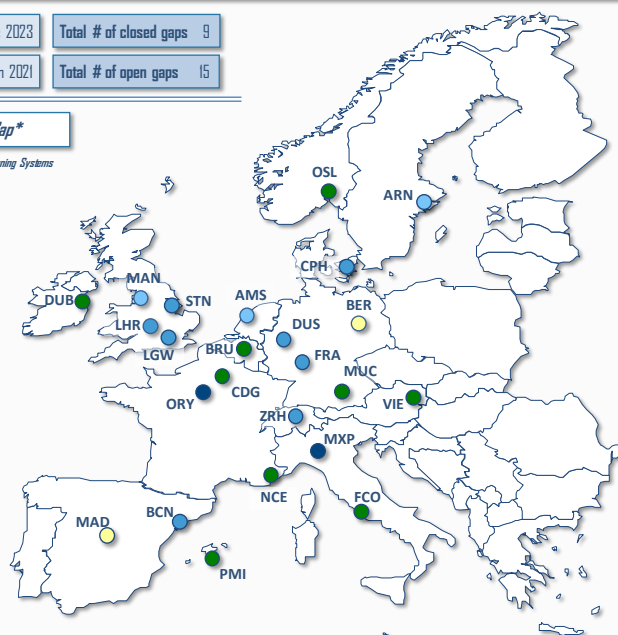


Chart Key - Implementation Status

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

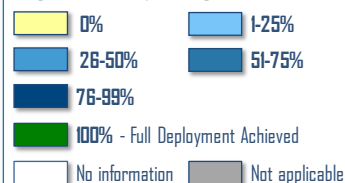
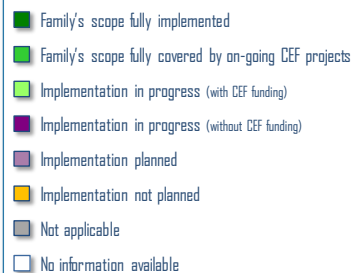


Chart Key per Stakeholders



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	10%	90%	0%	Dec 2023		
Barcelona El Prat	35%	65%	0%	Jul 2021		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2023		
Brussels National	✓			✓		
Copenhagen Kastrup	50%	50%	0%	Dec 2021		
Dublin Airport	✓			✓		
Düsseldorf International	50%	50%	0%	Dec 2023		
Frankfurt International	35%	65%	0%	Dec 2023		
London Gatwick	50%	0%	50%	-		
London Heathrow	50%	0%	50%	Dec 2022		
London Stansted	50%	50%	0%	Dec 2019		
Madrid Barajas	0%	100%	0%	Jul 2021		
Manchester Ringway	15%	85%	0%	May 2023		
Milan Malpensa	85%	15%	0%	Dec 2019		
Munich Franz Josef Strauss	✓			✓		
Nice Côte d'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	90%	10%	0%	Dec 2022		
Rome Fiumicino	✓			✓		
Stockholm Arlanda	10%	90%	0%	Dec 2022		
Vienna Schwechat	✓			✓		
Zurich Kloten	50%	50%	0%	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 2019 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	In Progress with CEF	In Progress with CEF	
Runway 09	In Progress with CEF	In Progress with CEF	
Runway 18C	In Progress with CEF	In Progress with CEF	
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	In Progress with CEF	In Progress with CEF	




Barcelona El Prat			Jul 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 Jun 2020		
	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	Not Applicable	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 2019		
	LNAV/VNAV procedures	LPV procedures
Runway 04	Already Implemented	Planned
Runway 22	Already Implemented	Planned




Madrid Barajas Jul 2021		
	LNAV/VNAV procedures	LPV procedures
Runway 14L	Not Applicable	Not Applicable
Runway 14R	Not Applicable	Not Applicable
Runway 18L	Planned	Planned
Runway 18R	Planned	Planned
Runway 32L	Planned	Planned
Runway 32R	Planned	Planned
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			Dec 2019
	LNAV/VNAV procedures	LPV procedures	
Runway 17L	In Progress with CEF	In Progress with CEF	
Runway 17R	In Progress with CEF	In Progress with CEF	
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			Dec 2022
	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	Planned	
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 16C	Not Applicable	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 2022
	LNAV/VNAV procedures	LPV procedures	
Runway 01L	In Progress without CEF	In Progress with CEF	
Runway 01R	Already Implemented	In Progress with CEF	
Runway 08	Not Applicable	Not Applicable	
Runway 19L	In Progress without CEF	In Progress with CEF	
Runway 19R	In Progress without CEF	In Progress with CEF	
Runway 26	In Progress without CEF	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

1.2.2 Geographic Database for Procedure design

Expected completion year Dec 2021

Total # of closed gaps 19

Family FDC date Jan 2019

Total # of open gaps 5

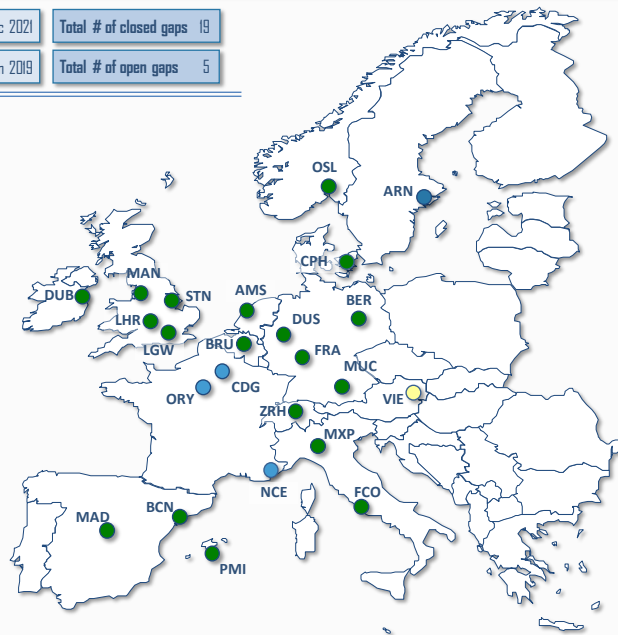


Chart Key – Implementation Status

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

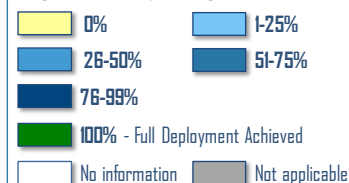
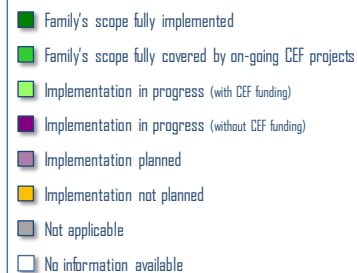


Chart Key per Stakeholders



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	✓			✓		
Düsseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	✓			✓		
Madrid Barajas	✓			✓		
Manchester Ringway	✓			✓		
Milan Malpensa	✓			✓		
Munich Franz Josef Strauss	✓			✓		
Nice Côte d'Azur	40%	60%	0%	Dec 2021		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	40%	60%	0%	Dec 2021		
Paris Orly	40%	60%	0%	Dec 2021		
Rome Fiumicino	✓			✓		
Stockholm Arlanda	65%	35%	0%	Dec 2020		
Vienna Schwechat	0%	100%	0%	Dec 2020		
Zurich Kloten	✓			✓		

H

1.2.3 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

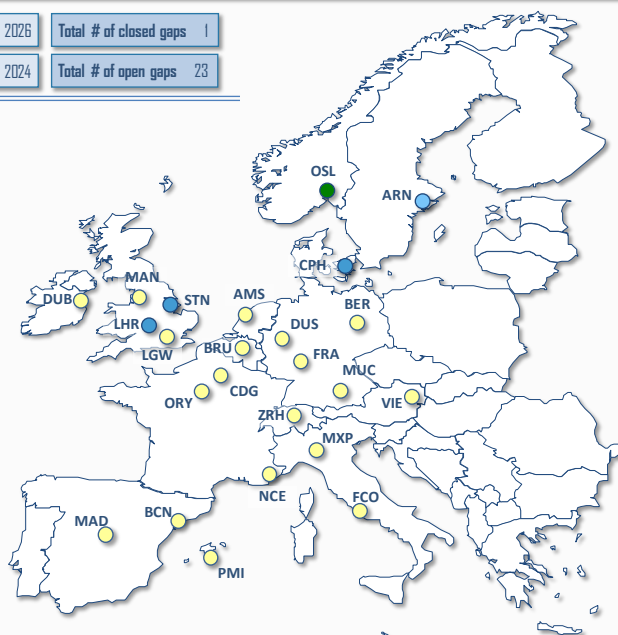


Chart Key – Implementation Status

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

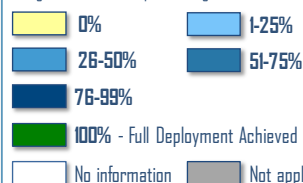
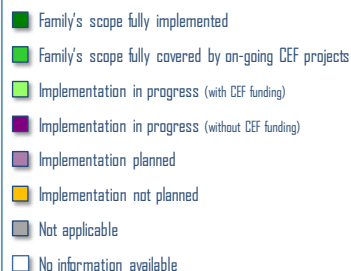


Chart Key per Stakeholders



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	0%	100%	0%	Dec 2023		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2023		
Brussels National	0%	100%	0%	Dec 2023		
Copenhagen Kastrup	35%	65%	0%	Dec 2021		
Dublin Airport	0%	100%	0%	Dec 2023		
Düsseldorf International	0%	100%	0%	Dec 2023		
Frankfurt International	0%	100%	0%	Dec 2023		
London Gatwick	0%	80%	20%	Dec 2023		
London Heathrow	50%	50%	0%	Dec 2026		
London Stansted	50%	50%	0%	Dec 2021		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	0%	100%	0%	Dec 2023		
Milan Malpensa	0%	100%	0%	Dec 2023		
Munich Franz Josef Strauss	0%	100%	0%	Dec 2023		
Nice Côte d'Azur	0%	0%	100%	-		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	0%	30%	70%	-		
Paris Orly	0%	0%	100%	-		
Rome Fiumicino	0%	100%	0%	Dec 2023		
Stockholm Arlanda	10%	90%	0%	Dec 2023		
Vienna Schwechat	0%	100%	0%	Dec 2023		
Zurich Kloten	0%	100%	0%	Dec 2023		

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.

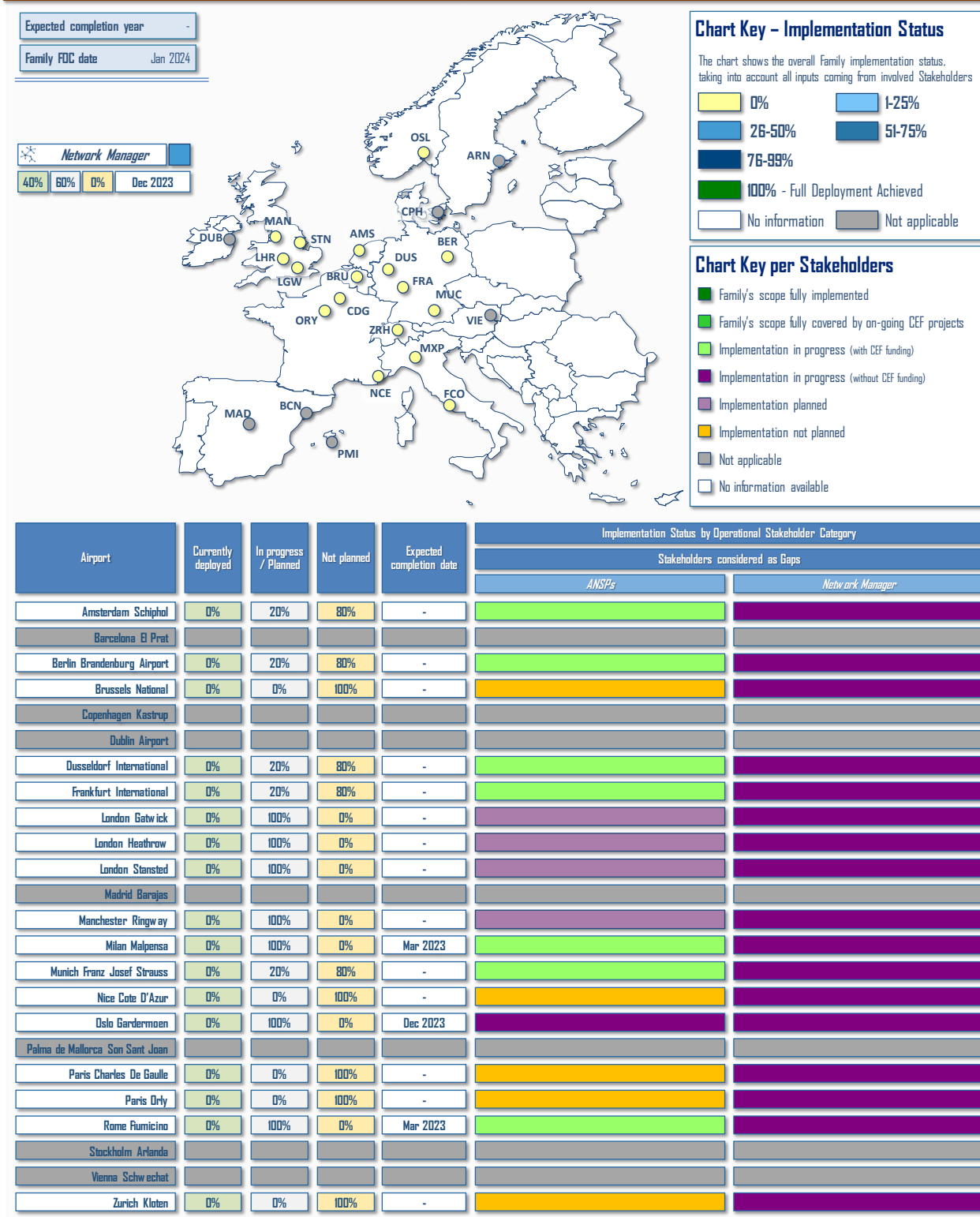
In Oslo Gardermoen the gap is fully covered with 24 SIDs and 12 STARs already implemented. In two airports the deployment is being carried out by CEF projects; Copenhagen, where the implementation of SID/STAR procedures for all 6 RWYs will be completed by end of 2021; and in London Stansted, the conventional SIDs and STARs have been converted to RNP1 procedures and more are planned until end of 2020.

One airport plans to implement RNP1 at the end of 2026. Four airports have not declared any end date for deployment and 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

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



AF #2 – Airport Integration and Throughput

H

2.1.1 Initial DMAN

Expected completion year	Dec 2021	Total # of closed gaps	16
Family FOC date	Jan 2021	Total # of open gaps	8

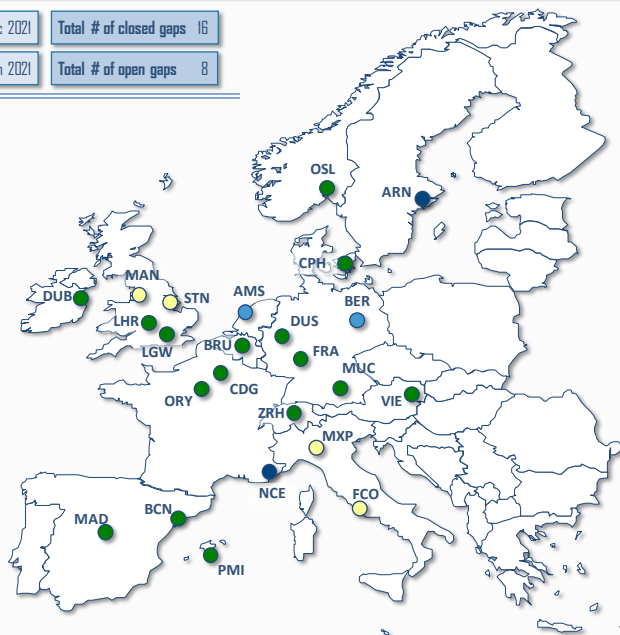


Chart Key – Implementation Status

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

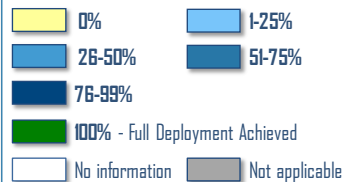
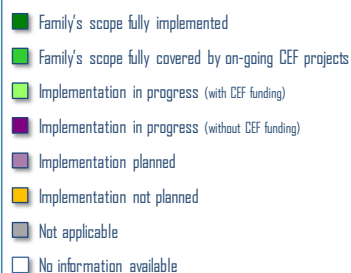


Chart Key per Stakeholders



N = Network-relevant implementation gaps

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Airport Operators
N Amsterdam Schiphol	50%	50%	0%	Dec 2020		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	40%	60%	0%	Dec 2020		
Brussels National	✓			✓		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Düsseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	0%	100%	0%	Dec 2020		
Madrid Barajas	✓			✓		
Manchester Ringway	0%	100%	0%	Dec 2021		
Milan Malpensa	0%	100%	0%	Dec 2020		
Munich Franz Josef Strauss	✓			✓		
Nice Côte d'Azur	80%	20%	0%	Dec 2019		
Oslo Gardermoen	✓			✓		
Palma de Mallorca San Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	0%	100%	0%	Dec 2020		
Stockholm Arlanda	90%	10%	0%	Dec 2019		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

H

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

Expected completion year Dec 2020

Total # of closed gaps 20

Family FOC date Jan 2021

Total # of open gaps 4

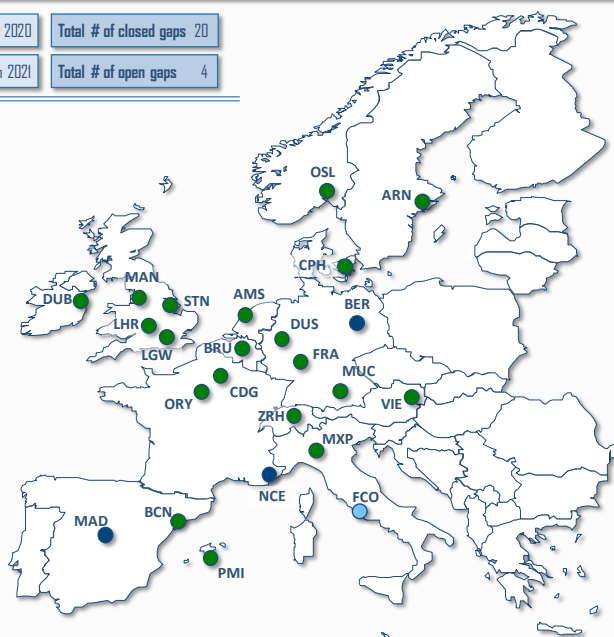


Chart Key – Implementation Status

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

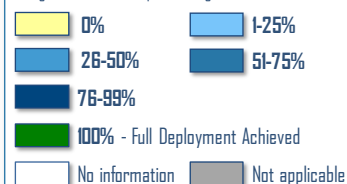
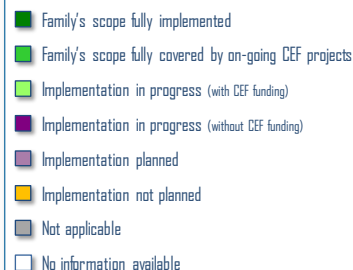


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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	✓			✓		
Düsseldorf International	✓			✓		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	✓			✓		
Madrid Barajas	90%	10%	0%	Sep 2020		
Manchester Ringway	✓			✓		
Milan Malpensa	✓			✓		
Munich Franz Josef Strauss	✓			✓		
Nice Côte D'Azur	95%	5%	0%	Dec 2019		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son Sant Joan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	25%	75%	0%	Dec 2020		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

2.1.3 Basic A-CDM

Expected completion year Dec 2020

Total # of closed gaps 19

Family FOC date Jan 2021

Total # of open gaps 5

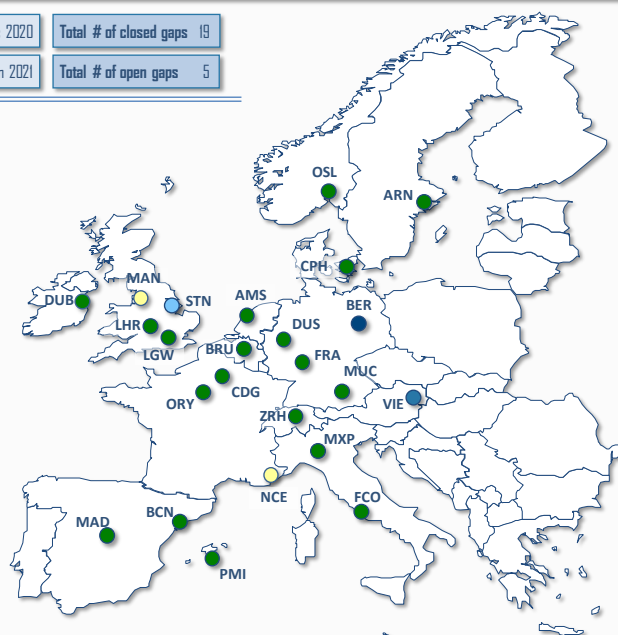


Chart Key - Implementation Status

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

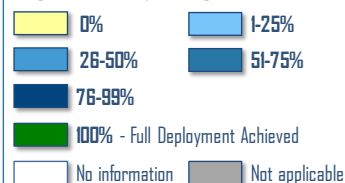
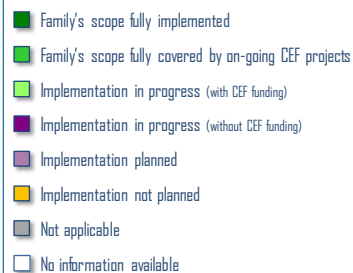


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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	✓			✓			
Düsseldorf International	✓			✓			
Frankfurt International	✓			✓			
London Gatwick	✓			✓			
London Heathrow	✓			✓			
London Stansted	25%	75%	0%	Dec 2020			
Madrid Barajas	✓			✓			
Manchester Ringway	0%	100%	0%	Mar 2020			
Milan Malpensa	✓			✓			
Munich Franz Josef Strauss	✓			✓			
Nice Côte d'Azur	0%	100%	0%	Mar 2020			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son Sant Joan	✓			✓			
Paris Charles De Gaulle	✓			✓			
Paris Orly	✓			✓			
Rome Fiumicino	✓			✓			
Stockholm Arlanda	✓			✓			
Vienna Schwechat	55%	45%	0%	Dec 2020			
Zurich Kloten	✓			✓			

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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

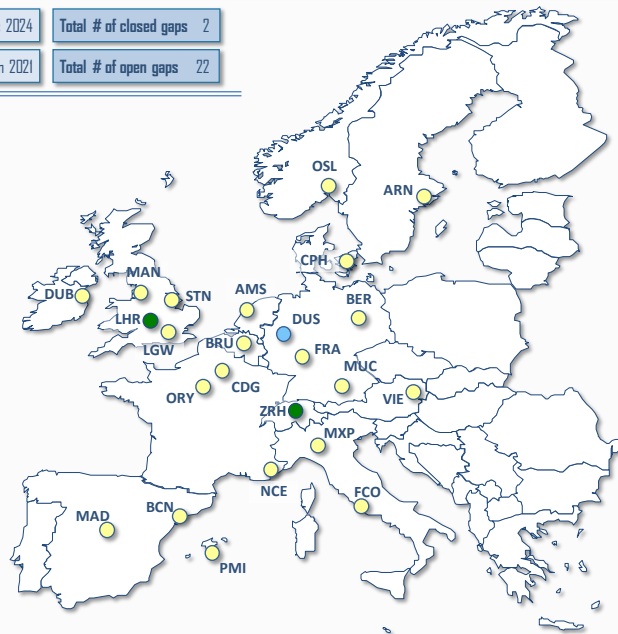


Chart Key – Implementation Status

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

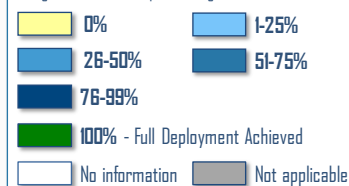
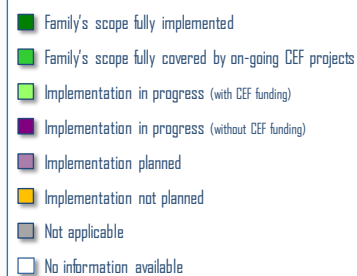


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Amsterdam Schiphol	0%	100%	0%	Dec 2020			
N Barcelona El Prat	0%	100%	0%	Dec 2019			
Berlin Brandenburg Airport	0%	90%	10%	-			
Brussels National	0%	100%	0%	Dec 2020			
Copenhagen Kastrup	0%	90%	10%	Dec 2021			
Dublin Airport	0%	100%	0%	Dec 2020			
Düsseldorf International	20%	70%	10%	Dec 2020			
N Frankfurt International	0%	90%	10%	Dec 2020			
N London Gatwick	0%	100%	0%	Dec 2020			
London Heathrow	✓			✓			
London Stansted	0%	100%	0%	Dec 2020			
Madrid Barajas	0%	100%	0%	Dec 2019			
Manchester Ringway	0%	100%	0%	Dec 2021			
Milan Malpensa	0%	100%	0%	Dec 2024			
Munich Franz Josef Strauss	0%	90%	10%	Dec 2020			
Nice Côte d'Azur	0%	100%	0%	Dec 2020			
Oslo Gardermoen	0%	100%	0%	Dec 2020			
N Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2019			
Paris Charles De Gaulle	0%	100%	0%	Dec 2021			
Paris Orly	0%	100%	0%	Dec 2021			
Rome Fiumicino	0%	100%	0%	Dec 2020			
Stockholm Arlanda	0%	100%	0%	Dec 2020			
Vienne Schwechat	0%	100%	0%	Dec 2021			
Zurich Kloten	✓			✓			

2.2.1A-SMGCS Level 1 and 2

Expected completion year Dec 2020

Total # of closed gaps 13

Family FOC date Jan 2021

Total # of open gaps 10

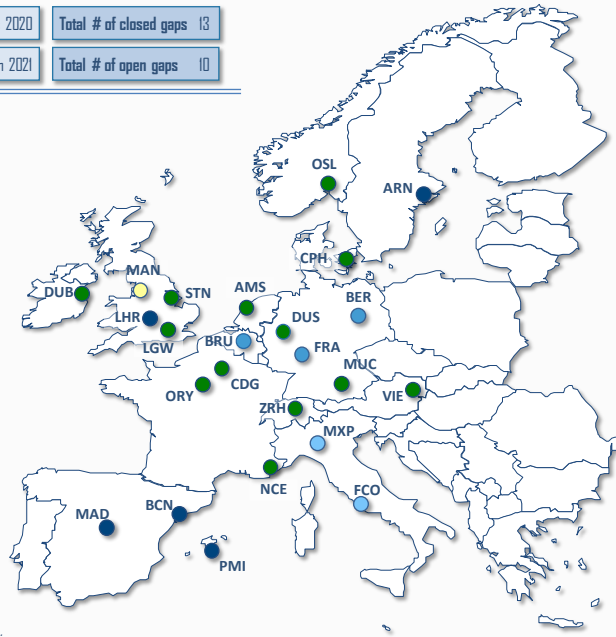


Chart Key – Implementation Status

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

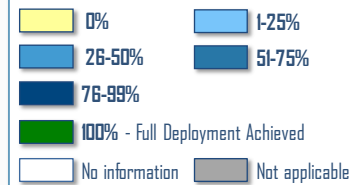
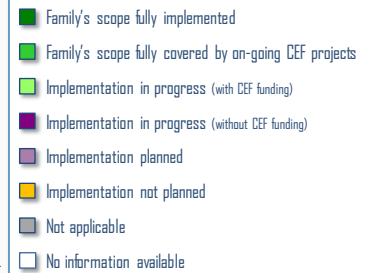


Chart Key per Stakeholders



N = Network-relevant implementation gaps

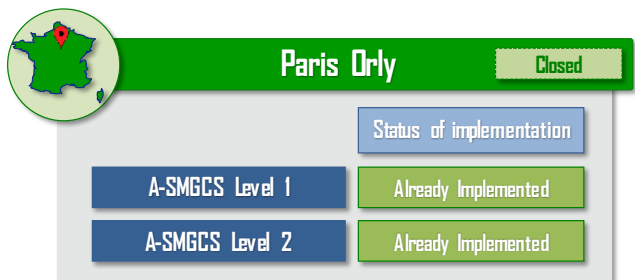
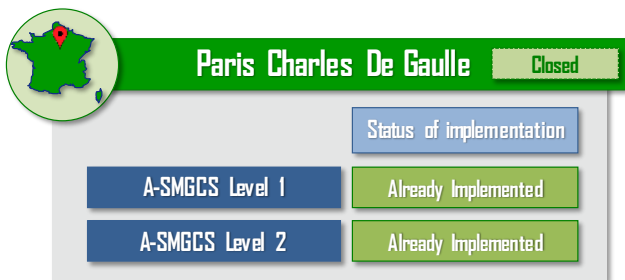
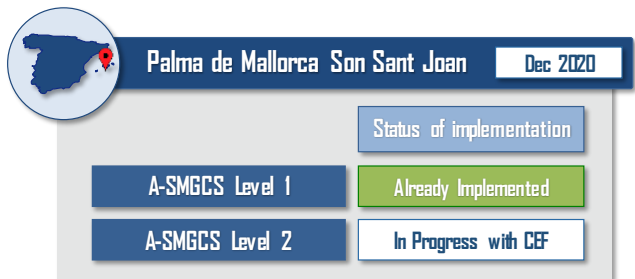
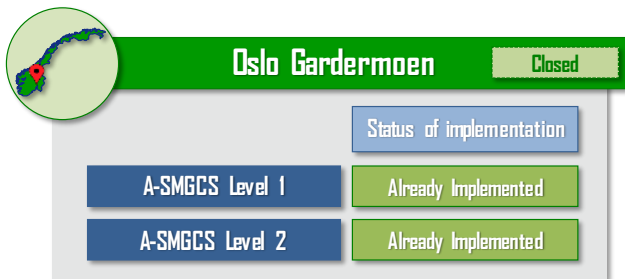
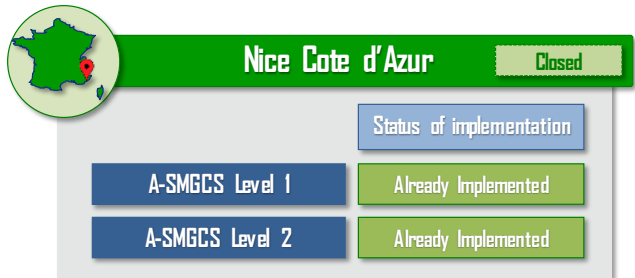
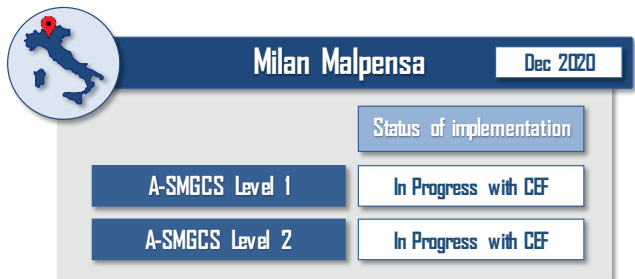
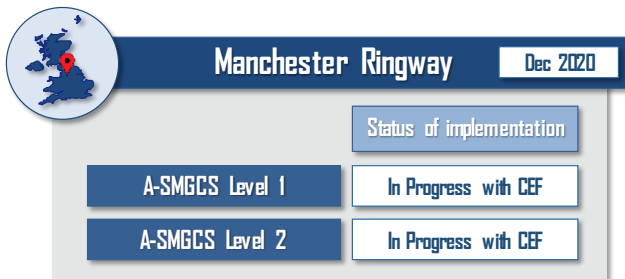
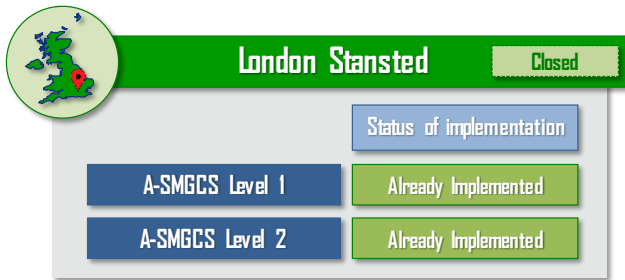
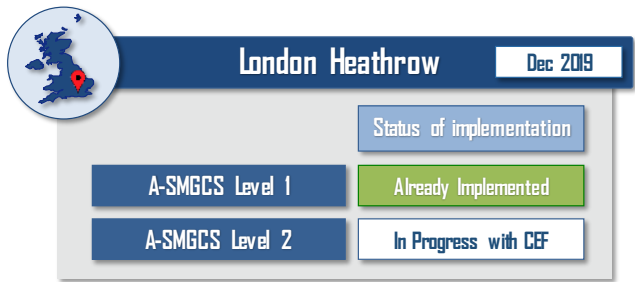
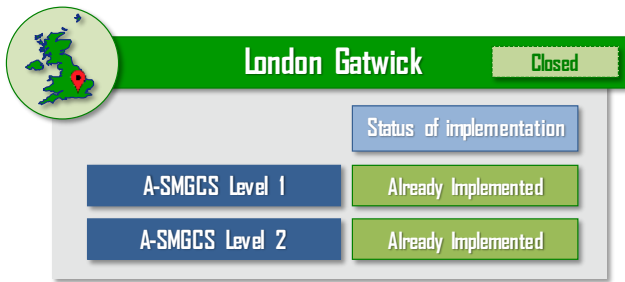
Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Airport Operators
Amsterdam Schiphol	✓			✓		
N Barcelona El Prat	85%	15%	0%	Dec 2020		
Berlin Brandenburg Airport	30%	70%	0%	Dec 2020		
Brussels National	40%	60%	0%	Dec 2020		
Copenhagen Kastrup	✓			✓		
Dublin Airport	✓			✓		
Düsseldorf International	✓			✓		
N Frankfurt International	30%	70%	0%	Dec 2020		
London Gatwick	✓			✓		
N London Heathrow	90%	10%	0%	Dec 2019		
London Stansted	✓			✓		
Madrid Barajas	85%	15%	0%	Dec 2020		
Manchester Ringway	0%	100%	0%	Dec 2020		
Milan Malpensa	20%	80%	0%	Dec 2020		
Munich Franz Josef Strauss	✓			✓		
Nice Côte d'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
N Palma de Mallorca Son Sant Joan	85%	15%	0%	Dec 2020		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	20%	80%	0%	Dec 2020		
Stockholm Arlanda	85%	15%	0%	Dec 2019		
Vienna Schwechat	✓			✓		
Zurich Kloten	✓			✓		

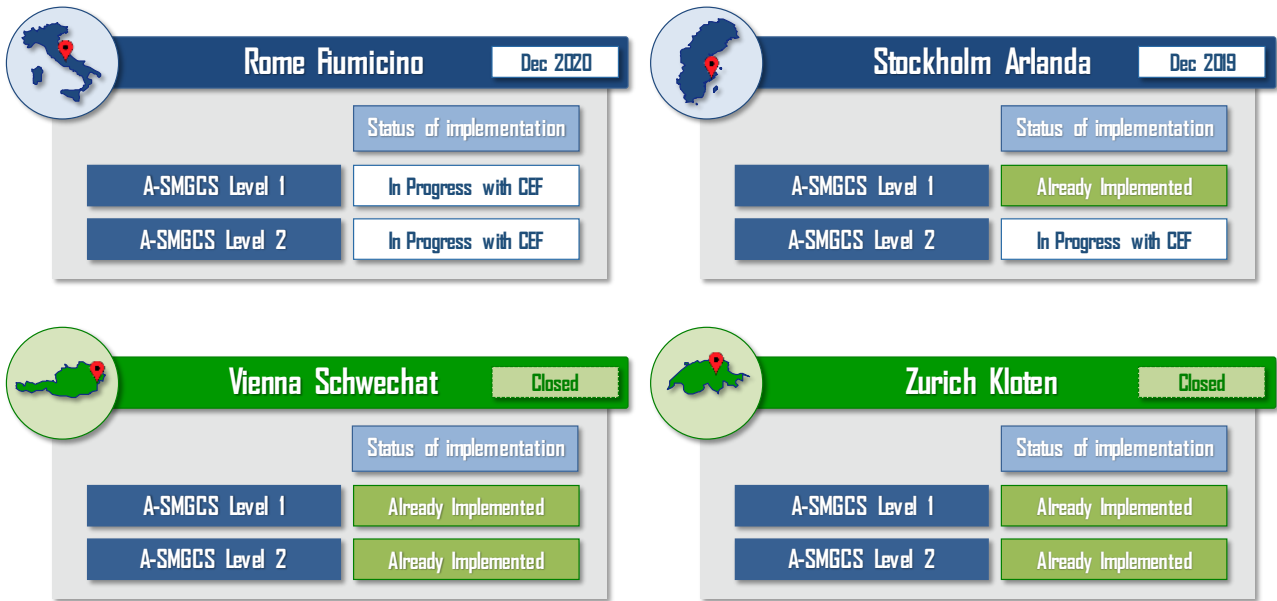
Focus on Advanced Surface Movement Guidance and Control System (A-SMGCS) Level 1 and Level 2

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 2019 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.







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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

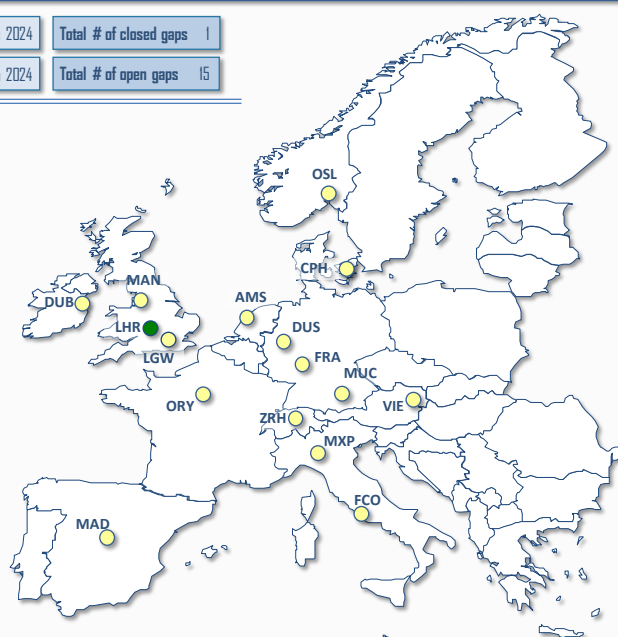


Chart Key - Implementation Status

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

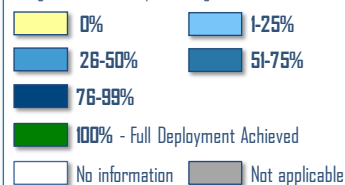
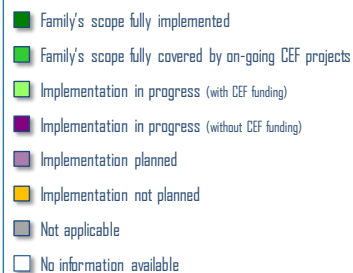


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Amsterdam Schiphol	0%	100%	0%	Dec 2023		
Copenhagen Kastrup	0%	100%	0%	May 2022		
Dublin Airport	0%	100%	0%	Dec 2023		
Dusseldorf International	0%	0%	100%	-		
N Frankfurt International	0%	0%	100%	-		
N London Gatwick	0%	100%	0%	Dec 2023		
London Heathrow	✓			✓		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	0%	0%	100%	-		
Milan Malpensa	0%	0%	100%	-		
Munich Franz Josef Strauss	0%	0%	100%	-		
Oslo Gardermoen	0%	100%	0%	Dec 2024		
Paris Orly	0%	0%	100%	-		
Rome Fiumicino	0%	0%	100%	-		
Vienna Schwechat	0%	100%	0%	Dec 2024		
N Zurich Kloten	0%	0%	100%	-		

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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

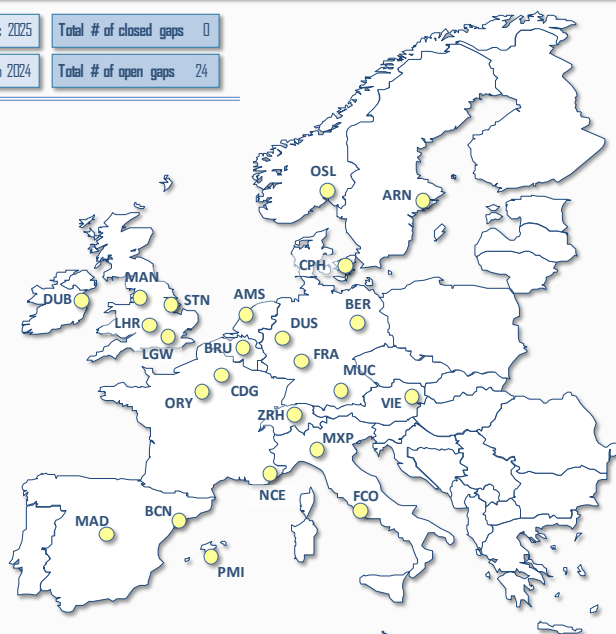


Chart Key – Implementation Status

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

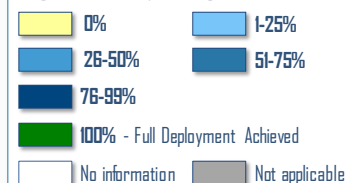
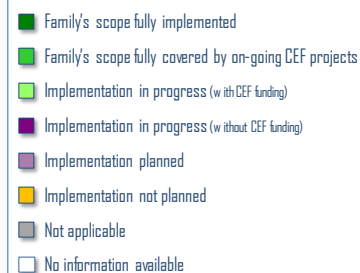


Chart Key per Stakeholders



N = Network-relevant implementation gaps

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Airport Operators
N Amsterdam Schiphol	0%	100%	0%	Dec 2023		
N Barcelona El Prat	0%	100%	0%	Dec 2023		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2023		
Brussels National	0%	100%	0%	Dec 2023		
Copenhagen Kastrup	0%	70%	30%	-		
Dublin Airport	0%	100%	0%	Dec 2023		
Düsseldorf International	0%	100%	0%	Dec 2023		
N Frankfurt International	0%	100%	0%	Dec 2023		
N London Gatwick	0%	100%	0%	Dec 2023		
N London Heathrow	0%	100%	0%	Dec 2021		
London Stansted	0%	100%	0%	Dec 2023		
Madrid Barajas	0%	100%	0%	Dec 2023		
Manchester Ringway	0%	100%	0%	Dec 2023		
Milan Malpensa	0%	0%	100%	-		
Munich Franz Josef Strauss	0%	100%	0%	Dec 2023		
Nice Côte d'Azur	0%	100%	0%	Dec 2023		
Oslo Gardermoen	0%	100%	0%	Dec 2023		
N Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	0%	100%	0%	Dec 2023		
Paris Orly	0%	100%	0%	Dec 2023		
Rome Fiumicino	0%	100%	0%	Dec 2023		
Stockholm Arlanda	0%	25%	75%	Dec 2023		
Vienna Schwechat	0%	100%	0%	Dec 2023		
N Zurich Kloten	0%	100%	0%	Dec 2025		

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

Expected completion year Dec 2025

Total # of closed gaps 1

Family FOC date Jan 2021

Total # of open gaps 23

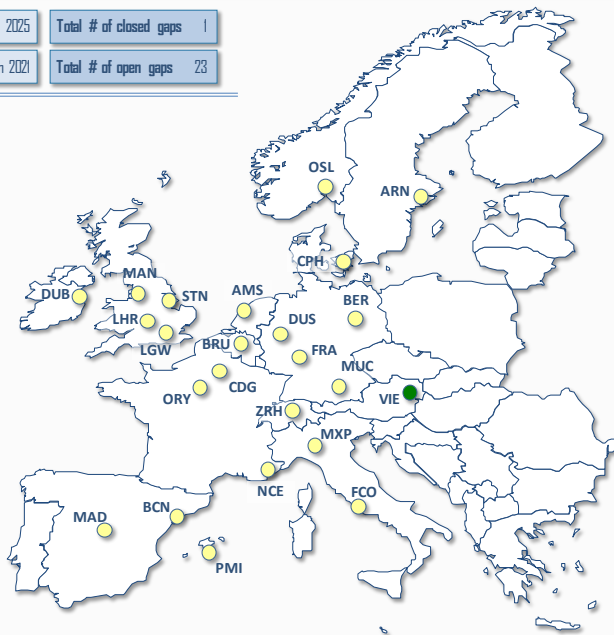


Chart Key – Implementation Status

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

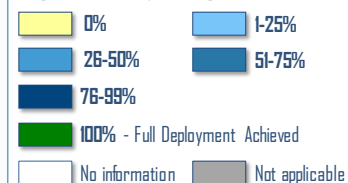
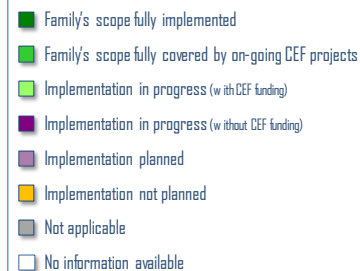


Chart Key per Stakeholders



N = Network-relevant implementation gaps

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Airport Operators
N Amsterdam Schiphol	0%	100%	0%	Dec 2020		
N Barcelona El Prat	0%	100%	0%	Dec 2020		
Berlin Brandenburg Airport	0%	100%	0%	Dec 2020		
Brussels National	0%	100%	0%	Dec 2020		
Copenhagen Kastrup	0%	70%	30%	-		
Dublin Airport	0%	100%	0%	Dec 2020		
Düsseldorf International	0%	100%	0%	-		
N Frankfurt International	0%	100%	0%	-		
N London Gatwick	0%	100%	0%	Dec 2020		
N London Heathrow	0%	100%	0%	Dec 2021		
London Stansted	0%	100%	0%	Dec 2020		
Madrid Barajas	0%	100%	0%	Dec 2020		
Manchester Ringway	0%	100%	0%	Dec 2023		
Milan Malpensa	0%	0%	100%	-		
Munich Franz Josef Strauss	0%	100%	0%	Dec 2020		
Nice Côte d'Azur	0%	100%	0%	-		
Oslo Gardermoen	0%	100%	0%	Dec 2024		
N Palma de Mallorca Son Sant Joan	0%	100%	0%	Dec 2020		
Paris Charles De Gaulle	0%	100%	0%	Dec 2020		
Paris Orly	0%	100%	0%	Dec 2020		
Rome Fiumicino	0%	0%	100%	-		
Stockholm Arlanda	0%	75%	25%	Dec 2019		
Vienna Schwechat	✓			✓		
N Zurich Kloten	0%	100%	0%	Dec 2025		

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

Expected completion year Dec 2023

Total # of closed gaps 5

Family FOC date Jan 2021

Total # of open gaps 19



Airspace User Gap*

* Through the update of Computer Flight Planning Systems

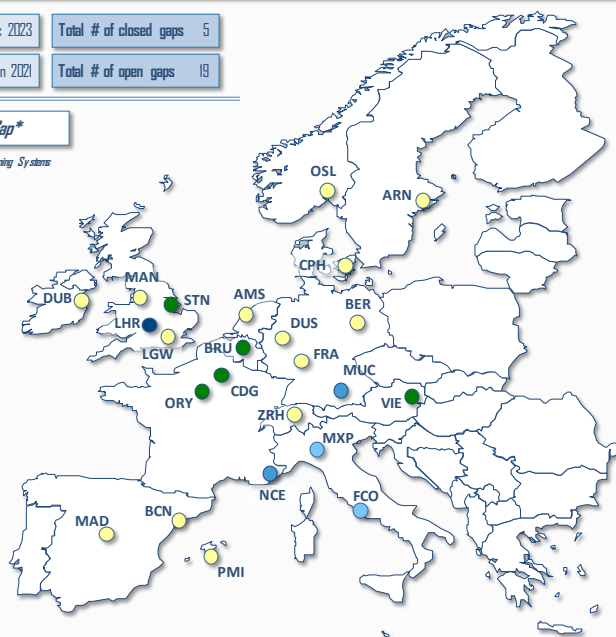


Chart Key - Implementation Status

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

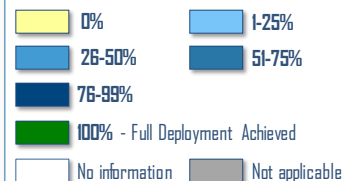
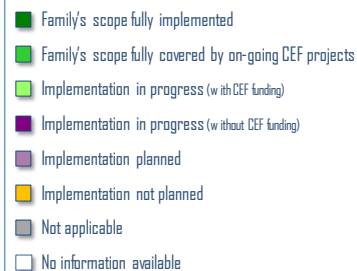


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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

AF #3 – Flexible ASM and Free Route

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3.1.1 ASM Tool to support AFUA

Expected completion year	Dec 2021	Total # of closed gaps	24
Family FOC date	Jan 2022	Total # of open gaps	5

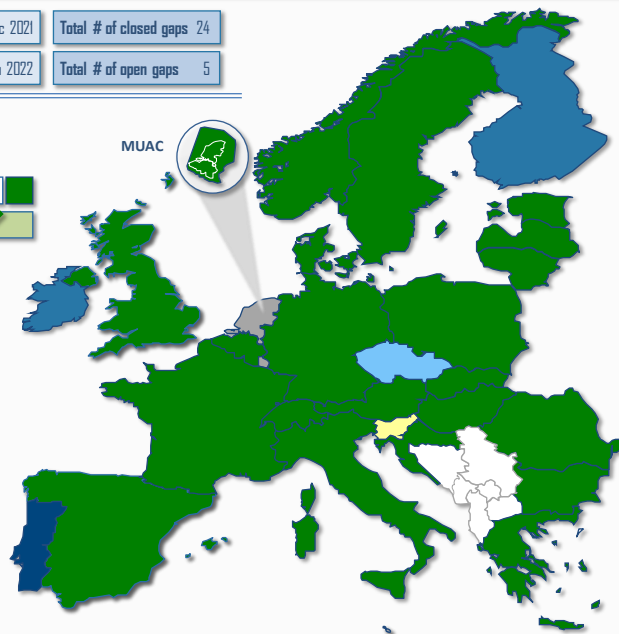


Chart Key – Implementation Status

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

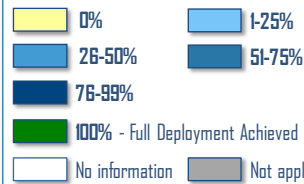
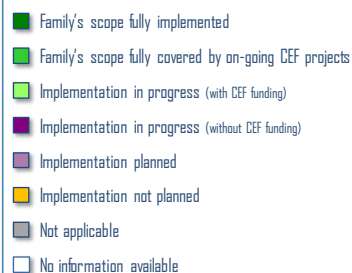


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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	✓			✓			
N Czech Republic	15%	85%	0%	Dec 2020			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	70%	0%	30%	Dec 2020			
France	✓			✓			
Germany	✓			✓			
Greece	✓			✓			
Hungary	✓			✓			
Ireland	65%	35%	0%	Dec 2021			
Italy	✓			✓			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg							
Malta*							
MUAC	✓			✓			
Netherlands							
Norway	✓			✓			
Poland	✓			✓			
Portugal	90%	10%	0%	Oct 2019			
Romania	✓			✓			
Slovak Republic	✓			✓			
Slovenia	0%	100%	0%	Dec 2021			
Spain	✓			✓			
Sweden	✓			✓			
Switzerland	✓			✓			
United Kingdom	✓			✓			

* Differently from what reported in 2018, ASM tool to support AFUA is not required to be deployed within the airspace of Malta, considering the nature and complexity of air traffic to be managed

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3.1.2 ASM Management of real time airspace data

Expected completion year Apr 2023

Total # of closed gaps 2

Family FOC date Jan 2022

Total # of open gaps 28

Network Manager

40% 60% 0% Dec 2021

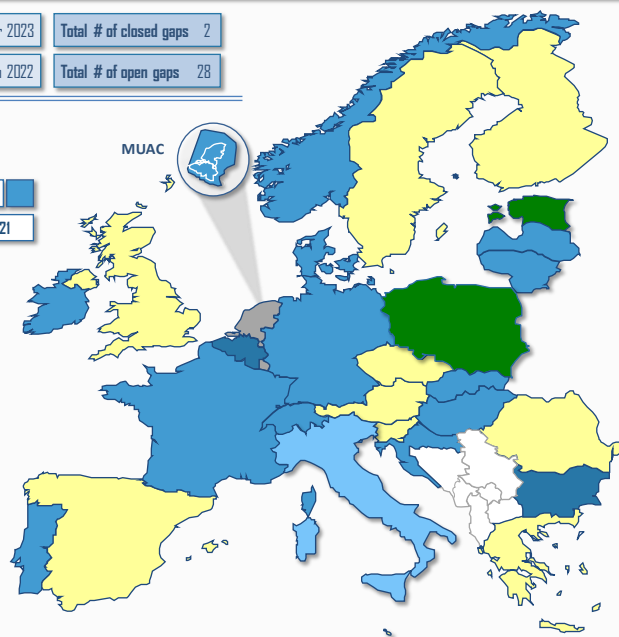


Chart Key – Implementation Status

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

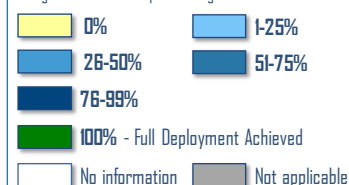
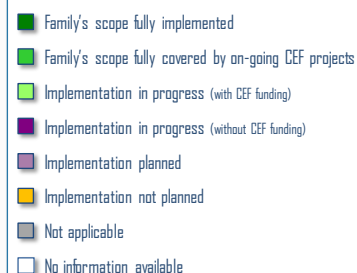


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Austria	0%	100%	0%	Dec 2021			
Belgium	70%	30%	0%	Dec 2019			
Bulgaria	75%	25%	0%	Dec 2021			
Croatia	50%	50%	0%	Dec 2021			
N Cyprus	0%	100%	0%	Dec 2021			
N Czech Republic	0%	100%	0%	Dec 2020			
Denmark	30%	35%	35%	-			
Estonia	✓			✓			
Finland	0%	100%	0%	Dec 2020			
N France	30%	70%	0%	Dec 2021			
N Germany	30%	70%	0%	Dec 2021			
N Greece	0%	100%	0%	Dec 2021			
N Hungary	30%	70%	0%	Apr 2021			
Ireland	30%	70%	0%	Dec 2021			
Italy	20%	80%	0%	Dec 2021			
Latvia	30%	70%	0%	Dec 2021			
Lithuania	30%	70%	0%	Dec 2021			
Luxembourg							
Malta	0%	0%	100%	-			
N MUAC	50%	50%	0%	Dec 2021			
Netherlands							
Norway	30%	70%	0%	Apr 2023			
Poland	✓			✓			
Portugal	30%	70%	0%	Dec 2021			
Romania	0%	100%	0%	Dec 2021			
N Slovak Republic	30%	70%	0%	Dec 2021			
Slovenia	0%	100%	0%	Dec 2021			
N Spain	0%	100%	0%	Dec 2021			
N Sweden	0%	30%	70%	Dec 2021			
N Switzerland	30%	10%	60%	Dec 2021			
United Kingdom	0%	100%	0%	Dec 2020			

H

3.1.3 Full rolling ASM/ATFCM process and ASM information sharing

Expected completion year Dec 2021

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

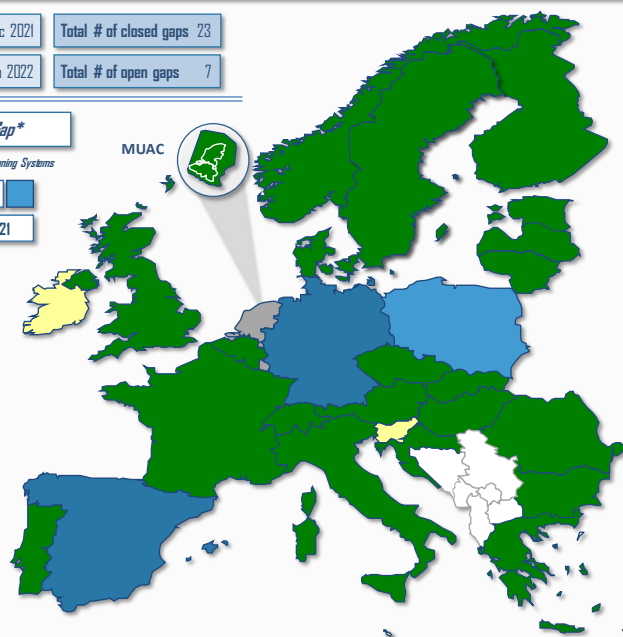


Chart Key - Implementation Status

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

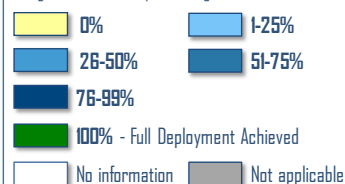
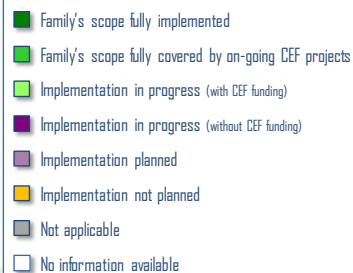


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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	✓			✓			
N 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	45%	55%	0%	Dec 2021			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	✓			✓			
Slovenia	0%	100%	0%	Dec 2021			
Spain	70%	0%	30%	-			
Sweden	✓			✓			
Switzerland	✓			✓			
United Kingdom	✓			✓			

M

3.1.4 Management of Dynamic Airspace Configurations

Expected completion year Dec 2023

Total # of closed gaps 4

Family FOC date Jan 2022

Total # of open gaps 26

Network Manager

10% 60% 30% Dec 2021

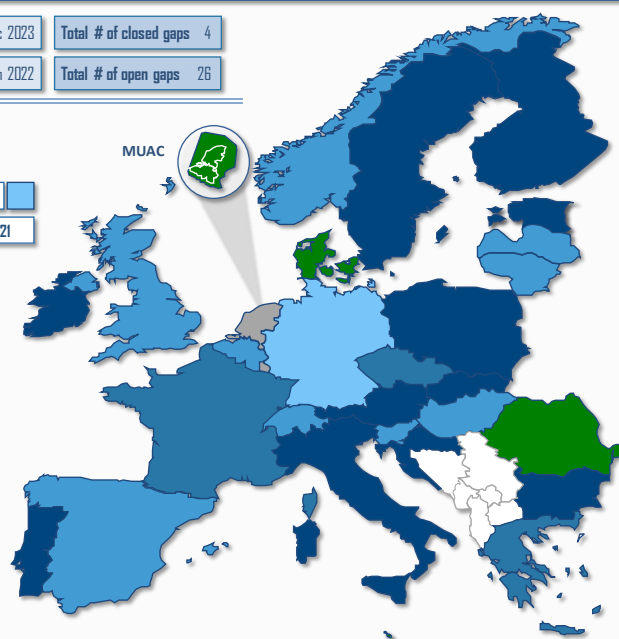


Chart Key - Implementation Status

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

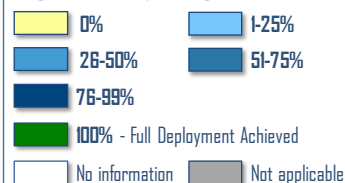
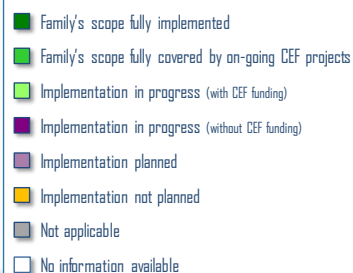


Chart Key per Stakeholders



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	95%	5%	0%	Dec 2023		
Belgium	45%	10%	45%	Dec 2021		
Bulgaria	95%	5%	0%	Dec 2021		
Croatia	90%	10%	0%	Dec 2021		
Cyprus	45%	55%	0%	Dec 2021		
Czech Republic	65%	35%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	90%	10%	0%	Dec 2021		
Finland	90%	10%	0%	Dec 2021		
France	60%	40%	0%	Dec 2019		
Germany	10%	90%	0%	Dec 2020		
Greece	65%	35%	0%	Dec 2021		
Hungary	45%	55%	0%	Apr 2021		
Ireland	90%	10%	0%	Dec 2021		
Italy	90%	10%	0%	Dec 2021		
Latvia	50%	5%	45%	Dec 2020		
Lithuania	45%	55%	0%	Dec 2021		
Luxembourg*						
Malta	✓			✓		
MUAC	✓			✓		
Netherlands						
Norway	45%	55%	0%	Apr 2023		
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	45%	55%	0%	Dec 2021		
Sweden	80%	20%	0%	Dec 2021		
Switzerland	45%	10%	45%	Dec 2021		
United Kingdom	45%	55%	0%	Dec 2021		

* Differently from what reported in 2018, the Family is not applicable for the Luxembourg ANSP, as all ASM / ATFCM processes and information sharing, under the responsibility of the Belgian ANSP and of the Network Manager

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 2023

Total # of closed gaps 0

Family FOC date Jan 2022

Total # of open gaps 31

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

60% 40% 0% Dec 2021

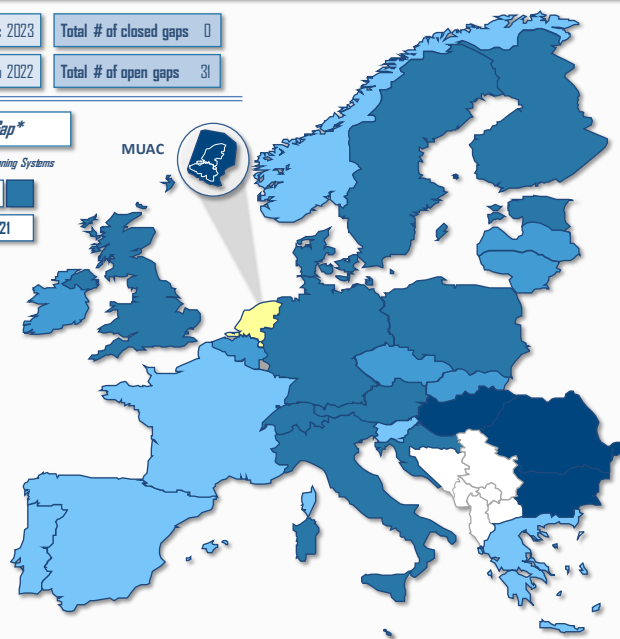


Chart Key – Implementation Status

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

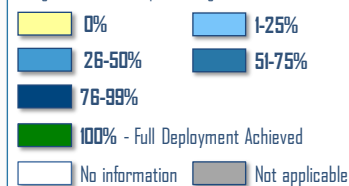
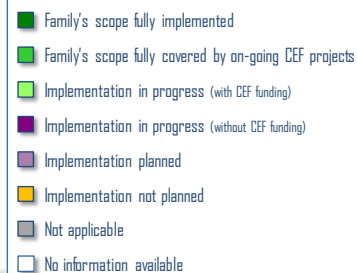


Chart Key per Stakeholders



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	75%	0%	25%	Dec 2021			
Belgium	45%	10%	45%	-			
Bulgaria	90%	10%	0%	Dec 2021			
Croatia	65%	5%	30%	Dec 2021			
Cyprus	15%	85%	0%	Dec 2021			
Czech Republic	35%	50%	15%	Dec 2021			
Denmark	70%	10%	20%	Dec 2021			
Estonia	70%	15%	15%	Dec 2021			
Finland	75%	5%	20%	Dec 2021			
France	15%	55%	30%	Dec 2023			
Germany	70%	15%	15%	Dec 2021			
Greece	20%	80%	0%	Dec 2021			
Hungary	85%	15%	0%	Apr 2021			
Ireland	40%	30%	30%	Dec 2021			
Italy	70%	30%	0%	Dec 2021			
Latvia	50%	15%	35%	Dec 2021			
Lithuania	50%	50%	0%	Dec 2021			
Luxembourg							
Malta	70%	15%	15%	Dec 2021			
MUAC	90%	10%	0%	-			
Netherlands	0%	100%	0%	Dec 2021			
Norway	15%	85%	0%	Apr 2023			
Poland	55%	45%	0%	Dec 2021			
Portugal	15%	70%	15%	-			
Romania	85%	15%	0%	Dec 2021			
Slovak Republic	30%	40%	30%	Dec 2021			
Slovenia	15%	85%	0%	Dec 2021			
Spain	15%	85%	0%	Dec 2021			
Sweden	65%	10%	25%	Dec 2021			
Switzerland	60%	0%	40%	Dec 2019			
United Kingdom	60%	0%	40%	Dec 2021			

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

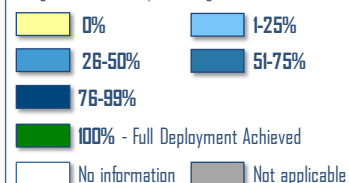
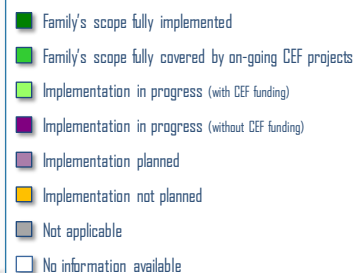


Chart Key per Stakeholders



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	✓			✓		

3.2.4 Implement Free Route Airspace

Expected completion year Dec 2023

Total # of closed gaps 19

Family FOC date Jan 2022

Total # of open gaps 10

Network Manager

75% 25% 0% Dec 2021

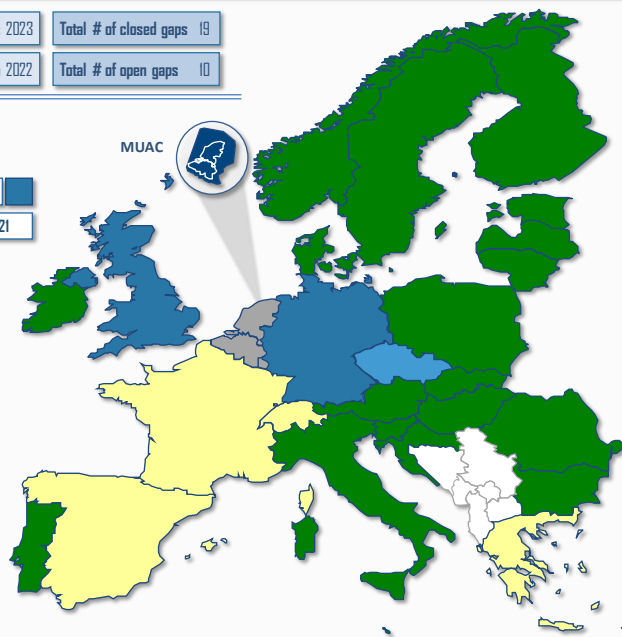


Chart Key – Implementation Status

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

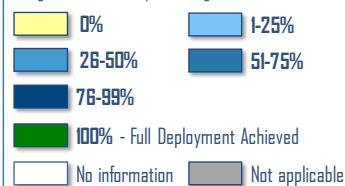
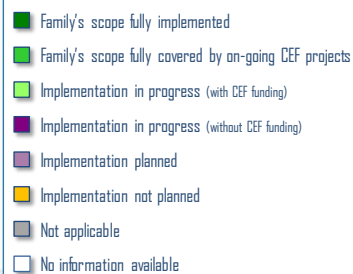


Chart Key per Stakeholders



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	45%	55%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	✓			✓		
France	0%	100%	0%	Dec 2023		
Germany	65%	35%	0%	Dec 2021		
Greece	0%	100%	0%	Dec 2021		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg						
Malta	✓			✓		
MUAC	95%	5%	0%	Dec 2019		
Netherlands						
Norway	✓			✓		
Poland	✓			✓		
Portugal	✓			✓		
Romania	✓			✓		
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	0%	100%	0%	Dec 2021		
Sweden	✓			✓		
Switzerland	0%	100%	0%	Dec 2021		
United Kingdom	65%	35%	0%	Dec 2020		

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.

Austria – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Ground to FL 650	Ground to FL 650
Pub. Constraints	According to RAD	According to RAD
Area of Responsibility	Full AoR	Full AoR
Cross-border	Slovenia Control, Croatia Control	FAB CE

Belgium – 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.	

Bulgaria – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 175	Above Flight Level 105
Pub. Constraints	According to RAD	According to RAD
Area of Responsibility	Full AoR	Full AoR
Cross-border	ROMATSA HungaroControl and UPS SR (only night FRA)	ROMATSA, HungaroControl, UPS SR

Croatia – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H24 / 7	FRA H24 / 7
Flight Level	Above Flight Level 205	Above Flight Level 205
Pub. Constraints	No published constraint	No published constraint
Area of Responsibility	Full AoR	Full AoR
Cross-border	Austrocontrol, BHANSA, Slovenia Control, SMATSA	Austrocontrol, BHANSA, BNAV, Slovenia Control, SMATSA

Cyprus – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	Direct Routings (DCT) in place	Under definition
Flight Level	Under development	Above FL 285
Pub. Constraints	Under development	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Planned	HCAA and DHMI

Czech Republic – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	Direct Routings (DCT) in place	FRA H 24 / 7
Flight Level	Above FL 245	Ground to FL 650
Pub. Constraints	According to RAD	According to RAD
Area of Responsibility	Full AoR	Full AoR
Cross-border	DCTs within Praha FIR	Praha FIR; FAB CE (under review)



Denmark – Free Route implementation

	Current status (Summer 2019)	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	Avinor; DFS; LFV; MUAC; NATS



Estonia – Free Route implementation

	Current status (Summer 2019)	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 2019)	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 2019)	Target (January 2022)
Time limitations	Implementation plan defined	FRA H 24 / 7
Flight Level	Implementation plan defined	Above FL 195
Pub. Constraints	Implementation plan defined	According to RAD
Area of Responsibility	Implementation plan defined	Bordeaux and Brest (Full AoR in 2023)
Cross-border	Implementation plan defined	Skyguide



Germany – Free Route implementation

	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7, except for FRA Cells EDUW, EDUS, EDW WE FRA @ Night	FRA H 24 / 7
Flight Level	FRA Cell EDUW R285+ FRA Cell EDUE R315+ FRA Cells EDMM EDWW R245+	Above FL 245
Pub. Constraints	Structural limitations	Structural limitations
Area of Responsibility	Three ACCs/UACs (EDUW, EDW W, EDMM)	Three ACCs/UACs (EDUW, EDW W, EDMM)
Cross-border	Between EDUW and DK SE FAB	Naviair; LFV; MUAC



Greece – Free Route implementation

	Current status (Summer 2019)	Target (January 2022)
Time limitations	Night FRA under finalization (available on Jan 2020)	FRA H 24 / 7
Flight Level	Deployment in progress	Between FL 355 and FL 460
Pub. Constraints	Deployment in progress	No published constraints
Area of Responsibility	Deployment in progress	Full AoR
Cross-border	Not currently foreseen	Blue MED FAB (under discussion)



Hungary – Free Route implementation

	Current status (Summer 2019)	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; LPS SR (Night FRA)	FAB CE; BULATSA; ROMATSA



Ireland – Free Route implementation

	Current status (Summer 2019)	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 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 305	Above FL 305
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Under development	MATS



Latvia – Free Route implementation

	Current status (Summer 2019)	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	Borealis Alliance

Lithuania – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right Level	Above FL 310	Above FL 95
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	No	PANSA

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 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right 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 2019)	Target (January 2022)
Time limitations	Night and Weekends FRA	FRA H 24 / 7
Right Level	Above FL 245	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	MUAC Region: DK SE FAB	MUAC Region: DK SE FAB

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 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right 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, LBS, Naviair	Borealis Alliance

Poland – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right 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	Full AoR
Cross-border	Under development	Baltic FAB

Portugal – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right 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)	ENAIRE (Madrid FIR)

Romania – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	Night FRA	FRA H 24 / 7
Right Level	Above FL 105	Above FL 105
Pub. Constraints	According to RAD	According to RAD
Area of Responsibility	Full AoR	Full AoR
Cross-border	Danube FAB HungaroControl and LPS SR (only night FRA)	BULATSA; Hungarocontrol; LPS SR

Slovak Republic – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Right Level	Above FL 245	Above FL 245
Pub. Constraints	According to RAD	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	BULATSA; ROMATSA; HungaroControl (only night FRA)	All neighboring ANSPs

Slovenia – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Ground to FL 690	Ground to FL 690
Pub. Constraints	Some constraints due to sector clipping	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Austrocontrol, BHANSA, Croatia Control, SMATSA	Austrocontrol, BHANSA, Croatia Control, SMATSA

Spain – Free Route implementation		
	Current status (Summer 2019)	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	No current plans

Sweden – Free Route implementation		
	Current status (Summer 2019)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above FL 285	Above FL 245 (R 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, DFS, EANS, LGS, Naviair, PANSA

Switzerland – Free Route implementation		
	Current status (Summer 2019)	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 2019)	Target (January 2022)
Time limitations	Planned	FRA H 24 / 7
Flight Level	Planned	Above FL 255 in Prestwick ACC Above FL 305 for Swanwick ACC
Pub. Constraints	Planned	No published constraints
Area of Responsibility	Planned	Full AoR
Cross-border	Planned	Borealis Alliance

AF #4 – Network Collaborative Management

H

4.1.1 STAM Phase I

Fully Implemented

Expected completion year	Closed	Total # of closed gaps	24
Family FOC date	Jan 2017	Total # of open gaps	0

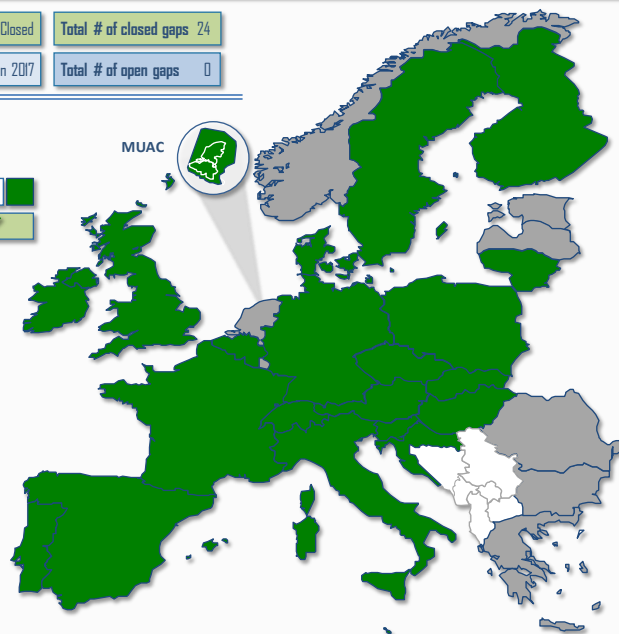


Chart Key – Implementation Status

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

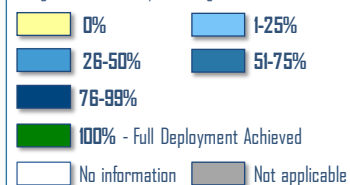
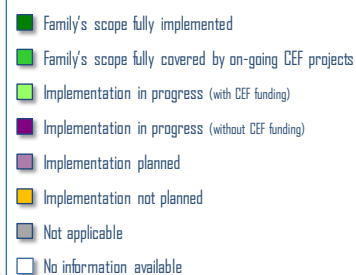


Chart Key per Stakeholders



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	✓			✓		

H

4.1.2 STAM Phase 2

Expected completion year Dec 2022

Total # of closed gaps 2

Family FOC date Jan 2022

Total # of open gaps 30

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

40% 60% 0% Dec 2021

MUAC

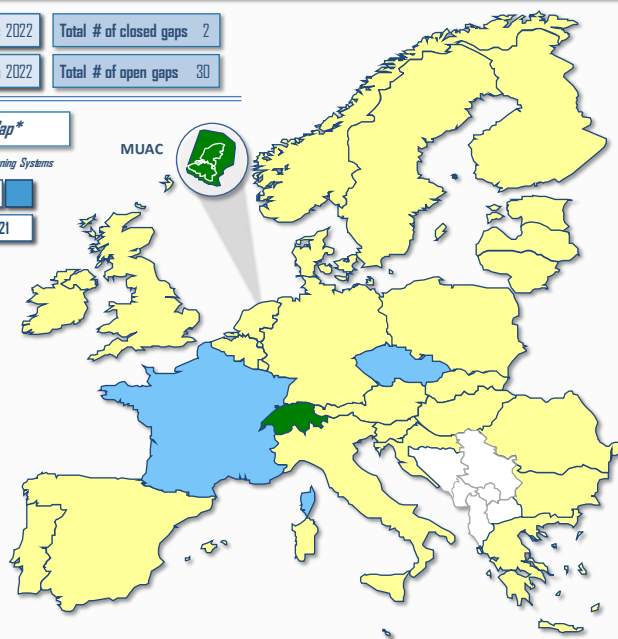


Chart Key – Implementation Status

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

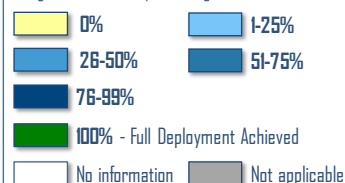
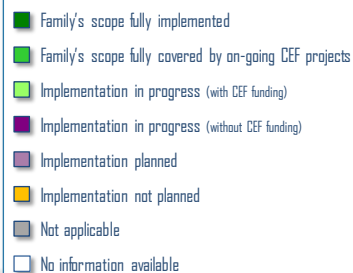


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Austria	0%	100%	0%	Dec 2021			
Belgium	0%	100%	0%	Dec 2021			
Bulgaria	0%	100%	0%	Dec 2021			
Croatia	0%	100%	0%	Dec 2021			
N Cyprus	0%	100%	0%	Dec 2021			
N Czech Republic	10%	90%	0%	Dec 2021			
Denmark	0%	100%	0%	Dec 2021			
Estonia	0%	100%	0%	-			
Finland	0%	100%	0%	Dec 2021			
N France	25%	75%	0%	Dec 2021			
N Germany	0%	100%	0%	Dec 2021			
N Greece	0%	100%	0%	Dec 2022			
N Hungary	0%	100%	0%	Dec 2021			
Ireland	0%	100%	0%	Dec 2021			
Italy	0%	100%	0%	Dec 2021			
Latvia	0%	0%	100%	-			
Lithuania	0%	100%	0%	Dec 2021			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	100%	0%	Dec 2021			
MUAC	✓			✓			
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%	0%	100%	-			
N Slovak Republic	0%	100%	0%	Dec 2021			
Slovenia	0%	100%	0%	Dec 2021			
N Spain	0%	100%	0%	Dec 2021			
N Sweden	0%	100%	0%	Dec 2021			
Switzerland	✓			✓			
United Kingdom	0%	100%	0%	Dec 2021			

4.2.2 Interactive Rolling NOP

Expected completion year Dec 2021

Total # of closed gaps 0

Family FOC date Jan 2022

Total # of open gaps 32

 Airspace User Gap*

* Through the update of Computer Flight Planning Systems

 Network Manager

55% 45% 0% Dec 2021

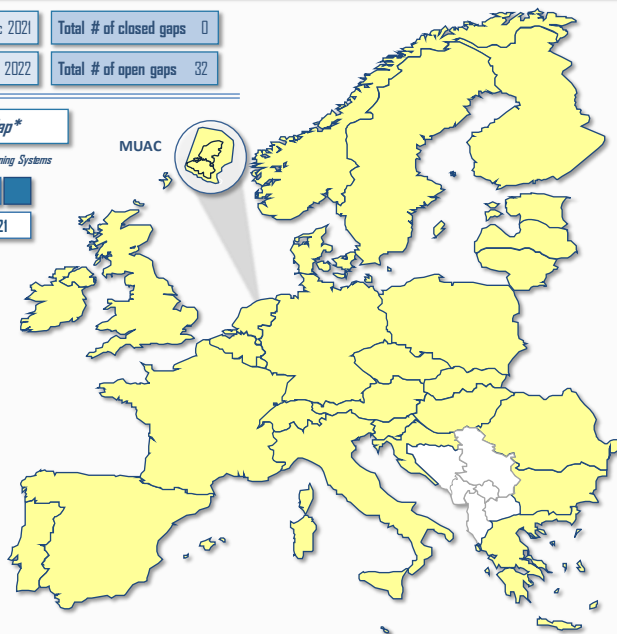


Chart Key – Implementation Status

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

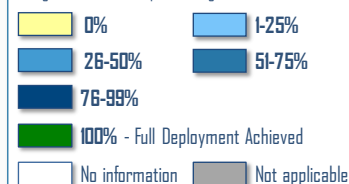
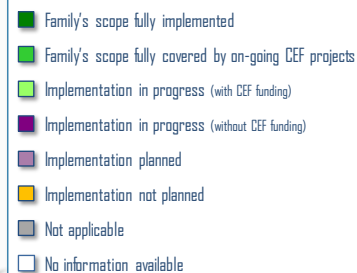


Chart Key per Stakeholders



N = Network-relevant implementation gaps

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
N Austria	0%	100%	0%	Dec 2021			
Belgium	0%	100%	0%	Dec 2021			
Bulgaria	0%	100%	0%	Dec 2021			
Croatia	0%	100%	0%	Dec 2021			
N Cyprus	0%	100%	0%	Dec 2021			
N 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			
N France	0%	0%	100%	-			
N Germany	0%	100%	0%	Dec 2021			
N Greece	0%	100%	0%	Dec 2021			
N Hungary	0%	100%	0%	Dec 2021			
Ireland	0%	100%	0%	Dec 2021			
Italy	0%	100%	0%	Dec 2021			
Latvia	0%	100%	0%	Dec 2021			
Lithuania	0%	100%	0%	Dec 2021			
Luxembourg	0%	0%	100%	-			
Malta	0%	100%	0%	Dec 2021			
N 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			
N Slovak Republic	0%	100%	0%	Dec 2021			
Slovenia	0%	100%	0%	Dec 2021			
N Spain	0%	100%	0%	Dec 2021			
N Sweden	0%	100%	0%	Dec 2021			
N Switzerland	0%	100%	0%	-			
United Kingdom	0%	100%	0%	Dec 2021			

H

4.2.3 Interface ATM systems to NM systems

Expected completion year Apr 2023

Total # of closed gaps 11

Family FOC date Jan 2022

Total # of open gaps 21

 **Airspace User Gap***

* Through the update of Computer Flight Planning Systems

 **Network Manager**

60% 40% 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

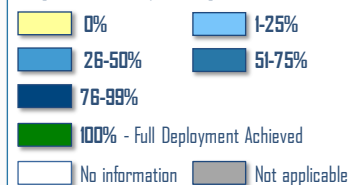
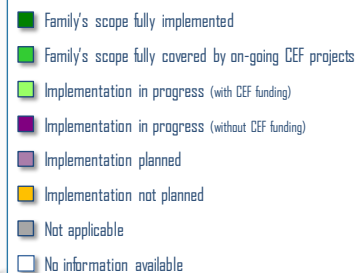


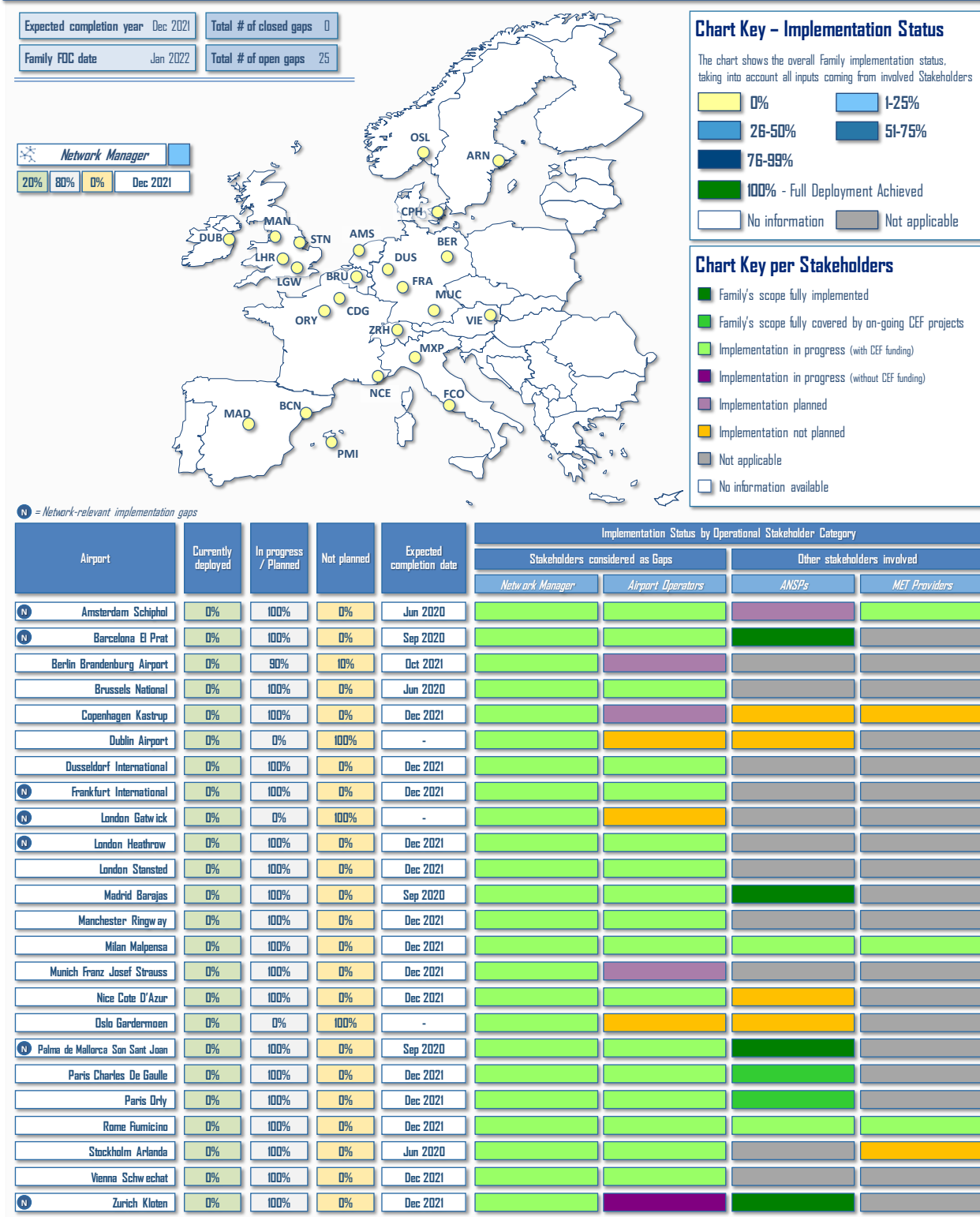
Chart Key per Stakeholders



N = Network-relevant implementation gaps

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Network Manager
N Austria	70%	30%	0%	Dec 2019		
Belgium	50%	0%	50%	Dec 2021		
Bulgaria	✓			✓		
Croatia	75%	25%	0%	Dec 2021		
N Cyprus	50%	50%	0%	Dec 2021		
N Czech Republic	75%	25%	0%	Dec 2021		
Denmark	✓			✓		
Estonia	30%	70%	0%	Dec 2021		
Finland	75%	25%	0%	Dec 2021		
N France	50%	50%	0%	Dec 2021		
N Germany	75%	25%	0%	-		
Greece	✓			✓		
N Hungary	75%	25%	0%	Dec 2021		
Ireland	75%	25%	0%	Dec 2021		
Italy	95%	5%	0%	Dec 2019		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg	50%	0%	50%	-		
Malta	✓			✓		
N MUAC	90%	10%	0%	Dec 2021		
Netherlands	✓			✓		
Norway	25%	75%	0%	Apr 2023		
Poland	95%	5%	0%	Dec 2019		
Portugal	✓			✓		
Romania	✓			✓		
N Slovak Republic	0%	75%	25%	Dec 2021		
Slovenia	75%	25%	0%	Dec 2021		
Spain	✓			✓		
N Sweden	75%	25%	0%	Dec 2021		
Switzerland	✓			✓		
United Kingdom	75%	25%	0%	Dec 2021		

4.2.4 AOP/NOP information sharing



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%

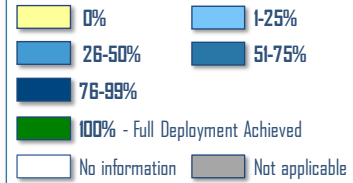
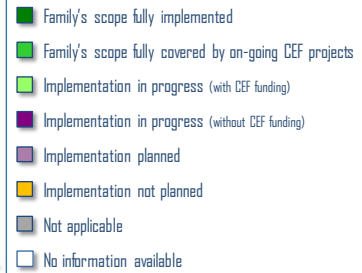
30%

0%

Dec 2021

**Chart Key - Implementation Status**

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

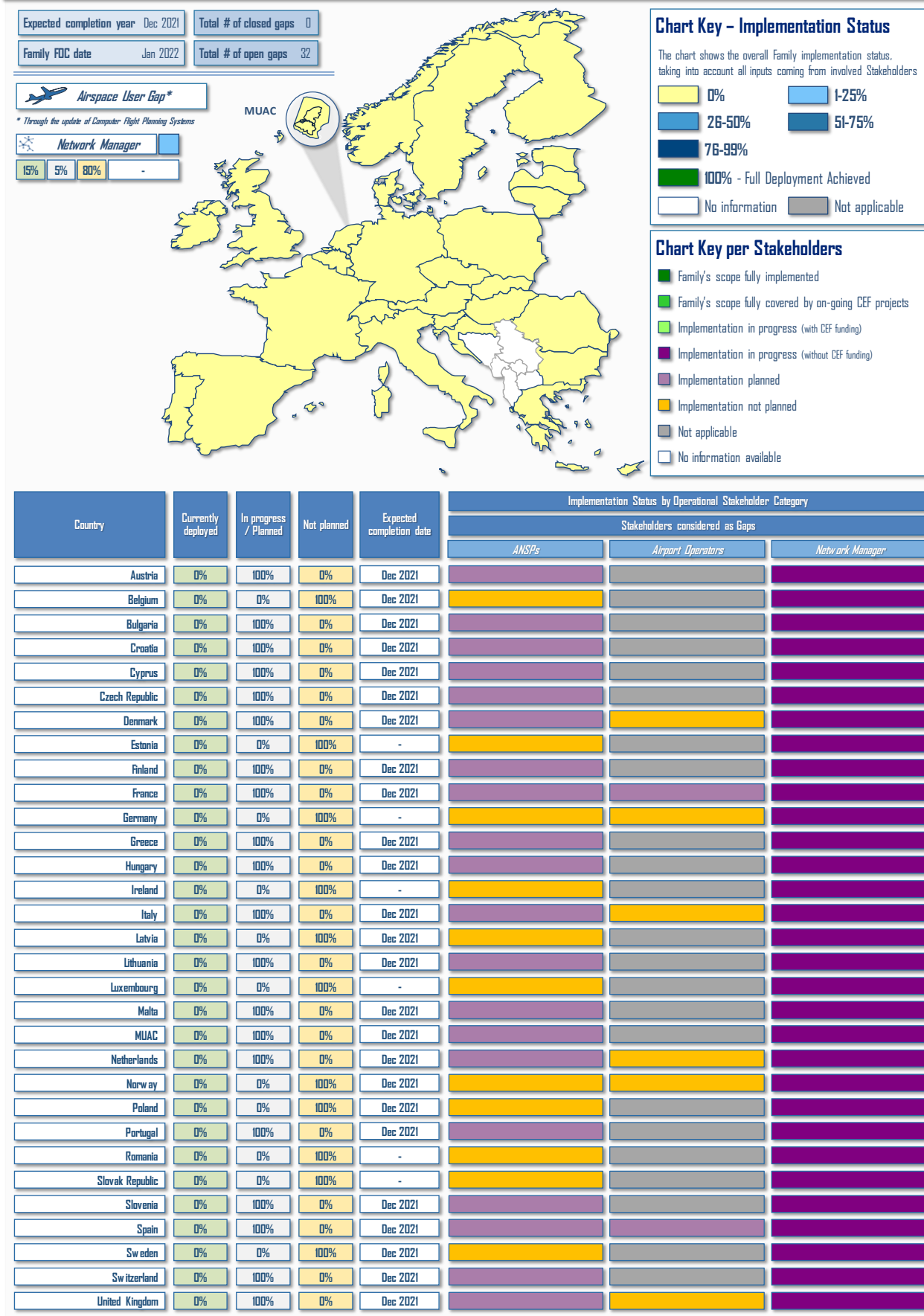
**Chart Key per Stakeholders**

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.

L

4.3.2 Reconciled target times for ATFCM and arrival sequencing



H

4.4.2 Traffic Complexity tools

Expected completion year Dec 2024

Total # of closed gaps 4

Family FOC date Jan 2022

Total # of open gaps 28

Network Manager

35% 65% 0% Dec 2021

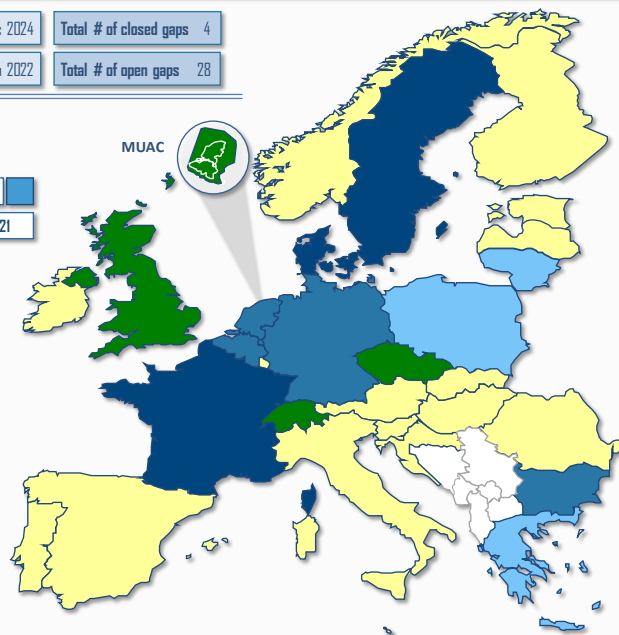


Chart Key – Implementation Status

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

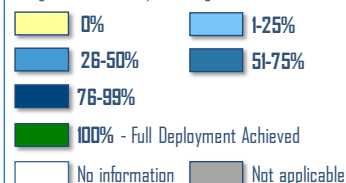
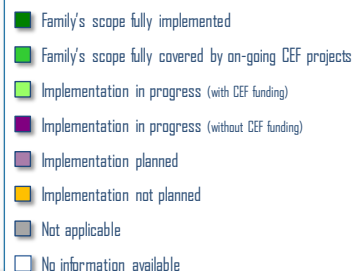


Chart Key per Stakeholders



N = Network-relevant implementation gaps

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	
					ANSPs	Network Manager
N Austria	0%	100%	0%	Dec 2024		
Belgium	60%	40%	0%	Dec 2019		
Bulgaria	55%	45%	0%	Sep 2020		
Croatia	0%	100%	0%	Dec 2021		
N 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		
N France	85%	15%	0%	Dec 2019		
N Germany	65%	35%	0%	Dec 2021		
N Greece	10%	90%	0%	Dec 2021		
N Hungary	0%	100%	0%	Dec 2021		
Ireland	0%	100%	0%	Dec 2021		
Italy	0%	100%	0%	Dec 2020		
Latvia	0%	100%	0%	Dec 2021		
Lithuania	10%	90%	0%	Dec 2022		
Luxembourg	0%	0%	100%	-		
Malta	0%	100%	0%	Dec 2021		
MUAC	✓			✓		
Netherlands	65%	35%	0%	Dec 2020		
Norway	0%	100%	0%	Dec 2021		
Poland	10%	90%	0%	Dec 2021		
Portugal	0%	100%	0%	Dec 2021		
Romania	0%	100%	0%	Dec 2021		
N Slovak Republic	0%	100%	0%	-		
Slovenia	0%	100%	0%	-		
N Spain	0%	100%	0%	Dec 2021		
N Sweden	95%	5%	0%	Dec 2021		
Switzerland	✓			✓		
United Kingdom	✓			✓		

AF #5 – Initial SWIM

H

5.1.1 PENS I: Pan-European Network Service version I

Expected completion year	-	Total # of closed gaps	30
Family FOC date	Dec 2019	Total # of open gaps	2

Network Manager	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>



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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Belgium	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Bulgaria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Croatia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Cyprus	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Czech Republic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Denmark	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Estonia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Finland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
France	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Germany	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Greece	0%	100%	0%	-		
Hungary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Ireland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Italy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Latvia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Lithuania	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Luxembourg	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Malta	0%	100%	0%	-		
MUAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Netherlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Norway	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Poland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Portugal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Romania						
Serbia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Slovak Republic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Slovenia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Spain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Sweden	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Switzerland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
United Kingdom	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

5.1.2 NewPENS: New Pan-European Network Service

Expected completion year Dec 2024

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**

65% 35% 0% Dec 2020

MUAC

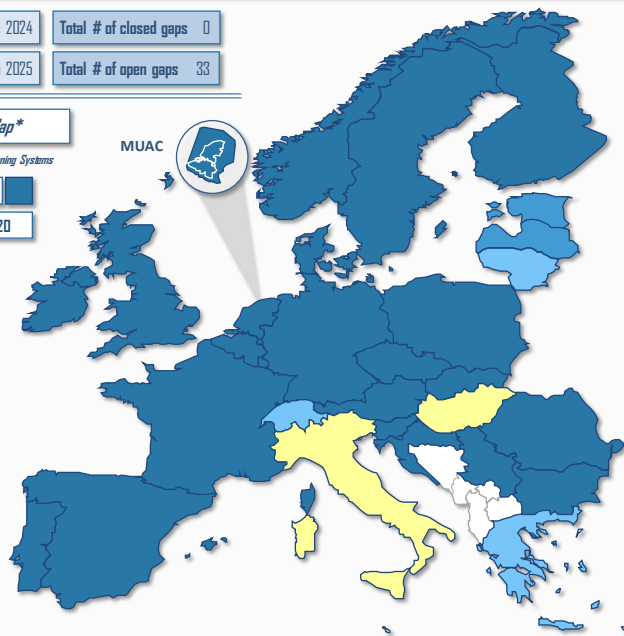


Chart Key – Implementation Status

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

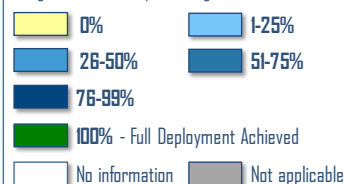
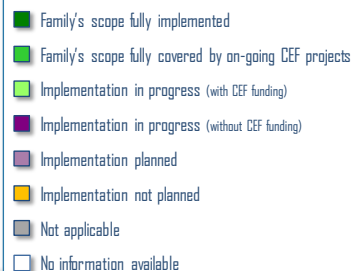


Chart Key per Stakeholders



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	65%	35%	0%	Dec 2020				
Belgium	65%	35%	0%	Dec 2020				
Bulgaria	65%	35%	0%	Dec 2020				
Croatia	65%	35%	0%	Dec 2020				
Cyprus	10%	90%	0%	Dec 2021				
Czech Republic	65%	35%	0%	Dec 2020				
Denmark	65%	35%	0%	Dec 2020				
Estonia	30%	70%	0%	Dec 2020				
Finland	65%	35%	0%	Dec 2020				
France	65%	35%	0%	Dec 2020				
Germany	65%	35%	0%	Dec 2019				
Greece	10%	90%	0%	Dec 2020				
Hungary	0%	100%	0%	Dec 2019				
Ireland	65%	35%	0%	Dec 2020				
Italy	0%	100%	0%	Dec 2024				
Latvia	30%	70%	0%	Dec 2020				
Lithuania	10%	90%	0%	Jun 2020				
Luxembourg	65%	35%	0%	Mar 2020				
Malta	0%	100%	0%	Dec 2019				
MUAC	65%	35%	0%	Dec 2020				
Netherlands	65%	35%	0%	Dec 2020				
Norway	60%	40%	0%	Dec 2024				
Poland	65%	35%	0%	Dec 2020				
Portugal	65%	35%	0%	Dec 2020				
Romania	65%	35%	0%	Dec 2020				
Serbia	65%	35%	0%	Dec 2020				
Slovak Republic	65%	35%	0%	Dec 2020				
Slovenia	65%	35%	0%	Dec 2020				
Spain	65%	35%	0%	Dec 2020				
Sweden	65%	35%	0%	Dec 2020				
Switzerland	10%	90%	0%	Dec 2019				
United Kingdom	65%	35%	0%	Dec 2020				

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 shall follow 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, currently coordinated by SDM under the Framework Partnership Agreement¹².

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 initial priorities of the project are Task 02, Task 05 and Task 07.

The Task 02, "to refine and set up the SWIM Governance structure and process, has concluded its work. The set of deliverables of this task has been delivered 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.

At the same time, Task 05 is concluding its work on the legal setup of SWIM Governance, elaborating a number of legal issues and tackling a legal agreement for SWIM Governance to be used after the end of the project.

Finally, Task 07 have drafted security requirements and, more importantly, a draft security guidelines.

Based on the above-mentioned achievements, Task 04 has also kicked off. This task sets out to instantiate the SWIM Governance bodies and execute the related processes. As a first action, a SWIM Governance Handbook was drafted, which details the relevant processes of the SWIM Governance. Once Task 04 will be fully on execution, an operational SWIM Governance will exist.

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

This multi-stakeholder initiative has been launched in the 2017 CEF Transport Call and has been fully awarded by INEA in early September 2018.

The project aims at deploying a common framework for both integrating local PKI deployments in an interoperable manner as well as providing interoperable digital certificates to the users of SWIM. The resulting PKI and its associated trust framework, which will be part of the cyber security infrastructure of aviation systems, are required to sign, emit and maintain digital certificates and revocation lists as required by the PCP Regulation.

This project comprises the following tasks:

- Task 01 - Develop the Trust Framework policies and procedures
 - o Analyse the future business objectives the PKI shall contribute to
 - o Define the Policy Management Authority (PMA) (Terms Of Reference (ToR), procedures)
 - o Develop/approve the initial Certificate Policy/Certification Practices Statement(s)
 - o Develop the Membership Agreement
 - o Develop interoperability/cross-certification framework (criteria, checklist)
 - o Ensure interoperability with other PKIs e.g. US Federal Bridge (demonstrator)
- Task 02 - Develop Common PKI specifications (for both development and operations)
 - o Develop high-level architecture
 - o Functional Technical Specifications (including certificates specs)
- Task 03 - Define the (SWIM) interfaces to the Common PKI

¹² For further information see contract No. MOVE/E2-2014-717/SESAR FPA

- Define Users interface
- Define validation interfaces (e.g. OCSP interface (Online Certificate Status Protocol), CRL interface (Certification Revocation List))
- Task 04 - Interface with SWIIM governance
 - Interaction with SWIM governance project deliverables
- Task 05 - Prepare the material for the potential launch of a CFT (scope still to be defined)
 - Develop the draft of technical and contractual specifications
- Task 06 - Prepare all necessary material for operations
 - Develop guidance for SWIM service providers
 - Develop guidance for SWIM service consumers
- Task 07 - Project Management
 - Management of the tasks
 - Project reporting
 - Coordination with external bodies (e.g. ICAO, FAA, EASA)
 - Official presentations
 - Liaison with SDM

The overall project plan is as follows:

Title	Date
M1.1 - Initial Trust framework approval	30 Dec 19
M1.2 - Approval of Interoperability criteria with US Federal Bridge	31 Dec 20
M1.3 - Final Trust framework approval	31 Dec 21
M2.1 - Common PKI specifications	23 Feb 21
M3.1 - Initial SWIM interfaces to Common PKI	27 Dec 19
M3.2 - Final SWIM interfaces to Common PKI	31 Dec 21
M4.1 - Initial SWIM governance relationships/interfaces with Common SWIM PKI	28 Jun 19
M4.2 - Final SWIM governance relationships/interfaces with Common SWIM PKI	30 Dec 21
M5.1 - Draft of technical and contractual specifications	06 Mar 20
M6.1 - Publication of guidance for SWIM Providers and Consumers	31 Dec 21
M7.1 - Kick-Off Meeting	13 Nov 18
M7.2- Yearly Project Progress Meeting N°1	02 Dec 19
M7.3 - Yearly Project Progress Meeting N°2	03 Dec 20
M7.4 - Closure Meeting	02 Dec 21

5.2.1 Stakeholders Internet Protocol Compliance

Expected completion year: Dec 2024

Total # of closed gaps: 14

Family FOC date: Jan 2018

Total # of open gaps: 19

 **Airspace User Gap***

* Through the update of Computer Flight Planning Systems



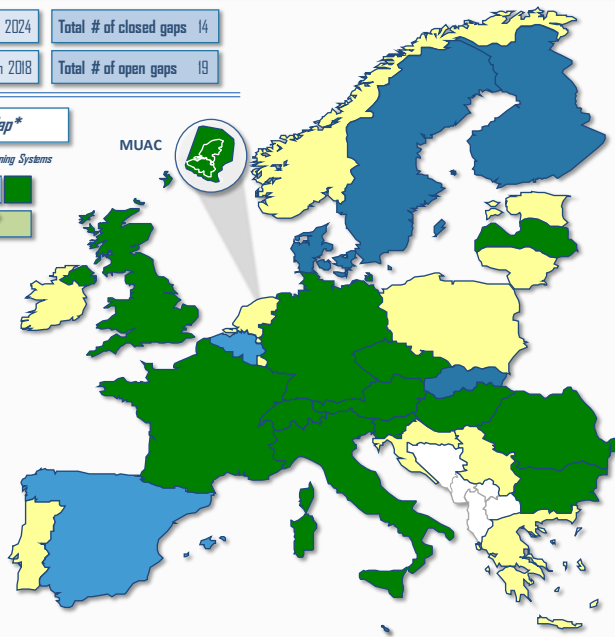
 **Network Manager**
   


Chart Key – Implementation Status

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

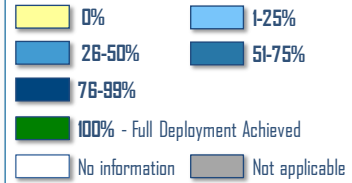
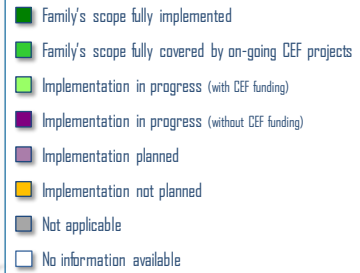


Chart Key per Stakeholders



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	50%	50%	0%	Dec 2021				
Bulgaria								
Croatia	0%	100%	0%	Dec 2019				
Cyprus	55%	45%	0%	Dec 2020				
Czech Republic								
Denmark	70%	30%	0%	Dec 2020				
Estonia	0%	0%	100%	-				
Finland	60%	40%	0%	Dec 2024				
France								
Germany								
Greece	0%	100%	0%	Dec 2022				
Hungary								
Ireland	0%	100%	0%	Dec 2020				
Italy								
Latvia								
Lithuania	0%	100%	0%	Dec 2021				
Luxembourg	0%	100%	0%	Dec 2021				
Malta	55%	45%	0%	Dec 2020				
MUAC								
Netherlands	0%	100%	0%	Mar 2022				
Norway	0%	0%	100%	Dec 2024				
Poland	0%	100%	0%	Dec 2019				
Portugal	0%	100%	0%	Dec 2024				
Romania								
Serbia	0%	0%	100%	-				
Slovak Republic	60%	40%	0%	Dec 2022				
Slovenia								
Spain	50%	50%	0%	Dec 2020				
Sweden	55%	45%	0%	Dec 2024				
Switzerland								
United Kingdom								

5.2.2 Stakeholders SWIM Infrastructures Components

Expected completion year Dec 2024

Total # of closed gaps 0

Family FDC 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

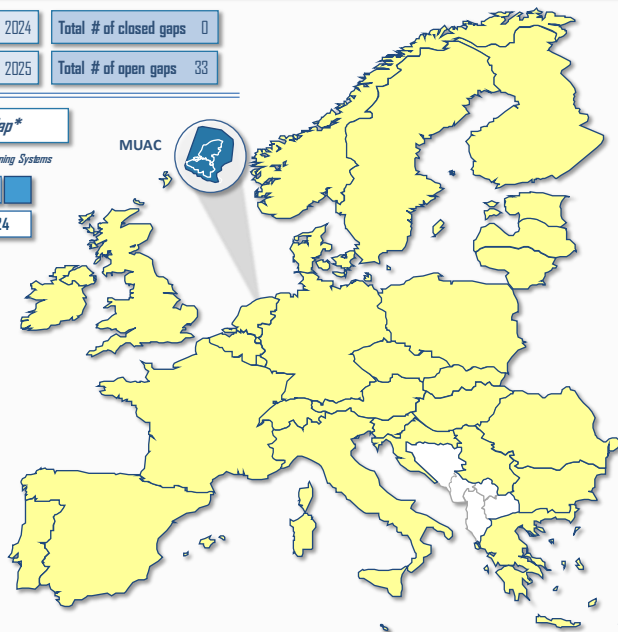


Chart Key – Implementation Status

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

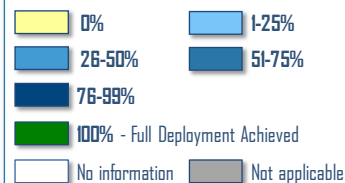
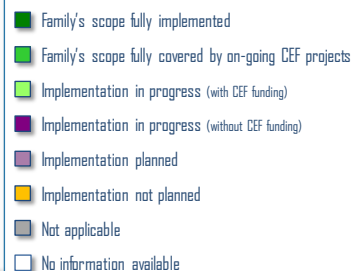


Chart Key per Stakeholders



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	0%	70%	30%	Dec 2024					
Belgium	0%	100%	0%	Dec 2024					
Bulgaria	0%	0%	100%	-					
Croatia	0%	100%	0%	Dec 2024					
Cyprus	0%	0%	100%	-					
Czech Republic	0%	100%	0%	Dec 2024					
Denmark	0%	60%	40%	Dec 2024					
Estonia	0%	80%	20%	Dec 2024					
Finland	0%	100%	0%	Dec 2024					
France	0%	100%	0%	Dec 2024					
Germany	0%	100%	0%	Dec 2021					
Greece	0%	100%	0%	Dec 2022					
Hungary	0%	100%	0%	Dec 2024					
Ireland	0%	100%	0%	Dec 2024					
Italy	0%	100%	0%	Dec 2024					
Latvia	0%	100%	0%	Dec 2024					
Lithuania	0%	100%	0%	Dec 2022					
Luxembourg	0%	100%	0%	Dec 2021					
Malta	0%	60%	40%	Dec 2020					
MUAC	55%	45%	0%	Dec 2024					
Netherlands	0%	100%	0%	Dec 2024					
Norway	0%	0%	100%	Dec 2024					
Poland	0%	100%	0%	Dec 2024					
Portugal	0%	100%	0%	Dec 2024					
Romania	0%	100%	0%	Dec 2024					
Serbia	0%	0%	100%	-					
Slovak Republic	0%	15%	85%	Dec 2023					
Slovenia	0%	0%	100%	-					
Spain	0%	100%	0%	Dec 2024					
Sweden	0%	100%	0%	Dec 2024					
Switzerland	0%	100%	0%	-					
United Kingdom	0%	100%	0%	Dec 2024					

H

5.2.3 Stakeholders SWIM PKI and Cybersecurity

Expected completion year Dec 2024

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

80%

20%

0%

Dec 2024

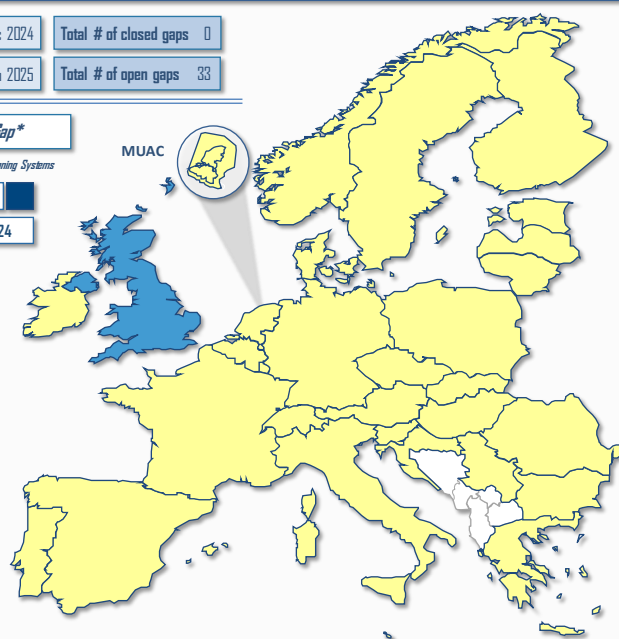


Chart Key – Implementation Status

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

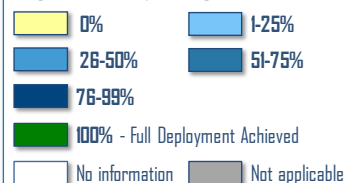
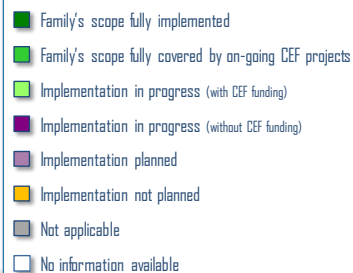


Chart Key per Stakeholders



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	0%	60%	40%	Dec 2024					
Belgium	0%	100%	0%	Dec 2024					
Bulgaria	0%	100%	0%	Dec 2024					
Croatia	0%	100%	0%	Dec 2024					
Cyprus	0%	0%	100%	-					
Czech Republic	0%	100%	0%	Dec 2024					
Denmark	0%	100%	0%	Dec 2024					
Estonia	0%	0%	100%	-					
Finland	0%	100%	0%	Dec 2024					
France	0%	100%	0%	Dec 2024					
Germany	0%	100%	0%	Dec 2024					
Greece	0%	100%	0%	Dec 2022					
Hungary	0%	100%	0%	Dec 2024					
Ireland	0%	95%	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 2020					
MUAC	0%	100%	0%	Dec 2024					
Netherlands	0%	100%	0%	Dec 2024					
Norway	0%	0%	100%	Dec 2024					
Poland	0%	100%	0%	Dec 2024					
Portugal	0%	0%	100%	-					
Romania	0%	0%	100%	-					
Serbia	0%	100%	0%	-					
Slovak Republic	0%	100%	0%	Dec 2024					
Slovenia	0%	100%	0%	Dec 2021					
Spain	0%	100%	0%	Dec 2024					
Sweden	0%	100%	0%	Dec 2024					
Switzerland	0%	100%	0%	-					
United Kingdom	30%	70%	0%	Dec 2024					

H

5.3.1 Upgrade / Implement Aeronautical Information Exchange system / service

Expected completion year Dec 2024

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

60%

40%

0%

Dec 2024

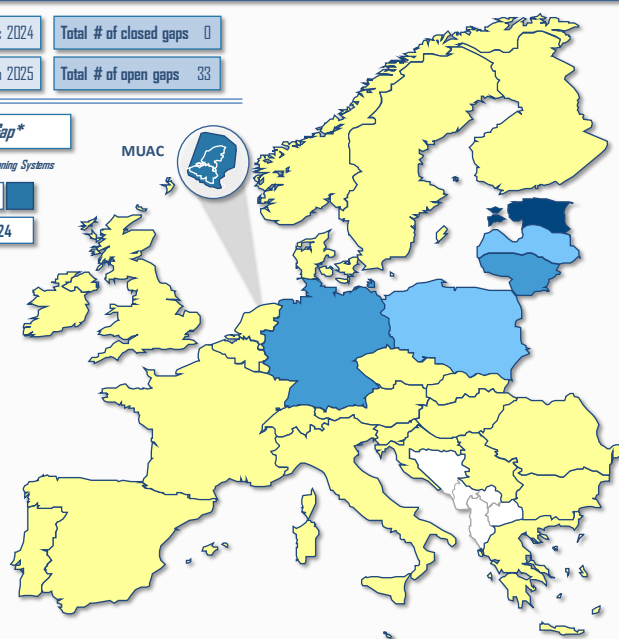


Chart Key - Implementation Status

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

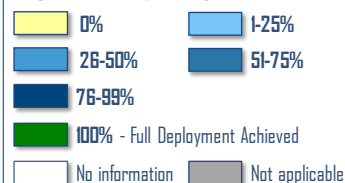
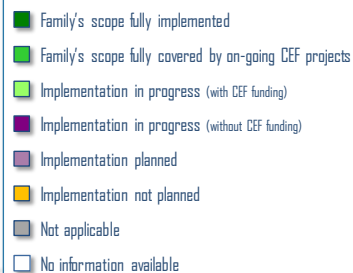


Chart Key per Stakeholders



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 2024				
Belgium	0%	0%	100%	Dec 2024				
Bulgaria	0%	100%	0%	Nov 2020				
Croatia	0%	100%	0%	Dec 2024				
Cyprus	0%	0%	100%	-				
Czech Republic	0%	40%	60%	Dec 2024				
Denmark	0%	0%	100%	Dec 2024				
Estonia	80%	10%	10%	Dec 2020				
Finland	0%	100%	0%	Dec 2024				
France	0%	20%	80%	Dec 2024				
Germany	30%	20%	50%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	100%	0%	Dec 2024				
Italy	0%	100%	0%	Dec 2024				
Latvia	10%	70%	20%	Dec 2024				
Lithuania	40%	60%	0%	Dec 2024				
Luxembourg	0%	0%	100%	-				
Malta	0%	10%	90%	-				
MUAC	60%	40%	0%	Dec 2024				
Netherlands	0%	90%	10%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	20%	60%	20%	Dec 2024				
Portugal	0%	100%	0%	Dec 2024				
Romania	0%	0%	100%	-				
Serbia	0%	20%	80%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	20%	80%	-				
Spain	0%	30%	70%	Dec 2024				
Sweden	0%	90%	10%	Dec 2022				
Switzerland	0%	100%	0%	-				
United Kingdom	0%	100%	0%	Dec 2024				

H

5.4.1 Upgrade / Implement Meteorological Information Exchange system / service

Expected completion year Dec 2024

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

10%

90%

0%

Dec 2024

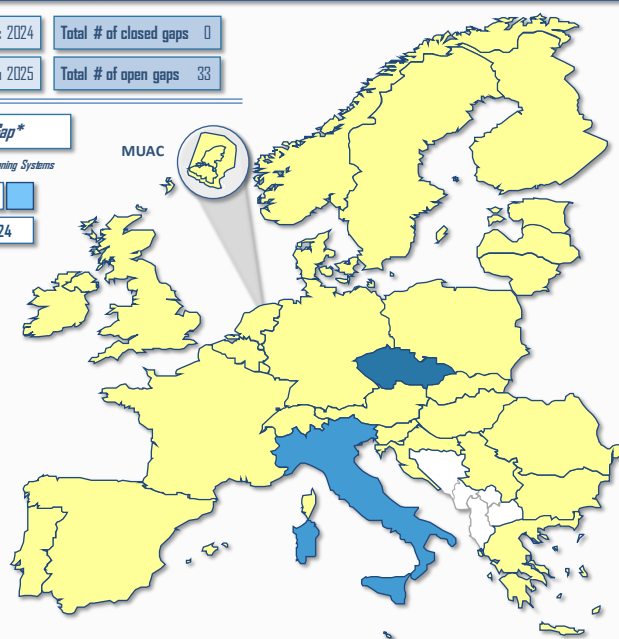


Chart Key - Implementation Status

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

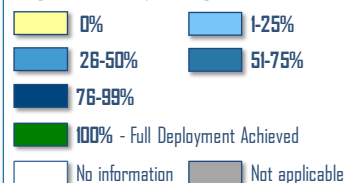
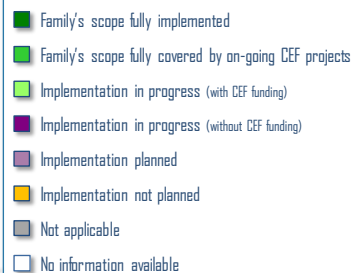


Chart Key per Stakeholders



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 2024				
Belgium	0%	45%	55%	Dec 2024				
Bulgaria	0%	0%	100%	-				
Croatia	0%	90%	10%	Dec 2024				
Cyprus	0%	0%	100%	-				
Czech Republic	65%	35%	0%	Dec 2024				
Denmark	0%	60%	40%	Dec 2024				
Estonia	0%	70%	30%	Dec 2024				
Finland	0%	90%	10%	Dec 2024				
France	0%	100%	0%	Dec 2024				
Germany	0%	100%	0%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	75%	25%	Dec 2024				
Ireland	0%	100%	0%	Dec 2024				
Italy	50%	50%	0%	Dec 2020				
Latvia	0%	90%	10%	Dec 2024				
Lithuania	0%	60%	40%	Dec 2024				
Luxembourg	0%	55%	45%	Dec 2024				
Malta	0%	0%	100%	-				
MUAC	0%	100%	0%	Dec 2024				
Netherlands	0%	100%	0%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	0%	100%	0%	Dec 2024				
Portugal	0%	100%	0%	Dec 2019				
Romania	0%	35%	65%	Dec 2024				
Serbia	0%	0%	100%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	20%	80%	-				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	100%	0%	Dec 2024				
Switzerland	0%	100%	0%	-				
United Kingdom	0%	70%	30%	Dec 2023				

H

5.5.1 Upgrade / Implement Cooperative Network Information Exchange system/service

Expected completion year Dec 2024

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

80% 20% 0% Dec 2020

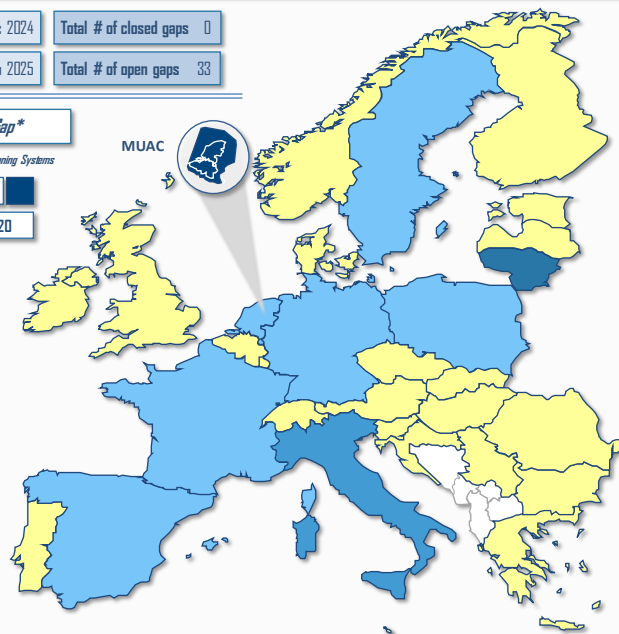


Chart Key – Implementation Status

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

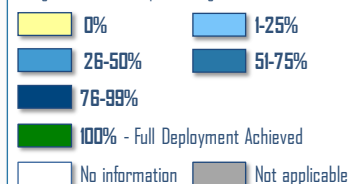
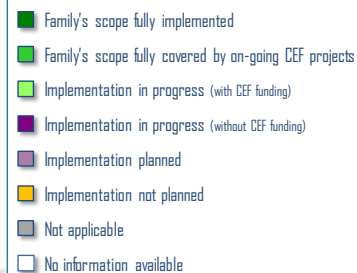


Chart Key per Stakeholders



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%	0%	100%	Dec 2024				
Belgium	0%	100%	0%	Dec 2024				
Bulgaria	0%	0%	100%	-				
Croatia	0%	100%	0%	Dec 2024				
Cyprus	0%	0%	100%	-				
Czech Republic	0%	100%	0%	Dec 2024				
Denmark	0%	100%	0%	Dec 2024				
Estonia	0%	0%	100%	Dec 2024				
Finland	0%	100%	0%	Dec 2024				
France	25%	75%	0%	Dec 2024				
Germany	20%	80%	0%	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	70%	15%	15%	Dec 2021				
Luxembourg	0%	25%	75%	Dec 2024				
Malta	0%	10%	90%	Dec 2020				
MUAC	80%	20%	0%	Dec 2024				
Netherlands	5%	95%	0%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	20%	70%	10%	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%	95%	0%	Dec 2024				
Sweden	10%	5%	85%	Dec 2024				
Switzerland	0%	0%	100%	-				
United Kingdom	0%	100%	0%	Dec 2024				

H

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

Expected completion year Dec 2024

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

60%

40%

0%

Dec 2020

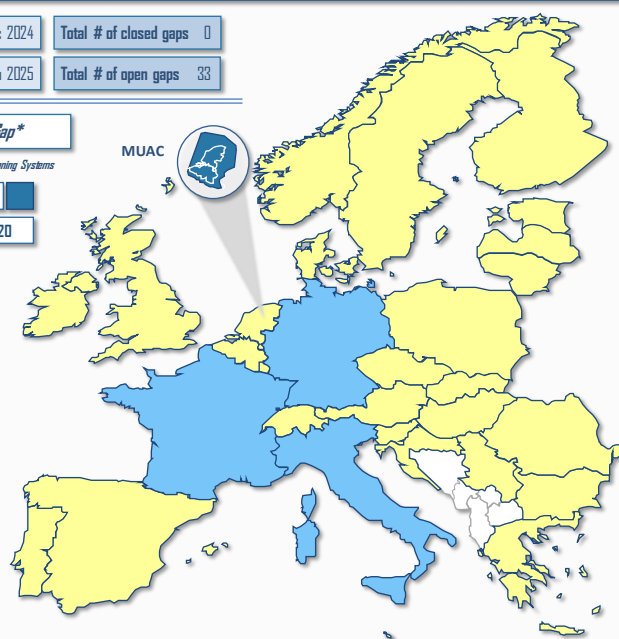


Chart Key - Implementation Status

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

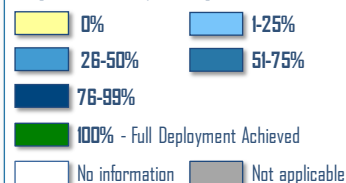
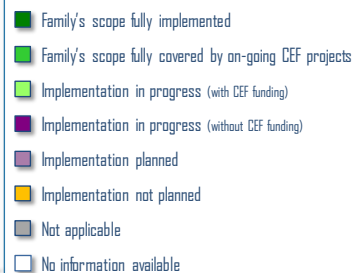


Chart Key per Stakeholders



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 2024				
Belgium	0%	0%	100%	-				
Bulgaria	0%	0%	100%	-				
Croatia	0%	100%	0%	Dec 2024				
Cyprus	0%	0%	100%	-				
Czech Republic	0%	75%	25%	Nov 2020				
Denmark	0%	0%	100%	Dec 2024				
Estonia	0%	0%	100%	-				
Finland	0%	100%	0%	Dec 2024				
France	15%	85%	0%	Dec 2024				
Germany	25%	75%	0%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	100%	0%	Dec 2024				
Ireland	0%	20%	80%	Dec 2024				
Italy	15%	85%	0%	Dec 2024				
Latvia	0%	0%	100%	Dec 2024				
Lithuania	0%	100%	0%	Dec 2024				
Luxembourg	0%	0%	100%	Dec 2024				
Malta	0%	0%	100%	-				
MUAC	60%	0%	40%	Mar 2020				
Netherlands	0%	100%	0%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	0%	100%	0%	Dec 2024				
Portugal	0%	0%	100%	-				
Romania	0%	0%	100%	-				
Serbia	0%	0%	100%	-				
Slovak Republic	0%	100%	0%	Dec 2023				
Slovenia	0%	0%	100%	-				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	100%	0%	Dec 2024				
Switzerland	0%	0%	100%	-				
United Kingdom	0%	100%	0%	Dec 2024				

M

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

Expected completion year Dec 2027

Total # of closed gaps 0

Family FOC date Jan 2025

Total # of open gaps 32

Network Manager

0% 0% 100% -

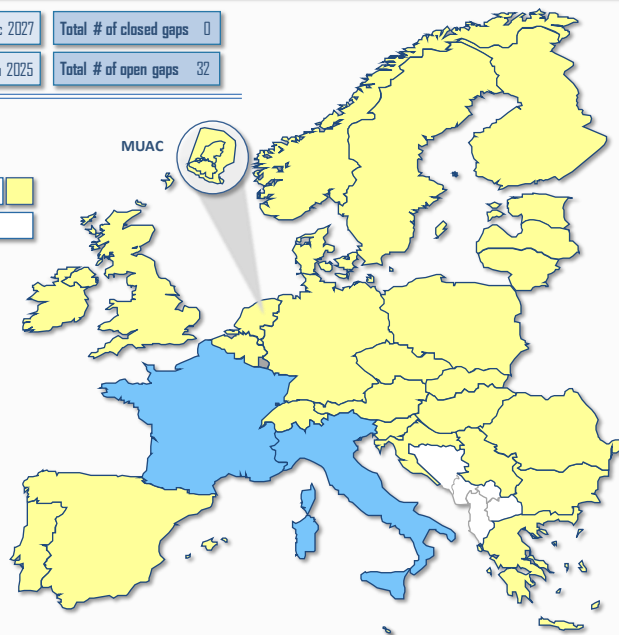


Chart Key – Implementation Status

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

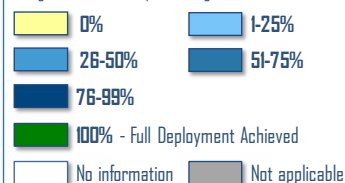
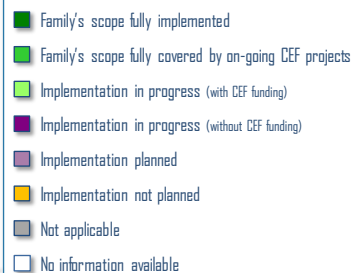


Chart Key per Stakeholders



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%	100%	0%	Dec 2027		
Greece	0%	100%	0%	Dec 2022		
Hungary	0%	100%	0%	Dec 2024		
Ireland	0%	0%	100%	Dec 2024		
Italy	10%	90%	0%	Dec 2024		
Latvia	0%	0%	100%	-		
Lithuania	0%	100%	0%	Dec 2024		
Luxembourg						
Malta	0%	0%	100%	-		
MUAC	0%	100%	0%	Dec 2024		
Netherlands	0%	100%	0%	Dec 2026		
Norway	0%	0%	100%	-		
Poland	0%	100%	0%	Dec 2024		
Portugal	0%	0%	100%	-		
Romania	0%	0%	100%	-		
Serbia	0%	0%	100%	-		
Slovak Republic	0%	0%	100%	-		
Slovenia	0%	0%	100%	-		
Spain	0%	100%	0%	Dec 2024		
Sweden	0%	100%	0%	Dec 2023		
Switzerland	0%	0%	100%	-		
United Kingdom	0%	100%	0%	-		

SWIM Services Implementation – Overview of deployment activities

While so far, the implementation progress of AF5, and in particular of SWIM services, has been slower than in other AFs, an increased speed can be observed over the last year.

Many operational stakeholders report ongoing or even concluded planning of SWIM service implementations, which are expected to transition to actual 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 (expected released fall 2019) have also matured, thus providing better grounds for SWIM implementation.

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

While the above-mentioned foundations provide a starting point for drafting implementation plans, currently missing details for some SWIM services, i.e. missing service descriptions/definitions, constitutes an obstacle to actual implementation.

Further service standardization is also required for this purpose. This can be achieved either through SDOs, e.g. EUROCAE, drafting standards or through *de facto* standardization by SWIM Governance.

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

- In general, Families 5.3.1, 5.4.1, 5.5.1 and 5.6.1 are being considered mature. This translates into more numerous and more concrete planning of implementation 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, which is SWIM compliant. Implementation initiatives in this Family are based on NM B2B services or the alternative NM access via the NM portal.
- Family 5.6.1 is mature for implementation and tendency is that most stakeholders have planned the implementation of the family
- Family 5.6.2 are lagging behind with regard to the planning coverage. Family 5.6.2 is mostly not even planned. This is due to the non-maturity or unavailability of the required industrialization material, i.e. the update of the EUROCAE ED-133 standard and the specification of the SWIM TI Blue Profile, both of which are not expected before 2020 earliest.

AF #6 – Initial Trajectory Information Sharing

H

6.1.1 ATN B1 based services in ATSP domain

Expected completion year Apr 2023

Total # of closed gaps 14

Family FOC date Feb 2018

Total # of open gaps 14



Chart Key – Implementation Status

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

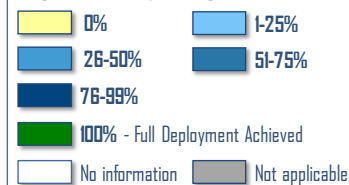
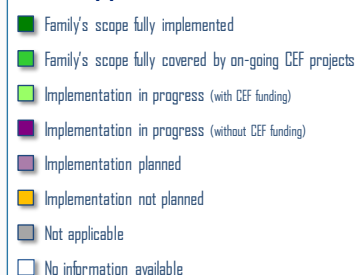


Chart Key per Stakeholders



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	95%	0%	5%	-		
Croatia	✓			✓		
Cyprus	20%	55%	25%	-		
Czech Republic	✓			✓		
Denmark	80%	0%	20%	-		
Estonia	✓			✓		
Finland	60%	0%	40%	-		
France	40%	60%	0%	Dec 2020		
Germany	✓			✓		
Greece	0%	100%	0%	-		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	60%	15%	25%	-		
Lithuania	85%	0%	15%	-		
Luxembourg						
Malta	20%	0%	80%	-		
MUAC	✓			✓		
Netherlands						
Norway	0%	40%	60%	Apr 2023		
Poland	✓			✓		
Portugal	20%	80%	0%	Nov 2020		
Romania	75%	0%	25%	-		
Slovak Republic	0%	65%	35%	Dec 2021		
Slovenia	80%	20%	0%	Dec 2019		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

For Cyprus, Finland, Greece, Ireland and Malta data refers to the information provided through the DLS questionnaire collected in 2018

M

6.1.2 ATN B2 based services in ATSP domain

Expected completion year Jun 2021

Total # of closed gaps 0

Family FOC date Jan 2025

Total # of open gaps 29

Network Manager

0% 0% 100% -

Canary Islands

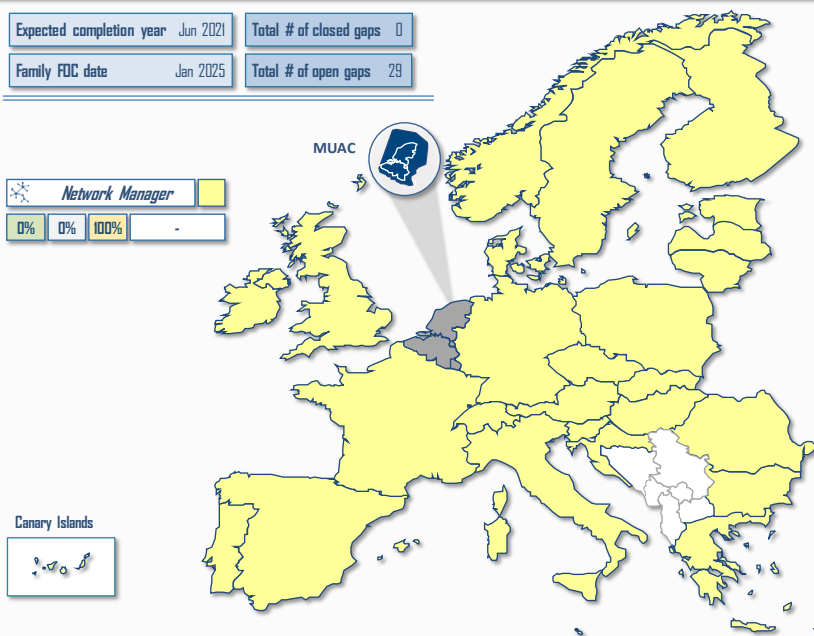


Chart Key – Implementation Status

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

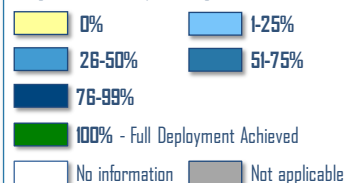
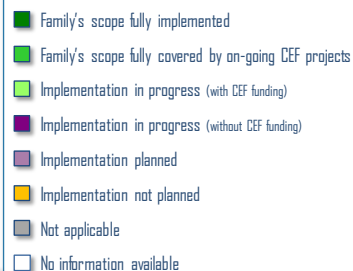


Chart Key per Stakeholders



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	90%	10%	0%	Jun 2021		
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%	-		

For Cyprus, Finland, Greece, Ireland and Malta data refers to the information provided through the DLS questionnaire collected in 2018

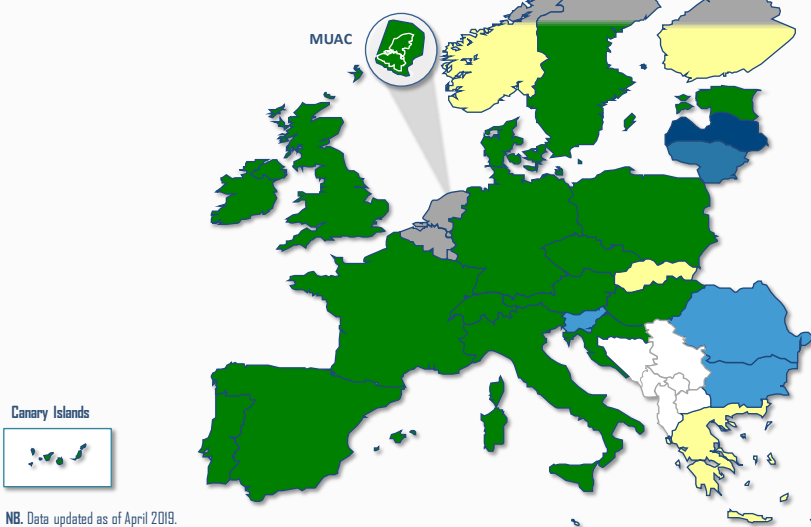
6.1.3 A/G and G/G Multi Frequency DL Network in defined European Service Areas (Country Level)

Expected completion year -

Total # of closed gaps 17

Family FOC date Dec 2022

Total # of open gaps 11



NB. Data updated as of April 2019.

Further information on the status of the Family implementation are reported in the following page.

Chart Key – Implementation Status

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

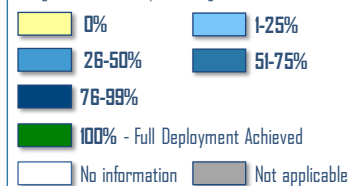
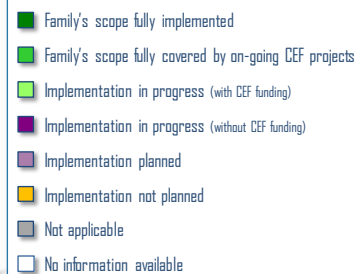


Chart Key per Stakeholders



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	50%	45%	5%	Jan 2020		
Croatia	✓			✓		
Cyprus	0%	0%	100%	-		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	0%	0%	100%	-		
France	✓			✓		
Germany	✓			✓		
Greece	0%	100%	0%	-		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	90%	10%	0%	Oct 2019		
Lithuania	60%	0%	40%	-		
Luxembourg						
Malta	0%	0%	100%	-		
MUAC	✓			✓		
Netherlands						
Norway	0%	90%	10%	Apr 2023		
Poland	✓			✓		
Portugal	✓			✓		
Romania	45%	0%	55%	-		
Slovak Republic	0%	90%	10%	Jun 2021		
Slovenia	50%	0%	50%	-		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

For Cyprus, Finland, Greece, Ireland and Malta data refers to the information provided through the DLS questionnaire collected in 2018

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 (Model D).

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"*¹³, 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" is 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 manufactory industries

In the 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 March 2019.

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).

¹³ 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. With respect to the number of commercial aircraft, number of departures/arrivals and market share of the respondents, the outcome of the surveys reflects a representative snap-shot of the current state-of-play on Civil Airspace Users' side.

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.

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 that – according to the information provided within the dedicated SDM survey – is already compliant with the PCP regulatory framework, in terms of aircraft equipage, operational approval and flight crew trained.

Such input is considered as resulting into a representative snap-shot 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. It is worth noting that the percentage of equipped aircraft is steadily improving over the years, demonstrating a synchronized approach between ground and airborne side, enabling the achievement of operational improvements and the realization of the associated performance benefits.

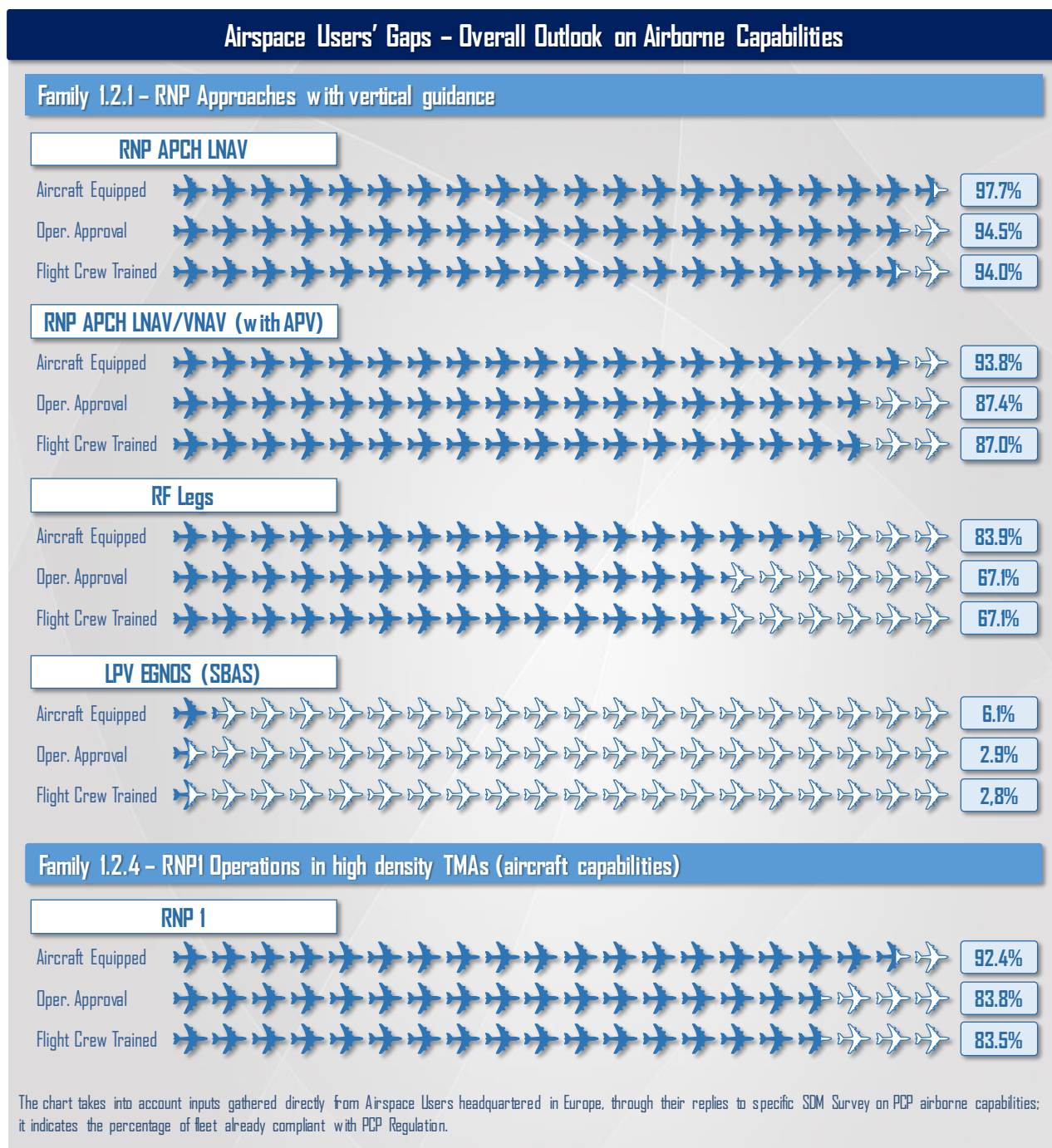
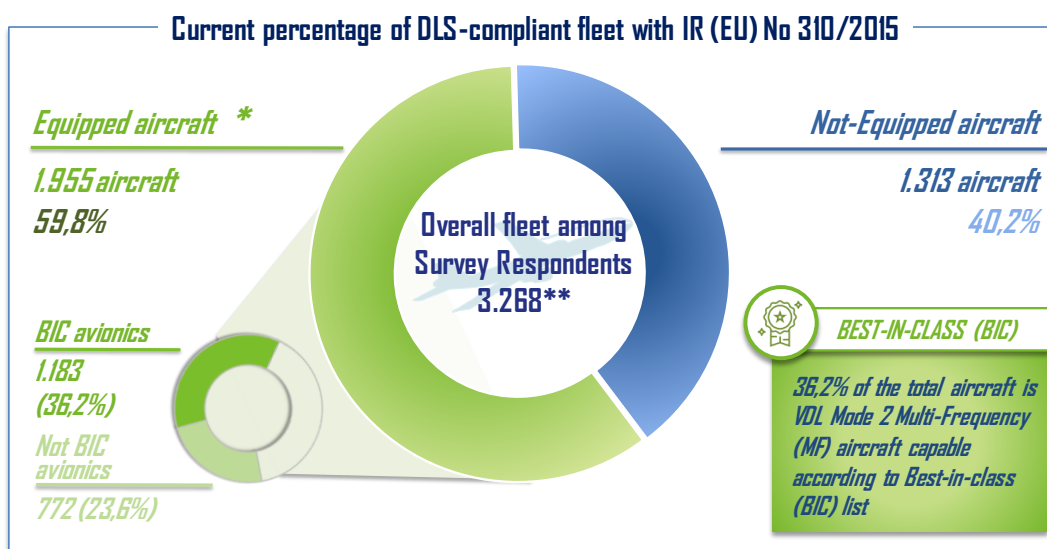


Figure 21 - Airspace Users' Gaps - Overall Outlook on Airborne Capabilities

DLS Update – Airborne domain equipage rate

Due to the limited number of feedbacks received within the 2019 DP monitoring exercise (7 AUs -1179 aircraft), not allowing the definition of a significant sample, below it is provided the airborne implementation status, based on the data gathered from the SDM survey compiled between July and September 2018 by Airspace Users headquartered in EU/ECAC area (feedback from 44 AUs):

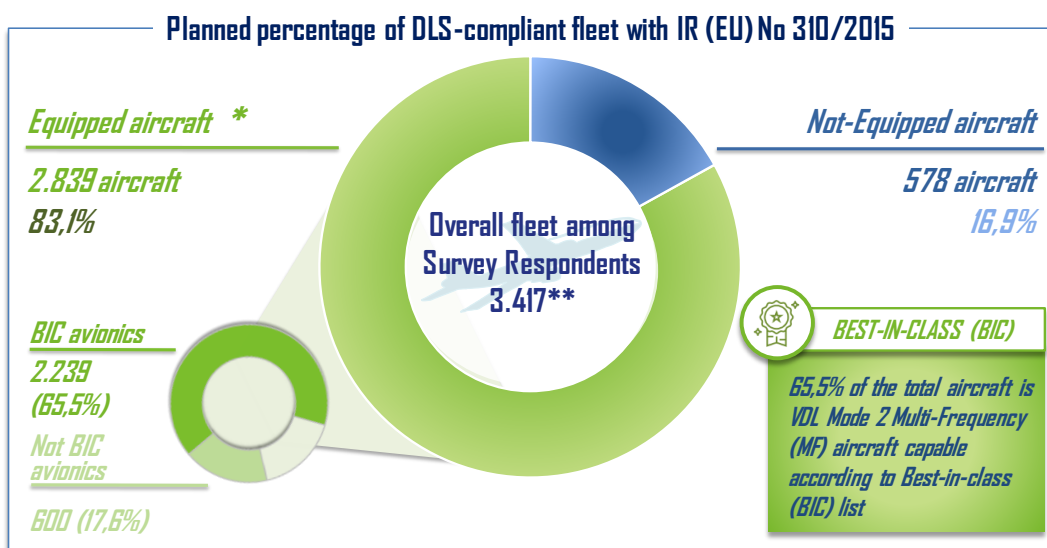


* Single, MF and BIC equipped avionics in line with DLS regulation

**181 Business Airlines aircraft excluded - sample not significant for the analysis

Figure 22 – Current Percentage of DLS-Compliant fleet with IR (EU) No 310/2015

In the same way, below it is provided the airborne implementation planned status (by 2020), based on the data gathered from the SDM survey compiled between July and September 2018 by Airspace Users headquartered in EU/ECAC area (feedback from 44 AUs):



* Single, MF and BIC equipped avionics in line with DLS regulation

**173 Business Airlines aircraft excluded - sample not significant for the analysis

Figure 23 – Planned Percentage of DLS-Compliant fleet with IR (EU) No 310/2015

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 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 Chapter 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;

Current status of implementation	Already implemented	In progress / Planned	Not planned
	#	#	#
- Status of coverage for each gap associated to a Family of the Deployment Programme, encompassing the following percentages and information:

Family	Gap coverage			Compl. Year	CEF Projects
#	70%	20%	10%	Jan 2020	Yes

 - o *Current percentage of implementation*, i.e. what has been already deployed (green box);
 - o *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);
 - o *Not planned*, i.e. the percentage of the Family for which no specific plan has been elaborated (yellow box).
 - o *Expected date of completion* of the Family deployment;
 - o *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.



Austria

Number of gaps

41

Current status of implementation

Already implemented

15

In progress / Planned

23

Not planned

3

ATM Functionality # 1				
Family	Gap coverage		Compl. Year	CEF Projects
1.1.1	✓		✓	
1.1.2	0%	75%	25%	Dec 2023
1.2.1	✓		✓	
1.2.2	0%	100%	0%	Dec 2020
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	55%	45%	0%	Dec 2020
2.1.4	0%	100%	0%	Dec 2021
2.2.1	✓		✓	
2.3.1	0%	100%	0%	Dec 2024
2.4.1	0%	100%	0%	Dec 2023
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	95%	5%	0%	Dec 2023
3.2.1	75%	0%	25%	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	70%	30%	0%	Dec 2019
4.2.4	0%	100%	0%	Dec 2021
4.3.1				
4.3.2	0%	100%	0%	Dec 2021
4.4.2	0%	100%	0%	Dec 2024

ATM Functionality # 5				
Family	Gap coverage		Compl. Year	CEF Projects
5.1.1	✓		✓	
5.1.2	65%	35%	0%	Dec 2020
5.2.1	✓		✓	
5.2.2	0%	70%	30%	Dec 2024
5.2.3	0%	60%	40%	Dec 2024
5.3.1	0%	100%	0%	Dec 2024
5.4.1	0%	100%	0%	Dec 2024
5.5.1	0%	0%	100%	Dec 2024
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	✓		✓	
6.1.4				
6.1.5				

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

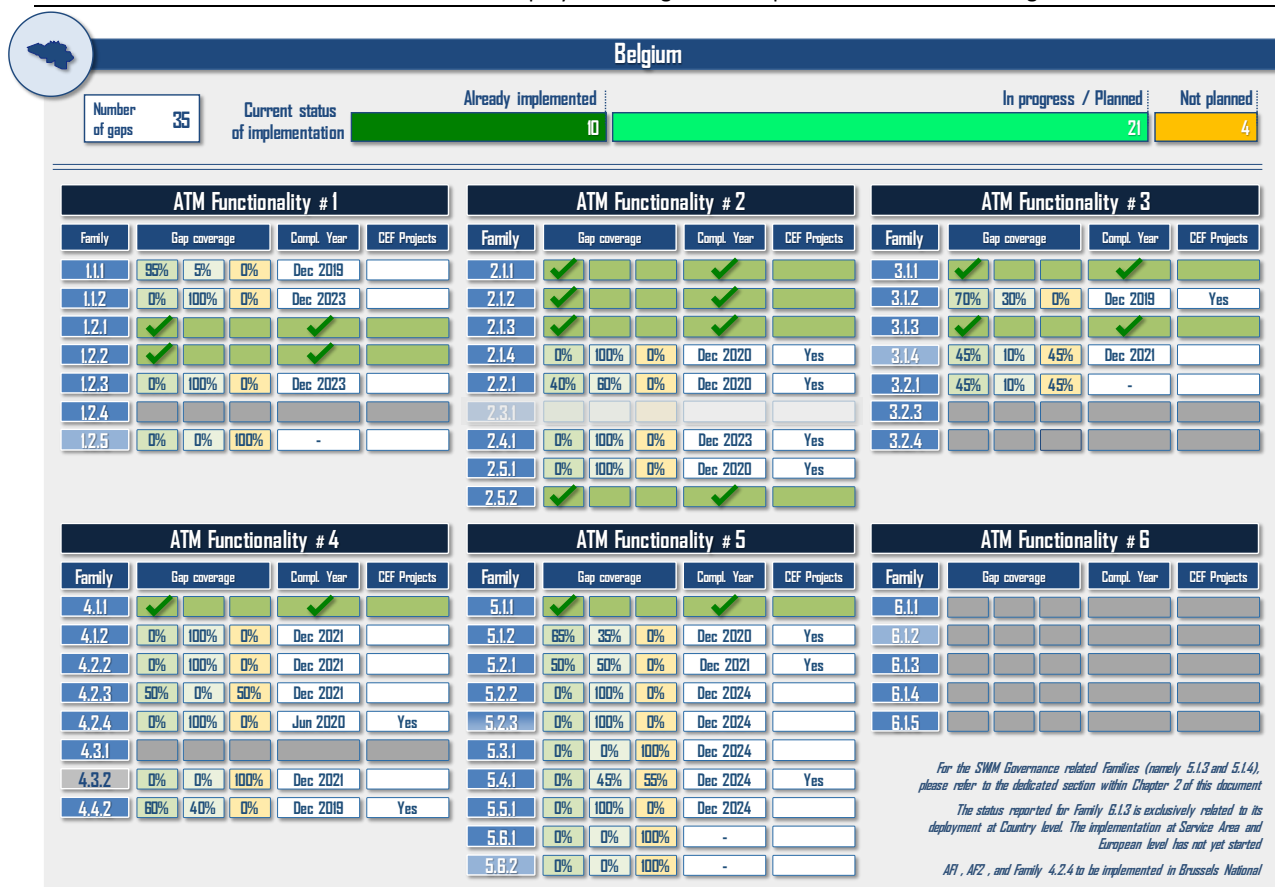
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

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 (ADD)	Austro Control	2016_008_AF4	Flight evolution and upgrade of interfaces with NM stakeholders	Austrian Airlines
✓	#007AF1	Performance Based Navigation (PBN) implementation in Vienna (LOWW)	Austro Control	2016_010_AF4	VHF Concept Implementation 2020	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	Flight 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	New PBN Stakeholders contribution for the procurement and deployment of New PBNs	Austro Control	2017_004_AF1	Flight Crew Training for RNP 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	ADP-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 (V) 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 35Current status
of implementation

Already implemented

10

In progress / Planned

21

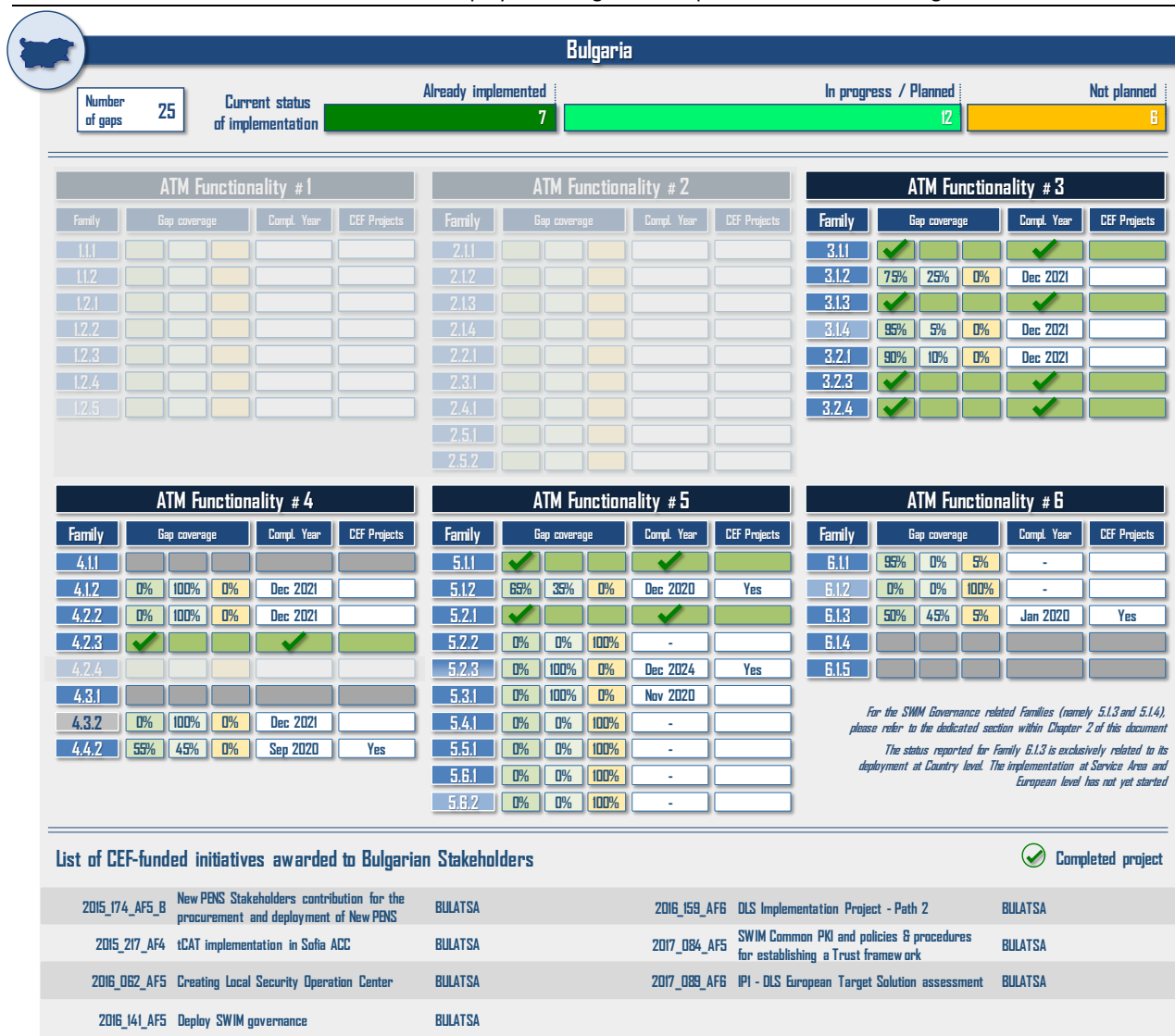
Not planned

4

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 / Netw ork Manager
	#014AF5	MPLS WAN Project	Belgocontrol	2015_174_AF5_A	New PNS Stakeholders contribution for the procurement and deployment of New PNS	ECTL / Netw ork Manager, ECTL / MUAC, Belgocontrol
	#015AF3	LARA integration in CANAC 2	Belgocontrol	2015_174_AF5_B	New PNS Stakeholders contribution for the procurement and deployment of New PNS	ECTL / Netw ork Manager
	#016AF5	Initial WXXM Implementation on Belgocontrol systems	Belgocontrol	2015_196_AF1_A	XMAN - Cross-center 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 / Netw ork Manager
	#022AF2	Vehicle Tracking System (VTS)	Brussels National	2015_244_AF2	APOC implementation	Brussels National
	#073AF5	SWIM Common Components	ECTL / Netw ork Manager	2015_245_AF2	AIRSTAT	Brussels National
	#077AF4	Interactive Rolling NDP	ECTL / Netw ork Manager	2015_319_AF5	SWIM Common Components - Phase 2	ECTL / Netw ork Manager
	#078AF4	ATFCM measures (STAM)	ECTL / Netw ork Manager	2016_023_AF1	XMAN - Cross-center arrival management - Part 2	ECTL / MUAC
	#079AF4	Trajectory accuracy and traffic complexity	ECTL / Netw ork Manager	2016_027_AF5	European Deployment Roadmap for Flight Object	ECTL / Netw ork Manager, ECTL / MUAC
	#080AF3	ASM and AFUA Implementation	ECTL / Netw ork Manager	2016_100_AF4	Provision of BPPL data and initial FF-ICE/ 1	ECTL / Netw ork Manager
	#081AF3	NM DCT/FRA Implementation and support	ECTL / Netw ork Manager	2016_129_AF5	New PNS Stakeholders contribution for the procurement and deployment of New PNS	ECTL / Netw ork Manager
	#082AF5	SWIM compliance of NM systems	ECTL / Netw ork Manager	2016_131_AF4	AOP-NDP Integration - Extended Implementation	ECTL / Netw ork Manager, Brussels National
	#083AF1	AMAN extended to en-route	ECTL / Netw ork Manager	2016_133_AF3	NM system management of real time airspace data	ECTL / Netw ork Manager
	2015_021_AF4	Slot Manager for PCP airports	Brussels Airlines	2016_134_AF3	Implementation of rolling ASM/ATFCM	ECTL / Netw ork Manager
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	EUMETNET BG, ECTL / Netw ork Manager	2016_135_AF3	Implementation of pre-defined airspace configuration	ECTL / Netw ork Manager
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	EUMETNET BG, ECTL / Netw ork Manager	2016_141_AF5	Deploy SWIM governance	EUMETNET BG, Eurocontrol
	2015_069_AF5	European MET Information Exchange (MET-GATE)	EUMETNET BG, ECTL / Netw ork Manager	2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Brussels National
	2015_101_AF1	Netw ork Support to extended Arrival Management	ECTL / Netw ork Manager	2016_159_AF6	DLS Implementation Project - Path 2	ECTL / MUAC
	2015_105_AF4	Interactive Rolling Netw ork Operations Planning	ECTL / Netw ork 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 / Netw ork Manager	2017_037_AF2	TBS deployment at Paris CDG	ECTL
	2015_107_AF3	NM Systems upgrades in support of DCTs and FRA	ECTL / Netw ork Manager	2017_052_AF4	AOP-NDP Integration - Extended Implementation	ECTL / Netw ork Manager
	2015_110_AF4	STAM Phase 2 (NM)	ECTL / Netw ork Manager	2017_053_AF3	Implementation of rolling ASM/ATFCM	ECTL / Netw ork Manager
	2015_112_AF5	Integrate the Aeronautical Information Exchange Services in NM Systems	ECTL / Netw ork Manager	2017_054_AF4	Netw ork Collaborative Management	ECTL / Netw ork Manager
	2015_113_AF4	AOP-NDP Integration	ECTL / Netw ork Manager	2017_055_AF3	NM Systems upgrades in support of FRA	ECTL / Netw ork Manager
	2015_114_AF4	Implementation of Target Times for ATFCM purposes (NM)	ECTL / Netw ork Manager	2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	ECTL / Netw ork Manager
	2015_115_AF4	Traffic Complexity Management	ECTL / Netw ork Manager	2017_058_AF2	ITWP4LOWW (Integrated Tower Working Position for Vienna Schwechat)	ECTL
	2015_117_AF5	Improve NM SWIM Infrastructure	ECTL / Netw ork Manager	2017_062_AF4	Traffic Complexity Assessment and Simulations Tool - TCAST	Belgocontrol
	2015_141_AF5	Improve NM Flight Information Exchange Services	ECTL / Netw ork Manager	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ECTL, Belgocontrol
	2015_143_AF5	Improve Cooperative Netw ork Information Exchange Services	ECTL / Netw ork Manager	2017_089_AF6	IP1 - DLS European Target Solution assessment	ECTL / Netw ork Manager
	2015_145_AF5_A	AIM Deployment Toolkit	ECTL / Netw ork Manager			





Croatia

Number
of gaps

26

Current status
of implementation

Already implemented

7

In progress / Planned

17

Not planned

2

ATM Functionality #1					ATM Functionality #2					ATM Functionality #3				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
1.1.1					2.1.1					3.1.1	✓		✓	
1.1.2					2.1.2					3.1.2	50%	50%	0%	Dec 2021
1.2.1					2.1.3					3.1.3	✓		✓	
1.2.2					2.1.4					3.1.4	90%	10%	0%	Dec 2021
1.2.3					2.2.1					3.2.1	65%	5%	30%	Dec 2021
1.2.4					2.3.1					3.2.3	✓		✓	
1.2.5					2.4.1					3.2.4	✓		✓	
					2.5.1									
					2.5.2									
ATM Functionality #4					ATM Functionality #5					ATM Functionality #6				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
4.1.1	✓		✓		5.1.1	✓		✓		6.1.1	✓		✓	
4.1.2	0%	100%	0%	Dec 2021	5.1.2	65%	35%	0%	Dec 2020	6.1.2	0%	0%	100%	-
4.2.2	0%	100%	0%	Dec 2021	5.2.1	0%	100%	0%	Dec 2019	6.1.3	✓		✓	
4.2.3	75%	25%	0%	Dec 2021	5.2.2	0%	100%	0%	Dec 2024	6.1.4				
4.2.4					5.2.3	0%	100%	0%	Dec 2024	6.1.5				
4.3.1					5.3.1	0%	100%	0%	Dec 2024					
4.3.2	0%	100%	0%	Dec 2021	5.4.1	0%	90%	10%	Dec 2024					
4.4.2	0%	100%	0%	Dec 2021	5.5.1	0%	100%	0%	Dec 2024					
					5.6.1	0%	100%	0%	Dec 2024					
					5.6.2	0%	0%	100%	-					

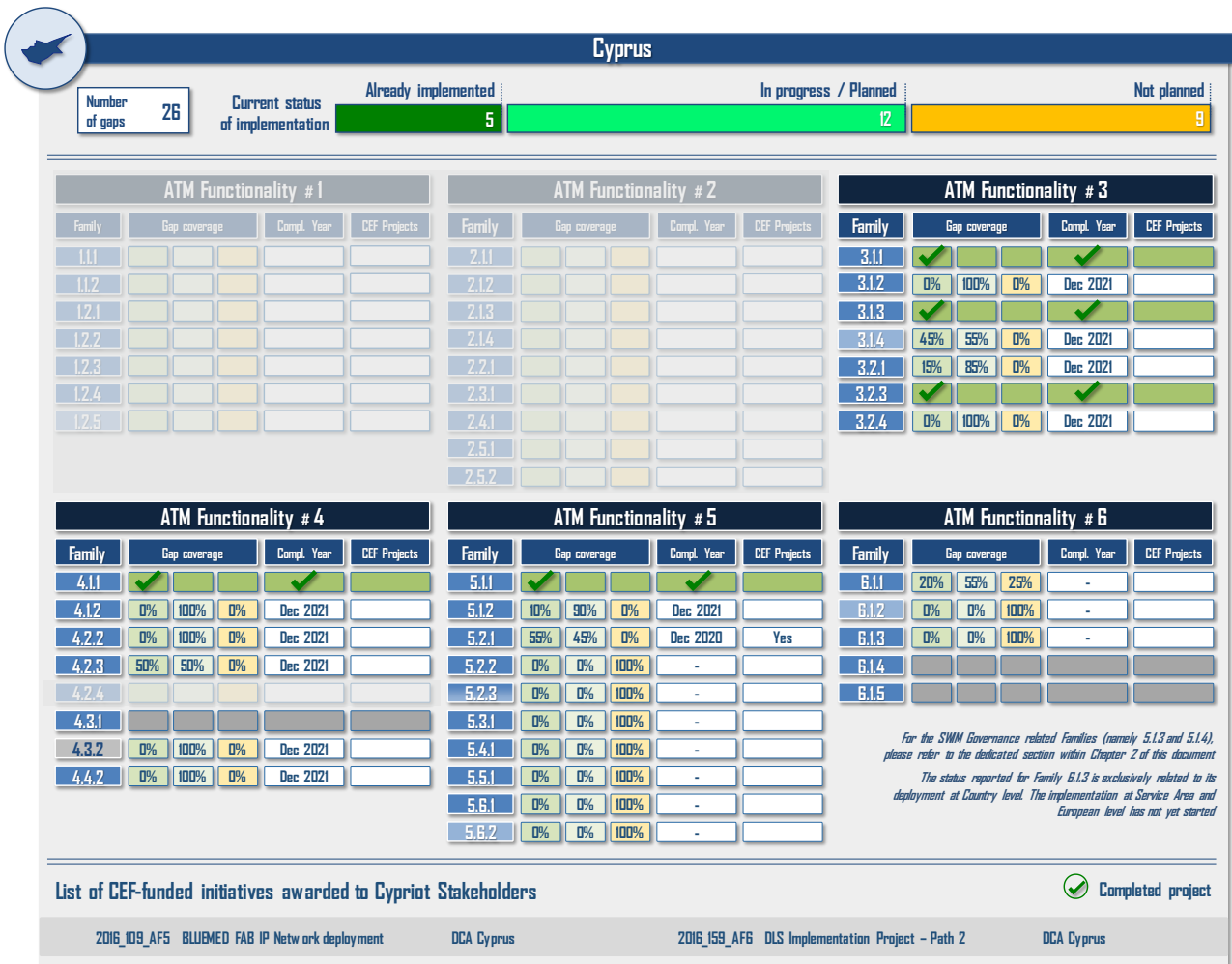
For the SWM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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_AFS	Modernisation of IP based G/G Data Network in CCL - CaRT/iWAN-NG	Croatia Control	2016_044_AFS	Modernization of IP based G/G Data Network in CCL - CaRT/iWAN-NG - Phase II	Croatia Control
✓	2015_049_AFS	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_AFS	DLS Implementation Project - Path 2	Croatia Control
	2015_051_AF3	VARP - VoIP ATC Radio Project	Croatia Control	✓ 2016_161_AFS	DLS Implementation Project - Path 1 "Ground" stakeholders	Croatia Control
	2015_174_AFS_B	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	Croatia Control	2017_086_AFS	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_AFS	IPI - DLS European Target Solution assessment	Croatia Control
✓	2016_027_AFS	European Deployment Roadmap for Right Object Interoperability	Croatia Control			







Denmark

Number of gaps 41

Current status of implementation

Already implemented

14

In progress / Planned

23

Not planned

4

ATM Functionality # 1						ATM Functionality # 2						ATM Functionality # 3					
Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage
1.1.1	✓		✓	2.1.1	✓		✓	3.1.1	✓		✓	3.1.1	✓		✓	3.1.1	✓
1.1.2	70%	0%	30%	2.1.2	✓		✓	3.1.2	30%	33%	33%	3.1.2	30%	33%	33%	-	
1.2.1	50%	50%	0%	2.1.3	✓		✓	3.1.3	✓		✓	3.1.3	✓		✓		
1.2.2	✓		✓	2.1.4	0%	90%	10%	3.1.4	✓		✓	3.1.4	✓		✓		
1.2.3	35%	65%	0%	2.2.1	✓		✓	3.2.1	70%	10%	20%	3.2.1	70%	10%	20%	Dec 2021	Yes
1.2.4				2.3.1	0%	100%	0%	3.2.3	✓		✓	3.2.3	✓		✓		
1.2.5				2.4.1	0%	70%	30%	3.2.4	✓		✓	3.2.4	✓		✓		
				2.5.1	0%	70%	30%										
				2.5.2	0%	100%	0%										
ATM Functionality # 4						ATM Functionality # 5						ATM Functionality # 6					
Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage
4.1.1	✓		✓	5.1.1	✓		✓	6.1.1	80%	0%	20%	6.1.1	80%	0%	20%	-	
4.1.2	0%	100%	0%	5.1.2	65%	35%	0%	6.1.2	0%	0%	100%	6.1.2	0%	0%	100%	-	
4.2.2	0%	100%	0%	5.2.1	70%	30%	0%	6.1.3	✓		✓	6.1.3	✓		✓		
4.2.3	✓		✓	5.2.2	0%	60%	40%	6.1.4				6.1.4					
4.2.4	0%	100%	0%	5.2.3	0%	100%	0%	6.1.5				6.1.5					
4.3.1				5.3.1	0%	0%	100%										
4.3.2	0%	100%	0%	5.4.1	0%	60%	40%										
4.4.2	95%	5%	0%	5.5.1	0%	100%	0%										
				5.6.1	0%	0%	100%										
				5.6.2	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

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





Finland

Number of gaps

26

Current status of implementation

Already implemented

5

In progress / Planned

19

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	70% 0% 30%	Dec 2020	Yes
3.1.2	0% 100% 0%	Dec 2020	Yes
3.1.3	✓	✓	
3.1.4	90% 10% 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	65% 35% 0%	Dec 2020	Yes
5.2.1	60% 40% 0%	Dec 2024	Yes
5.2.2	0% 100% 0%	Dec 2024	Yes
5.2.3	0% 100% 0%	Dec 2024	
5.3.1	0% 100% 0%	Dec 2024	
5.4.1	0% 90% 10%	Dec 2024	Yes
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	60% 0% 40%	-	
6.1.2	0% 0% 100%	-	
6.1.3	0% 0% 100%	-	
6.1.4			
6.1.5			

For the SWM 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 1)	Finavia	✓ 2016_027_AFS	European Deployment Roadmap for Flight Object	ANS Finland
2015_025_AFS_A	Sub-regional SWIM MET deployment to support NEFA (part A)	Finnish Meteorological Institute	2016_141_AFS	Deploy SWIM governance	ANS Finland
2015_068_AFS	European Harmonised Forecasts of Adverse Weather	Finnish Meteorological Institute	2016_159_AFS	OLS Implementation Project - Path 2	ANS Finland
2015_174_AFS_A	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	Finavia	2017_084_AFS	SWIM Common PKI and policies & procedures for establishing a Trust framework	ANS Finland
2015_227_AFS_A	Borealis FRA Implementation (Part 2)	Finavia			



France

Number
of gaps

69

Current status
of implementation

Already implemented

22

In progress / Planned

42

Not planned

5

ATM Functionality # 1

Family	Paris Charles de Gaulle					Paris Orly					Nice Côte 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	50%	35%	15%	Dec 2023	Yes	50%	30%	20%	Dec 2023	Yes	50%	5%	45%	Dec 2023	Yes
1.2.1	✓			✓		90%	10%	0%	Dec 2022		✓			✓	
1.2.2	40%	60%	0%	Dec 2021	Yes	40%	60%	0%	Dec 2021	Yes	40%	60%	0%	Dec 2021	Yes
1.2.3	0%	30%	70%	-		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 Côte d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		80%	20%	0%	Dec 2019	Yes
2.1.2	✓			✓		✓			✓		95%	5%	0%	Dec 2019	Yes
2.1.3	✓			✓		✓			✓		0%	100%	0%	Mar 2020	Yes
2.1.4	0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2020	Yes
2.2.1	✓			✓		✓			✓		✓			✓	
2.3.1						0%	0%	100%	-						
2.4.1	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	-	Yes
2.5.2	✓			✓		✓			✓		30%	0%	70%	-	Yes

ATM Functionality # 4 (Airport Gaps)

Family	Paris Charles de Gaulle					Paris Orly					Nice Côte d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	100%	0%	Dec 2021	Yes	0%	100%	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	60%	40%	0%	Dec 2019	
3.2.1	15%	55%	30%	Dec 2023	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2023	Yes

ATM Functionality # 4 (Country Gaps)

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	25%	75%	0%	Dec 2021	Yes
4.2.2	0%	0%	100%	-	
4.2.3	50%	50%	0%	Dec 2021	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	85%	15%	0%	Dec 2019	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	65%	35%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	20%	80%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	25%	75%	0%	Dec 2024	Yes
5.6.1	15%	85%	0%	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	40%	60%	0%	Dec 2020	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

For the SWM 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
69Current status
of implementation

Already implemented

22

In progress / Planned

42

Not planned

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	4Right 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 (CE2D16)	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 BPPL 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
	#051AFa	RNP Approaches at CDG Airport with vertical guidance (Part A)	DSNA, Air France		2016_159_AF6	DLS Implementation Project - Path 2	DSNA, ESSP
	#051AFb	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-Right 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 I	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_Phase_I	4-Right Deployment in PARIS Area - Phase I	DSNA		2017_035_AF5	Deploying SWIM infrastructure at DSNA	DSNA
	2015_062_AF3_Phase_II	4-Right 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 (POS) 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 Upgrade for 4Right compliance	French MOD
	2015_135_AF2	CDG and ORLY - Initial Airport Operational Plan (ADP)	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, DSNA, ESSP, SITA IT Services France, Thales
	2015_174_AF5_A	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	Aéroports De Paris, DSNA				



Germany

Number of gaps 85

Current status of implementation

Already implemented 25

In progress / Planned 55

Not planned 5

ATM Functionality # 1

Family	Berlin Brandenburg Airport					Düsseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects		
1.1	95%	5%	0%	Oct 2020	Yes	✓			✓		✓			✓		✓			✓	
1.1.2	10%	90%	0%	Dec 2023	Yes	10%	80%	10%	Dec 2023	Yes	75%	25%	0%	Dec 2023	Yes	90%	10%	0%	Dec 2021	Yes
1.2	0%	100%	0%	Dec 2023		50%	50%	0%	Dec 2023		35%	65%	0%	Dec 2023		✓		✓		
1.2.2	✓			✓		✓			✓		✓			✓		✓		✓		
1.2.3	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	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					Düsseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF 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	0%	90%	10%	-		20%	70%	10%	Dec 2020	Yes	0%	90%	10%	Dec 2020	Yes	0%	90%	10%	Dec 2020	Yes
2.2.1	30%	70%	0%	Dec 2020		✓			✓		30%	70%	0%	Dec 2020	Yes	✓			✓	
2.3.1						0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	-	Yes	0%	100%	0%	-	Yes	0%	100%	0%	Dec 2020	Yes
2.5.2	0%	100%	0%	Dec 2020		0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2020	Yes	50%	50%	0%	Dec 2020	

ATM Functionality # 4 (Airport Gaps)

Family	Berlin Brandenburg Airport					Düsseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects			Gap coverage	Compl. Year	DEF Projects		
4.2.4	0%	90%	10%	Oct 2021		0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2021	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	DEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2021	Yes
3.1.3	70%	30%	0%	Dec 2021	Yes
3.1.4	10%	90%	0%	Dec 2020	Yes
3.2.1	70%	15%	15%	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	DEF 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%	-	Yes
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	65%	35%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	DEF Projects
5.1.1	✓			✓	
5.1.2	65%	35%	0%	Dec 2019	
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2021	Yes
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	30%	20%	50%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	20%	80%	0%	Dec 2024	Yes
5.6.1	25%	75%	0%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2027	

ATM Functionality # 6

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

For the SWM 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 85Current status
of implementation

Already implemented

25

In progress / Planned

55

Not planned

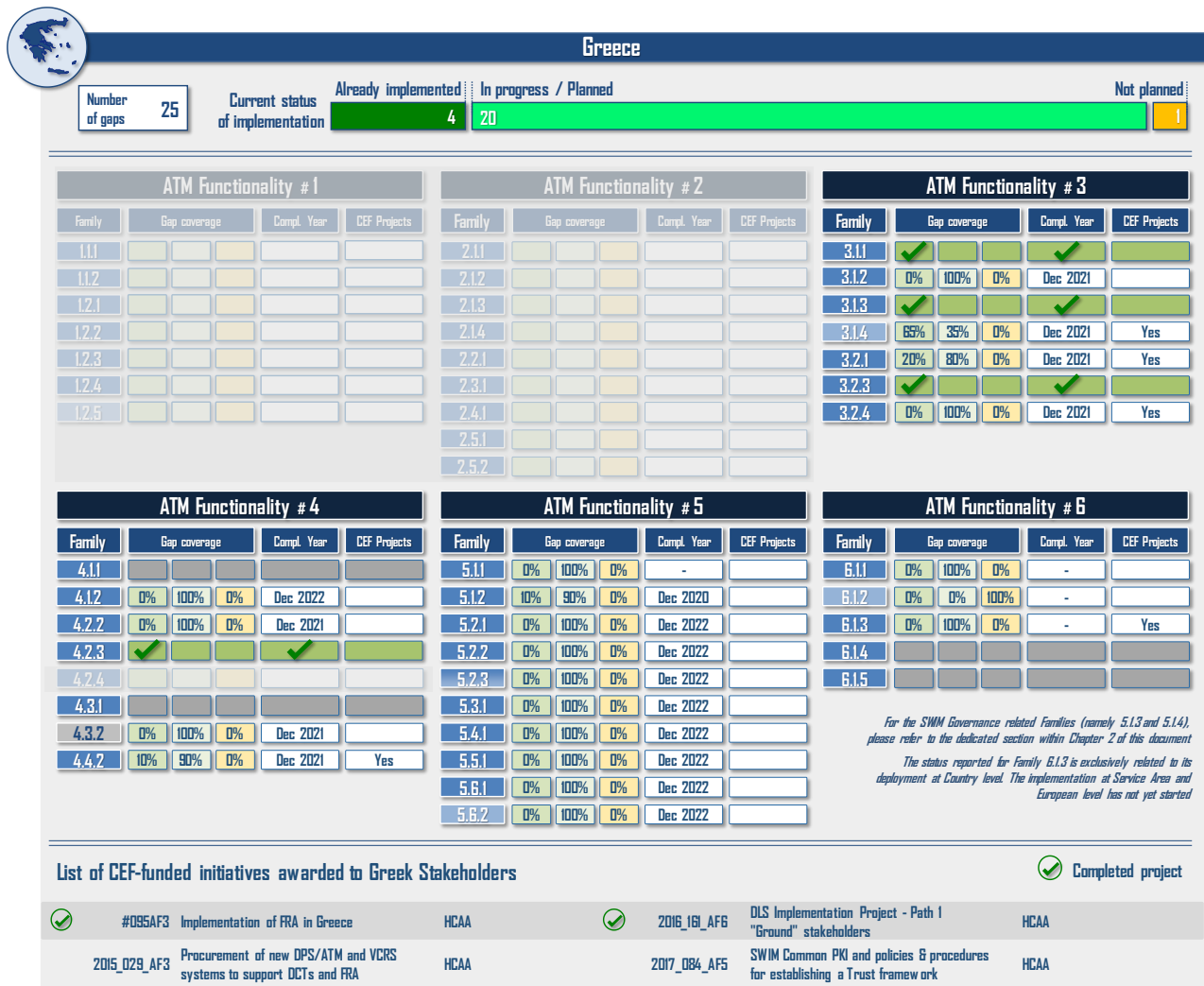
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List of CEF-funded initiatives awarded to German Stakeholders

Completed project

	#040AF5	ADQ – Aeronautical Data Quality	DFS	2016_021_AF2	TANGe (Tower ATS-System Next Generation) Phase 1	DFS
	#041AF5	EASI – EAD AIM System Integration	DFS	2016_023_AF1	XMAN - Cross-center arrival management - Part 2 (CES2016)	DFS
	#042AF2a	A-SMGCS Düsseldorf	DFS, Düsseldorf International	2016_024_AF4	Deployment of an Automated Support Tool for Traffic Complexity Assessment at DFS	DFS
	#084AF5	Prerequisites for the Provision of Aerodrome Mapping Data and Airport Maps	Fraport	2016_026_AF3	System Procurement for Deployment of PCP Air Traffic Control System iCAS at DFS and LVNL	DFS
	#086AF2	A-CDM Extension	Fraport	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	DFS
	#087AF2	Apron Controller Working Position	Fraport	2016_100_AF4	Provision of EPL data and initial FF-ICE/ I readiness	Deutsche Lufthansa, LH Systems
	#088AF2	Airport Safety Net Mobile Detection of Air Crash Tenders	Fraport	2016_121_AF3	Free Route	Deutsche Lufthansa, LH Systems
	#115AF2	A-SMGCS Renewal of the Surface Movement Radar (BORR)	Munich Airport	2016_123_AF4	STAM Phase 2 in combination with Target Times	Deutsche Lufthansa, LH Systems
	2015_031_AF2	Vehicle Transponder A-SMGCS Düsseldorf	Düsseldorf International	2016_134_AF3	Implementation of rolling ASM/ATCRM	Deutsche Lufthansa, LH Systems
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	DWD	2016_137_AF2	Initial ADP DUS	DFS, Düsseldorf International
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	DWD	2016_141_AF5	Deploy SWIM governance	Deutsche Lufthansa, DFS, Munich Airport
	2015_069_AF5	European MET Information Exchange (MET-GATE)	DFS, DWD	2016_147_AF1	RNP APCH RWY 23 Vienna	Deutsche Lufthansa
	2015_113_AF4	ADP-NOP Integration	Fraport	2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Fraport, Munich Airport
	2015_188_AF1	Deploy AMAN - Arrival Management at Düsseldorf and Berlin International	DFS	2016_159_AF6	DLS Implementation Project – Path 2	Deutsche Lufthansa, DFS
	2015_189_AF3	Deploy Free Route Airspace (Full FRA) in German Airspace	DFS	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	DFS
	2015_190_AF3	Deployment of ATC System iCAS: Implementation of ATM PCP Funct. at LVNL and DFS	DFS	2016_165_AF6	Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics	Lufthansa Group *
	2015_192_AF5	RAPNET NG	DFS	2017_002_AF5	Aeronautical Information Exchange system for Airlines FDC at Lufthansa & Air France	Deutsche Lufthansa, LH Systems
	2015_193_AF1	RNP Based Departure Operations in High Density TMAs in FRA, DUS, BER and MUC	DFS, Fraport, Deutsche Lufthansa	2017_004_AF1	Flight Crew Training for RNP Operations	Lufthansa Group *
	2015_194_AF5	STANLY ACDS iSWIM for Free-Route and NM	DFS	2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Fraport, Munich Airport
	2015_195_AF3	Deployment of next Generation and VoIP Capable Centre Voice Communication System	DFS	2017_029_AF3	Deployment of Centralized Interoperable Center Information Service (Step 1)	DFS
	2015_196_AF1_A	XMAN - Cross-centre arrival management	DFS	2017_031_AF3	Procurement and Deployment of PCP ATC System iCAS at DFS Munich and Bremen and LVNL Amsterdam	DFS
	2015_197_AF5	Centralized DFS "Yellow Profile" SWIM Node	DFS	2017_032_AF2	TANGe (Tower ATS-System Next Generation) Phase 1+ incl. Service Architecture	DFS
	2015_222_AF2	Advanced Airport Moving Map (AAMM) Prototype Implementation	Fraport, Deutsche Lufthansa	2017_052_AF4	ADP-NOP Integration - Extended Implementation	Düsseldorf International
	2015_225_AF2	Initial Airport Operations Plan @ FRA	Fraport	2017_053_AF3	Implementation of rolling ASM/ATCRM	Deutsche Lufthansa, LH Systems, Sabre GmbH
	2015_226_AF2	Airport Safety Net: Mobile Detection of Marshaller Vehicles	Fraport	2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Deutsche Lufthansa, LH Systems, Sabre GmbH
	2015_282_AF2	Initial APOC and ADP	Munich Airport	2017_076_AF5	Meteorological Information Exchange service for Airlines FDC at Lufthansa & Air France	Deutsche Lufthansa, LH Systems
	2016_008_AF4	Right evolution and upgrade of interfaces with NM stakeholders	Deutsche Lufthansa	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Deutsche Lufthansa, DFS
	2016_010_AF4	STAM Phase 2	Deutsche Lufthansa	2017_089_AF6	IP1 - DLS European Target Solution assessment	DFS

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

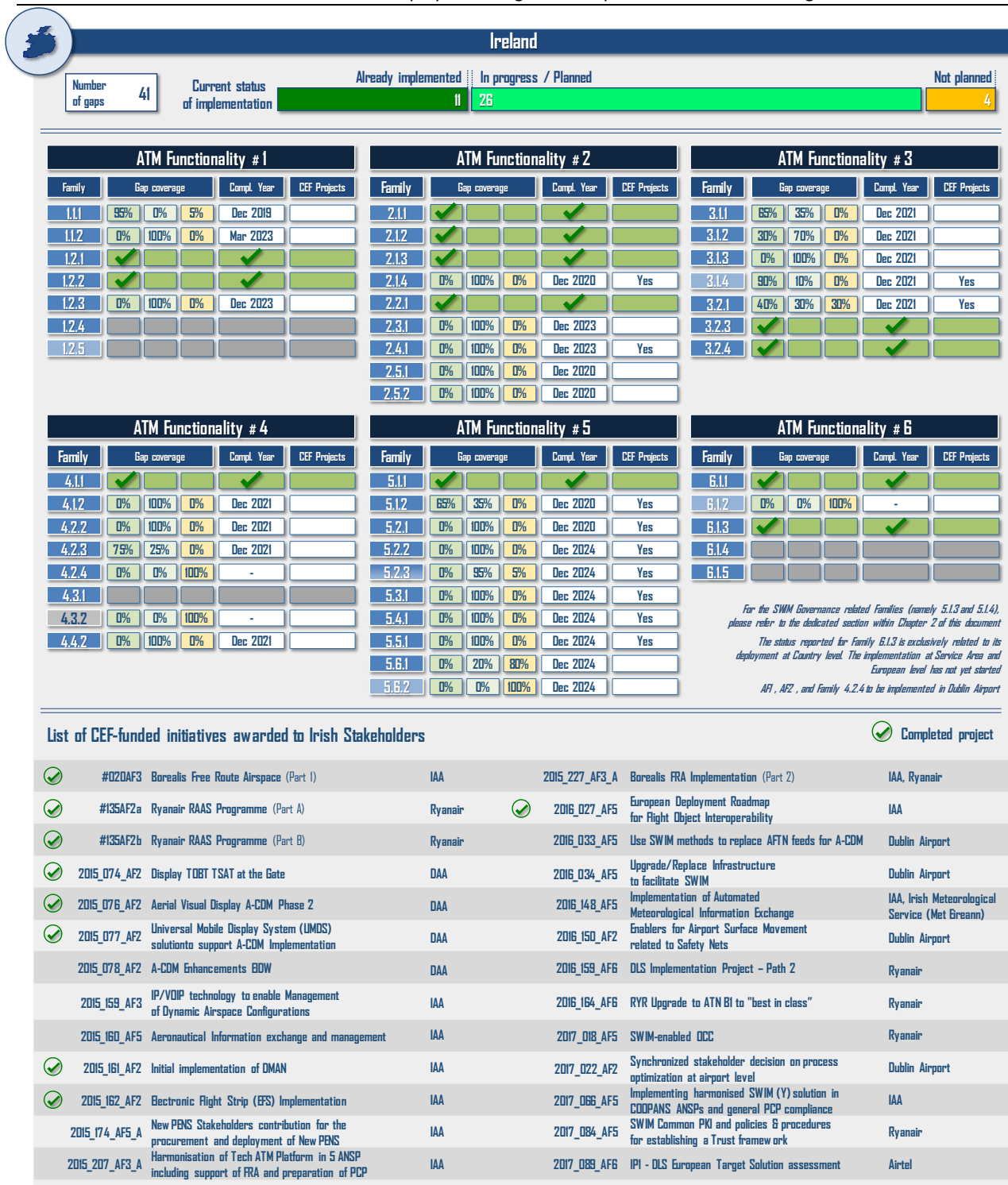


Hungary																
Number of gaps26		Current status of implementation		Already implemented8		In progress / Planned17		Not planned1								
ATM Functionality # 1					ATM Functionality # 2					ATM Functionality # 3						
Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects		
1.1.1					2.1.1					3.1.1	✓		✓			
1.1.2					2.1.2					3.1.2	30%	70%	0%	Apr 2021	Yes	
1.2.1					2.1.3					3.1.3	✓		✓			
1.2.2					2.1.4					3.1.4	45%	55%	0%	Apr 2021	Yes	
1.2.3					2.2.1					3.2.1	85%	15%	0%	Apr 2021	Yes	
1.2.4					2.3.1					3.2.3	✓		✓			
1.2.5					2.4.1					3.2.4	✓		✓			
					2.5.1											
					2.5.2											
ATM Functionality # 4					ATM Functionality # 5					ATM Functionality # 6						
Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects		
4.1.1	✓		✓		5.1.1	✓		✓		6.1.1	✓		✓			
4.1.2	0%	100%	0%	Dec 2021	Yes	5.1.2	0%	100%	0%	Dec 2019		6.1.2	0%	0%	100%	-
4.2.2	0%	100%	0%	Dec 2021		5.2.1	✓		✓		6.1.3	✓		✓		
4.2.3	75%	25%	0%	Dec 2021	Yes	5.2.2	0%	100%	0%	Dec 2024		6.1.4				
4.2.4					5.2.3	0%	100%	0%	Dec 2024		6.1.5					
4.3.1					5.3.1	0%	100%	0%	Dec 2024							
4.3.2	0%	100%	0%	Dec 2021		5.4.1	0%	75%	25%	Dec 2024						
4.4.2	0%	100%	0%	Dec 2021	Yes	5.5.1	0%	100%	0%	Dec 2024						
					5.6.1	0%	100%	0%	Dec 2024							
					5.6.2	0%	100%	0%	Dec 2024							
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																
✓	#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_AFI_B	AMAN LDWW initial	Hungaro Control	2017_074_AF3	Hungarian ATM system upgrade for AF3-AF4	Hungaro Control										
✓	2016_027_AFS	European Deployment Roadmap for Flight Object Interoperability	Hungaro Control	2017_084_AFS	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	IPI – DLS European Target Solution assessment	Hungaro Control										
	2016_141_AFS	Deploy SWIM governance	Hungaro Control													

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_AFB	DLS Implementation Project – Path 2	Hungaro Control
✓ 2015_034_AFB	ATM System (MATIAS) upgrade for cross-border free route operation	Hungaro Control	✓ 2016_161_AFB	DLS Implementation Project – Path 1 "Ground" stakeholders	Hungaro Control
✓ 2015_234_AFI_B	AMAN LOWW initial	Hungaro Control	2017_074_AFB	Hungarian ATM system upgrade for AF3-AF4	Hungaro Control
✓ 2016_027_AFB	European Deployment Roadmap for Flight Object Interoperability	Hungaro Control	2017_084_AFB	SWIM Common PKI and policies & procedures for establishing a Trust framework	Hungaro Control
✓ 2016_075_AFB_B	FAB CE wide Study of DAM and STAM – Cohesion Call	Hungaro Control	2017_088_AFB	IPI - DLS European Target Solution assessment	Hungaro Control
2016_141_AFB	Deploy SWIM governance	Hungaro Control			





Italy

Number
of gaps 56Current status
of implementation

Already implemented

In progress / Planned

Not planned

14

36

6

ATM Functionality # 1

Family	Milan Malpensa					Rome Fiumicino				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	20%	80%	0%	Dec 2019	Yes	20%	80%	0%	Dec 2019	Yes
1.1.2	10%	90%	0%	Dec 2023	Yes	15%	85%	0%	Dec 2023	Yes
1.2.1	85%	15%	0%	Dec 2019	Yes	✓			✓	
1.2.2	✓			✓		✓			✓	
1.2.3	0%	100%	0%	Dec 2023	Yes	0%	100%	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 2020		0%	100%	0%	Dec 2020	
2.1.2	✓			✓		25%	75%	0%	Dec 2020	Yes
2.1.3	✓			✓		✓			✓	
2.1.4	0%	100%	0%	Dec 2024	Yes	0%	100%	0%	Dec 2020	Yes
2.2.1	20%	80%	0%	Dec 2020	Yes	20%	80%	0%	Dec 2020	Yes
2.3.1	0%	0%	100%	-		0%	0%	100%	-	
2.4.1	0%	0%	100%	-		0%	100%	0%	Dec 2023	Yes
2.5.1	0%	0%	100%	-		0%	0%	100%	-	
2.5.2	20%	80%	0%	Dec 2020	Yes	20%	80%	0%	Dec 2020	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 2021	Yes	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	20%	80%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2021	
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	0%	100%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	95%	5%	0%	Dec 2019	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2020	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	0%	100%	0%	Dec 2024	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	50%	50%	0%	Dec 2020	Yes
5.5.1	35%	65%	0%	Dec 2020	Yes
5.6.1	15%	85%	0%	Dec 2024	Yes
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 SWM 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 56Current status
of implementation

Already implemented

14

In progress / Planned

38

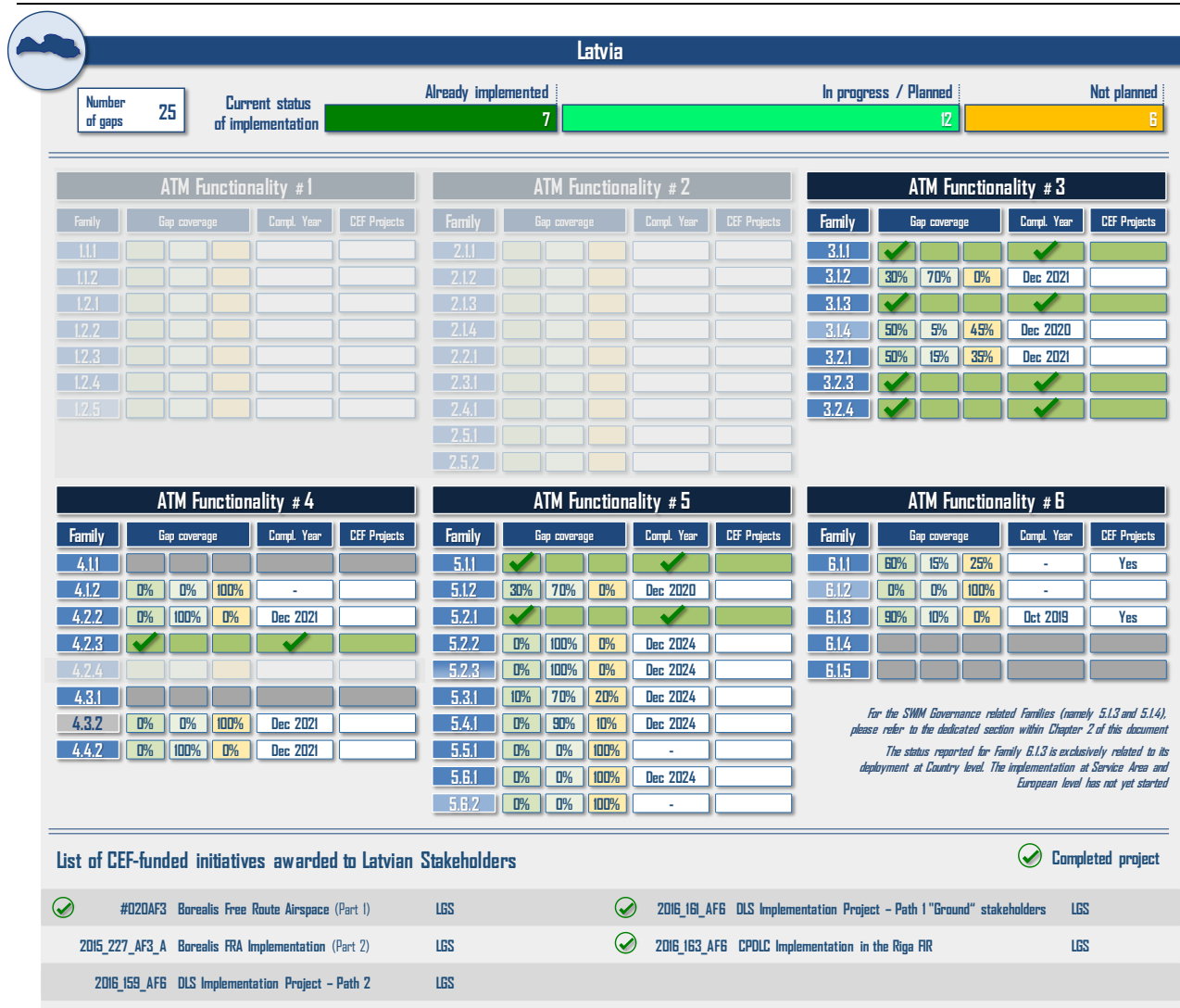
Not planned

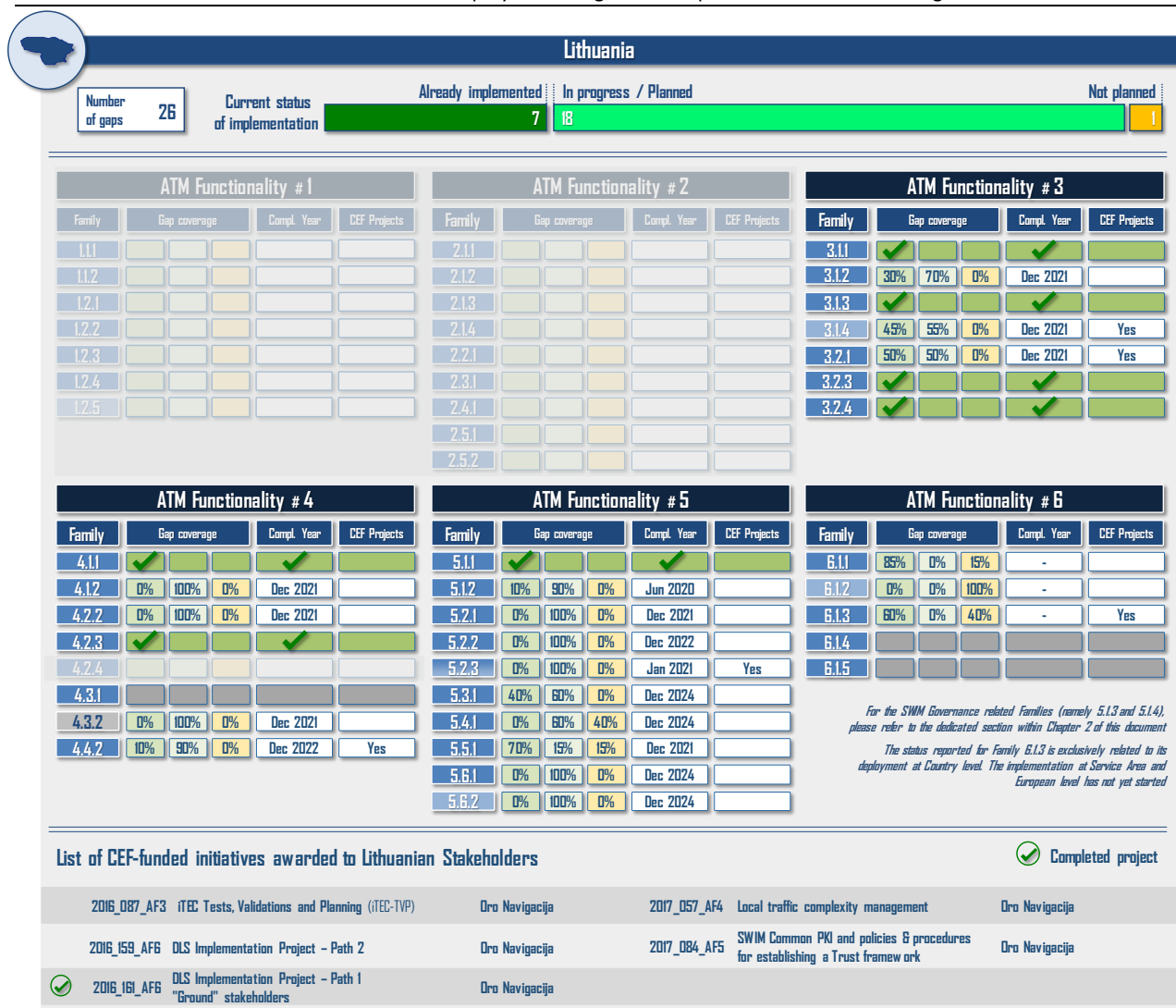
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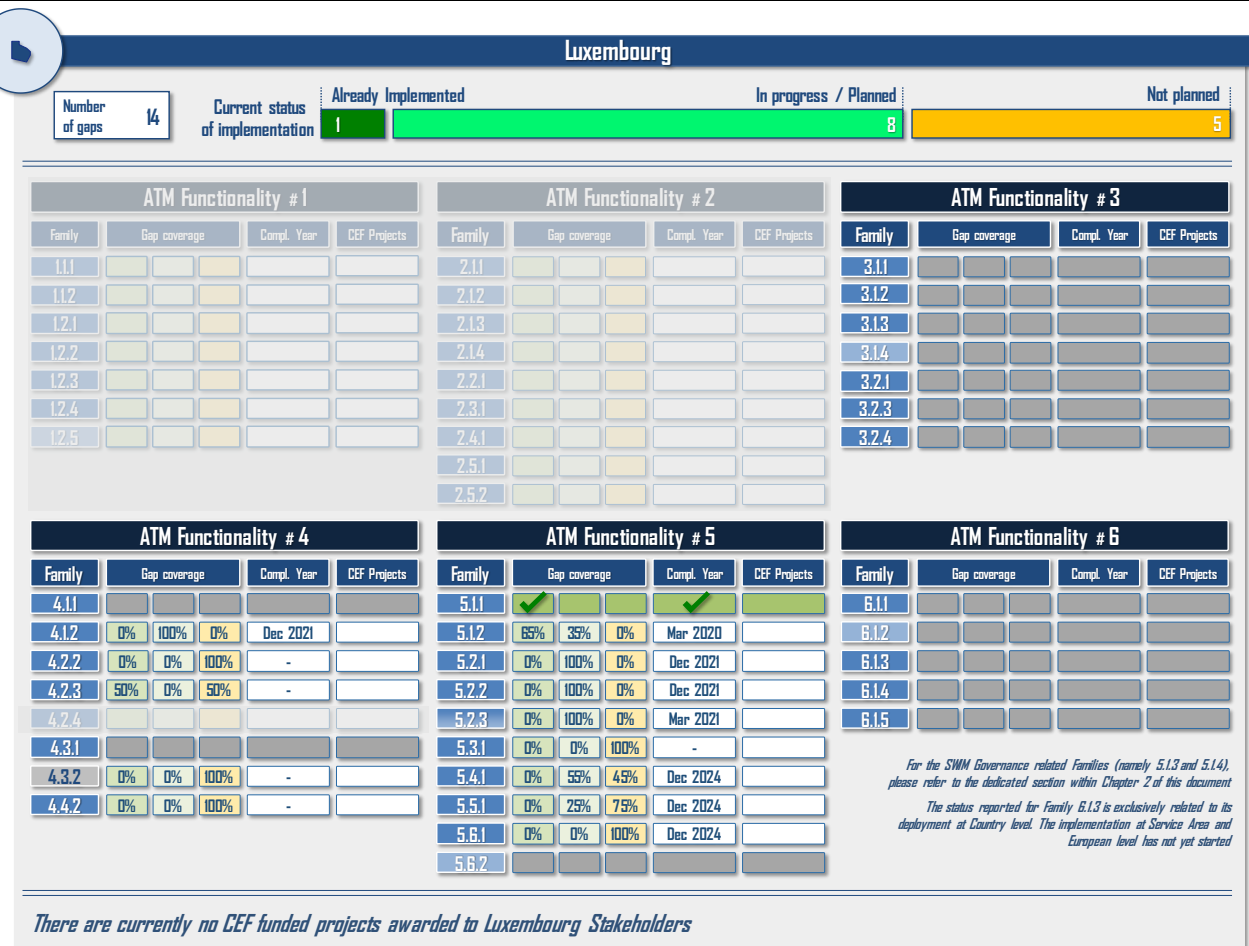
List of CEF-funded initiatives awarded to Italian Stakeholders

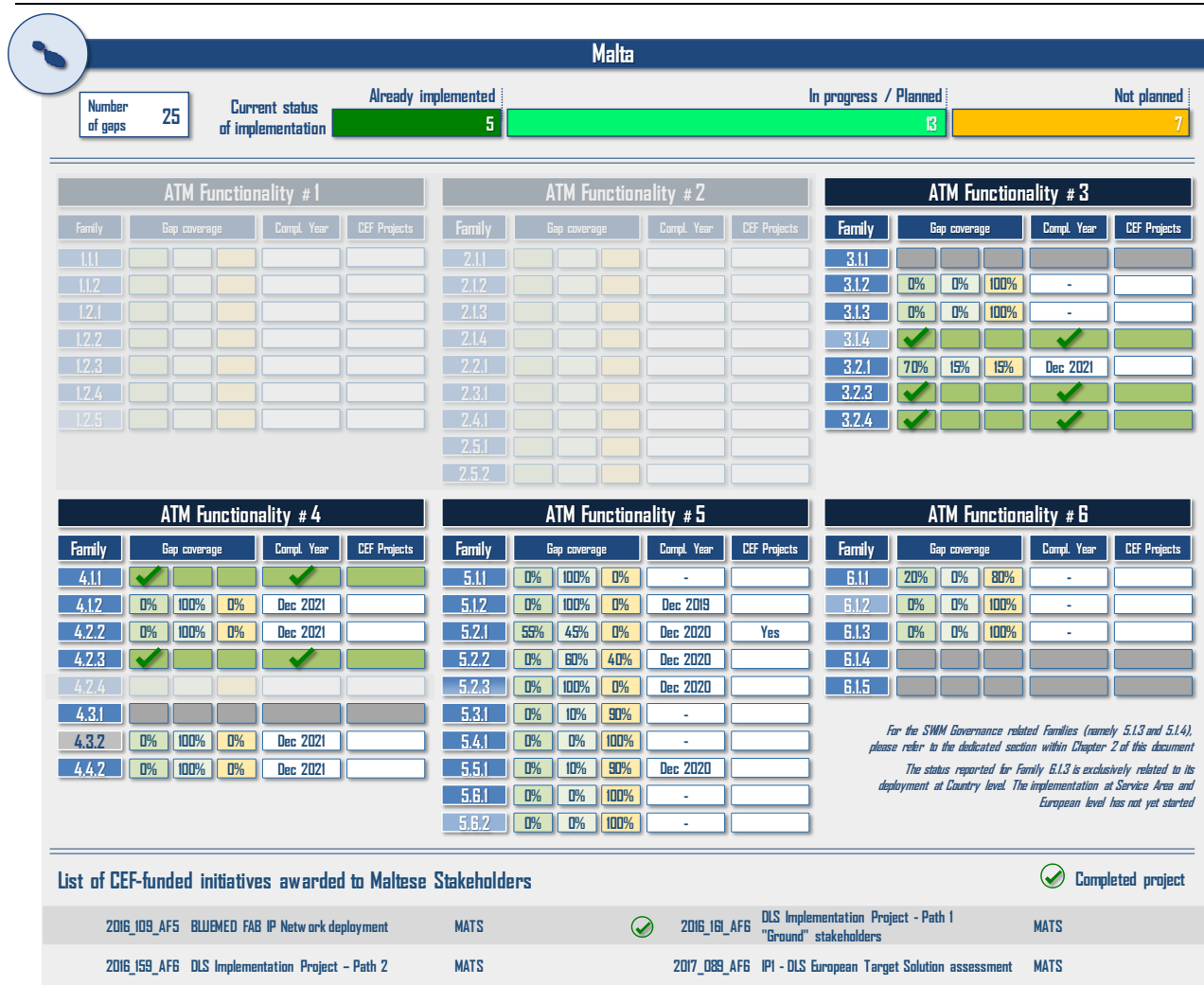
Completed project

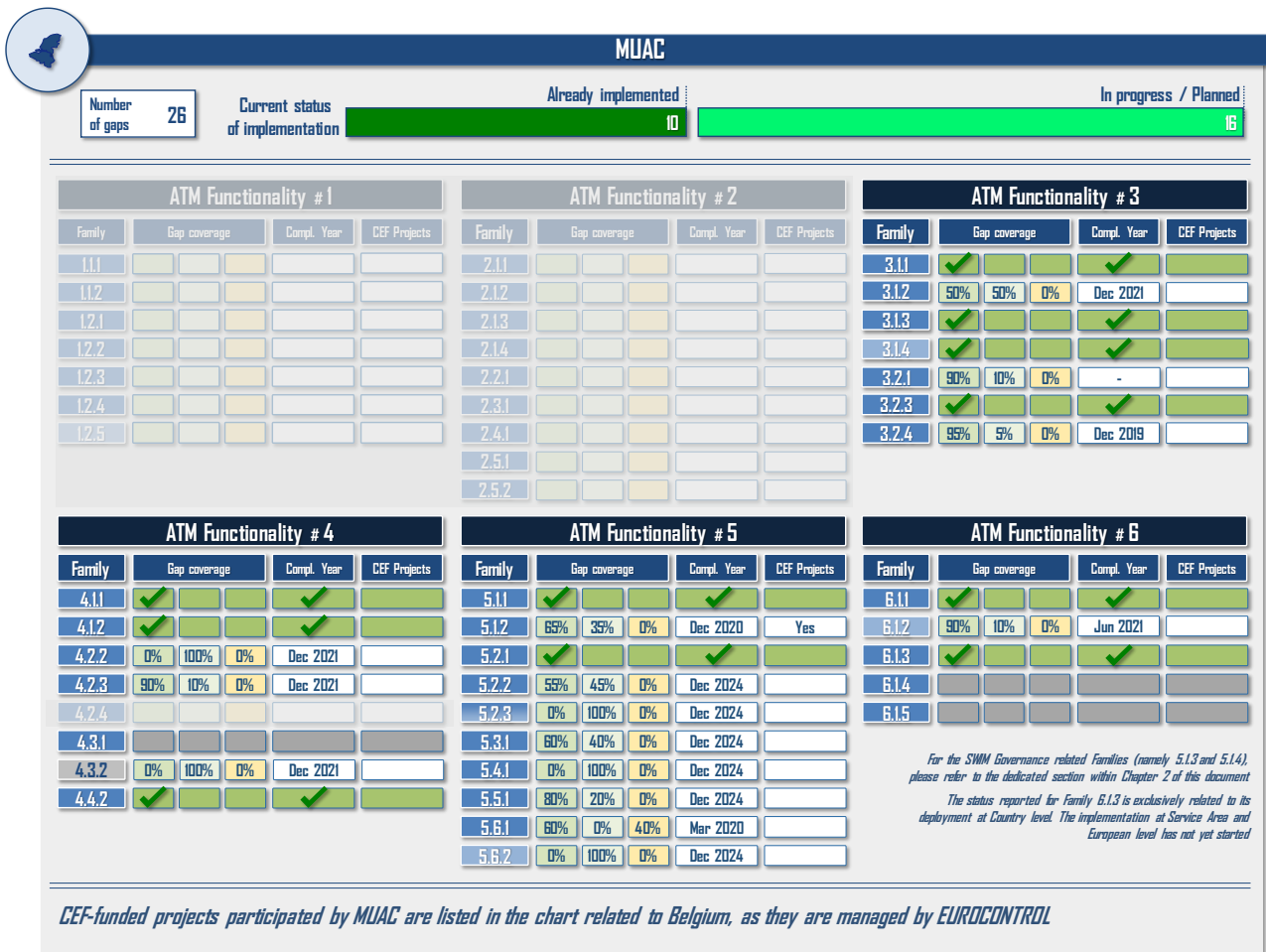
	#004AF3	Traffic Flow Restriction (TFR) – LDD planning system	Alitalia	2016_116_AF5	ENAV Security Operational Centre (SOC) Upgrade	ENAV	
	#005AF3	Free Flight – Direct Optimization	Alitalia	2016_117_AF2	ENAV Implementation of A-SMGCS Level 1 and 2 with Safety Nets in MXP and FCO	ENAV, Rome Fiumicino, SEA Milano Airports	
	#062AF4	ENAV initiative for the identification of Network Collaborative Management requirements	ENAV		2016_118_AF5	ENAV Network enhancement toward New PENS	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	ABRONET/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 ADD – Aeronautical Data Quality system interface evolution (ADD2)	ENAV	2017_052_AF4	AOP-NOP Integration - Extended Implementation	Rome Fiumicino, SEA Milano Airports	
	2016_109_AF5	BLUJMED 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				













Netherlands

Number of gaps
31

Current status of implementation

Already implemented
6In progress / Planned
25

ATM Functionality # 1					
Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	80%	20%	0%	Dec 2019	Yes
1.1.2	0%	100%	0%	Dec 2023	Yes
1.2.1	10%	90%	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	50%	50%	0%	Dec 2020	Yes
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	0%	100%	0%	Dec 2020	Yes
2.2.1	✓			✓	
2.3.1	0%	100%	0%	Dec 2023	
2.4.1	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes
2.5.2	0%	100%	0%	Dec 2020	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	0%	100%	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	Yes
4.2.3	✓			✓	
4.2.4	0%	100%	0%	Jun 2020	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	65%	35%	0%	Dec 2020	Yes

ATM Functionality # 5					
Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	65%	35%	0%	Dec 2020	Yes
5.2.1	0%	100%	0%	Mar 2022	Yes
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	90%	10%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	5%	95%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2026	

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 SWM 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_AFI_A_AIR	RNP 1.0, RNP 0.3 & SBAS for E3A AWACS for CEF eligible Nations and third party	NAPMA
#108AF2	Electronic Right Strips at Schiphol TWR	LVNL	2015_253_AFI_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_AFI_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_AFI	XMAN - Cross-center arrival management - Part 2	LVNL
2015_137_AFS	European Meteorological Aircraft Derived Data Center (EMADDC)	KNMI	2016_026_AFI3	System Procurement for Deployment of PCP Air Traffic Control System iCAS at DFS and LVNL	LVNL
✓ 2015_165_AFI	Amsterdam Schiphol AMAN 1.0	LVNL	2016_027_AFI5	European Deployment Roadmap for Right Object Interoperability	LVNL
2015_166_AFI	Amsterdam Schiphol AMAN 2.0	LVNL	2016_131_AFI4	AOP-NOP Integration - Extended Implementation	Amsterdam Schiphol
2015_167_AFI4	Workload model for Amsterdam Area Control and Approach Control operations	LVNL	2016_143_AFI5	ATM Network 2.0 Amsterdam	LVNL
✓ 2015_168_AFI5	Implementation of Aeronautical Data Quality (ADQ) at LVNL	LVNL	2016_150_AFI2	Enablers for Airport Surface Movement related to Safety Nets	Amsterdam Schiphol
2015_169_AFI5	Initial (I)WXXM implementation on CCIS Amsterdam ACC and Schiphol	LVNL	2016_159_AFI6	DLS Implementation Project - Path 2	SITA
2015_174_AFI5_A	New PENS Stakeholders contribution for the procurement and deployment of New PENS	LVNL	2016_161_AFI6	DLS Implementation Project - Path 1 "Ground" stakeholders	SITA
2015_178_AFI2	Implementation of AOP Schiphol Airport	Amsterdam Schiphol, KNMI	2017_031_AFI3	Procurement and Deployment of PCP ATC System iCAS at DFS Munich and Bremen and LVNL Amsterdam	LVNL
2015_179_AFI4	Implementation of APOC Schiphol Airport	Amsterdam Schiphol, KNMI	2017_063_AFI2	A-SMGCS High Performance Surveillance enhancement to support routing & planning functions	LVNL
2015_186_AFI	RNP approaches to three main landing runways Amsterdam Schiphol	LVNL	2017_064_AFI	Final phase RNP APCH procedures Amsterdam Schiphol	LVNL
2015_187_AFI2	TWR System at Amsterdam Schiphol	LVNL	2017_065_AFI5	LVNL Nation wide managed network supporting SWIM	LVNL
2015_190_AFI3	Deployment of ATC System iCAS: Implementation of ATM PCP Funct. at LVNL and DFS	LVNL	2017_084_AFI5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LVNL
2015_196_AFI_A	XMAN - Cross-Centre arrival management	LVNL	2017_089_AFI6	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					ATM Functionality # 2					ATM Functionality # 3				
Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects
1.1.1	✓		✓		2.1.1	✓		✓		3.1.1	✓		✓	
1.1.2	50%	0%	50%	Dec 2023	2.1.2	✓		✓		3.1.2	30%	70%	0%	Apr 2023
1.2.1	✓		✓		2.1.3	✓		✓		3.1.3	✓		✓	
1.2.2	✓		✓		2.1.4	0%	100%	0%	Dec 2020	3.1.4	45%	55%	0%	Apr 2023
1.2.3	✓		✓		2.2.1	✓		✓		3.2.1	15%	85%	0%	Apr 2023
1.2.4					2.3.1	0%	100%	0%	Dec 2024	3.2.3	✓		✓	
1.2.5	0%	100%	0%	Dec 2023	2.4.1	0%	100%	0%	Dec 2023	3.2.4	✓		✓	
					2.5.1	0%	100%	0%	Dec 2024					
					2.5.2	0%	100%	0%	Dec 2023					
ATM Functionality # 4					ATM Functionality # 5					ATM Functionality # 6				
Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects	Family	Gap coverage		Compl. Year	CEF Projects
4.1.1					5.1.1	✓		✓		6.1.1	0%	40%	60%	Apr 2023
4.1.2	0%	100%	0%	Dec 2021	5.1.2	60%	40%	0%	Dec 2024	6.1.2	0%	0%	100%	-
4.2.2	0%	100%	0%	Dec 2021	5.2.1	0%	0%	100%	Dec 2024	6.1.3	0%	90%	10%	Apr 2023
4.2.3	25%	75%	0%	Apr 2023	5.2.2	0%	0%	100%	Dec 2024	6.1.4				
4.2.4	0%	0%	100%	-	5.2.3	0%	0%	100%	Dec 2024	6.1.5				
4.3.1					5.3.1	0%	0%	100%	-					
4.3.2	0%	0%	100%	Dec 2021	5.4.1	0%	0%	100%	-					
4.4.2	0%	100%	0%	Dec 2021	5.5.1	0%	0%	100%	-					
					5.6.1	0%	0%	100%	-					
					5.6.2	0%	0%	100%	-					

For the SWM 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

API, 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

7

In progress / Planned

17

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	45%	55%	0%	Dec 2021	Yes
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	55%	45%	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	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	95%	5%	0%	Dec 2019	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	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	65%	35%	0%	Dec 2020	Yes
5.2.1	0%	100%	0%	Dec 2019	Yes
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	20%	60%	20%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	20%	70%	10%	Dec 2024	Yes
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 SWM 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

✓	#131AF3	1st part of the upgrade of the P_21 PEGASUS system to SESAR functionalities	PANSA	✓	2016_161_AFG	DLS Implementation Project - Path 1 "Ground" stakeholders	PANSA
	2015_035_AFS	LAN network upgrade	PANSA	✓	2016_162_AFG	Implementation of Data Link Services for the ATM in the FIR Warsaw	PANSA
	2015_038_AFS	The ECG Communication System upgrade	PANSA		2017_002_AFS	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	LH Systems Poland
✓	2016_027_AFS	European Deployment Roadmap for Flight Object Interoperability	PANSA		2017_053_AFS	Implementation of rolling ASM/ATFCM	LH Systems Poland, SABRE Polska SP Z.o.o
	2016_085_AFS	ATM System Upgrade Towards Free Route Airspace	PANSA		2017_056_AFS	Towards Shared Business Trajectory / Trajectory Based Operations	LH Systems Poland, SABRE Polska SP Z.o.o
	2016_087_AFS	iTEC Tests, Validations and Planning (iTEC - TVP)	PANSA		2017_057_AFS	Local traffic complexity management	PANSA
	2016_129_AFS	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	PANSA		2017_076_AFS	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	LH Systems Poland
	2016_141_AFS	Deploy SWIM governance	PANSA		2017_084_AFS	SWIM Common PKI and policies & procedures for establishing a Trust framework	PANSA
	2016_159_AFS	DLS Implementation Project - Path 2	PANSA		2017_089_AFS	IPI - DLS European Target Solution assessment	PANSA



Portugal

Number of gaps	26	Current status of implementation	Already implemented: 6	In progress / Planned: 15	Not planned: 5
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ATM Functionality #1					ATM Functionality #2					ATM Functionality #3				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
1.1.1					2.1.1					3.1.1	90%	10%	0%	Oct 2019
1.1.2					2.1.2					3.1.2	30%	70%	0%	Dec 2021
1.2.1					2.1.3					3.1.3	✓			✓
1.2.2					2.1.4					3.1.4	90%	10%	0%	Dec 2020
1.2.3					2.2.1					3.2.1	15%	70%	15%	-
1.2.4					2.3.1					3.2.3	✓			✓
1.2.5					2.4.1					3.2.4	✓			✓
					2.5.1									
					2.5.2									
ATM Functionality #4					ATM Functionality #5					ATM Functionality #6				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
4.1.1	✓			✓	5.1.1	✓			✓	6.1.1	20%	80%	0%	Nov 2020
4.1.2	0%	100%	0%	Dec 2021	5.1.2	65%	35%	0%	Dec 2020	6.1.2	0%	0%	100%	-
4.2.2	0%	100%	0%	Dec 2021	5.2.1	0%	100%	0%	Dec 2024	6.1.3	✓			✓
4.2.3	✓			✓	5.2.2	0%	100%	0%	Dec 2024	6.1.4				
4.2.4					5.2.3	0%	0%	100%	-	6.1.5				
4.3.1					5.3.1	0%	100%	0%	Dec 2024					
4.3.2	0%	100%	0%	Dec 2021	5.4.1	0%	100%	0%	Dec 2019					
4.4.2	0%	100%	0%	Dec 2021	5.5.1	0%	0%	100%	-					
					5.6.1	0%	0%	100%	-					
					5.6.2	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 Portuguese Stakeholders

Completed project

#	Initiative	Stakeholder	Year	Project	Stakeholder
#122AF3	FT 3.1.1 NAV Portugal – Initial ASM tool to support ARJA	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 New PBNS	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	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	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_AFI	C-130H RNP-1 Avionics Upgrade for 5 A/C	PT MOD	2017_083_AF6	Portugalia B95 - Deployment of ATN B1 capability	PGA – Portugalia Airlines
2015_279_AFI	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 – Portugalia Airlines			

Romania														
	Number of gaps	24	Current status of implementation	Already implemented				In progress / Planned				Not planned		
				7				9				8		

ATM Functionality # 1					ATM Functionality # 2					ATM Functionality # 3				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
1.1.1					2.1.1					3.1.1	✓		✓	
1.1.2					2.1.2					3.1.2	0%	100%	0%	Dec 2021
1.2.1					2.1.3					3.1.3	✓		✓	
1.2.2					2.1.4					3.1.4	✓		✓	
1.2.3					2.2.1					3.2.1	85%	15%	0%	Dec 2021
1.2.4					2.3.1					3.2.3	✓		✓	
1.2.5					2.4.1					3.2.4	✓		✓	
					2.5.1									
					2.5.2									

ATM Functionality # 4					ATM Functionality # 5					ATM Functionality # 6				
Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects		Family	Gap coverage	Compl. Year	CEF Projects	
4.1.1					5.1.1					6.1.1	75%	0%	25%	-
4.1.2	0%	0%	100%	-	5.1.2	65%	35%	0%	Dec 2020	Yes	6.1.2	0%	0%	100%
4.2.2	0%	100%	0%	Dec 2021	5.2.1	✓			✓		6.1.3	45%	0%	55%
4.2.3	✓			✓	5.2.2	0%	100%	0%	Dec 2024		6.1.4			
4.2.4					5.2.3	0%	0%	100%	-		6.1.5			
4.3.1					5.3.1	0%	0%	100%	-					
4.3.2	0%	0%	100%	-	5.4.1	0%	35%	65%	Dec 2024	Yes				
4.4.2	0%	100%	0%	Dec 2021	5.5.1	0%	0%	100%	-					
					5.6.1	0%	0%	100%	-					
					5.6.2	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 Romanian Stakeholders										✓ Completed project
✓	#134AF5	PILOT PLATFORM for access services to DPMET 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	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	ROMATSA							







Slovenia

Number of gaps 26

Current status of implementation

Already implemented

5

In progress / Planned

16

Not planned

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	0%	100%	0%	Dec 2021	Yes
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	0%	100%	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	0%	100%	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	0%	100%	0%	-	Yes

ATM Functionality # 5					
Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	65%	35%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	0%	100%	-	
5.2.3	0%	100%	0%	Dec 2021	Yes
5.3.1	0%	20%	80%	-	
5.4.1	0%	20%	80%	-	
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	80%	20%	0%	Dec 2019	Yes
6.1.2	0%	0%	100%	-	
6.1.3	50%	0%	50%	-	Yes
6.1.4					
6.1.5					

For the SWM 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.

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	✓	2016_075_AF3_A	FAB CE wide Study of DAM and STAM – General Call	Slovenia Control
	2015_174_AF5_A	New PBNS Stakeholders contribution for the procurement and deployment of New PBNS	Slovenia Control	✓	2016_075_AF3_B	FAB CE wide Study of DAM and STAM – Cohesion Call	Fabce Ltd.
✓	2016_030_AF6	Air Ground Datalink Implementation	Slovenia Control		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

21

In progress / Planned

47

Not planned

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 2023	Yes	65%	35%	0%	Dec 2023	Yes	60%	40%	0%	Dec 2023	Yes
1.2.1	35%	65%	0%	Jul 2021	Yes	0%	100%	0%	Jul 2021	Yes	✓			✓	
1.2.2	✓			✓		✓			✓		✓			✓	
1.2.3	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023		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%	Sep 2020	Yes	✓			✓	
2.1.3	✓			✓		✓			✓		✓			✓	
2.1.4	0%	100%	0%	Dec 2019		0%	100%	0%	Dec 2019		0%	100%	0%	Dec 2019	
2.2.1	85%	15%	0%	Dec 2020	Yes	85%	15%	0%	Dec 2020	Yes	85%	15%	0%	Dec 2020	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 2020		0%	100%	0%	Dec 2020		0%	100%	0%	Dec 2020	
2.5.2	0%	100%	0%	Dec 2020		0%	100%	0%	Dec 2020		0%	100%	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	0%	100%	0%	Sep 2020	Yes	0%	100%	0%	Sep 2020	Yes	0%	100%	0%	Sep 2020	Yes

ATM Functionality # 3

Family	Gap coverage		Compl. Year	CEF Projects	
3.1.1	✓			✓	
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	70%	0%	30%	-	
3.1.4	45%	55%	0%	Dec 2021	Yes
3.2.1	15%	85%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	

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%	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	65%	35%	0%	Dec 2020	Yes
5.2.1	50%	50%	0%	Dec 2020	Yes
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	30%	70%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	5%	95%	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 SWM 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 69Current status
of implementation

Already implemented

21

In progress / Planned

47

Not planned

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 IARA 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 I Implementation in Spain	ENAIRE
	#060AF1	ENAIRE reference geographic database (FI 1.2.2)	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	New PENS Stakeholders contribution for the procurement and deployment of New PENS	ENAIRE	2016_125_AF6	2016_125_AF6_ES_Airbus A310 ATN VOL2 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 VOL2 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 10

In progress / Planned 28

Not planned 2

ATM Functionality # 1						ATM Functionality # 2						ATM Functionality # 3					
Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage
1.1.1	✓		✓	2.1.1	90%	10%	0%	3.1.1	✓		✓	3.1.1	✓		✓	3.1.1	✓
1.1.2	50%	0%	50%	2.1.2	✓		✓	3.1.2	0%	30%	70%	3.1.2	0%	30%	70%	3.1.2	0%
1.2.1	10%	90%	0%	2.1.3	✓		✓	3.1.3	✓		✓	3.1.3	✓		✓	3.1.3	✓
1.2.2	65%	35%	0%	2.1.4	0%	100%	0%	3.1.4	80%	20%	0%	3.1.4	80%	20%	0%	3.1.4	80%
1.2.3	10%	90%	0%	2.2.1	85%	15%	0%	3.2.1	65%	10%	25%	3.2.1	65%	10%	25%	3.2.1	65%
1.2.4				2.3.1				3.2.3	✓		✓	3.2.3	✓		✓	3.2.3	✓
1.2.5				2.4.1	0%	25%	75%	3.2.4	✓		✓	3.2.4	✓		✓	3.2.4	✓
				2.5.1	0%	75%	25%										
				2.5.2	0%	50%	50%										
ATM Functionality # 4						ATM Functionality # 5						ATM Functionality # 6					
Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage	Compl. Year	CEF Projects	Family	Gap coverage
4.1.1	✓		✓	5.1.1	✓		✓	6.1.1	✓		✓	6.1.1	✓		✓	6.1.1	✓
4.1.2	0%	100%	0%	5.1.2	65%	35%	0%	6.1.2	0%	0%	100%	6.1.2	0%	0%	100%	6.1.2	0%
4.2.2	0%	100%	0%	5.2.1	55%	45%	0%	6.1.3	✓		✓	6.1.3	✓		✓	6.1.3	✓
4.2.3	75%	25%	0%	5.2.2	0%	100%	0%	6.1.4				6.1.4				6.1.4	
4.2.4	0%	100%	0%	5.2.3	0%	100%	0%	6.1.5				6.1.5				6.1.5	
4.3.1				5.3.1	0%	90%	10%										
4.3.2	0%	0%	100%	5.4.1	0%	100%	0%										
4.4.2	95%	5%	0%	5.5.1	10%	5%	85%										
				5.6.1	0%	100%	0%										
				5.6.2	0%	100%	0%										

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 1)	LFV	✓	2015_309_AFI_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 VolP	LFV
✓	#136AF2	A-CDM Optimization	Swedavia	✓	2016_027_AFS	European Deployment Roadmap for Flight Object Interoperability	LFV
✓	#137AF2	Enhancement of Airport Safety Nets at Stockholm Arlanda Airport	Swedavia		2016_131_AF4	ADP-NOP Integration - Extended Implementation	Swedavia
	2015_025_AFS_A	Sub-regional SWIM MET deployment to support NEFRA (part A)	SMHI		2016_141_AFS	Deploy SWIM governance	LFV
	2015_098_AFS	Implementing redundant WAN	LFV		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Swedavia
	2015_099_AFS	DK-SE FAB Aeronautical Data Quality (ADQ)	LFV		2016_159_AFS	DLS Implementation Project - Path 2	LFV
	2015_118_AFS	More efficient Flight Planning	LFV	✓	2016_161_AFS	DLS Implementation Project - Path 1 "Ground" stakeholders	LFV
	2015_174_AFS_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LFV		2016_166_AFI	Stockholm Arlanda Airport RNP Project (SAARP)	Swedavia, Nova Airlines AB
	2015_207_AFS_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_AFS_A	Borealis FRA Implementation (Part 2)	LFV		2017_060_AFS	ADQ Components in the SWIM Infrastructure - upstream data inclusion in the full data chain	LFV, Swedavia
✓	2015_288_AFS	ADQ implementation Stockholm Arlanda	Swedavia		2017_061_AFS	Application of cyber security to ANSP and SWIM services at LFV	LFV
	2015_290_AF2	Initial ADP	Swedavia		2017_066_AFS	Implementing harmonised SWIM (V) solution in COOPANS ANSPs and general PCP compliance	LFV
	2015_291_AF2	A-SMGCS Level 2 implementation	Swedavia		2017_075_AFS	SWIMARN - SWIM with Cyber Security at Stockholm Arlanda Airport	Swedavia
	2015_292_AF2	DMAN Stockholm Arlanda Airport	Swedavia		2017_084_AFS	SWIM Common PKI and policies 8 procedures for establishing a Trust framework	LFV
✓	2015_294_AF2	Implementation of OTP	Swedavia		2017_089_AFS	IPI - DLS European Target Solution assessment	LFV
✓	2015_309_AFI_AIR	Implementation of GBAS (operation in the Flights Operations Dept and training of flight crew)	Nova Airlines AB				



Switzerland

Number
of gaps 41Current status
of implementation

Already implemented 17

In progress / Planned 18

Not planned 6

ATM Functionality # 1					
Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	65%	35%	0%	-	
1.2.1	50%	50%	0%	Dec 2023	
1.2.2	✓			✓	
1.2.3	0%	100%	0%	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	✓			✓	
2.2.1	✓			✓	
2.3.1	0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2025	
2.5.1	0%	100%	0%	Dec 2025	
2.5.2	0%	0%	100%	-	

ATM Functionality # 3					
Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	10%	60%	Dec 2021	
3.1.3	✓			✓	
3.1.4	45%	10%	45%	Dec 2021	
3.2.1	60%	0%	40%	Dec 2019	
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	10%	90%	0%	Dec 2019	
5.2.1	✓			✓	
5.2.2	0%	100%	0%	-	
5.2.3	0%	100%	0%	-	
5.3.1	0%	100%	0%	-	
5.4.1	0%	100%	0%	-	
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 SWM 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_AFI Flight Crew Training for RNPI Operations Swiss

2017_089_AFG IPI - DLS European Target Solution assessment SITA OnAir SARL Sw itzerland



United Kingdom

Number of gaps
85

Current status of implementation

Already implemented | In progress / Planned

Not planned |

27

54

4

ATM Functionality #1

Family	London Gatwick			London Heathrow			London Stansted			Manchester Ringway		
	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects
1.1.1	✓		✓	✓		✓	0%	100%	0%	0%	100%	0%
1.1.2	0%	100%	0%	85%	15%	0%	0%	100%	0%	0%	100%	0%
1.2.1	50%	0%	50%	50%	0%	50%	50%	0%	50%	15%	85%	0%
1.2.2	✓		✓	✓		✓	✓		✓	✓		✓
1.2.3	0%	80%	20%	50%	50%	0%	50%	50%	0%	0%	100%	0%
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	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects
2.1.1	✓		✓	✓		✓	0%	100%	0%	0%	100%	0%
2.1.2	✓		✓	✓		✓	✓		✓	✓		✓
2.1.3	✓		✓	✓		✓	25%	75%	0%	0%	100%	0%
2.1.4	0%	100%	0%	✓		✓	0%	100%	0%	0%	100%	0%
2.2.1	✓		✓	90%	10%	0%	✓		✓	0%	100%	0%
2.3.1	0%	100%	0%	✓		✓				0%	0%	100%
2.4.1	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
2.5.1	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
2.5.2	0%	0%	100%	95%	5%	0%	✓		✓	0%	100%	0%

ATM Functionality #4 (Airport Gaps)

Family	London Gatwick			London Heathrow			London Stansted			Manchester Ringway		
	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects	Gap coverage	Compl. Year	DEF Projects
4.2.4	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%

ATM Functionality #3

Family	Gap coverage	Compl. Year	DEF Projects
3.1.1	✓		✓
3.1.2	0%	100%	0%
3.1.3	✓		✓
3.1.4	45%	55%	0%
3.2.1	60%	0%	40%
3.2.3	✓		✓
3.2.4	65%	35%	0%

ATM Functionality #4 (Country Gaps)

Family	Gap coverage	Compl. Year	DEF Projects
4.1.1	✓		✓
4.1.2	0%	100%	0%
4.2.2	0%	100%	0%
4.2.3	75%	25%	0%
4.3.1			
4.3.2	0%	100%	0%
4.4.2	✓		✓

ATM Functionality #5

Family	Gap coverage	Compl. Year	DEF Projects
5.1.1	✓		✓
5.1.2	65%	35%	0%
5.2.1	✓		✓
5.2.2	0%	100%	0%
5.2.3	30%	70%	0%
5.3.1	0%	100%	0%
5.4.1	0%	70%	30%
5.5.1	0%	100%	0%
5.6.1	0%	100%	0%
5.6.2	0%	100%	0%

ATM Functionality #6

Family	Gap coverage	Compl. Year	DEF 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 85

Current status of implementation

Already implemented

27

In progress / Planned

54

Not planned

4

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
	#081AF1	Enhanced Terminal Airspace (TMA) using RNP-Based Operations	London Gatwick	2015_269_AF3	Mil MTCD Advanced Controller Tools (FOURSIGHT)	UK MOD
✓	#082AF2	Enhanced Departure Management integrating airfield surface assets	London Gatwick	✓ 2015_286_AF2	Introduction of Electronic Flight Strips	NATS
✓	#084AF2	Time-based separation for Final Approach	London Gatwick	2015_288_AF2	A-SMGCS upgrade to provide airport safety nets and routing & planning functions	London Gatwick
✓	#087AF2	Time Based Separation	London Heathrow, British Airways, NATS	2015_289_AF2	Integrated Ground Management (GMAN)	London Gatwick
✓	#089AF2	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 (AFS) 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_158_AF8	DLS Implementation Project – Path 2	Arinc, NATS
	2015_016_AF2	ASMGCS Level 1 & 2	London Heathrow	✓ 2016_161_AF8	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_AR	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_AR	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_AF8	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
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