Guidance Material for SESAR Deployment Programme Implementation

Monitoring View 2018

Proposal for update to European Commission

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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. It is within such phase that the modernization of the European ATM system becomes an operational reality and starts bringing the expected benefits, after its careful planning and its progress towards an adequate level of technological maturity.

This modernization initiative entails 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 includes a constantly evolving reporting mechanism, which monitors all implementation activities associated to the ATM functionalities of the DP, thus tracking the overall progress of the PCP implementation.

More specifically, the synchronization of the PCP deployment relies on the oversight and monitoring of all implementation initiatives activated by operational stakeholders impacted by the Pilot Common Project: this oversight is not only limited to Implementation Projects under SDM coordination and benefitting of EU funding support, but also involves any other deployment activities 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 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. These activities – or *implementation gaps* - represent 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. Each existing gap is composed of two main elements:

- The technical/operational element to be deployed, i.e. one of the Families included in the SESAR DP;
- The geographical location (e.g. airport or country[1]) in which the Family shall be deployed.

As the deployment phase of SESAR passed its start-up period and is now progressing 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 living ATM reality, both on ground and on airborne side.

The Monitoring View 2018 thus 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 steer the subsequent phase of the PCP deployment and to develop a common reference for all involved actors.

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:

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

- Section 1, which provides for a high-level overview of the status of deployment across Europe. Specifically, it identifies all activities that have already been performed between 2014 and 2018,

[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.

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 implementation. On the basis of the inputs gathered during the Monitoring Exercise from the operational stakeholders, this section also provides the expected 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 the ground stakeholders and the Airspace Users.

The document is 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 and maintenance of a constantly updated and 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, gathering 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, required the establishment of a dedicated exercise, 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, a dedicated SDM Monitoring Exercise was preliminarily established in 2015. To this end, building on the legacy of the Interim Deployment Programme (IDP) monitoring activities, the full alignment between specific DP Families 2016 and the IDP Activity Areas and/or Work Packages addressing PCP prerequisites and facilitators was duly taken into consideration. The exercise has then been refined and expanded in 2016 and 2017, setting the ground for yearly iterations that ensure a more structured and reliable view.

The current monitoring exercise has been carried out taking into account targeted and detailed inputs provided by all relevant operational stakeholder categories, gathered through *ad-hoc* templates and surveys, specifically developed by the SESAR Deployment Manager, with the cooperation of EDA, NM and the SESAR JU. To achieve this goal, the 2018 SDM Monitoring Exercise involves:

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

As each milestone is assigned with a specific weight in the Family deployment, the progress towards the full coverage of a specific gap is defined by the achievement of this standard set of milestones from the Stakeholders' operating within the defined geographical scope[2]. In particular, a gap is considered fully closed when all associated milestones have been achieved, the technologies within the Family scope have been fully deployed and their operational use has started.

[2] 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.

Furthermore, within the 2018 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 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 identifying 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. These 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)
- **3.2.4** – Free Route Implementation
- **5.3.1** – Upgrade / Implement Aeronautical Information Exchange system / service
- **5.4.1** – Upgrade / Implement Meteorological Information Exchange system / service
- **5.5.1** – Upgrade / Implement Cooperative Network Information Exchange system/service
- **5.6.1** – Upgrade / Implement Flights Information Exchange system / service supported by Yellow Profile
- **5.6.2** – Upgrade / Implement Flights Information Exchange system / service supported by Blue Profile

On the basis of this information, specific tables and/or paragraphs complement the charts at Family level included in Chapter 2.

1. PCP Implementation Status

1.1 Current status of PCP deployment

As anticipated in the introduction, SDM identified the concept of the coverage of the existing implementation gaps as a suitable indicator to measure the progress of the PCP implementation activities. Tracking the growing number of covered (or "closed") gaps during the years allows 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 implementation of a Family within a specific geographical location (airport[3] or country – to refer to Airspace dimension – plus Network Manager and MUAC, when applicable) has been achieved, 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 deployment of the related Family.

The overall number of ground gaps has been defined by taking into account all implementation activities needed to deploy the DP 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, no gap has been considered.

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 only associated to implementation 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 figure, 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 1152. This number has been slightly reviewed and increased from the 2017 edition, where a total number of 1142 ground gaps were considered. That is mostly due to further discussions and analysis – performed by SDM in cooperation with the Network Manager and the relevant local operational stakeholders – on the geographical applicability of STAM Phase 1 (Family 4.1.1) in the framework of the PCP implementation. As the additional assessment confirmed, elements included within this Family are applicable within a much wider geographical area than previously considered, thus leading to an increase of the overall number of gaps. It is however worth emphasizing that those elements are already fully implemented and used operationally, so that the gaps can be considered already closed and do not require additional activities nor investments by the involved stakeholders.

According to the results of the SDM Monitoring Exercise, these 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 coordination of the SESAR Deployment Manager;
- gaps whose implementation is in progress without the EU funding support, through deployment activities performed by operational stakeholders without the coordination of SDM;
- gaps whose implementation is planned by operational stakeholders, but not currently in place;
- gaps for which the implementation is not currently planned.

[3] The scope of the SDM 2018 Monitoring Exercise encompasses all 25 PCP airports but Istanbul Ataturk.

PCP implementation: a general view

275 gaps out of the 1152 composing the Deployment Programme scope are already fully implemented and the associated technological and operational elements are already in use by the relevant stakeholders. Compared to the results stemming from the analysis carried out in 2017, the overall percentage of implementation increased by more than four percentage points, thus bringing the coverage from roughly 19% to 23,9%. It is worth noting that such implemented gaps are spread across all PCP ATM Functionalities and 24 Deployment Programme families, demonstrating a wide-ranging and far-reaching effort from involved stakeholders.

Figure 2 further provides evidence that **the implementation activities are progressing well, as they are covering around 540 gaps, amounting to almost 47% of their total number**. More specifically, 391 gaps are in the process of being implemented **benefitting from the outcomes of EU-funded and SDM-coordinated Implementation Projects from CEF Call 2014, 2015, 2016 and 2017**, covering either the implementation of the partial or full scope of an identified gap. On the other hand, for 149 gaps the implementation is in progress with Stakeholders' own resources and/or through other means of funding/financing.

In other words, **more than two thirds of the identified gaps (70,7%) is either already closed or is in the process of being implemented by the relevant operational stakeholders**, slightly improving the overall 2017 outlook by around four percentage points. Furthermore, these progresses led to the achievement of partial results in almost 300 additional gaps, for instance through the achievement of intermediate implementation steps, almost doubling the number of gaps where tangible deployment results have already been accomplished.

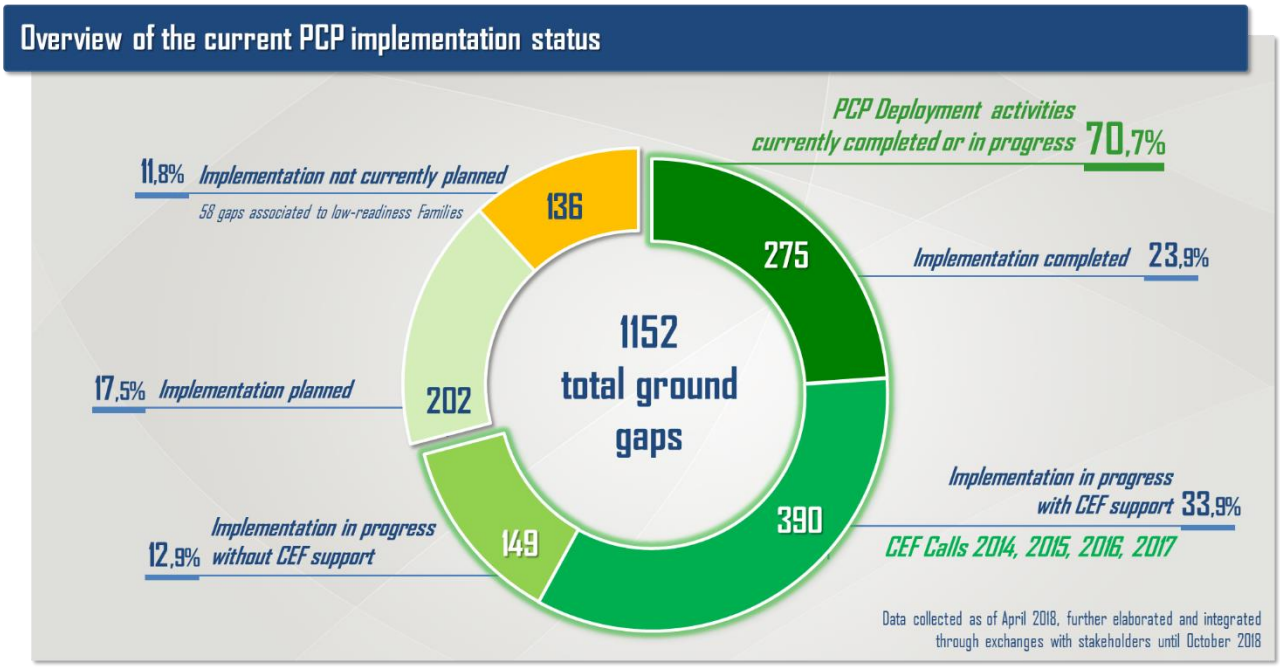


Figure 2 - Current PCP Implementation Status - Overview

17,5% of the gaps are currently planned to be deployed, as Stakeholders declared through the Monitoring Exercise, bringing the total number of gaps implemented, addressed or soon-to-be addressed by implementation activities to 1016, more of 88% of the total SDP scope. Finally, stakeholders declared the lack of specific plans for the remaining 11,8% of the PCP scope (136 gaps).

Taking a closer look at these last two figures, it is worth noting that the total share of gaps that are either planned or not yet part of the Stakeholders' future implementation programs has seen a slight decrease compared to 2017, dropping from more than 33% to a shy 30%. This is due to the increasing commitment of operational stakeholders to implement the Deployment Programme, as well as to the EU funding support provided under the CEF Framework, including 49 Implementation Projects awarded in CEF Call 2017.

In a nutshell, the aforementioned figures help bringing the positive message that Stakeholders are moving forward with the deployment, thus getting closer to turn the Pilot Common Project into operational reality.

However, attention should be also drawn to specific reasons why the implementation activities are not yet planned:

- the low readiness of the associated Families does not allow the elaboration of concrete implementation plans. It is the case of implementation activities linked to Family 4.3.2 (11 gaps with no associated plans), Family 6.1.2 (28 out of a total of 29 gaps) and Family 5.6.2 (19 gaps with no concrete plans from local stakeholders);
- the potential uncertainties linked to the implementation of SWIM-related elements (especially those associated to different kinds of 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. For 63 implementation gaps associated to AF5 elements no specific implementation plan has been indicated by the stakeholders; furthermore, it is worth noting that Family 5.2.3 is still considered as a *medium readiness* Family;
- potential concerns associated to the deployment of specific Sub-AFs, such as the integration of Departure Management with Surface Management Constraints and its link with the A-SMGCS Planning and Routing functions and the deployment of Enhanced Short Term ATFCM Measures (especially with regard to Family 4.1.2, STAM Phase 2);
- possible reservations regarding the deployment of Family 2.3.1 – Time Based Separation – 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 plans to implement another (e.g. the integration of the AOP-NOP, which relies on the implementation of the local Initial Airport Operations Plans, or Family 3.1.2, which requires the full deployment of Family 3.1.1).

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 DP itself and the stakeholders' investment plans. SDM is already supporting the ATM community, in cooperation with the appropriate SES bodies, in the preparation and implementation of the identified mitigation actions, which are expected to improve the situation in the upcoming years.

Detailed view per ATM Functionality

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

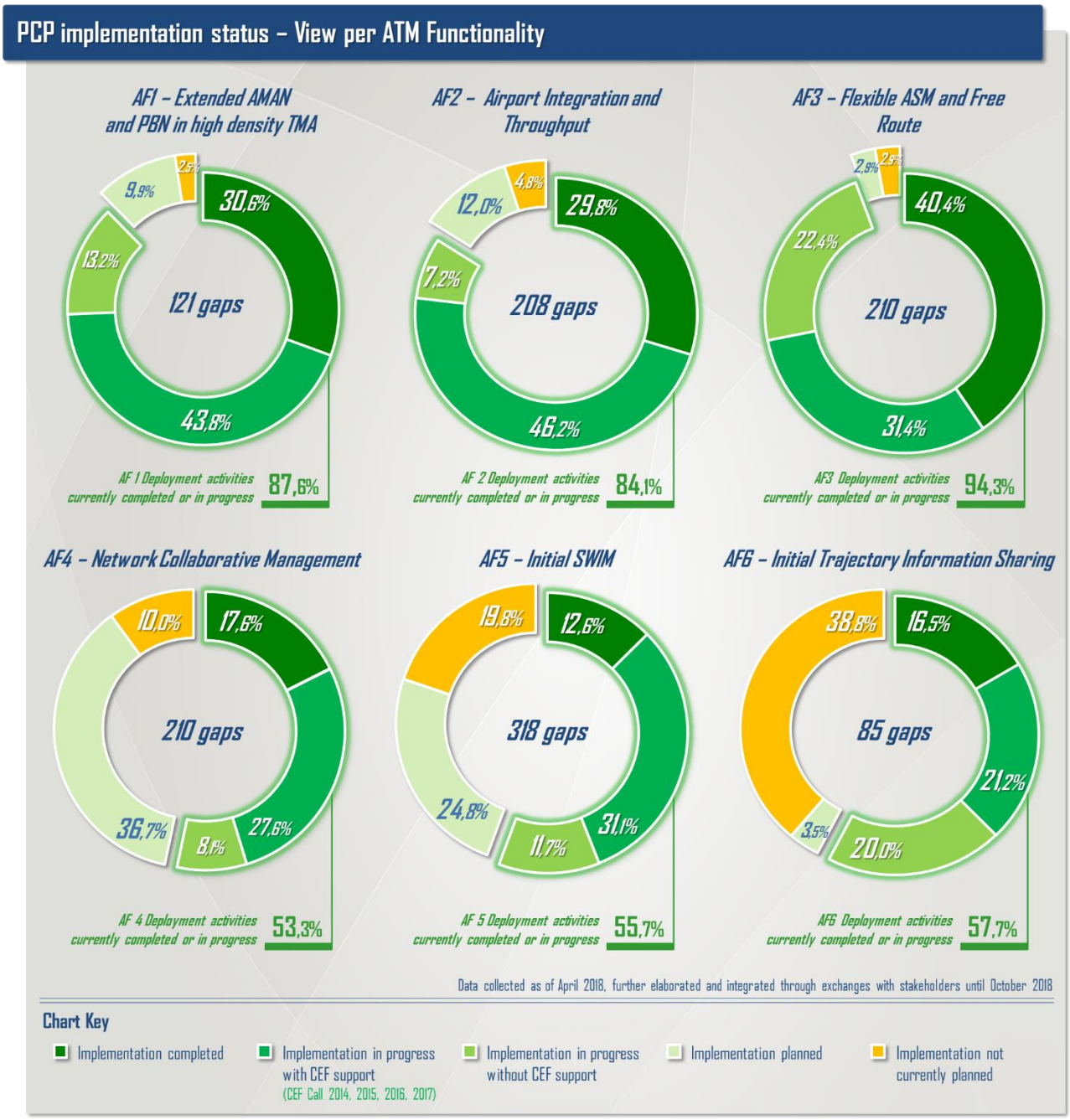


Figure 3 - PCP Implementation Status: view per AF

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

Roughly one third of the existing implementation gaps associated to AF1 Families have already been closed, with slight improvements already achieved across all families compared to 2017. Around 60% 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 12.5% of the cases, of which more than two thirds are planned to be implemented by stakeholders.

Whilst for Family 1.1.1 and 1.2.2 more than half the stakeholders operating in the PCP airports have already implemented the associated technological and operational elements, it is worth mentioning that for some families only a limited set of gaps have already been closed (4 for Family 1.2.1, and 1 for Family 1.2.3). On the other hand, intermediate results have been achieved in the implementation of all the mentioned Families: 18 airports have already partially implemented the AMAN upgrade to included Extended Horizon function, 19 partially deployed RNP approaches with vertical guidance in at least one of its runways, and 3 implemented some elements associated to RNP 1 operations.

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. In the wide majority of cases, the implementation activities are also coordinated by SDM.

For a limited number of gaps (only less than 5% of their total number), no plans have been declared by stakeholders. That is due essentially to some uncertainties regarding Family 2.3.1 (Time Based Separation): no plans have been declared by 8 airports out of the 16 into which the deployment is required.

The implementation of Family 2.1.1, 2.1.2, 2.1.3 and 2.2.1[4] is well progressing, as the number of fully or partially covered gaps amounts respectively to 16, 23, 21 and 21 gaps out of the 24 airports, for a total increase of almost 10% vis-à-vis 2017.

Although a limited number of airports have already fully implemented the technological elements linked to Families 2.1.4, 2.4.1, 2.5.1 and 2.5.2, it has to be highlighted that the deployment activities have already started in A-SMGCS Routing and Planning Functions and Airports Safety Nets associated with A-SMGCS, in 18 airports each, whilst the implementation of Aircraft and vehicle systems contributing to Airport Safety Nets and the Initial Airport Operations Plan has started respectively for 17 and 16 gaps. With regard to the above Families, in 85% of the cases, the activities are being carried out under the coordination of SDM.

AF 3 – Flexible ASM and Free Route Airspace

More than 40% of the implementation gaps associated to AF3 have already been fully covered by operational stakeholders, demonstrating considerable improvements compared to the situation outlined in the Monitoring View 2017. The year 2018 also marks the achievement of the first PCP milestone, with the successful implementation of Direct Routings (DCTs) throughout Europe, in accordance to Regulation (EU) n. 716/2014. In addition, significant results have been obtained in Families 3.1.1 and 3.1.3, which have been achieved respectively in 11 and 24 countries. The deployment of Family 3.2.4 is also progressing well, with an overall increase of 10% compared to last year, thus bringing the total number of countries where Airspace Users are able to fly FRA to 17.

113 gaps 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.

With regard to Family 3.2.1, which is associated to the upgrade of ATM systems supporting Sub-AF 3.2, it is worth noting that the situation improved vis-à-vis the Monitoring View 2017, where the implementation activities have already been concluded for Portugal, MUAC and Bulgaria, whilst tangible results have already been achieved elsewhere. Specifically, in 90% of the occasions, the activities toward the full implementation

[4] 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.

of the supporting tools included in the Family's scope have successfully started, with more than two thirds of them covering 50% or more of the relevant gap.

For only 2,9% of the identified gaps, the implementation activities have been planned but not started yet, whilst for the remaining 2,9% no specific plans have been elaborated by the relevant stakeholders. Also for AF3, the abovementioned results show a convincing progress compared to last year, when 15% and 5% of the gaps where planned and not planned, respectively.

AF 4 – Network Collaborative Management

The number of completed implementations amount to 17,6% of the total gaps associated to ATM Functionality #4, which is more than 6 percentage points higher than in 2017. However, it needs to be noted that AF4 is 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 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 associated to any implementation plans.

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), the deployment of Interfaces between ATM systems and NM systems (Family 4.2.3), 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 more than 35% of the total number of existing gaps, leaving only around 10% of the AF-related gaps without any associated specific implementation plans.

AF 5 – Initial SWIM

The overall implementation of the ATM Functionality #5 is progressing, although it needs to be considered that some key enabling activities are currently being ramped up through two multi-Stakeholder initiatives. Building on the activities already started in 2016, the implementation project aimed at establishing a SWIM Governance officially started its deployment activities, benefitting of EU funding due to its award under the 2016 CEF Call framework. In addition, an initiative on the SWIM Common PKI has been awarded by INEA within the 2017 CEF Call for Proposals, demonstrating and supporting a cooperative effort to set-up the necessary elements enabling the full implementation of AF5.

Even though due consideration needs to be given to the points highlighted above, it is worth noting that more than 56% of the AF5 gaps are or will be addressed by the operational stakeholders, either through their full closure or through deployment activities currently on going with and without the support of EU funding. More in detail, 40 out of the 318 gaps to be covered by the implementation of technological elements linked to the deployment of Initial SWIM have been closed, 137 are in the process of being addressed, and 78 are associated with future plans of the Operational Stakeholders to achieve the full PCP compliance.

Finally, around 20% 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 operational use after the establishment of a SWIM Governance.

In a nutshell, the figures remain practically steady compared to the results stemming from the analysis carried out in 2017. However, the global situation has improved thanks to the multi-Stakeholder initiatives described above. Significant improvements are expected to be tangible once these Europe-wide initiatives progress 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 advancing and increasing the number of closed gaps compared to last year, with 14 countries having the ATN B1 based services implemented. On the other hand, 35 gaps out of the 84 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 more than 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 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 of the associated technological elements is needed to start a synchronized and effective deployment.

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 12 countries (plus the MUAC area - upper airspace of Belgium, north-west Germany, Luxembourg and the Netherlands), whilst 8 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.

1.2 Expected roadmap for PCP completion

Overall roadmap

Complementing the current snapshot of Regulation (EU) n. 716/2014 implementation status, the yearly SDM Monitoring Exercise also allows to build the expected roadmap towards the full implementation of the Deployment Programme, as per the data and information provided by all relevant ATM operational stakeholders operating within the PCP geographical scope.

Together with the information on the current and planned status of the implementation, each respondent to the Monitoring Exercise was also requested to identify the planned date for the complete implementation of the Family within its geographical area of responsibility.

Through the combination of inputs from operational stakeholders operating within a specific airport or Country, for each existing gap it was possible to identify the expected date on which all elements linked to a specific family will be fully deployed and their operational use will start. The main results stemming from this analysis are reported within Figure 4 and are further illustrated in the following paragraphs. Such figure starts from the status of implementation reported on last edition of the Monitoring View 2017, as resulting from last year SDM Monitoring Exercise and specifically highlighted in orange, and illustrates through a green curve the expected progress in the overall implementation of the Pilot Common Project

It is worth noting that for around 17% of the 1152 implementation gaps that compose the full SESAR Deployment Programme scope, no specific date of completion has been indicated or identified, among other reasons due to a lower level of readiness for implementation of the technological and operational elements to be deployed, and – in a smaller set of cases – due to the lack of already defined plans to steer and address the implementation by local stakeholders.

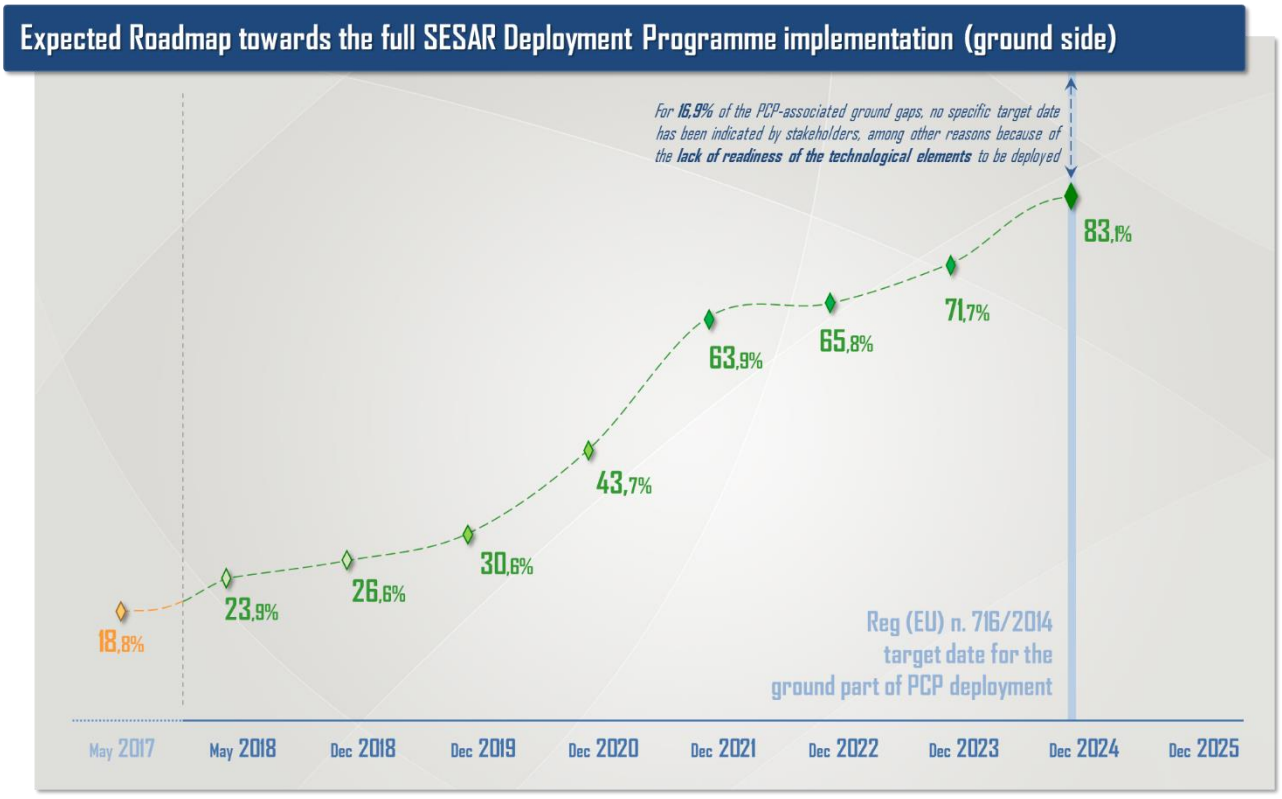


Figure 4 - Expected Roadmap towards the Full PCP implementation

As illustrated within Section 1.1, the current[5] status of implementation of the Pilot Common Project includes 275 gaps fully covered, amounting to more than 24% of the total number of 1152 implementation gaps. That marks a significant step forward from May 2017, when less than 19% of the gaps were already fully

[5] Such status corresponds to the status of PCP implementation as in May 2018, when the monitoring data and associated information has been submitted by the relevant ATM operational stakeholders. For the deployment activities performed under the coordination of SDM, the monitoring results are fully aligned with the DP Execution Progress Report 2/2018, published in June 2018.

closed; that is mostly due to stakeholders' efforts in closing additional gaps in AF2 (e.g. with the significant progress in the wide-spread implementation of Airport-CDM across the PCP airports) and in AF3 (especially thanks to the progress in the implementation of Family 3.1.3 and the achievement of the full closure of Family 3.2.3, leading to the implementation of Direct Routings across the whole European Union).

By the end of 2018, an additional set of 32 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 Brussels airport, which would bring the total number of PCP airports operating AMAN to 15, 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 Brussels and Dublin across all local applicable runways used for landings;
- The wide-spread progress in the installation and integration of ASM tools (supported by Family 3.1.1) across 12 European countries, with the coordination and support of the Network Manager. It is worth underlining that in several of these countries, the implementation is currently supported by EU-funded implementation projects. That would bring the total number of Family 3.1.1 closed gaps to 23.

By the end of 2019, a total number of 352 gaps is expected to be closed (roughly 30% of the total), thanks to the achievement of the full coverage for additional 45 gaps spread across all PCP ATM Functionalities, with a specific focus on AF1, AF3 and AF5. More specifically, a significant progress is expected in Family 1.2.1, with the implementation of RNP approach procedures across 6 PCP airports. The deployment of PCP at airport level is also expected to significantly accelerate within AF2, with 11 gaps closed in 2019 within Family 2.1.1, 2.1.2 and 2.2.1. Furthermore, operational stakeholders will achieve important milestones in the deployment of Initial SWIM and its infrastructure components, with 7 gaps closed among Family 5.1.2 (dealing with the installation of NewPENS) and Family 5.2.1 (Stakeholders' Internet Protocol Compliance). It is also worth noting that initial results will be achieved in the integration of local Airport Operations Plan in the Network Operations Plan (covered by Family 4.2.4), with 4 gaps expected to be closed.

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 44%, thanks to the closure of additional 151 gaps, leading to a total number of 503.

The acceleration in the deployment progress will be significantly pushed by the closure of implementation activities, covering more than 80 gaps from AF1 and AF2, spread across almost all identified Families, including the full implementation of RNP APCH with vertical guidance (Family 1.2.1) in 8 PCP airports and the closure of more than 65 gaps associated to Sub-AF 2.1, Family 2.2.1 and Sub-AF 2.5. Additional progress will be represented by the progress in the implementation of AOP/NOP integration (to be deployed by December 2020 in 6 PCP airports) and especially by the implementation of NewPENS (Family 5.1.2) within 23 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 736, topping 64% of the overall implementation of the Pilot Common Project: the constant growth (with 233 gaps closed during 2021) is explicitly led by the progress in the implementation of AF3, with 49 gaps to be closed within Sub-AF 3.1 *Airspace Management and Advanced Flexible Use of Airspace* and 31 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 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.).

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 slightly above 200 gaps in total, with a significant increase in covered gaps from AF4, AF5 and AF6.

At the current time, 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.

On the other hand, 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 more 200 gaps. A specific focus is needed for AF5 and AF6 implementation, as no completion date has been indicated for around 150 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 well-advanced and already started delivering their first results, also in terms of the achievement of the related performance benefits: around 30% out of the 121 gaps to be covered have already been closed, setting the ground for the future implementation of all technological and operational elements mandated by the Pilot Common Project. It is also worth mentioning that the progress in the implementation is expected to keep a steady pace in 2018 and in 2019, closing on average 10 gaps per year.

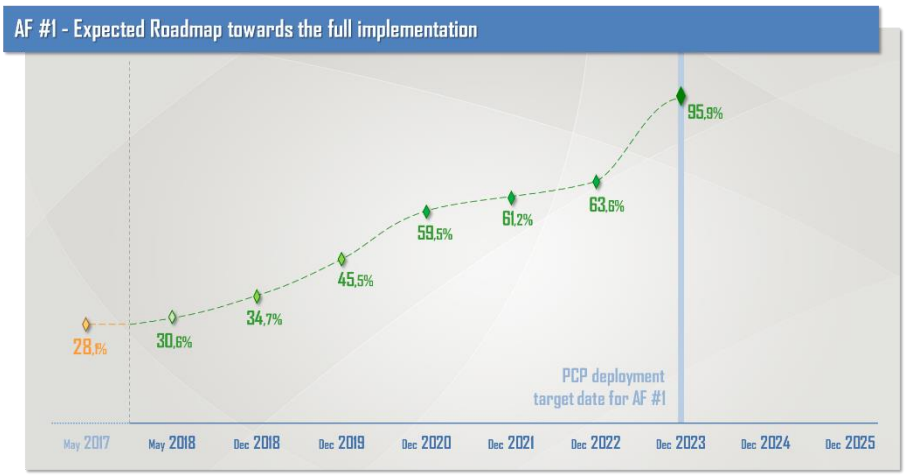


Figure 5 - AF1 Expected Roadmap for Implementation

By December 2020, also thanks to the closure of several EU-funded implementation projects, additional 17 gaps will be closed by local operational stakeholders, achieving around 60% of the overall implementation of AF #1.

The implementation progress rate is expected to slow down during 2021 and 2022, then experiencing a significant spike during 2023, bringing the total of closed gaps to 116 (around 96%). 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 14 and 18 airports each.

The completion of Family 1.1.1 is expected to proceed in the upcoming months, as Arrival Manager is expected to be implemented and become operational in Brussels in 2018, as well as in additional 5 of the busiest PCP airports in 2019. In parallel, the Spanish gaps for Family 1.2.2 have just been closed by and EU-funded initiative led by ENAIRE implementing a reference Geographic Database (in Barcelona, Madrid

and Palma de Mallorca) and a similar initiative is also in the process of being completed in Amsterdam Schiphol.

The progress achieved within the implementation of these families is of utmost importance; Basic AMAN represents an intermediate step and a significant push towards the implementation of Family 1.1.2, 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 declared plans to complete the implementation of the Family in accordance with the deployment target date stated in the Regulation – by the end of 2023. On the other hand, the implementation of the Geographic Database for Procedure design works as an effective enabler for the full 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 for the ATM Functionality and with the FOC dates specifically identified for each Family in the SESAR Deployment Programme. Moreover, some earlier implementations are foreseen: as an example, RNP approaches with vertical guidance (Family 1.2.1, with FOC date at the end of 2020) are already implemented at Nice, Oslo, Palma de Mallorca and Paris CDG and will be implemented by the end of 2018 in Brussels and Dublin. Furthermore, the implementation efforts from local ANSPs and Airport Operators already led to the adoption of RNP APCH procedures already in 23 of the 24 PCP airports, although not yet across all the locally applicable runways.

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 62 gaps closed out of a total of 208, accounting for slightly lower than 30% of the overall ATM Functionality. These results have been achieved through the coordinated effort of ANSPs and Airport Operators and have also take advantage of EU funding support and of the coordination of SDM.

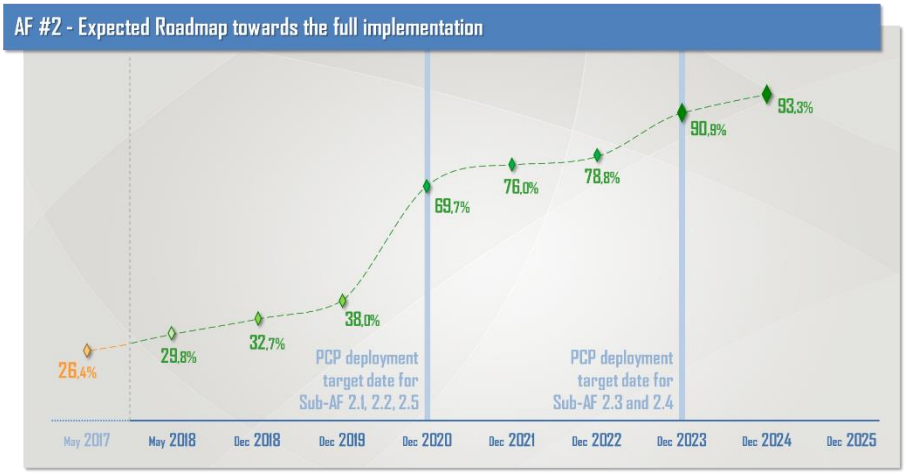


Figure 6 – AF2 Expected Roadmap for Implementation

After a foreseen slow but steady progress in 2018 and 2019 (closing 17 gaps in total and focusing on the implementation of Sub-AF 2.1 and 2.2), by the end of 2020, the total number of closed gaps is expected to significantly increase to 145, amounting to 69,7% 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 194, amounting to 93,3% of the total existing implementation gaps.

For around 15 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. More specifically, 8 of the 16 PCP airports currently do not foresee to implement the Family by the PCP deployment target date).

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 12, 16 and 18 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 2018, with the implementation of the Electronic Flight Strips in the three London PCP airports achieved in July, and with the upcoming implementation of Initial DMAN at Dublin Airport. Finally, all remaining PCP airports are already in the process of fully implementing Airport CDM.

8 implementation gaps associated to Family 2.2.1 (A-SMGCS Level 1 and 2) have already been closed by the joint effort of Airport Operators and ANSPs, depending on the specific operational arrangement in place within each airport and at least A-SMGCS Level 1 is implemented in 19 of the 24 PCP airports. It is worth noting that all involved stakeholders declared plans to close the existing gaps earlier than December 2020, whilst earlier implementations are foreseen in 7 airports (closing the gaps at the latest on December 2019 and, in two cases, in 2018). 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 which underpinning SESAR Solution was not successfully validated due to instability of the data. The corresponding Sub-AF is therefore proposed to be removed from the PCP through the PCP revision that SDM submitted to the European Commission in November 2017.

A smaller number of tangible results is associated to Family 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.

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 more than 40% of the identified implementation gaps already fully covered by operational stakeholders (mostly ANSPs and the Network Manager, with the involvement of Military Authorities whether relevant according to local arrangements).

By the end of 2018, the overall number of closed gaps is expected to raise at 101, reaching more than 48% of the total, slightly increasing also during 2019, with the closure of 4 additional gaps.

The progress of AF#3 implementation is expected to grow stable in the upcoming months leading to the coverage of around 57% of the identified gaps by the end of 2020.

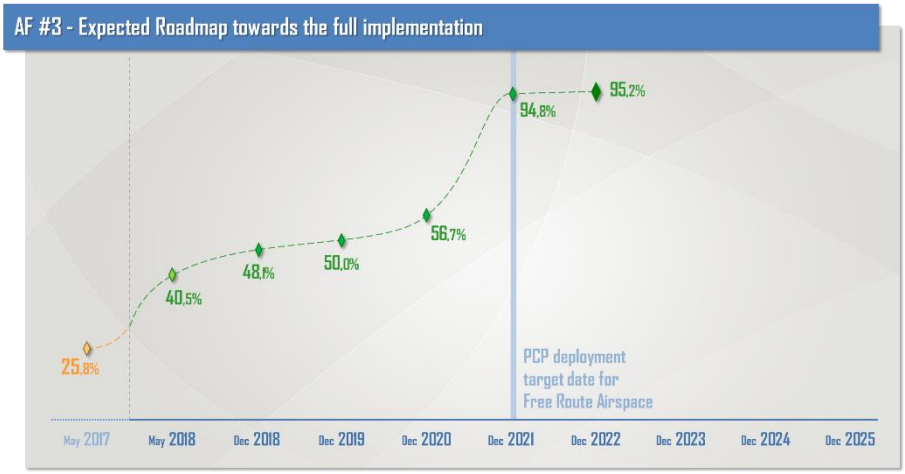


Figure 7 – AF3 Expected Roadmap for Implementation

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 during 2021, pushing the total to 200 closed gaps (more than 95%) by January 1st, 2022, the deployment target date of AF3. As described earlier within section 1.1, this implementation is likely to be subject to certain limitations.

For a limited number of gaps (less than 5% 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).

ASM tools to support AFUA (as described within Family 3.1.1) are already implemented within ten European countries (Belgium, Bulgaria, Croatia, Cyprus, Denmark, Estonia, France, Germany, Hungary, and Switzerland), plus MUAC, and additional implementations and integrations with NM systems will be closed in the upcoming months in Austria, Greece, Ireland, Italy, Lithuania, Norway, Poland, Portugal, Romania, Slovak Republic and Spain. That would lead to the closure of 23 gaps out of the 30 identified in the SESAR Deployment Programme, building the way for an improved civil-military coordination and for greater flexibility in the use of the European Airspace.

Whilst the implementation of Family 3.1.3 has received a significant boost in the previous years, registering more than two thirds of the existing gaps already fully closed, Family 3.1.2 is proceeding at a slower pace, as the still on-going implementation of local ASM tools represents an enabler for its full deployment. Almost all European ANSPs however have started the associated implementation activities and plan to close the gaps by the end of 2021, in compliance with the FOC date of the Family.

Although fully deployed only at MUAC, the implementation of Dynamic Airspace Configuration (covered by Family 3.1.4) is already on-going and have delivered the first intermediate results, with building blocks of the Family already implemented across 24 additional countries (in 11 cases, the Family implementation is already beyond 80% of the progress).

The upgrade of ATM systems associated to Family 3.2.1 is currently undergoing within almost all European countries, in many cases thanks to overarching upgrades of the ATM systems used by the local ANSPs, which will gradually bring to the implementation of tools and functionalities listed in Reg. (EU) 716/2014 to support DCTs and Free Route Airspace.

Within 27 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, leading to the full coverage of the Family in line with the 2021 deadline.

The full-scale implementation of Direct Routing (DCTs) represents one of the earliest achievements in PCP deployment, as Family 3.2.3 has been successfully implemented across all countries included in the Regulation geographical scope, with tangible operational benefits for Airspace Users flying across Europe.

Building on this progress, the deployment of Free Route Airspace is also expected to progress at fast pace: starting from the 17 currently closed gaps, the full implementation of the Family above Flight Level 310 will be achieved in additional 12 countries by the end of 2021, featuring also some relevant earlier implementations across some of the busiest European areas (e.g. the implementation in Germany, Maastricht Upper Area and United Kingdom is scheduled to be completed in 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.

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 around 18% of the identified implementation gaps have been closed until May 2018, and just a very limited progress rate could be expected in the upcoming years (21 closed gaps in the 2018-2020 framework).

A significant step forward will be experienced during 2021, with the closure of around 60% of the existing implementation gaps, thus bringing the percentage of

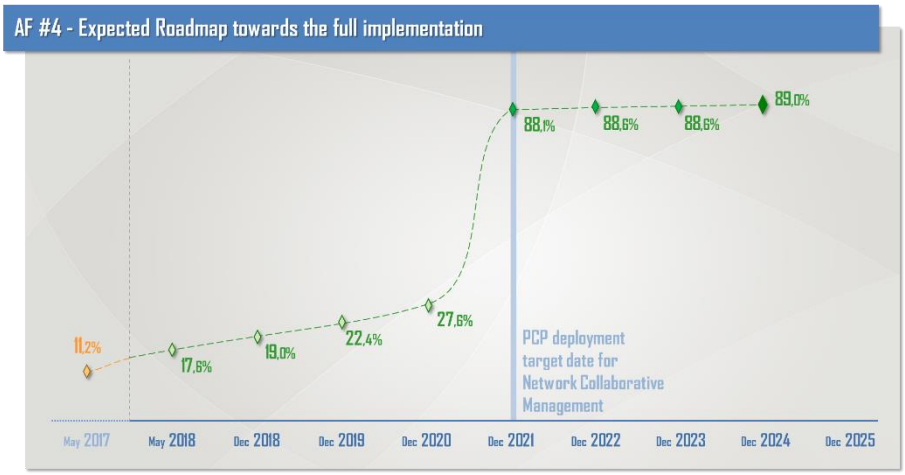


Figure 8 - AF4 Expected Roadmap for Implementation

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. Considering the operational role of the Network Manager, 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) requires the availability of a common platform, whose development is currently on-going by NM. Once the platform will be completed and enter into operational use, local stakeholders (mostly ANSPs) would be able to proceed with the implementation and close the associated gaps.

It has however to be noted that no specific date of completion has been identified by operational stakeholders for around 11% of the total number of gaps. That is 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.

STAM Phase 1 - a facilitating Family that supports the implementation of Sub-AF 4.1 - is already implemented within 20 out of the 22 applicable countries, plus MUAC; through the achievement of the Family implementation in 2018 in Spain (supported by an EU-funded Implementation Project), additional progress is also expected in the upcoming years towards the full implementation of the Family across the applicable geographical scope.

Family 4.1.2, 4.2.2 and 4.2.3 are 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 28 ANSPs have already deployed and put into operational use at least one of them.

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 Switzerland, MUAC and United Kingdom. The implementation will continue at a regular pace, with a notable earlier Family completion in Czech Republic within 2018. The deployment efforts from local stakeholders are in several cases (16 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 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.

More specifically, 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, are 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.

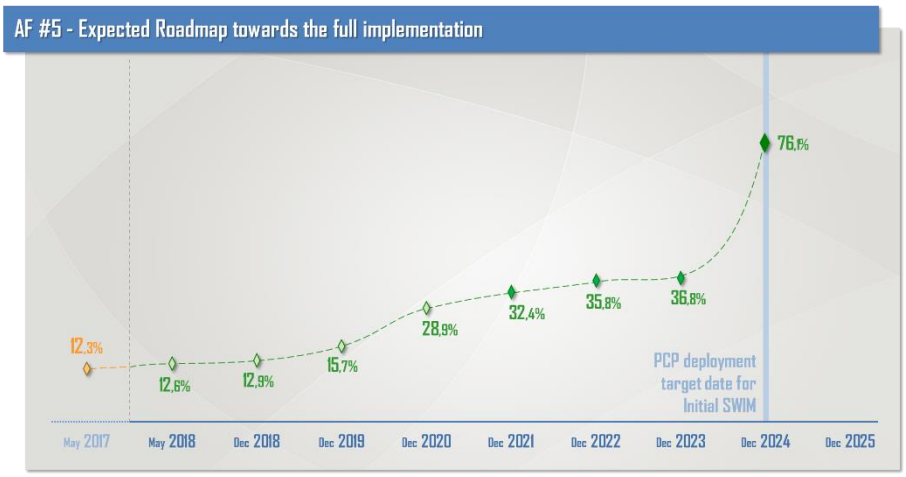


Figure 9 – AF5 Expected Roadmap for Implementation

As a result, in line with the results presented in the Monitoring View 2017, only 12,6% 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 (10 by the end of 2019).

However, the situation is expected to improve from 2020 onwards, with around 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 75% 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 25% 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 technologic al 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 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. Furthermore, around 30 operational stakeholders from all stakeholder categories are participating to a multi-stakeholder initiative funded under CEF Call 2017, aiming at deploying the SWIM Common Public Key Infrastructure, as required by the SESAR Deployment Programme and included within Family 5.1.4.

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, Hungary, Italy, Latvia, MUAC, Romania, Slovenia, Switzerland, and UK) and a stable progress rate is expected in the upcoming years (with Germany expected to close the gaps by the end of 2018 and several other countries in 2019). 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 Family 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.

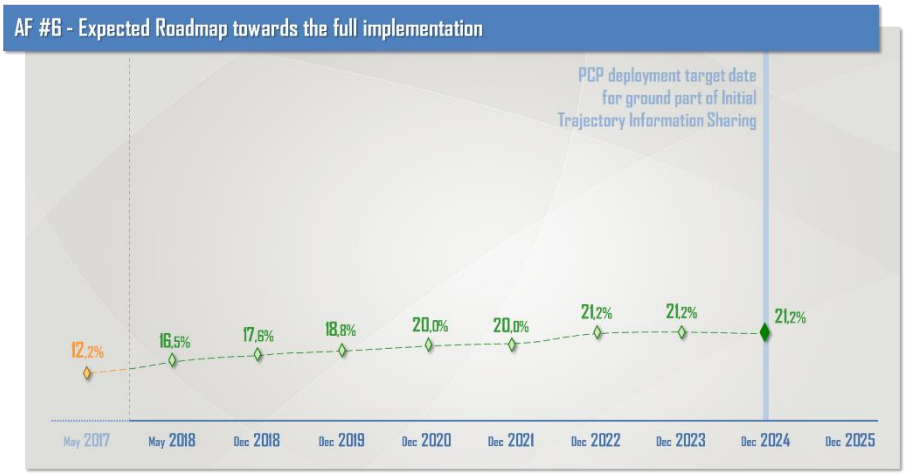


Figure 10 – AF6 Expected Roadmap for Implementation

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.

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, Czech Republic, Denmark, 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 12 countries (plus Maastricht Upper Area, operating DLS services within Belgium, Netherlands and Luxembourg airspaces). Partial results have also been achieved in other 8 countries, 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, as they are 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. It needs to be noted that the target date implementation of AF6 has been proposed to be shifted to 1st January 2027 through the PCP Review due to the fact that Flight Object distribution on the ground is still under R&D and the required standard is not expected to be ready before 2021.

1.3 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.

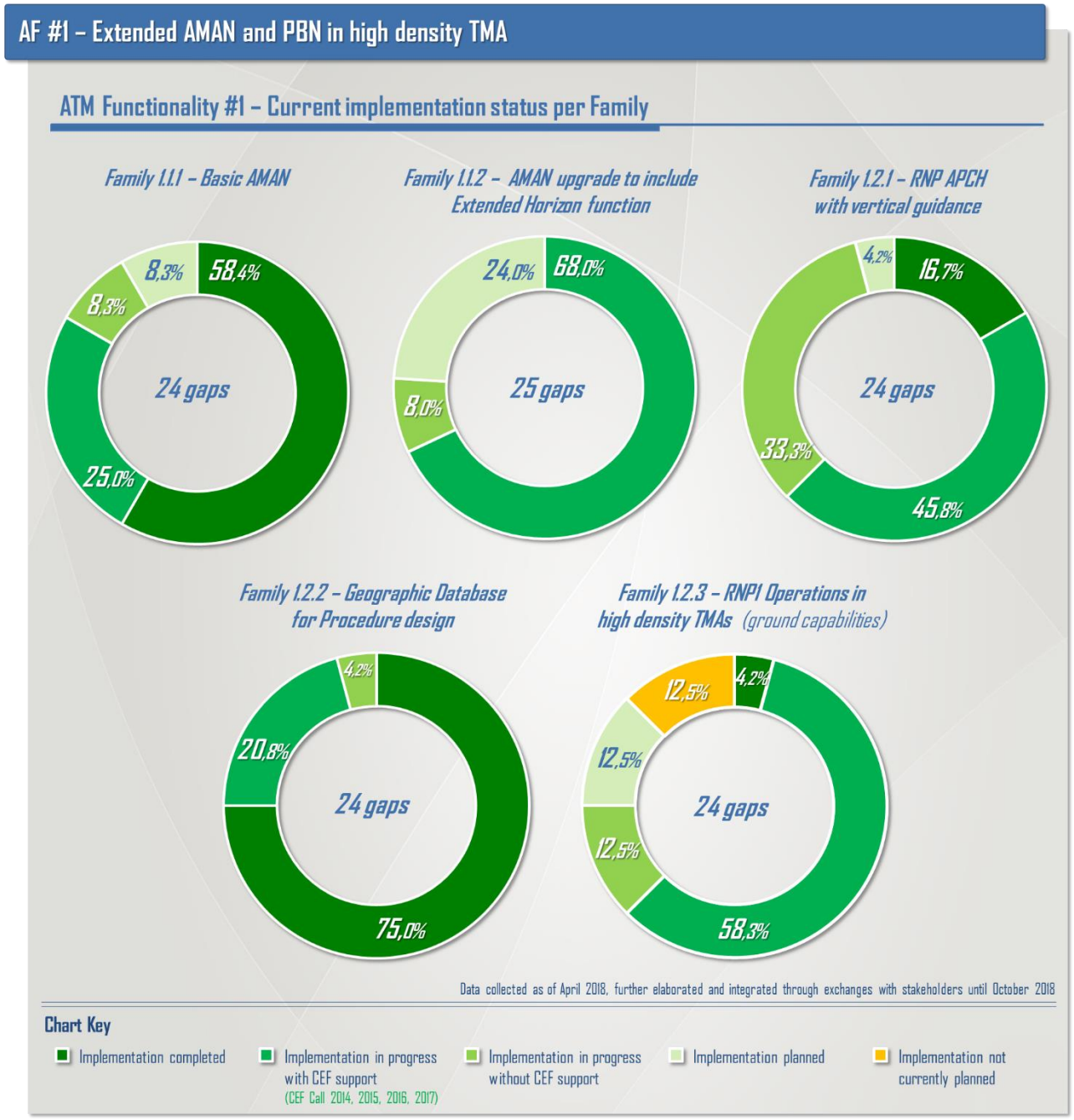


Figure 11 - AF1: current implementation status per Family

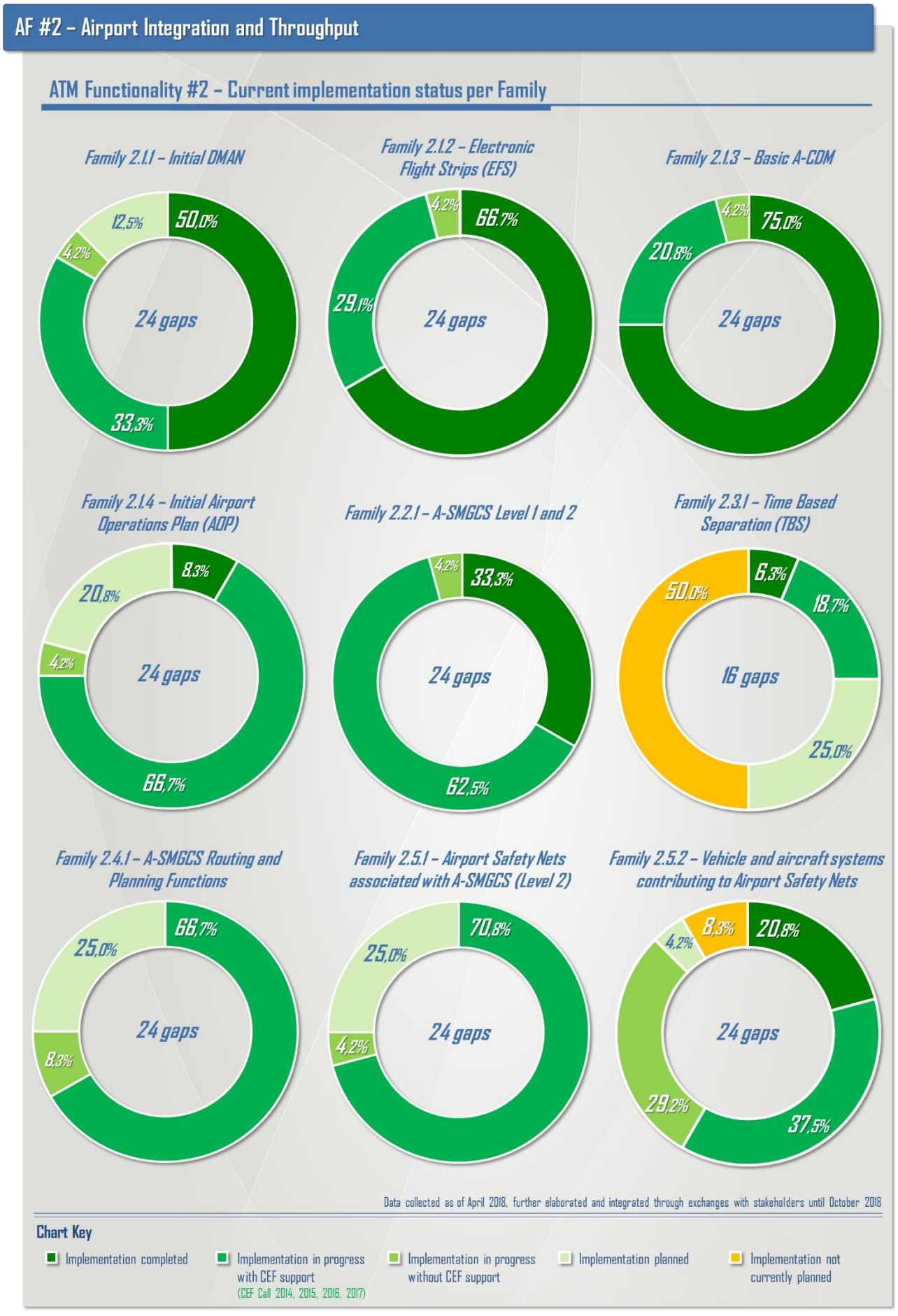


Figure 12 - AF2: current implementation status per Family

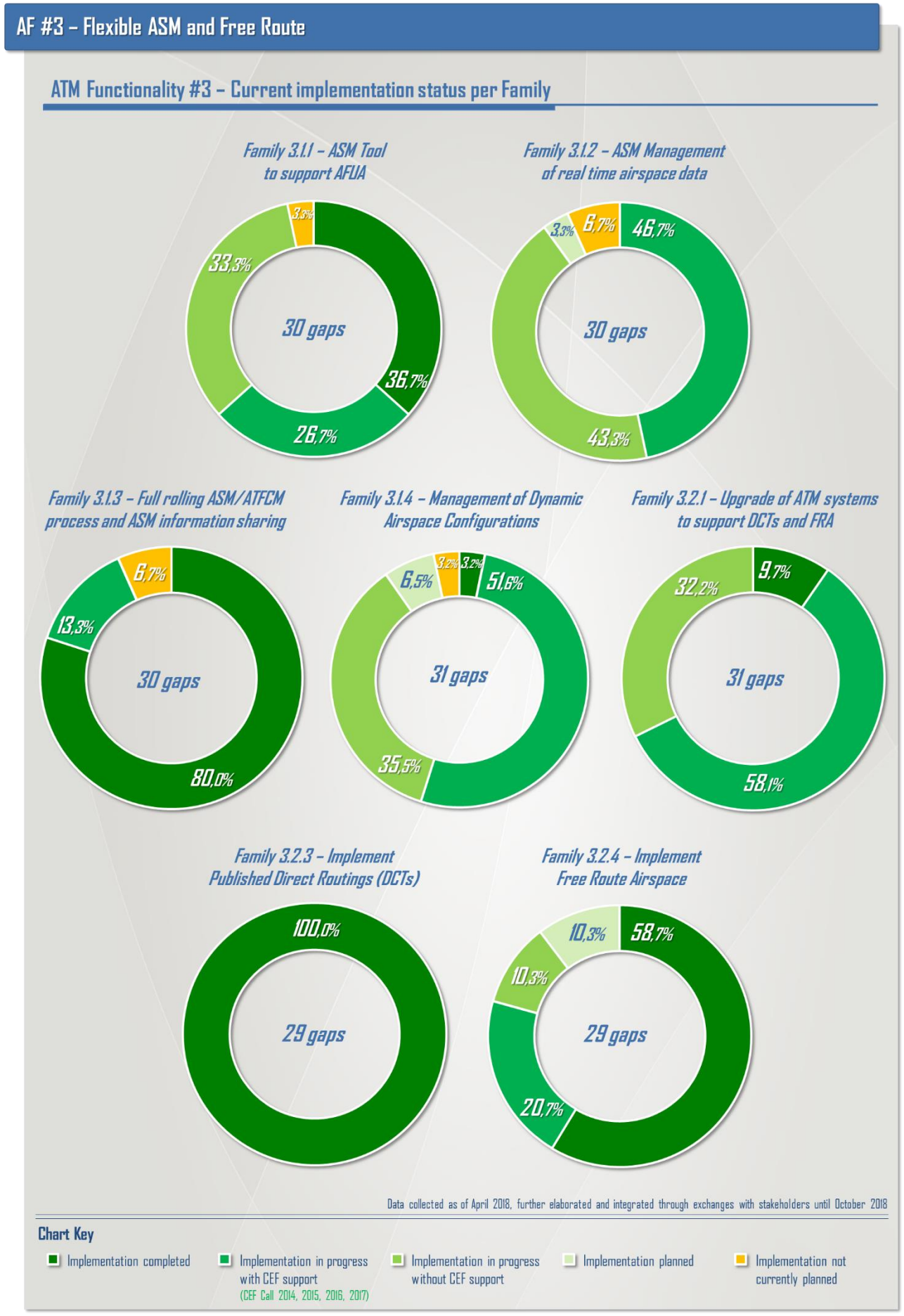


Figure 13 - AF3: current implementation status per Family

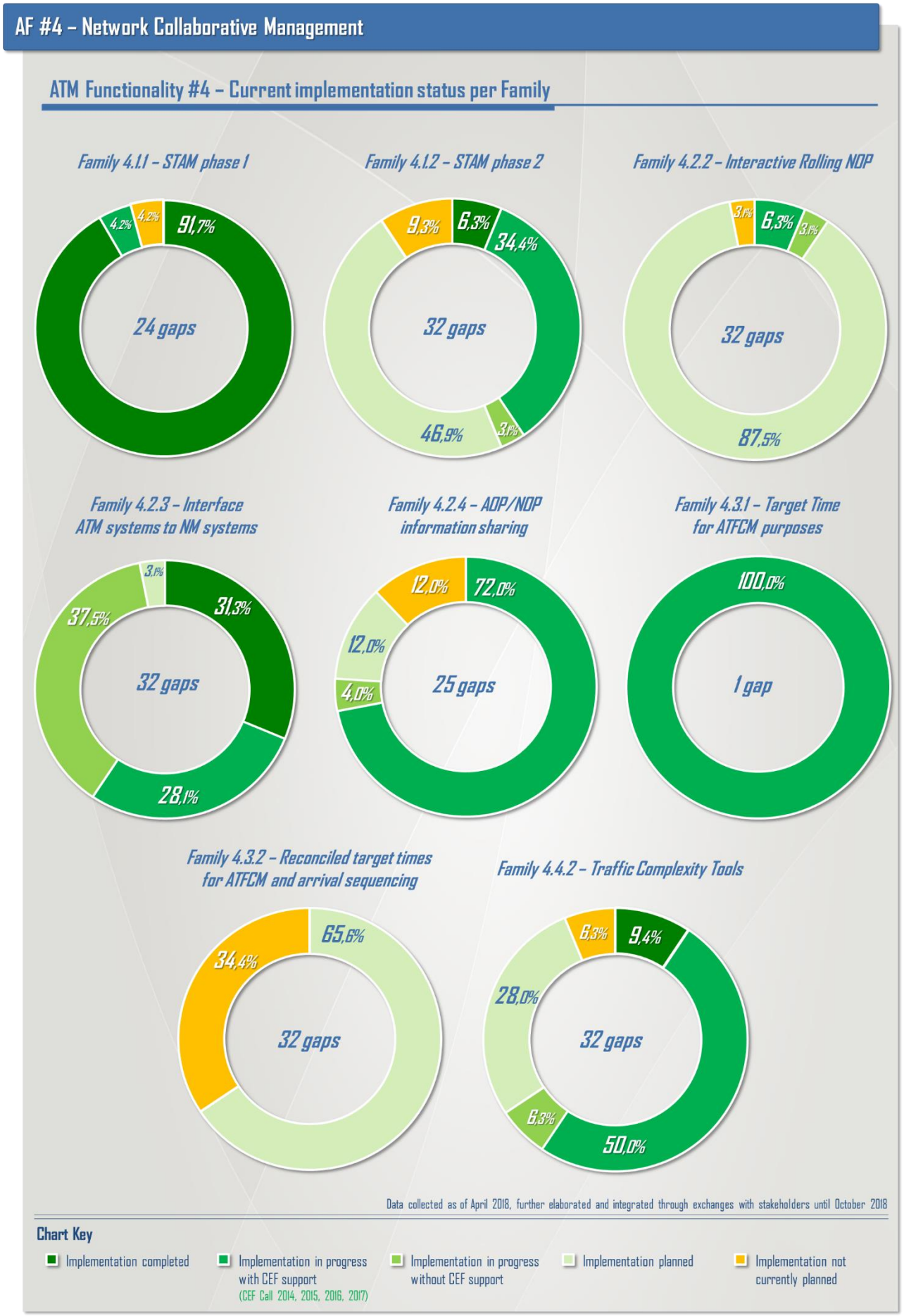


Figure 14 - AF4: current implementation status per Family

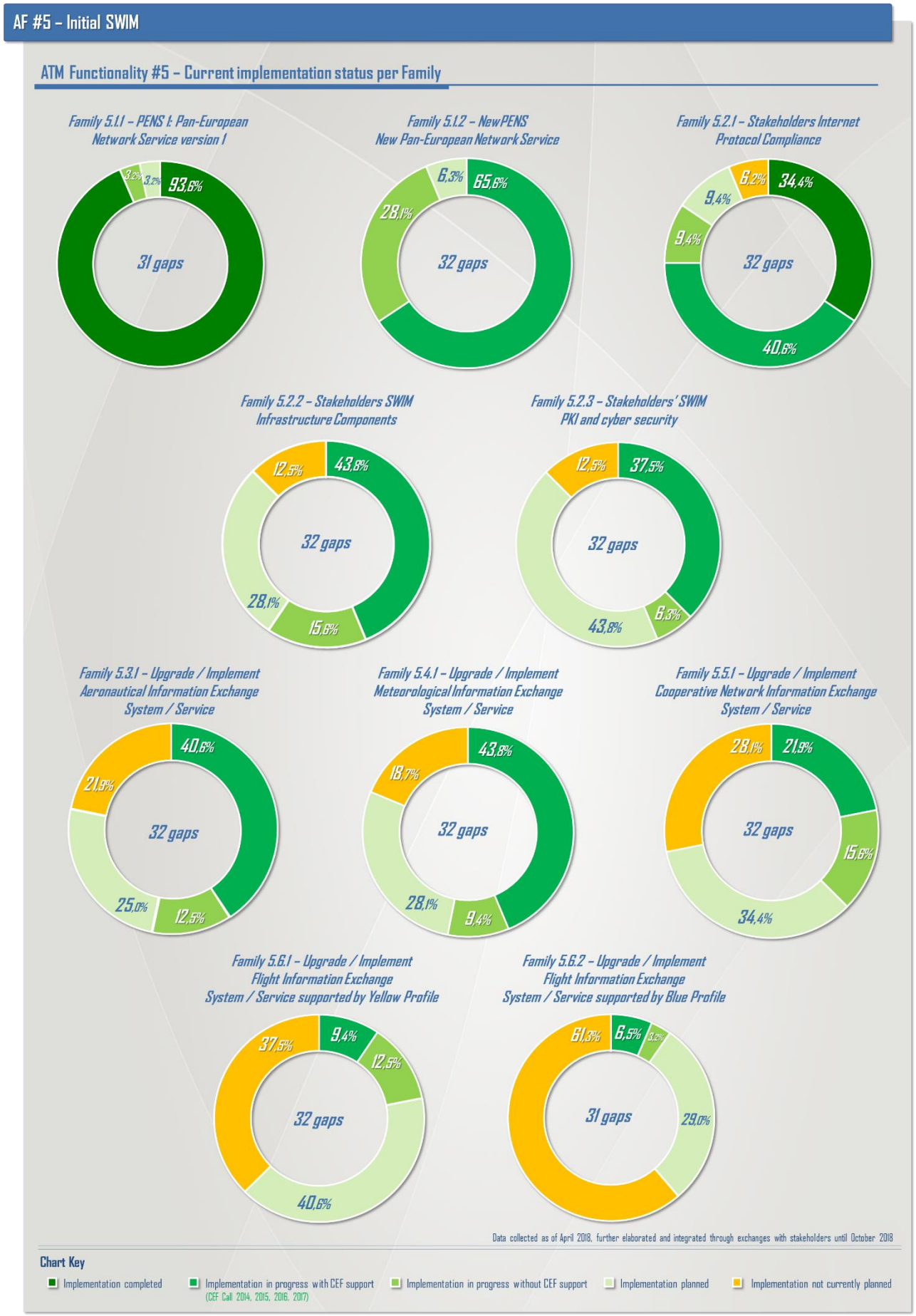


Figure 15 - AF5: current implementation status per Family

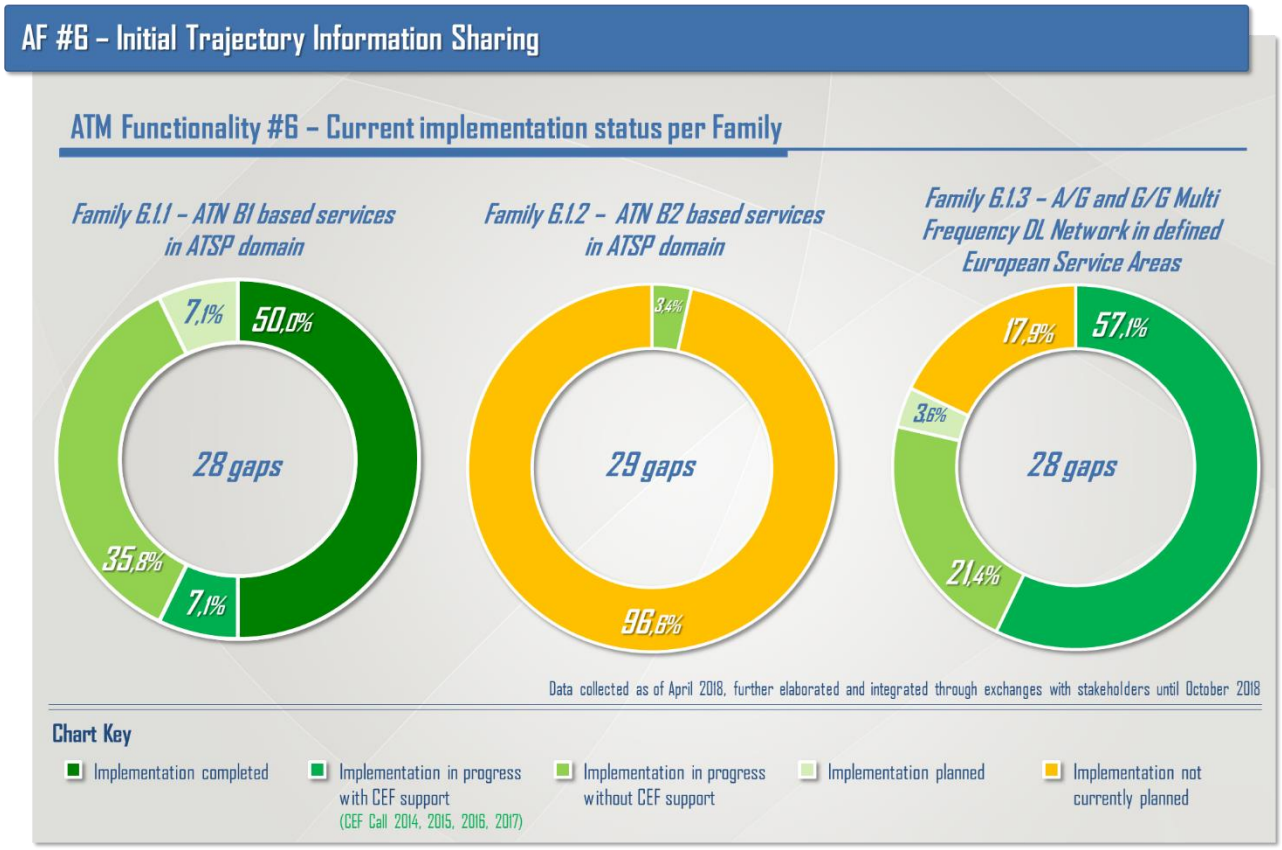


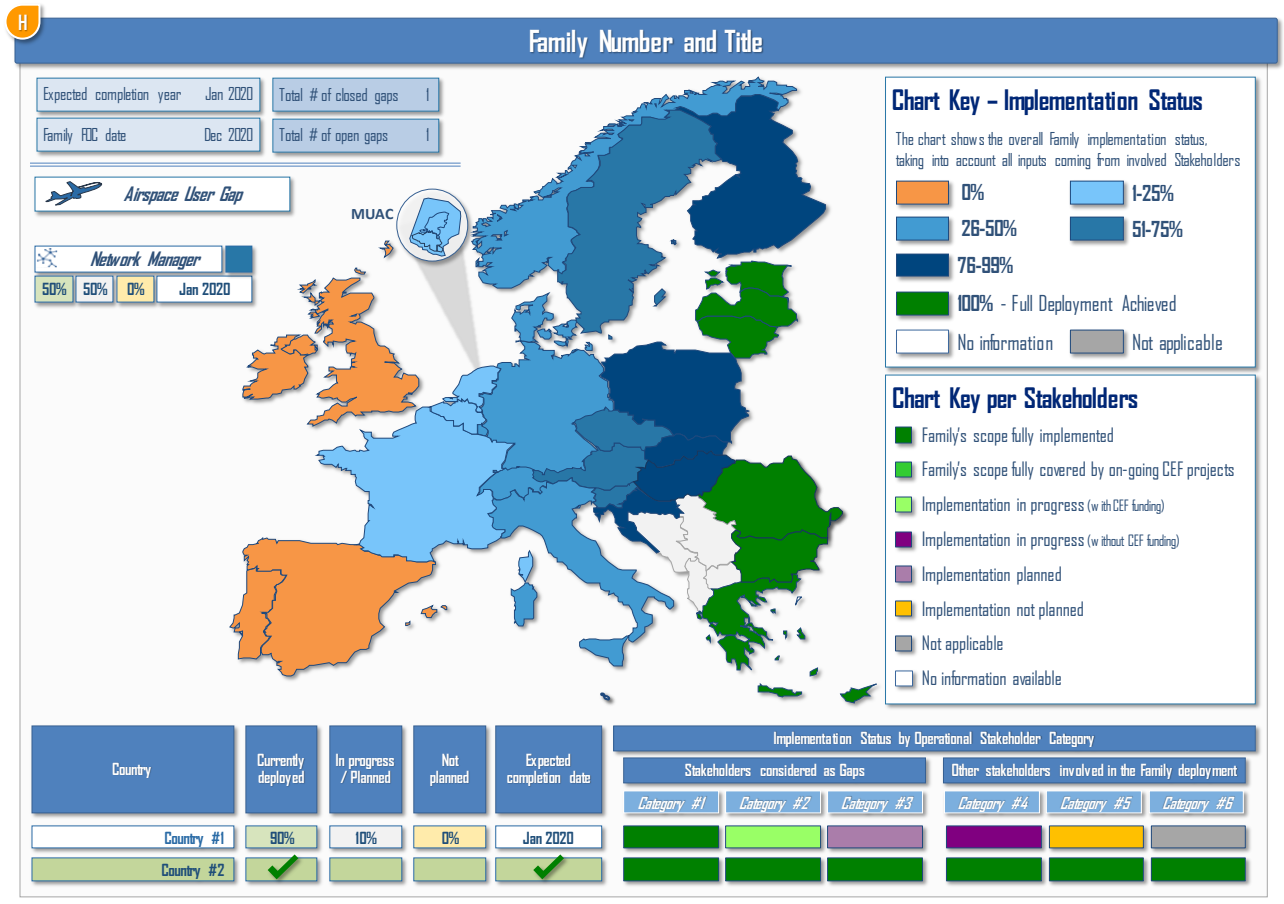
Figure 16 - AF6: current implementation status per Family

2. Detailed Views per Family

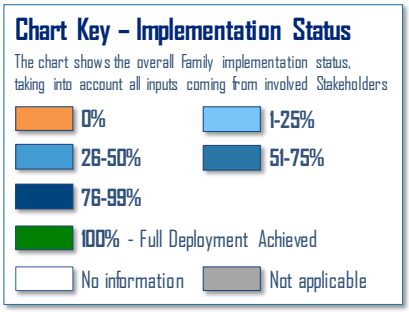
Complementing the overall picture of the deployment at global level, the engagement of all operational stakeholders impacted by Regulation (EU) n. 716/2014 in the yearly SDM Monitoring Exercise also allows to outline detailed views at local level, providing an accurate representation of the implementation progresses within each Country or Airport included within the PCP geographical scope. To this end, the Family-based charts included within the present Chapter report 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 countries or airports. This detailed outlook helps the identification of the main implementation areas to be tackled by future investments to avoid gaps and delays 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 they are involved in tackling the existing implementation gaps. The overall picture of geography-based ground gaps is complemented by the overview on the Airspace Users gaps, defined 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 of PCP-related technologies and operational elements.

Ground gaps – Monitoring Overview

A generic mock-up of the charts used to outline and provide for a representation of the result of the SDM Monitoring Exercise is proposed hereafter for illustrative purposes. The structure of the chart has been developed with the specific objective of providing the reader with a wide set of data and information within a single snapshot: the following paragraphs include an overall explanation on how the information is presented.

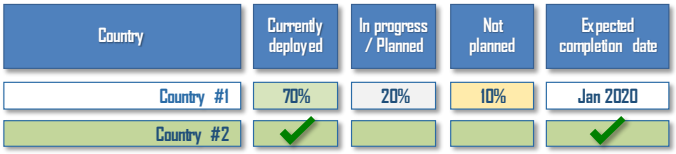


Each chart is dedicated to a specific Family: its number and title are identified within the header of the charts. Furthermore, the level of readiness for implementation (High/Medium/Low) is mentioned, listing the readiness of the technological and operational elements included in the Family scope. The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



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).



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

- the "*in progress / planned*" percentage, included in the grey boxes, which identifies the percentage of the Family that is covered by on-going activities and/or is planned to be covered by future initiatives (both within and beyond the SDM coordination);
- 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 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.

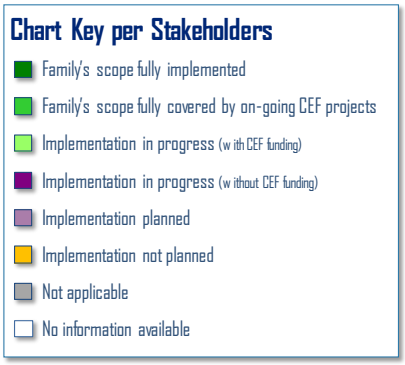
All information stemming from local deployment initiatives will be summarized within the boxes included in the upper left corner of the chart, which report – at Family level – the following information:

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

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

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

Building and further refining the clustering used in the previous releases of the Deployment Programme, seven categories of implementation status have been identified for each involved stakeholder, plus an eighth one in case of missing information. This information will be featured in the right section of the table at the bottom of the chart and will be populated on the basis of inputs provided by operational stakeholders through the Monitoring Exercise and – for the SDM-coordinated implementation activities – on the basis of the outcomes of SDM coordination. The following chart key / categories are represented:



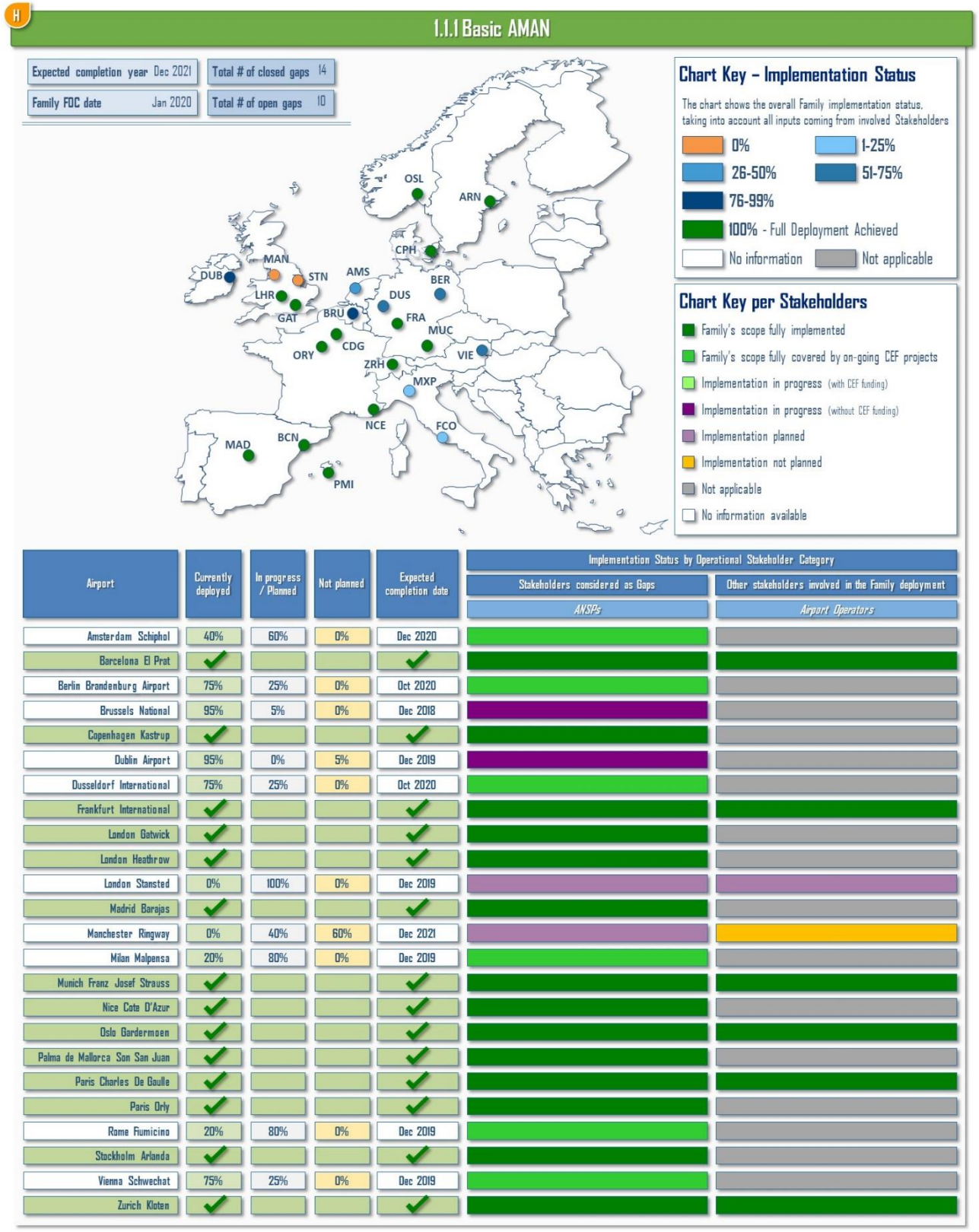
1. Family's scope fully implemented, thus no additional activities to fully deploy the Family scope is expected by the operational stakeholder;
2. Family's scope fully covered by on-going CEF projects, thus the current SDM-coordinated Implementation Projects are expected to lead to the full deployment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

It is worth noting that 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.

Whenever the specific features of Family (as described within the Planning View 2018) 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



Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved in the Family deployment
					ANSPs	*Airport Operators*
Amsterdam Schiphol	40%	60%	0%	Dec 2020		
Barcelona El Prat	✓			✓		
Berlin Brandenburg Airport	75%	25%	0%	Oct 2020		
Brussels National	95%	5%	0%	Dec 2018		
Copenhagen Kastrup	✓			✓		
Dublin Airport	95%	0%	5%	Dec 2019		
Dusseldorf International	75%	25%	0%	Oct 2020		
Frankfurt International	✓			✓		
London Gatwick	✓			✓		
London Heathrow	✓			✓		
London Stansted	0%	100%	0%	Dec 2019		
Madrid Barajas	✓			✓		
Manchester Ringway	0%	40%	60%	Dec 2021		
Milan Malpensa	20%	80%	0%	Dec 2019		
Munich Franz Josef Strauss	✓			✓		
Nice Cote D'Azur	✓			✓		
Oslo Gardermoen	✓			✓		
Palma de Mallorca Son San Juan	✓			✓		
Paris Charles De Gaulle	✓			✓		
Paris Orly	✓			✓		
Rome Fiumicino	20%	80%	0%	Dec 2019		
Stockholm Arlanda	✓			✓		
Vienna Schwechat	75%	25%	0%	Dec 2019		
Zurich Kloten	✓			✓		

H 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

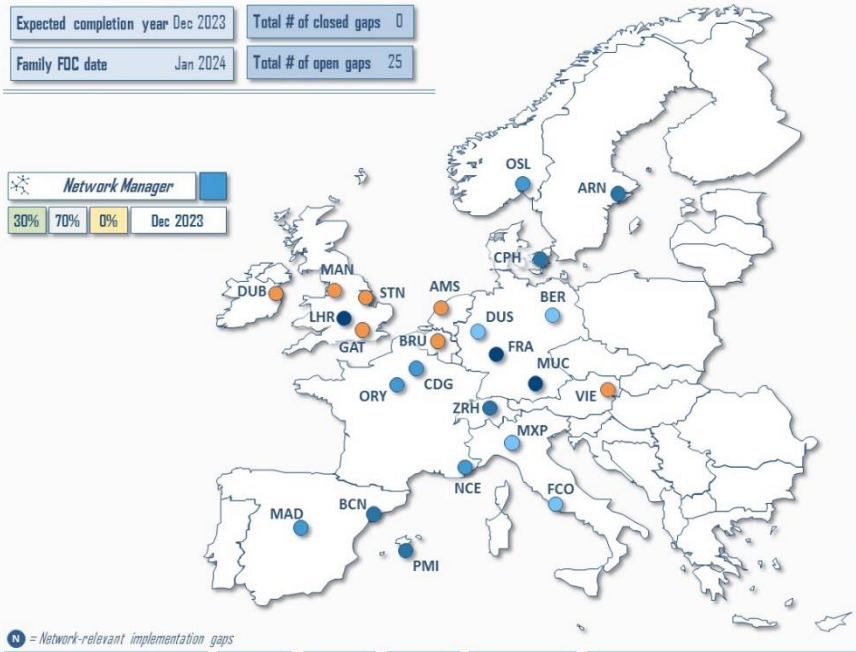


Chart Key – Implementation Status

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

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	Military Authorities	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				
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	80%	20%	0%	Dec 2023				
N London Gatwick	0%	100%	0%	Dec 2023				
N London Heathrow	85%	15%	0%	Mar 2019				
N London Stansted	0%	100%	0%	Dec 2023				
N Madrid Barajas	50%	50%	0%	Dec 2023				
Manchester Ringway	0%	100%	0%	Dec 2021				
N Milan Malpensa	10%	90%	0%	Dec 2023				
N Munich Franz Josef Strauss	80%	20%	0%	Dec 2023				
N Nice Cote D'Azur	50%	5%	45%	Dec 2023				
Oslo Gardermoen	50%	0%	50%	Dec 2023				
N Palma de Mallorca Son San Juan	60%	40%	0%	Dec 2023				
N Paris Charles De Gaulle	50%	35%	15%	Dec 2023				
N Paris Orly	50%	10%	40%	Dec 2023				
N Rome Fiumicino	15%	85%	0%	Dec 2023				
Stockholm Arlanda	60%	0%	40%	Dec 2023				
N Vienna Schwechat	0%	75%	25%	Dec 2023				
N Zurich Kloten	65%	35%	0%	-				

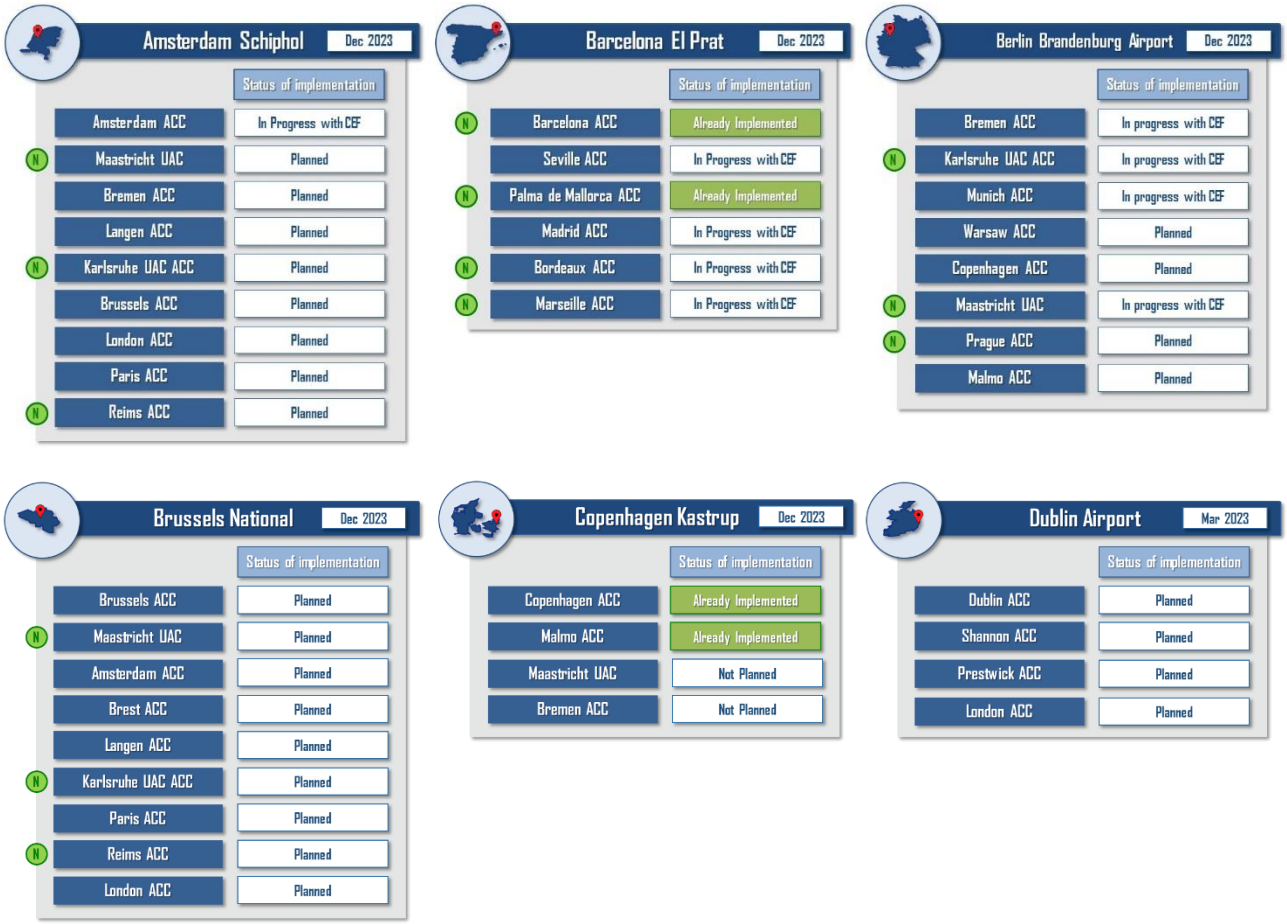
Focus on Extended AMAN implementation

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 2018 Monitoring Exercise.

In particular, the monitoring of Family 1.1.2 is now further detailed, as it is now 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.




Dusseldorf International
Dec 2023
Status of implementation
Bremen ACC
In progress with CEF
Langen ACC
In progress with CEF
N
Karlsruhe UAC ACC
In progress with CEF
N
Maastricht UAC
In progress with CEF
Amsterdam ACC
Planned
Brussels ACC
Planned
Reims ACC
Not Planned
London ACC
Not Planned
Frankfurt International
Dec 2023
Status of implementation
Langen ACC
Already Implemented
N
Karlsruhe UAC ACC
Already Implemented
Munich ACC
Already Implemented
Bremen 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 2023
Status of implementation
London ACC
Planned
N
Maastricht UAC
Planned
Amsterdam ACC
Planned
Brussels ACC
Planned
Brest ACC
Planned
Paris ACC
Planned
N
Reims ACC
Planned
London Heathrow
Mar 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
Maastricht UAC
Planned
Amsterdam ACC
Planned
Brussels ACC
Planned
Brest ACC
Planned
Paris 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
Planned
N
Lisboa ACC
In Progress with CEF
N
Bordeaux ACC
In Progress with CEF
Manchester Ringway
Dec 2021
Status of implementation
London ACC
Planned
Prestwick 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
Zurich and Geneva ACCs
In Progress with CEF
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 ACC
In Progress with CEF
Munich ACC
In Progress with CEF
Langen ACC
In Progress with CEF
Munich Franz Josef Strauss
Dec 2023
Status of implementation
Munich ACC
Already Implemented
Langen ACC
Already Implemented
N
Prague ACC
In progress with CEF
Zurich and Geneva ACCs
Already Implemented
Wien ACC
Already Implemented
Padua ACC
In progress with CEF
Nice Cote d'Azur
Dec 2023
Status of implementation
N
Marseille ACC
Already Implemented
N
Reims ACC
Not Planned
N
Bordeaux ACC
Not Planned
N
Barcelona ACC
Not Planned
N
Palma de Mallorca ACC
Not Planned
Milan ACC
In progress with CEF
Padua ACC
Not Planned
Rome ACC
Not Planned
Zurich and Geneva ACC
Not Planned
Oslo Gardermoen
Dec 2023
Status of implementation
Oslo, Stavanger and Bodo ACCs
Already Implemented
Malmoe and Stockholm ACCs
Not Planned
Copenhagen ACC
Not Planned
Palma de Mallorca Son San Juan
Dec 2023
Status of implementation
N
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
Planned
N
Brest ACC
Planned
N
Marseille ACC
In progress with CEF
N
Reims ACC
Planned
Brussels ACC
Not Planned
N
Maastricht UAC
Planned
Amsterdam ACC
Not Planned
Langen ACC
Not Planned
N
Karlsruhe UAC ACC
Planned
London ACC
Planned
Paris Orly
Dec 2023
Status of implementation
Paris ACC
Already Implemented
N
Bordeaux ACC
Planned
N
Brest ACC
Not Planned
N
Marseille ACC
In Progress with CEF
N
Reims ACC
Not Planned
Brussels ACC
Not Planned
N
Maastricht UAC
Not Planned
Amsterdam ACC
Not Planned
Langen ACC
Not Planned
N
Karlsruhe UAC ACC
Not Planned
London ACC
Not Planned
Rome Fiumicino
Dec 2023
Status of implementation
Rome ACC
In Progress with CEF
Brindisi 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
Malmo and Stockholm ACCs
Already Implemented
Copenhagen ACC
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
Vienna ACC
Planned
Padua ACC
Not Planned
N
Prague ACC
Planned
Bratislava ACC
Planned
Budapest ACC
Planned
Zagreb ACC
Planned
Ljubjana ACC
Planned
Munich ACC
Not Planned
Zurich Kloten
-
Status of implementation
Zurich ACC
Already Implemented
Geneva ACC
Planned
Milan ACC
Planned
Maastricht UAC
Planned
N
Marseille ACC
Planned
N
Reims ACC
Already Implemented
N
Karlsruhe UAC ACC
Planned
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 4

Family FOC date Jan 2021 | Total # of open gaps 20

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

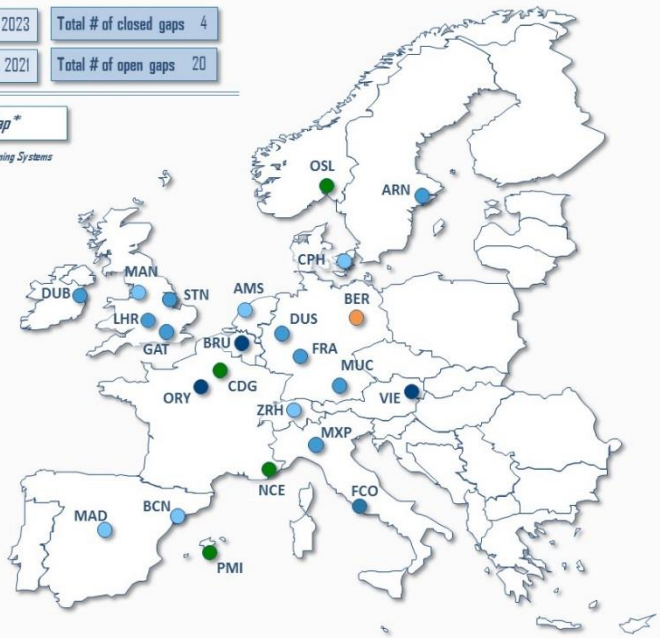


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Military Authorities
Amsterdam Schiphol	10%	90%	0%	Dec 2023			
Barcelona El Prat	10%	90%	0%	Dec 2020			
Berlin Brandenburg Airport	0%	50%	50%	Dec 2020			
Brussels National	90%	10%	0%	Dec 2018			
Copenhagen Kastrup	15%	85%	0%	Dec 2019			
Dublin Airport	50%	50%	0%	Dec 2018			
Dusseldorf International	50%	0%	50%	Dec 2020			
Frankfurt International	50%	0%	50%	Dec 2020			
London Gatwick	50%	0%	50%	Dec 2020			
London Heathrow	50%	0%	50%	Dec 2019			
London Stansted	50%	50%	0%	Dec 2019			
Madrid Barajas	10%	90%	0%	Dec 2020			
Manchester Ringway	15%	85%	0%	Dec 2023			
Milan Malpensa	50%	50%	0%	Mar 2019			
Munich Franz Josef Strauss	50%	0%	50%	Dec 2020			
Nice Cote D'Azur	✓			✓			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	✓			✓			
Paris Charles De Gaulle	✓			✓			
Paris Orly	90%	10%	0%	Dec 2022			
Rome Fiumicino	70%	30%	0%	Mar 2019			
Stockholm Arlanda	30%	70%	0%	Dec 2022			
Vienna Schwechat	90%	10%	0%	Mar 2019			
Zurich Kloten	25%	75%	0%	Dec 2020			

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 2018 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 have been 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 — Dec 2020

	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 2020

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 — Dec 2018

	LNAV/VNAV procedures	LPV procedures
Runway 01	Already Implemented	Already Implemented
Runway 07L	In Progress with CEF	In Progress with CEF
Runway 07R	In Progress with CEF	In Progress with CEF
Runway 19	In Progress with CEF	In Progress with CEF
Runway 25L	Already Implemented	Already Implemented
Runway 25R	Already Implemented	Already Implemented

Copenhagen Kastrup — Dec 2019

	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 — Dec 2018

	LNAV/VNAV procedures	LPV procedures
Runway 10	Already Implemented	In progress without CEF
Runway 16	In progress without CEF	In progress without CEF
Runway 28	Already Implemented	Already Implemented
Runway 34	Already Implemented	Planned

Dusseldorf International — Dec 2020

	LNAV/VNAV procedures	LPV procedures
Runway 05L	Already Implemented	Not Planned
Runway 05R	Already Implemented	Not Planned
Runway 23L	Already Implemented	Not Planned
Runway 23R	Already Implemented	Not Planned

Frankfurt International — Dec 2020

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

London Gatwick — Dec 2020

	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 — Dec 2019

	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	Not Planned
Runway 22	Already Implemented	Not Planned

Madrid Barajas — Dec 2020

	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 — Dec 2023

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

Milan Malpensa — Mar 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 — Dec 2020

	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

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 San Juan — 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 — Mar 2019

	LNAV/VNAV procedures	LPV procedures
Runway 07	Planned	Planned
Runway 16C	Not Applicable	Already Implemented
Runway 16L	Already Implemented	Already Implemented
Runway 16R	Already Implemented	Already Implemented
Runway 25	In Progress with CEF	In Progress with CEF
Runway 34C	Not Applicable	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	Already Implemented
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	Already Implemented	In Progress with CEF

Vienna Schwechat — Mar 2019

	LNAV/VNAV procedures	LPV procedures
Runway 11	Already Implemented	Already Implemented
Runway 16	Already Implemented	Already Implemented
Runway 29	Already Implemented	In Progress with CEF
Runway 34	Already Implemented	Already Implemented

Zurich Kloten — Dec 2020

	LNAV/VNAV procedures	LPV procedures
Runway 10	Not Applicable	Not Applicable
Runway 14	Already Implemented	Already Implemented
Runway 16	Planned	Planned
Runway 28	In Progress without CEF	In Progress without CEF
Runway 32	Not Applicable	Not Applicable
Runway 34	Planned	Planned

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1.2.2 Geographic Database for Procedure design

Expected completion year Dec 2020	Total # of closed gaps 18
Family FOC date Jan 2019	Total # of open gaps 6

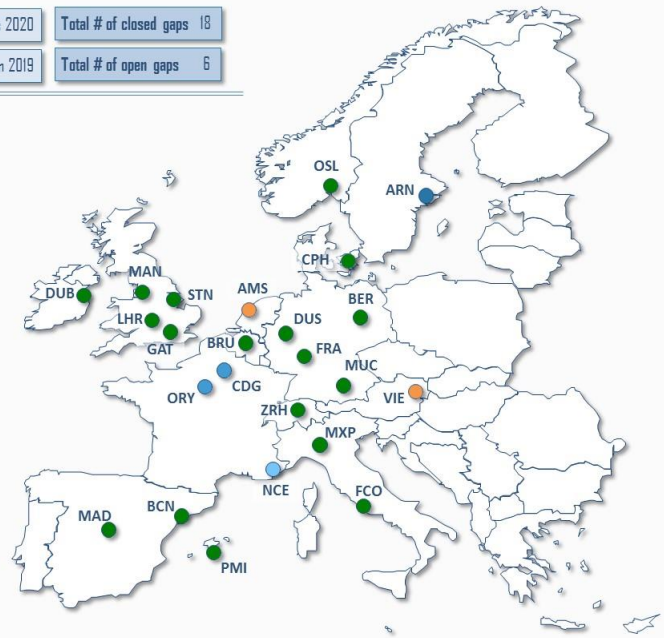

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Airport Operators	Military Authorities
Amsterdam Schiphol	0%	100%	0%	Dec 2018			
Barcelona El Prat	✓			✓			
Berlin Brandenburg Airport	✓			✓			
Brussels National	✓			✓			
Copenhagen Kastrup	✓			✓			
Dublin Airport	✓			✓			
Dusseldorf International	✓			✓			
Frankfurt International	✓			✓			
London Gatwick	✓			✓			
London Heathrow	✓			✓			
London Stansted	✓			✓			
Madrid Barajas	✓			✓			
Manchester Ringway	✓			✓			
Milan Malpensa	✓			✓			
Munich Franz Josef Strauss	✓			✓			
Nice Cote D'Azur	15%	55%	30%	-			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	✓			✓			
Paris Charles De Gaulle	30%	70%	0%	Dec 2020			
Paris Orly	30%	70%	0%	Dec 2020			
Rome Fiumicino	✓			✓			
Stockholm Arlanda	65%	35%	0%	Dec 2020			
Vienna Schwechat	0%	100%	0%	Dec 2020			
Zurich Kloten	✓			✓			

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1.2.3 RNP 1 Operations in high density TMAs (ground capabilities)

Expected completion year	Dec 2023
Family FOC date	Jan 2024
Total # of closed gaps	1
Total # of open gaps	23

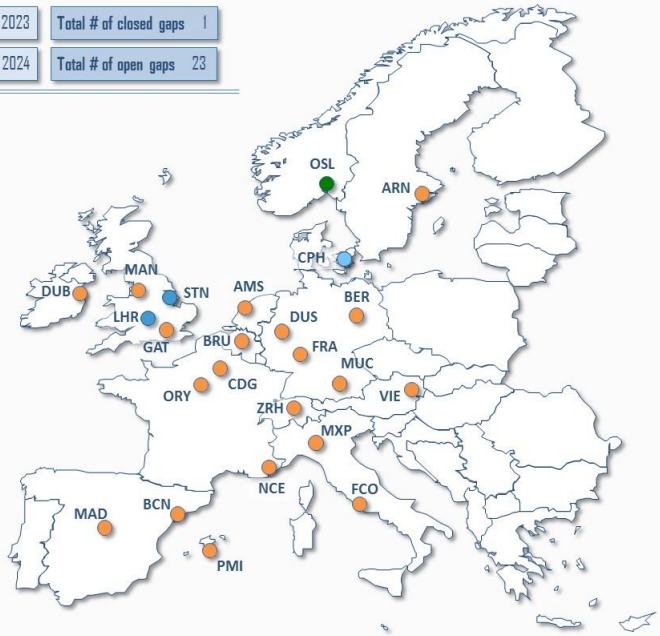

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Airport Operators	Military Authorities
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	15%	85%	0%	Dec 2019			
Dublin Airport	0%	100%	0%	Dec 2018			
Dusseldorf 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 2022			
London Stansted	50%	50%	0%	Dec 2020			
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 Cote D'Azur	0%	0%	100%	-			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	0%	100%	0%	Dec 2023			
Paris Charles De Gaulle	0%	0%	100%	-			
Paris Orly	0%	0%	100%	-			
Rome Fiumicino	0%	100%	0%	Dec 2023			
Stockholm Arlanda	0%	100%	0%	Dec 2020			
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, 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 where the deployment is being carried out by CEF projects, the gap will be covered in 2020: Copenhagen, where the implementation of SID/STAR procedures for all 6 RWYs will be completed by June 2020 and London Stansted, where all the conventional SIDs, STARs, transitions and LPV approaches will be converted to RNP1 procedures by December 2020. Besides, in January 2024, the gap is expected to be also covered in other 17 airports; only 4 of them have not yet a plan for the deployment.

In two cases, local stakeholders have started deploying RNAV1 procedures rather than RNP1, as explicitly required by the text of 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

Expected completion year Dec 2023

Family FOC date Jan 2024

Network Manager

40%	60%	0%	Dec 2023

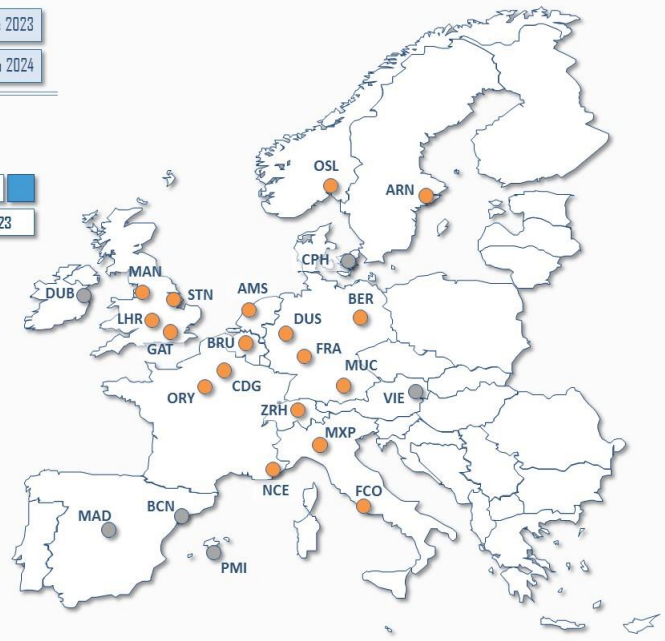

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

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

AF #2 – Airport Integration and Throughput

2.1.1 Initial DMAN

Expected completion year: Dec 2021
Family FOC date: Jan 2021
Total # of closed gaps: 12
Total # of open gaps: 12

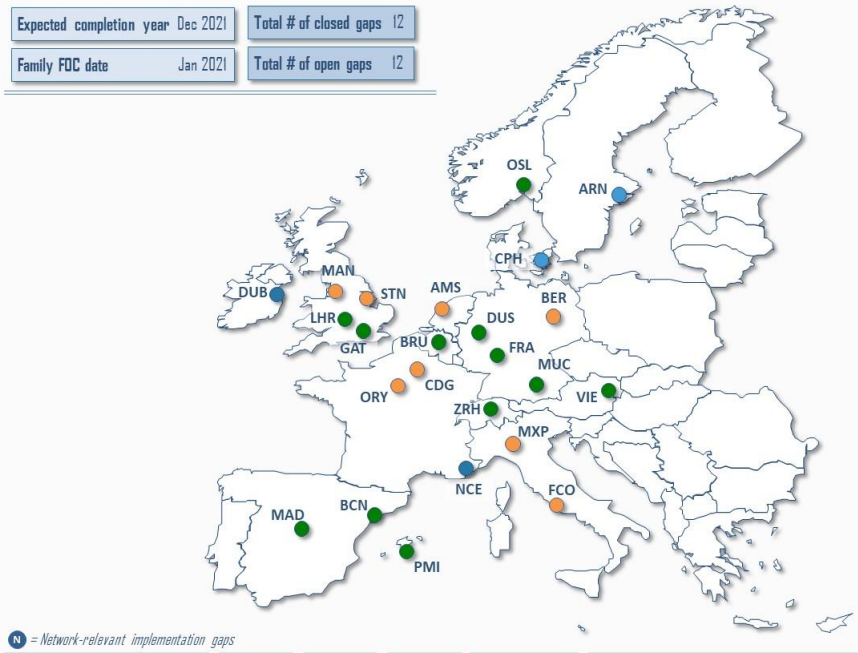

Chart Key – Implementation Status

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

(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	Military Authorities
(N) Amsterdam Schiphol	0%	100%	0%	Dec 2020			
Barcelona El Prat	✓			✓			
Berlin Brandenburg Airport	0%	100%	0%	Dec 2020			
Brussels National	✓			✓			
Copenhagen Kastrup	35%	65%	0%	Dec 2019			
Dublin Airport	65%	35%	0%	Dec 2018			
Dusseldorf 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 Cote D'Azur	65%	35%	0%	Dec 2020			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	✓			✓			
Paris Charles De Gaulle	0%	100%	0%	Dec 2020			
(N) Paris Orly	0%	100%	0%	Dec 2020			
Rome Fiumicino	0%	100%	0%	Dec 2020			
Stockholm Arlanda	50%	50%	0%	Dec 2019			
Vienna Schwechat	✓			✓			
Zurich Kloten	✓			✓			

2.1.2 Electronic Flight Strips (EFS)

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

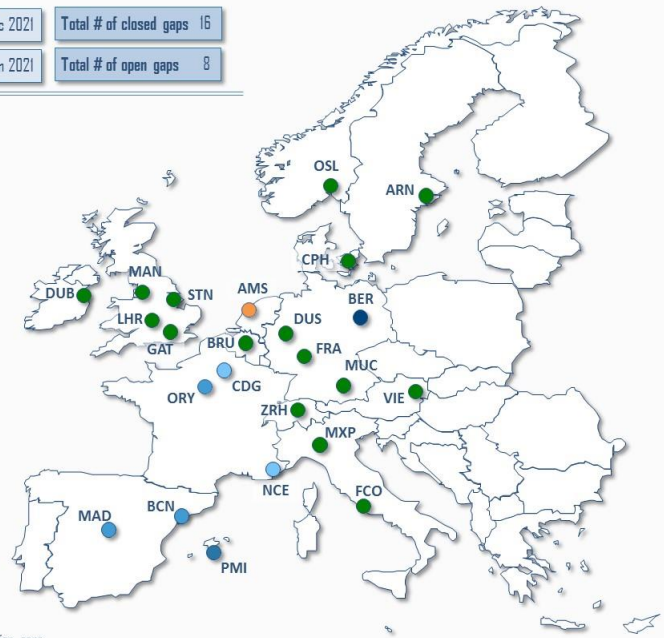

Chart Key – Implementation Status

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

- 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

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	Military Authorities
N Amsterdam Schiphol	0%	100%	0%	Dec 2020			
N Barcelona El Prat	50%	50%	0%	Dec 2019			
Berlin Brandenburg Airport	95%	5%	0%	Dec 2020			
Brussels National	✓			✓			
Copenhagen Kastrup	✓			✓			
Dublin Airport	✓			✓			
Dusseldorf International	✓			✓			
Frankfurt International	✓			✓			
London Gatwick	✓			✓			
London Heathrow	✓			✓			
London Stansted	✓			✓			
Madrid Barajas	50%	50%	0%	Dec 2019			
Manchester Ringway	✓			✓			
Milan Malpensa	✓			✓			
Munich Franz Josef Strauss	✓			✓			
Nice Cote D'Azur	20%	80%	0%	Dec 2021			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	75%	25%	0%	Dec 2019			
Paris Charles De Gaulle	20%	80%	0%	Dec 2021			
N Paris Orly	30%	70%	0%	Dec 2021			
Rome Fiumicino	✓			✓			
Stockholm Arlanda	✓			✓			
Vienna Schwechat	✓			✓			
Zurich Kloten	✓			✓			

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2.1.3 Basic A-CDM

Expected completion year: Dec 2021 | Total # of closed gaps: 18

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

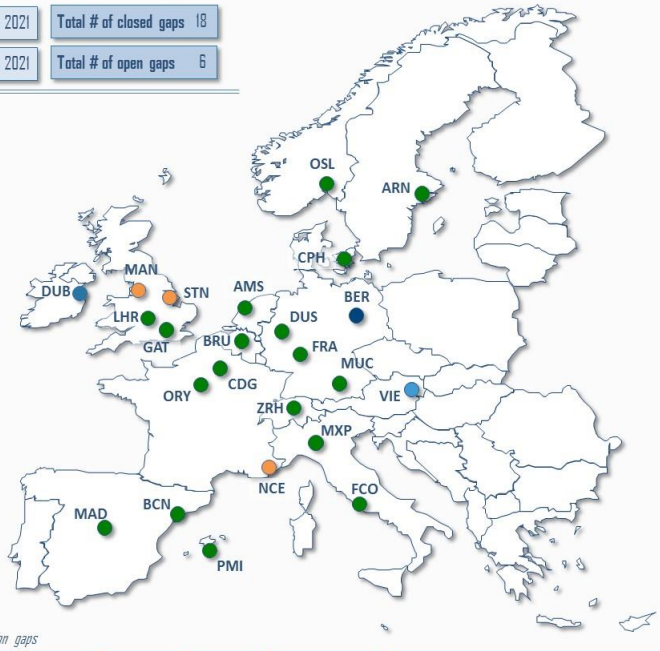

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

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 in the Family deployment	
					ANSPs	Airport Operators	Network Manager	Military Authorities
Amsterdam Schiphol	✓			✓				
Barcelona El Prat	✓			✓				
Berlin Brandenburg Airport	95%	5%	0%	Dec 2020				
Brussels National	✓			✓				
Copenhagen Kastrup	✓			✓				
Dublin Airport	55%	45%	0%	Jun 2019				
Dusseldorf 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	✓			✓				
Munich Franz Josef Strauss	✓			✓				
Nice Cote D'Azur	0%	100%	0%	Dec 2020				
Oslo Gardermoen	✓			✓				
Palma de Mallorca Son San Juan	✓			✓				
Paris Charles De Gaulle	✓			✓				
Paris Orly	✓			✓				
Rome Fiumicino	✓			✓				
Stockholm Arlanda	✓			✓				
Vienna Schwechat	45%	55%	0%	Dec 2018				
Zurich Kloten	✓			✓				

2.1.4 Initial Airport Operations Plan (AOP)

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

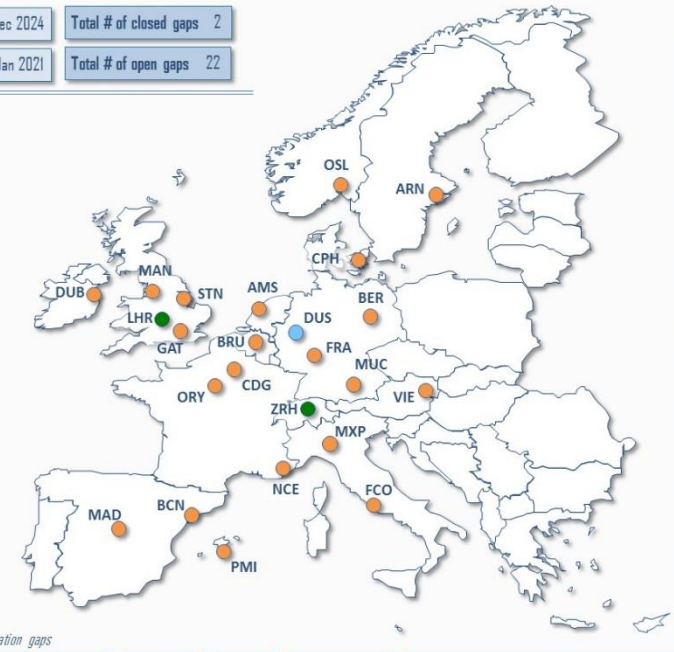

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

(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 in the Family deployment	
					ANSPs	Airport Operators	Military Authorities	MET Providers
(N) Amsterdam Schiphol	0%	100%	0%	Dec 2020				
(N) Barcelona El Prat	0%	100%	0%	Dec 2021				
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				
Dusseldorf 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 2021				
Manchester Ringway	0%	100%	0%	Dec 2021				
Milan Malpensa	0%	100%	0%	Dec 2024				
Munich Franz Josef Strauss	0%	90%	10%	Dec 2020				
Nice Cote D'Azur	0%	100%	0%	Dec 2020				
Oslo Gardermoen	0%	100%	0%	Dec 2024				
Palma de Mallorca Son San Juan	0%	100%	0%	Dec 2021				
Paris Charles De Gaulle	0%	100%	0%	Dec 2020				
(N) Paris Orly	0%	100%	0%	Dec 2020				
Rome Fiumicino	0%	100%	0%	Dec 2020				
Stockholm Arlanda	0%	100%	0%	Dec 2020				
Vienna Schwechat	0%	100%	0%	Dec 2021				
Zurich Kloten	✓			✓				

2.2.1 A-SMGCS Level 1 and 2

Expected completion year	Dec 2020
Family FOC date	Jan 2021
Total # of closed gaps	8
Total # of open gaps	16

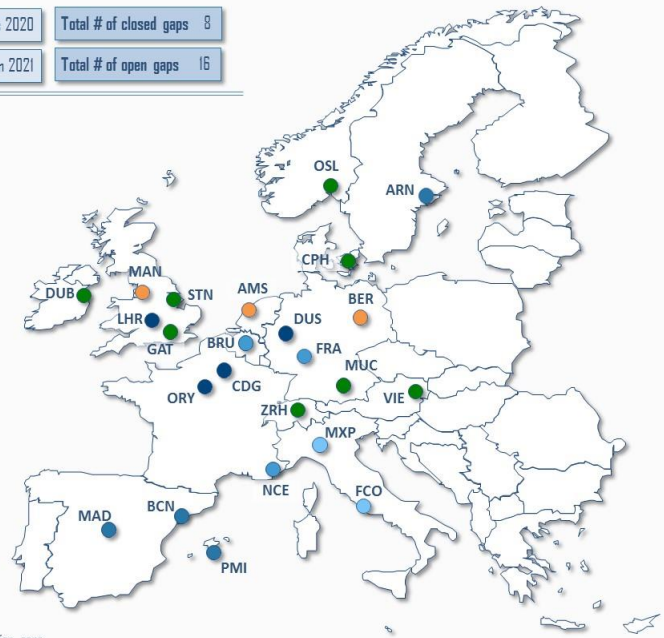

Chart Key – Implementation Status

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

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	Military Authorities
N Amsterdam Schiphol	0%	100%	0%	Dec 2020			
N Barcelona El Prat	75%	25%	0%	Dec 2019			
Berlin Brandenburg Airport	0%	100%	0%	Dec 2020			
Brussels National	40%	60%	0%	Dec 2019			
Copenhagen Kastrup	✓			✓			
Dublin Airport	✓			✓			
Dusseldorf International	90%	10%	0%	Jan 2019			
N Frankfurt International	30%	70%	0%	Dec 2020			
London Gatwick	✓			✓			
N London Heathrow	90%	10%	0%	Dec 2018			
London Stansted	✓			✓			
Madrid Barajas	75%	25%	0%	Dec 2019			
Manchester Ringway	0%	100%	0%	Dec 2020			
Milan Malpensa	10%	90%	0%	Dec 2020			
Munich Franz Josef Strauss	✓			✓			
Nice Cote D'Azur	30%	70%	0%	Dec 2020			
Oslo Gardermoen	✓			✓			
Palma de Mallorca Son San Juan	75%	25%	0%	Dec 2019			
Paris Charles De Gaulle	85%	15%	0%	Dec 2020			
N Paris Orly	85%	15%	0%	Dec 2020			
Rome Fiumicino	10%	90%	0%	Dec 2020			
Stockholm Arlanda	60%	40%	0%	Dec 2018			
Vienna Schwechat	✓			✓			
Zurich Kloten	✓			✓			

H 2.3.1 Time Based Separation (TBS)

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

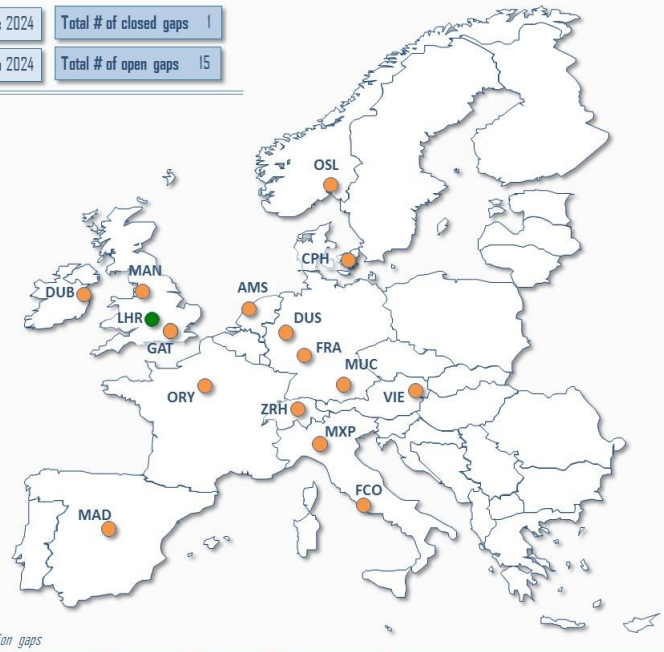

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

(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 in the Family deployment
					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		
(N) Paris Orly	0%	0%	100%	-		
Rome Fiumicino	0%	0%	100%	-		
Vienna Schwechat	0%	100%	0%	Dec 2023		
(N) Zurich Kloten	0%	0%	100%	-		

H 2.4.1 A-SMGCS Routing and Planning Functions

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

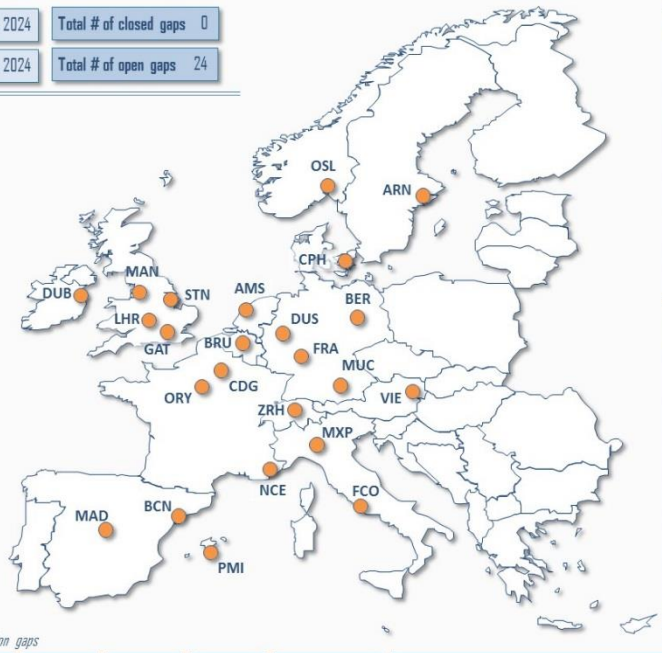

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

(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%	100%	0%	Dec 2020		
Dublin Airport	0%	100%	0%	Dec 2023		
Dusseldorf 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%	100%	0%	Dec 2023		
Munich Franz Josef Strauss	0%	100%	0%	Dec 2023		
Nice Cote D'Azur	0%	100%	0%	Dec 2023		
Oslo Gardermoen	0%	100%	0%	Dec 2024		
Palma de Mallorca Son San Juan	0%	100%	0%	Dec 2023		
Paris Charles De Gaulle	0%	100%	0%	Dec 2022		
(N) Paris Orly	0%	100%	0%	Dec 2022		
Rome Fiumicino	0%	100%	0%	Dec 2023		
Stockholm Arlanda	0%	100%	0%	Dec 2023		
Vienna Schwechat	0%	100%	0%	Dec 2023		
(N) Zurich Kloten	0%	100%	0%	Dec 2023		

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

Expected completion year	Dec 2024
Family FOC date	Jan 2021
Total # of closed gaps	0
Total # of open gaps	24

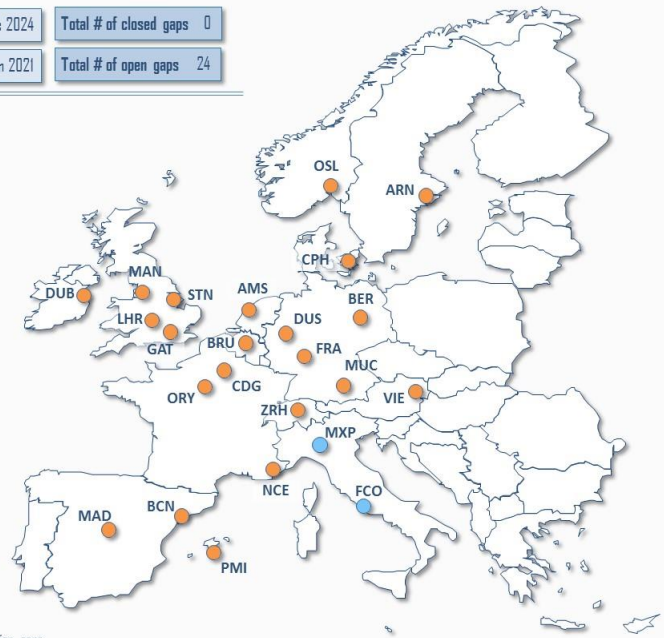

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

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%	100%	0%	Dec 2020		
Dublin Airport	0%	100%	0%	Dec 2020		
Dusseldorf 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 2020		
Milan Malpensa	10%	90%	0%	Dec 2020		
Munich Franz Josef Strauss	0%	100%	0%	Dec 2020		
Nice Cote D'Azur	0%	100%	0%	Dec 2022		
Oslo Gardermoen	0%	100%	0%	Dec 2024		
Palma de Mallorca Son San Juan	0%	100%	0%	Dec 2020		
Paris Charles De Gaulle	0%	100%	0%	Dec 2022		
N Paris Orly	0%	100%	0%	Dec 2022		
Rome Fiumicino	10%	90%	0%	Dec 2020		
Stockholm Arlanda	0%	100%	0%	Dec 2020		
Vienna Schwechat	0%	100%	0%	Dec 2020		
N Zurich Kloten	0%	100%	0%	Dec 2018		

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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

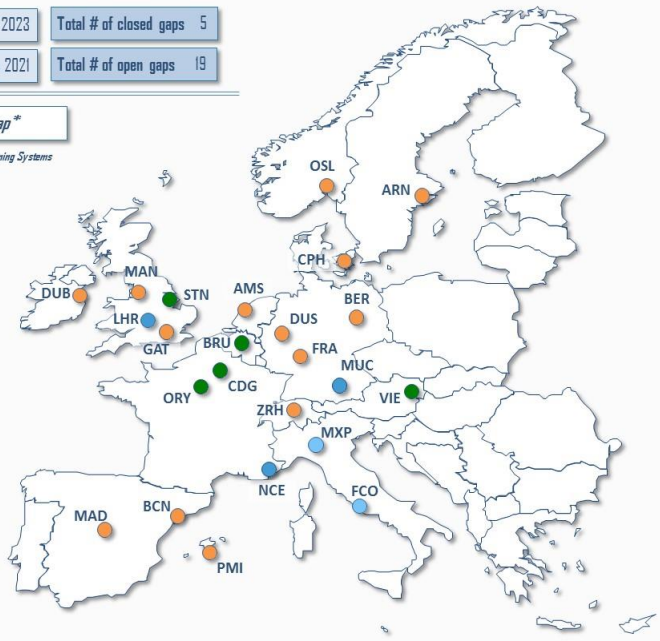

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Airport	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Military Authorities
(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			
Dusseldorf International	0%	100%	0%	Dec 2020			
(N) Frankfurt International	0%	100%	0%	Dec 2020			
(N) London Gatwick	0%	0%	100%	-			
(N) London Heathrow	45%	55%	0%	Nov 2018			
London Stansted	✓			✓			
Madrid Barajas	0%	100%	0%	Dec 2020			
Manchester Ringway	0%	100%	0%	Dec 2020			
Milan Malpensa	10%	90%	0%	Dec 2020			
Munich Franz Josef Strauss	50%	50%	0%	Dec 2020			
Nice Cote D'Azur	30%	0%	70%	-			
Oslo Gardermoen	0%	100%	0%	Dec 2023			
Palma de Mallorca Son San Juan	0%	100%	0%	Dec 2020			
Paris Charles De Gaulle	✓			✓			
Paris Orly	✓			✓			
Rome Fiumicino	10%	90%	0%	Dec 2020			
Stockholm Arlanda	0%	100%	0%	Dec 2020			
Vienna Schwechat	✓			✓			
(N) Zurich Kloten	0%	0%	100%	-			

AF #3 – Flexible ASM and Free Route

3.1.1 ASM Tool to support AFUA

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 11
Total # of open gaps: 19

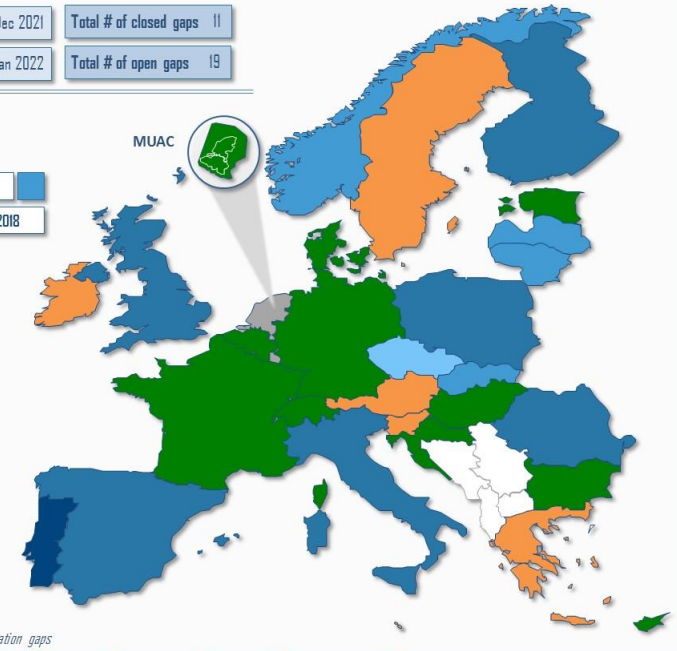

Chart Key – Implementation Status

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

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	0%	100%	0%	Dec 2018			
Belgium	✓			✓			
Bulgaria	✓			✓			
Croatia	✓			✓			
Cyprus	✓			✓			
N Czech Republic	15%	85%	0%	Dec 2020			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	70%	0%	30%	Dec 2020			
France	✓			✓			
Germany	✓			✓			
Greece	0%	100%	0%	Dec 2018			
Hungary	✓			✓			
Ireland	0%	100%	0%	Dec 2018			
Italy	55%	45%	0%	Dec 2018			
Latvia	40%	60%	0%	Dec 2020			
Lithuania	50%	50%	0%	Dec 2018			
Luxembourg							
Malta	0%	0%	100%	-			
MUAC	✓			✓			
Netherlands							
Norway	40%	60%	0%	Dec 2018			
Poland	70%	30%	0%	Dec 2018			
N Portugal	90%	10%	0%	Dec 2018			
Romania	65%	35%	0%	Dec 2018			
Slovak Republic	40%	60%	0%	Dec 2018			
Slovenia	0%	100%	0%	Dec 2021			
Spain	70%	30%	0%	Dec 2018			
Sweden	0%	100%	0%	Dec 2019			
Switzerland	✓			✓			
United Kingdom	70%	30%	0%	-			

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3.1.2 ASM Management of real time airspace data

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 0
Total # of open gaps: 30

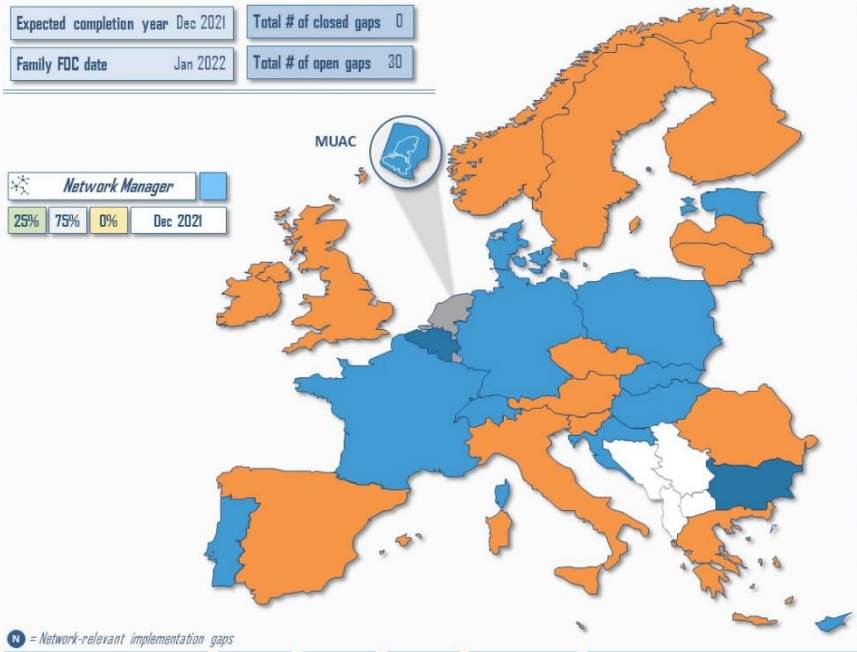


Chart Key – Implementation Status

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

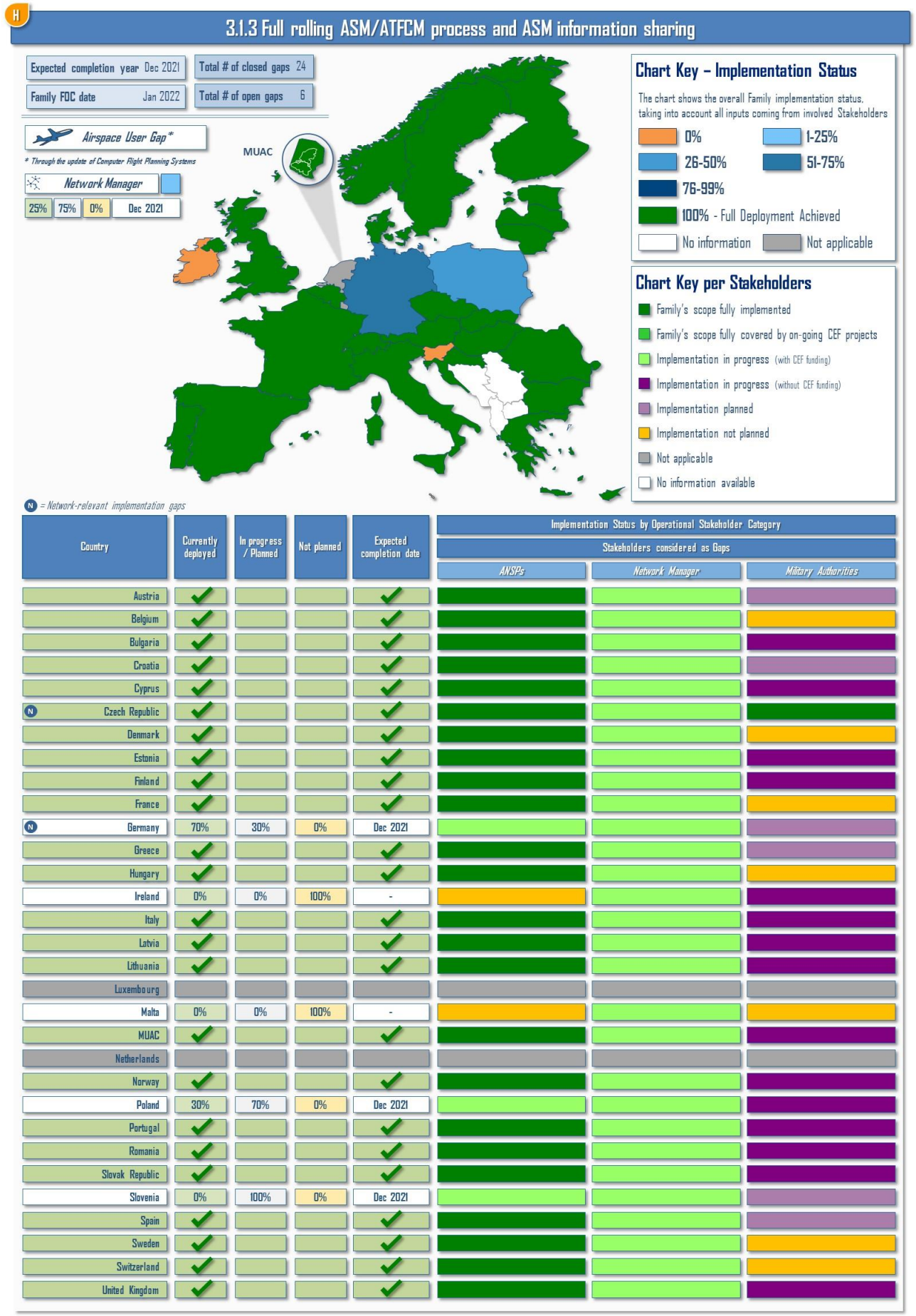
- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

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

(N) = Network-relevant implementation gaps

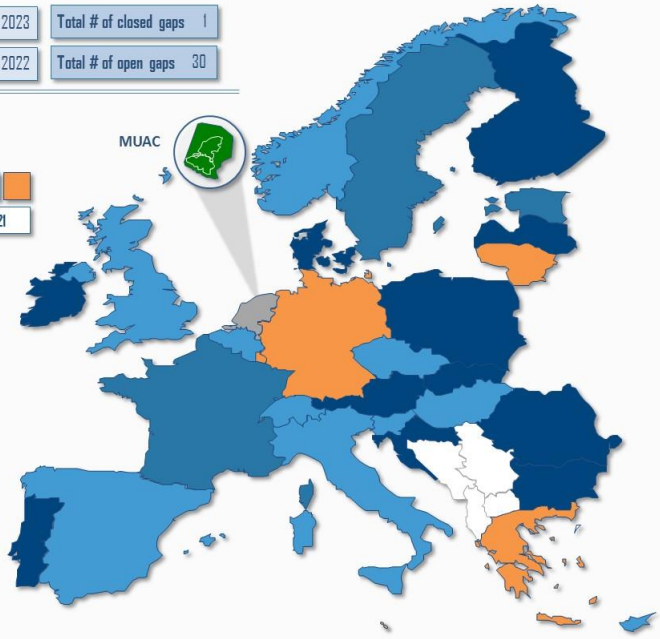
Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	0%	100%	0%	Dec 2021			
Belgium	70%	30%	0%	Dec 2019			
Bulgaria	70%	30%	0%	Dec 2021			
Croatia	50%	50%	0%	Dec 2021			
(N) Cyprus	30%	70%	0%	Dec 2021			
(N) Czech Republic	0%	100%	0%	Dec 2020			
Denmark	30%	35%	35%	-			
Estonia	30%	70%	0%	Dec 2018			
Finland	0%	100%	0%	Dec 2020			
(N) France	30%	70%	0%	Dec 2021			
(N) Germany	30%	70%	0%	Dec 2021			
Greece	0%	100%	0%	Dec 2021			
Hungary	30%	70%	0%	Jul 2020			
Ireland	0%	100%	0%	Dec 2021			
Italy	0%	100%	0%	Dec 2021			
Latvia	0%	0%	100%	-			
Lithuania	0%	100%	0%	Dec 2021			
Luxembourg							
Malta	0%	0%	100%	-			
(N) MUAC	50%	50%	0%	Dec 2021			
Netherlands							
Norway	0%	100%	0%	Dec 2021			
Poland	30%	70%	0%	Dec 2021			
(N) Portugal	30%	70%	0%	Dec 2021			
Romania	0%	100%	0%	Dec 2021			
Slovak Republic	50%	20%	30%	Dec 2021			
Slovenia	0%	100%	0%	Dec 2021			
Spain	0%	100%	0%	Dec 2021			
Sweden	0%	30%	70%	Dec 2021			
Switzerland	30%	70%	0%	Dec 2021			
United Kingdom	0%	100%	0%	Dec 2020			



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	✓			✓			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	✓			✓			
France	✓			✓			
N Germany	70%	30%	0%	Dec 2021			
Greece	✓			✓			
Hungary	✓			✓			
Ireland	0%	0%	100%	-			
Italy	✓			✓			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg							
Malta	0%	0%	100%	-			
MUAC	✓			✓			
Netherlands							
Norway	✓			✓			
Poland	30%	70%	0%	Dec 2021			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	✓			✓			
Slovenia	0%	100%	0%	Dec 2021			
Spain	✓			✓			
Sweden	✓			✓			
Switzerland	✓			✓			
United Kingdom	✓			✓			

3.1.4 Management of Dynamic Airspace Configurations

Expected completion year: Dec 2023
Family FOC date: Jan 2022
Total # of closed gaps: 1
Total # of open gaps: 30



Network Manager: 0% | 100% | 0% | Dec 2021

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Military Authorities
Austria	95%	5%	0%	Dec 2021			
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	45%	55%	0%	Dec 2021			
Denmark	95%	5%	0%	Dec 2018			
Estonia	60%	40%	0%	Dec 2021			
Finland	90%	10%	0%	Dec 2021			
France	55%	0%	45%	Dec 2018			
Germany	0%	100%	0%	Dec 2020			
Greece	0%	100%	0%	Dec 2020			
Hungary	45%	55%	0%	Dec 2021			
Ireland	90%	10%	0%	Dec 2021			
Italy	45%	55%	0%	Dec 2021			
Latvia	95%	5%	0%	Dec 2020			
Lithuania	0%	100%	0%	Dec 2021			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	0%	100%	-			
MUAC	✓			✓			
Netherlands							
Norway	45%	55%	0%	Dec 2021			
Poland	90%	10%	0%	Dec 2021			
Portugal	90%	10%	0%	Dec 2021			
Romania	85%	15%	0%	Dec 2021			
Slovak Republic	90%	10%	0%	Dec 2021			
Slovenia	50%	50%	0%	Dec 2021			
Spain	45%	55%	0%	Dec 2023			
Sweden	60%	40%	0%	Dec 2021			
Switzerland	45%	10%	45%	Dec 2021			
United Kingdom	45%	55%	0%	Dec 2021			

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

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 3
Total # of open gaps: 28

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
55% 45% 0% Dec 2021

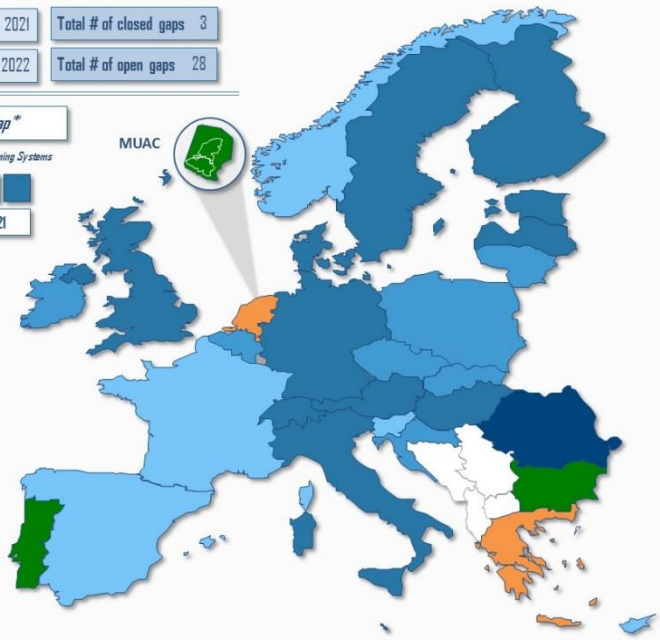


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager	Military Authorities
Austria	75%	25%	0%	Dec 2021			
Belgium	50%	0%	50%	-			
Bulgaria	✓			✓			
Croatia	50%	20%	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	70%	10%	20%	Dec 2021			
France	15%	70%	15%	Dec 2021			
Germany	65%	35%	0%	Dec 2021			
Greece	0%	100%	0%	Dec 2020			
Hungary	60%	40%	0%	Dec 2021			
Ireland	40%	0%	60%	-			
Italy	65%	35%	0%	Dec 2021			
Latvia	60%	0%	40%	Dec 2021			
Lithuania	50%	50%	0%	Dec 2021			
Luxembourg							
Malta	70%	15%	15%	Dec 2021			
MUAC	✓			✓			
Netherlands	0%	100%	0%	Dec 2021			
Norway	15%	85%	0%	Dec 2021			
Poland	50%	50%	0%	Dec 2021			
Portugal	✓			✓			
Romania	85%	15%	0%	Dec 2018			
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			

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3.2.3 Implement Published Direct Routings (DCTs)

Fully Implemented

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

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Military Authorities
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	✓			✓			

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3.2.4 Implement Free Route Airspace

Expected completion year: Dec 2021 | Total # of closed gaps: 17

Family FOC date: Jan 2022 | Total # of open gaps: 12

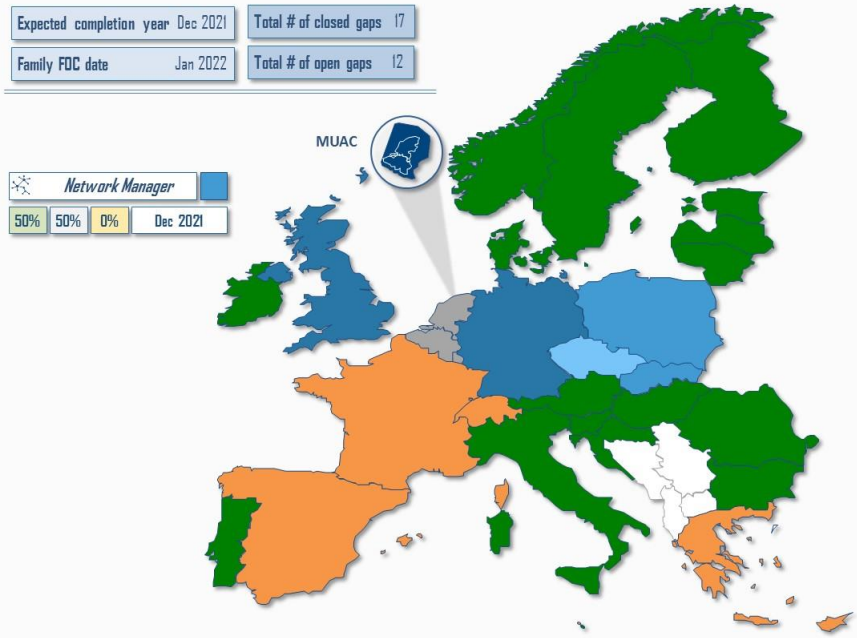


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Military Authorities
Austria	✓			✓			
Belgium							
Bulgaria	✓			✓			
Croatia	✓			✓			
Cyprus	0%	100%	0%	Dec 2021			
Czech Republic	5%	95%	0%	Dec 2021			
Denmark	✓			✓			
Estonia	✓			✓			
Finland	✓			✓			
France	0%	100%	0%	Dec 2021			
Germany	55%	45%	0%	Dec 2020			
Greece	0%	100%	0%	Dec 2021			
Hungary	✓			✓			
Ireland	✓			✓			
Italy	✓			✓			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg							
Malta	✓			✓			
MUAC	95%	5%	0%	May 2020			
Netherlands							
Norway	✓			✓			
Poland	35%	65%	0%	Feb 2019			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	35%	65%	0%	Dec 2021			
Slovenia	✓			✓			
Spain	0%	100%	0%	Dec 2021			
Sweden	✓			✓			
Switzerland	0%	100%	0%	Dec 2021			
United Kingdom	65%	35%	0%	Dec 2020			

SESAR DEPLOYMENT MANAGER

Focus on Free Route implementation

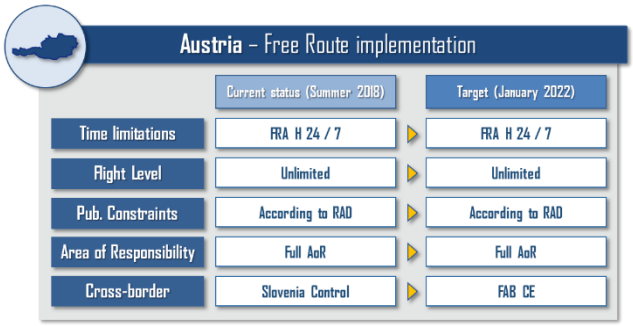
Due to the specific relevance of a **coordinated and synchronized implementation of Free Route** across Europe, the SESAR Deployment Manager has gathered additional information from the local Air Navigation Service Providers. This in-depth analysis, which is based on **data directly provided by ANSPs**,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

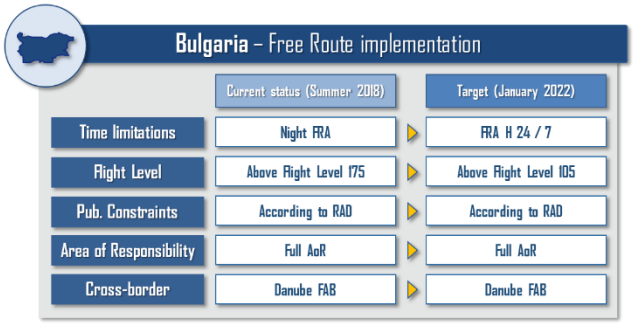
- Having a **clear picture of the Free Route deployment approach currently followed**;
- Identifying the stakeholders' planning **by January 1st, 2022**, the PCP Regulation target date for deploying and operating FRA.

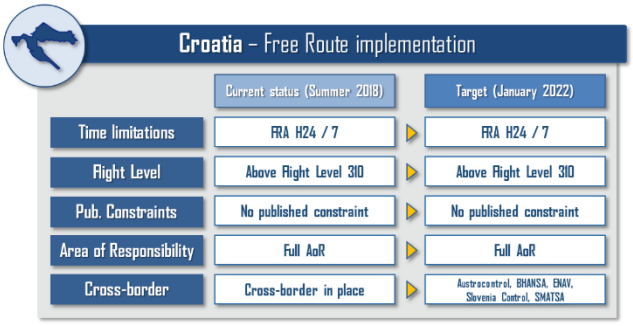
In the following pages, a specific table for each country within the PCP Geographical Scope is included, detailing the following information:

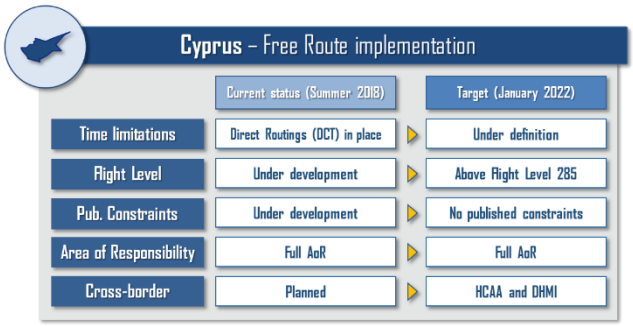
- The ***Time limitations*** set for the Free Route implementation;
- The ***Flight Level*** limit;
- The ***published constraints****;*
- The ***Area of Responsibility (AoR)*** where Free Route is implemented;
- The ***cross-border***, indicating if the deployment of cross-border FRA initiatives has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

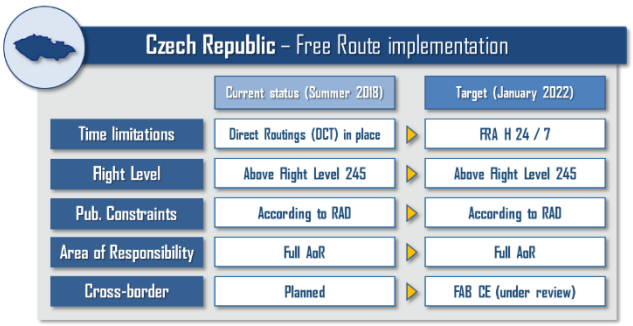
It has to be noted that the current text of Regulation (EU) No. 716/2014 does not explicitly include cross-border, neither specifies a clear requirement in terms of time implementation.











Denmark – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 285	Above Flight Level 285
Pub. Constraints	Routes to/from Helsinki	No constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Avinor; LFV	Avinor; LFV, MUAC; NATS

Estonia – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 285	Above Flight Level 95
Pub. Constraints	No published constraint	No published constraint
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 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 310	Above Flight Level 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 2018)	Target (January 2022)
Time limitations	Under development	FRA H 24 / 7 (Brest Jan 2021, Bordeaux Jan 2022, other ACCs to be confirmed)
Flight Level	Under development	From FL 195 (Brest, Bordeaux)
Pub. Constraints	Under development	According to RAD
Area of Responsibility	Under development	UIR France for Brest and Bordeaux
Cross-border	Under development	Spain, UK, FABEC

Germany – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA Cell EDUU: FRA H24 / 7 FRA Cells EDMM and EDWW: FRA Night	FRA H 24 / 7
Flight Level	FRA Cell: EDUU N FL 285+ FRA Cell: EDUU E FL 315+ FRA Cells: EDMM EDWW FL 245+	Above Flight Level 245
Pub. Constraints	Structural limitations	Structural limitations
Area of Responsibility	Three ACCs/UACs (EDUU, EDWW, EDMM)	Three ACCs/UACs (EDUU, EDWW, EDMM)
Cross-border	Planned	Naviair, LFV, MUAC

Greece – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	Deployment in progress	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	Deployment in progress	Blue MED FAB

Hungary – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 310	Above Flight Level 310
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Romania (Night FRA)	FAB CE

Ireland – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 245	Above Flight Level 95
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Planned	UK – Ireland FAB

Italy – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 305	Above Flight Level 305
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	Under development	Blue MED FAB + other adjacent ACCs

Latvia – Free Route implementation

	Current status (Summer 2018)	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 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 310	Above Flight Level 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 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 335	Above Flight Level 310
Pub. Constraints	Only operational constraints	As published on the AIP
Area of Responsibility	Full AoR	Full AoR
Cross-border	Planned	HCAA, ENAV

MUAC Region – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	Planned	FRA H 24 / 7
Flight Level	Above Flight Level 245	Above Flight Level 245
Pub. Constraints	Planned	No published constraints
Area of Responsibility	Planned	Full AoR, but French delegated airspace
Cross-border	MUAC Region by default	Naviair

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 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 310	Above Flight Level 310
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	EANS, Finavia LFV, LGS, Naviair	Borealis Alliance

Poland – Free Route implementation

	Current status (Summer 2018)	Target (January 2022)
Time limitations	DCT routings in place	FRA H 24 / 7
Flight Level	Under development	Above Flight Level 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	Gate One ANSPs, OFS, LFV, Oro Navigacija

Portugal – Free Route implementation

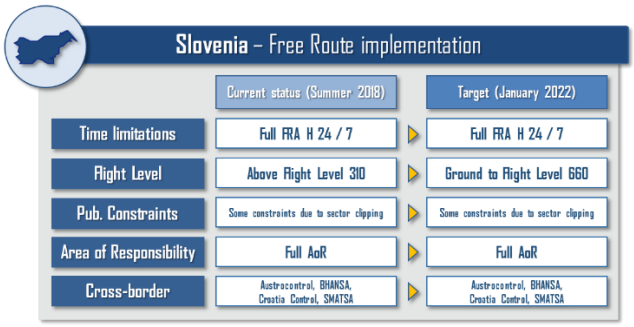
	Current status (Summer 2018)	Target (January 2022)
Time limitations	FRA H 24 / 7	FRA H 24 / 7
Flight Level	Above Flight Level 310	Above Flight Level 310
Pub. Constraints	No published constraints	No published constraints
Area of Responsibility	Full AoR	Full AoR
Cross-border	ENAIRE (Madrid FIR)	ENAIRE (Madrid FIR)

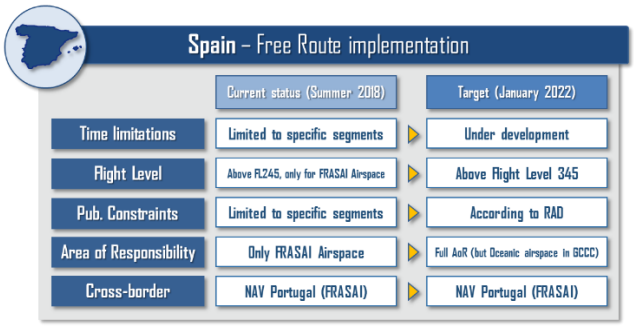
Romania – Free Route implementation

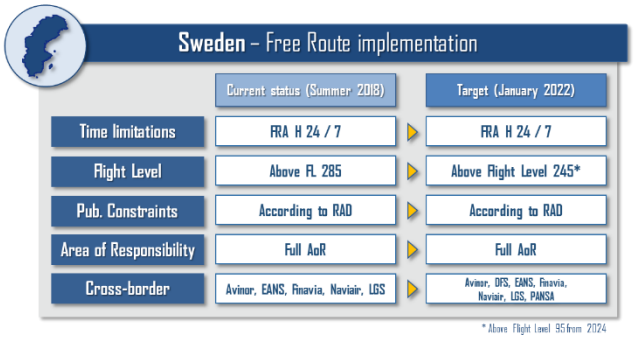
	Current status (Summer 2018)	Target (January 2022)
Time limitations	Night FRA	FRA H 24 / 7
Flight Level	Above Flight Level 105	Above Flight Level 105
Pub. Constraints	According to RAD	According to RAD
Area of Responsibility	Full AoR	Full AoR
Cross-border	BULATSA and Hungarocontrol	BULATSA and Hungarocontrol

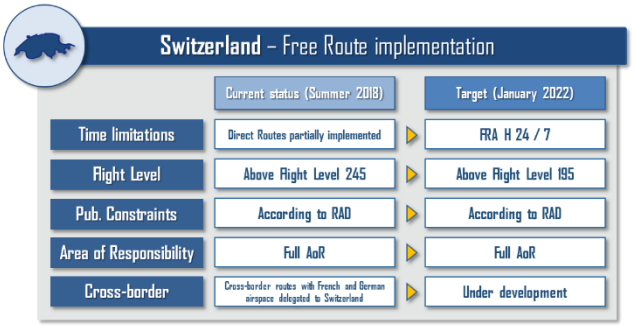
Slovak Republic – Free Route implementation

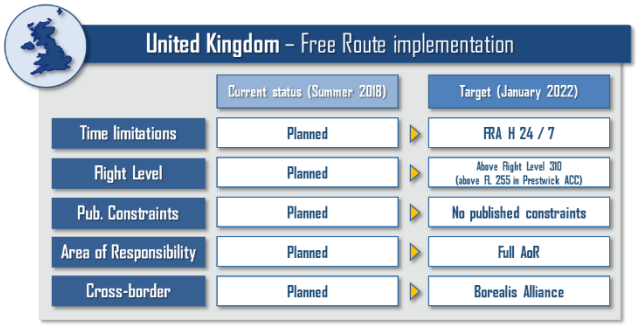
	Current status (Summer 2018)	Target (January 2022)
Time limitations	Planned	FRA H 24 / 7
Flight Level	Planned	Above Flight Level 245
Pub. Constraints	Planned	No published constraints
Area of Responsibility	Planned	Full AoR
Cross-border	Planned	Bulatsa, Romatsa, Hungaro Control


Slovenia – Free Route implementation
Current status (Summer 2018)
Target (January 2022)
Time limitations
Full FRA H 24 / 7
Full FRA H 24 / 7
Flight Level
Above Flight Level 310
Ground to Flight Level 660
Pub. Constraints
Some constraints due to sector clipping
Some constraints due to sector clipping
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 2018)
Target (January 2022)
Time limitations
Limited to specific segments
Under development
Flight Level
Above FL245, only for FRASAI Airspace
Above Flight Level 345
Pub. Constraints
Limited to specific segments
According to RAD
Area of Responsibility
Only FRASAI Airspace
Full AoR (but Oceanic airspace in GCCC)
Cross-border
NAV Portugal (FRASAI)
NAV Portugal (FRASAI)


Sweden – Free Route implementation
Current status (Summer 2018)
Target (January 2022)
Time limitations
FRA H 24 / 7
FRA H 24 / 7
Flight Level
Above FL 285
Above Flight Level 245*
Pub. Constraints
According to RAD
According to RAD
Area of Responsibility
Full AoR
Full AoR
Cross-border
Avinor, EANS, Finavia, Naviair, LGS
Avinor, DFS, EANS, Finavia, Naviair, LGS, PANSA
* Above Flight Level 95 from 2024


Switzerland – Free Route implementation
Current status (Summer 2018)
Target (January 2022)
Time limitations
Direct Routes partially implemented
FRA H 24 / 7
Flight Level
Above Flight Level 245
Above Flight Level 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 2018)
Target (January 2022)
Time limitations
Planned
FRA H 24 / 7
Flight Level
Planned
Above Flight Level 310 (above FL 255 in Prestwick ACC)
Pub. Constraints
Planned
No published constraints
Area of Responsibility
Planned
Full AoR
Cross-border
Planned
Borealis Alliance

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4.1.1 STAM Phase 1

Expected completion year: Nov 2018
Family FOC date: Jan 2017
Total # of closed gaps: 22
Total # of open gaps: 2

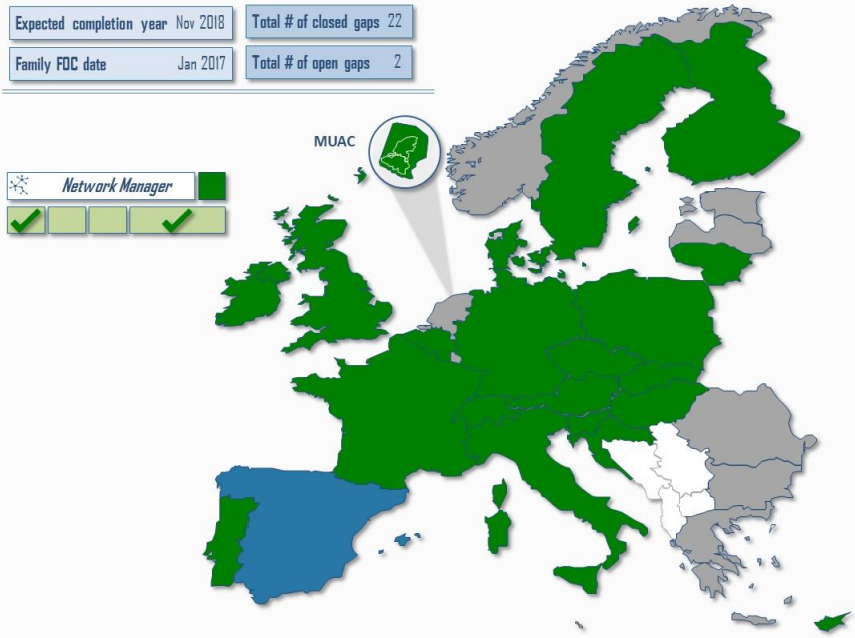


Chart Key – Implementation Status

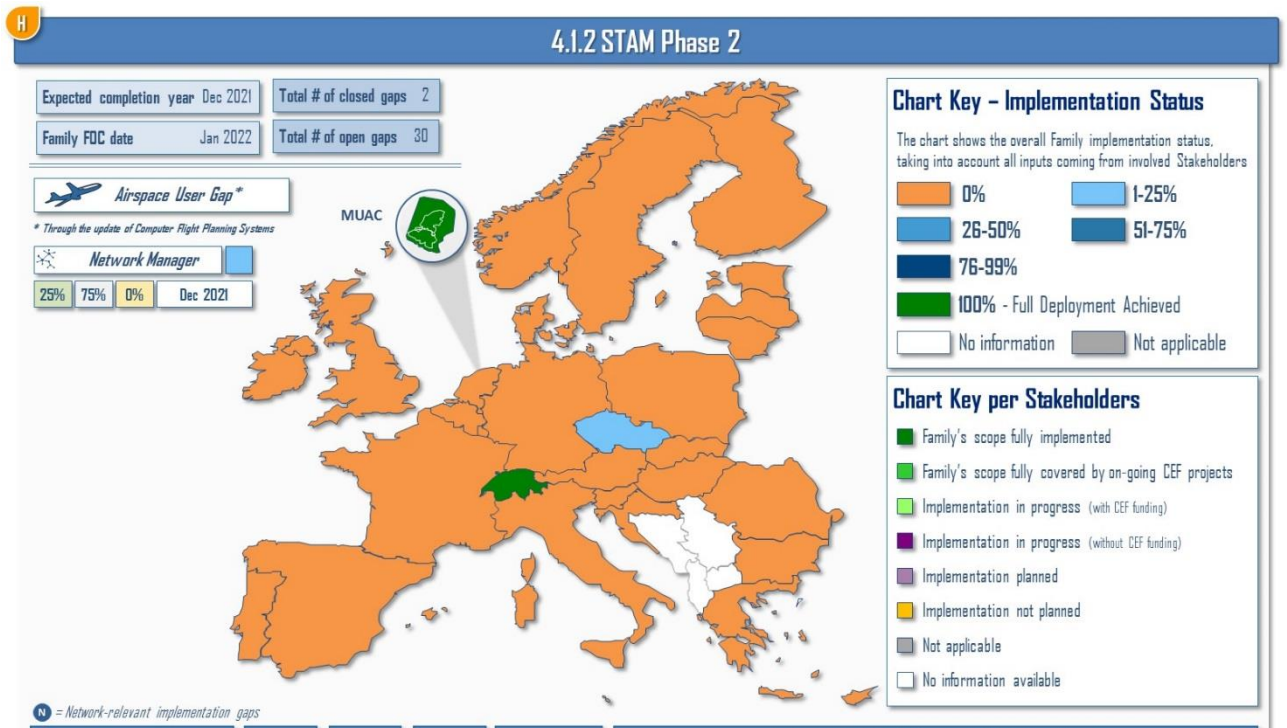
The chart shows the overall Family implementation status, taking into account all inputs coming from involved Stakeholders

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved in the Family deployment
					ANSPs	Network Manager
Austria	✓			✓		
Belgium	✓			✓		
Bulgaria						
Croatia	✓			✓		
Cyprus	✓			✓		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia						
Finland	✓			✓		
France	✓			✓		
Germany	✓			✓		
Greece						
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia						
Lithuania	✓			✓		
Luxembourg						
Malta	0%	0%	100%	-		
MUAC	✓			✓		
Netherlands						
Norway						
Poland	✓			✓		
Portugal	✓			✓		
Romania						
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	75%	25%	0%	Nov 2018		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		



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	Airport Operators	Network Manager	Military Authorities
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%	Dec 2021				
Finland	0%	100%	0%	Dec 2021				
N France	0%	100%	0%	Dec 2021				
N Germany	0%	100%	0%	Dec 2021				
Greece	0%	100%	0%	Dec 2021				
Hungary	0%	100%	0%	Dec 2021				
Ireland	0%	100%	0%	Dec 2021				
Italy	0%	100%	0%	Dec 2021				
Latvia	0%	0%	100%	Dec 2021				
Lithuania	0%	100%	0%	Dec 2021				
Luxembourg	0%	100%	0%	Dec 2021				
Malta	0%	0%	100%	-				
MUAC	✓			✓				
Netherlands	0%	100%	0%	Dec 2021				
Norway	0%	100%	0%	Dec 2021				
Poland	0%	100%	0%	Dec 2021				
N Portugal	0%	100%	0%	Dec 2021				
Romania	0%	0%	100%	-				
Slovak Republic	0%	100%	0%	Dec 2021				
Slovenia	0%	100%	0%	Dec 2021				
Spain	0%	100%	0%	Dec 2021				
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: 30% | 70% | 0% | Dec 2021

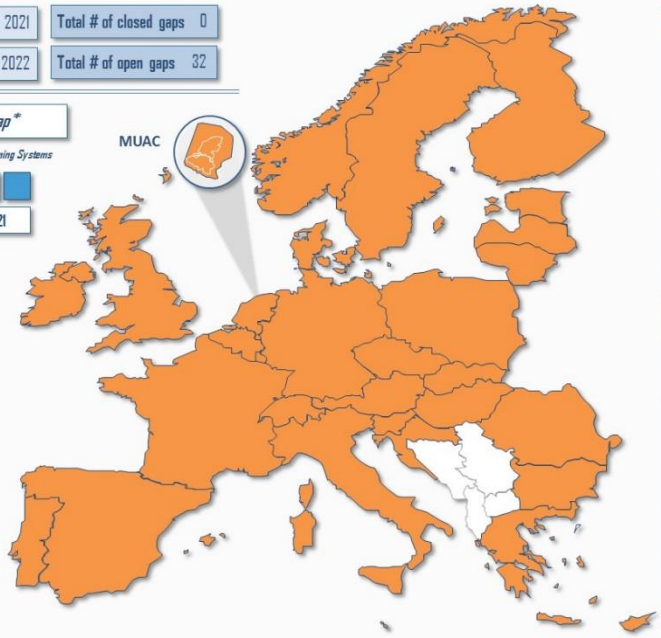


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category			
					Stakeholders considered as Gaps		Other stakeholders involved in the Family deployment	
					ANSPs	Network Manager	Airport Operators	Military Authorities
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%	100%	0%	Dec 2021				
(N) Germany	0%	100%	0%	Dec 2021				
Greece	0%	100%	0%	Dec 2021				
Hungary	0%	100%	0%	Dec 2021				
Ireland	0%	100%	0%	Dec 2020				
Italy	0%	100%	0%	Dec 2021				
Latvia	0%	100%	0%	Dec 2021				
Lithuania	0%	100%	0%	Dec 2021				
Luxembourg	0%	100%	0%	Dec 2021				
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				
(N) Portugal	0%	100%	0%	Dec 2021				
Romania	0%	100%	0%	Dec 2021				
Slovak Republic	0%	100%	0%	Dec 2021				
Slovenia	0%	100%	0%	Dec 2021				
Spain	0%	100%	0%	Dec 2021				
Sweden	0%	100%	0%	Dec 2021				
Switzerland	0%	0%	100%	-				
United Kingdom	0%	100%	0%	Dec 2021				

4.2.3 Interface ATM systems to NM systems

Expected completion year: Dec 2021
Family FOC date: Jan 2022
Total # of closed gaps: 10
Total # of open gaps: 22

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
50% | 50% | 0% | Dec 2021

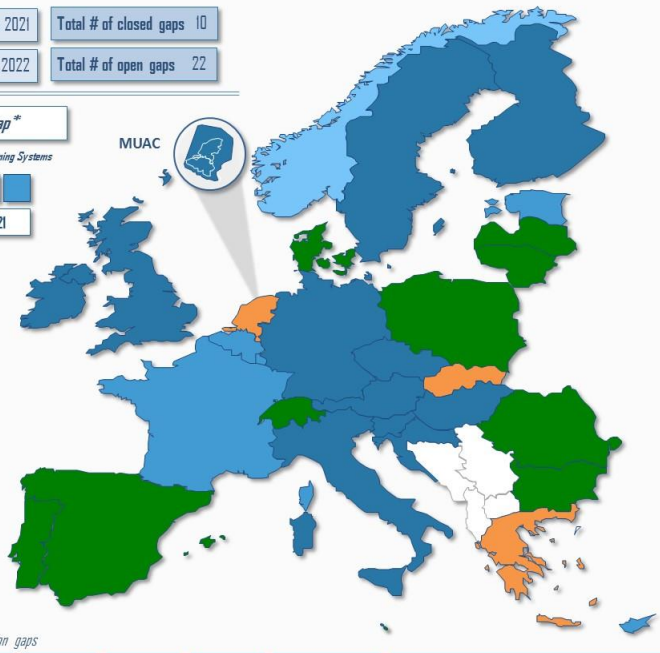


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

(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	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	0%	100%	0%	Dec 2020			
Hungary	75%	25%	0%	Dec 2021			
Ireland	75%	25%	0%	Dec 2021			
Italy	60%	40%	0%	Dec 2021			
Latvia	✓			✓			
Lithuania	✓			✓			
Luxembourg	50%	0%	50%	-			
Malta	✓			✓			
(N) MUAC	60%	40%	0%	Dec 2021			
Netherlands	0%	100%	0%	Dec 2021			
Norway	25%	75%	0%	Dec 2021			
Poland	✓			✓			
Portugal	✓			✓			
Romania	✓			✓			
Slovak Republic	0%	75%	25%	Dec 2021			
Slovenia	75%	25%	0%	Dec 2021			
Spain	✓			✓			
Sweden	75%	25%	0%	Dec 2018			
Switzerland	✓			✓			
United Kingdom	75%	25%	0%	Dec 2021			

4.2.4 AOP/NOP information sharing

Expected completion year	Dec 2021
Family FOC date	Jan 2022
Total # of closed gaps	0
Total # of open gaps	25

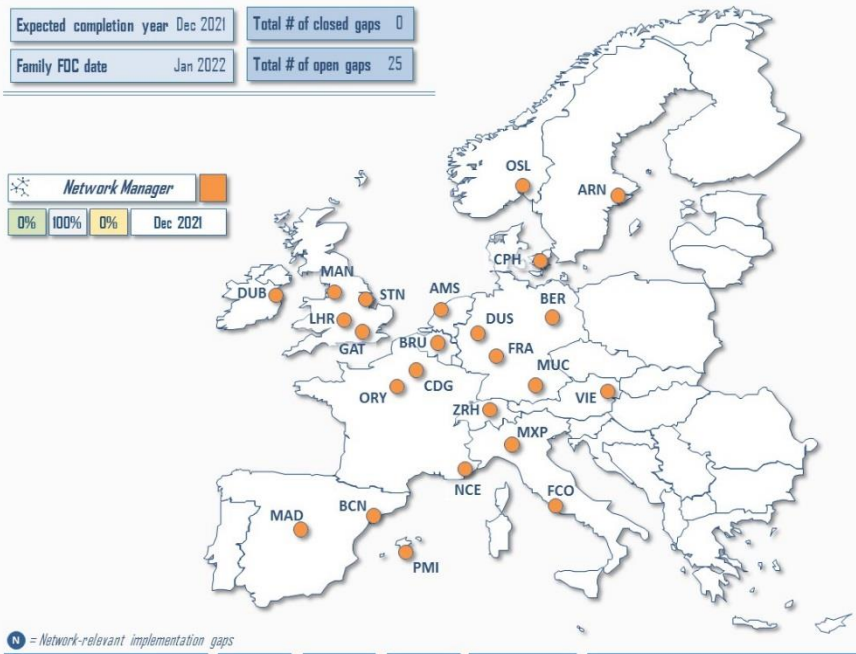


Chart Key – Implementation Status

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

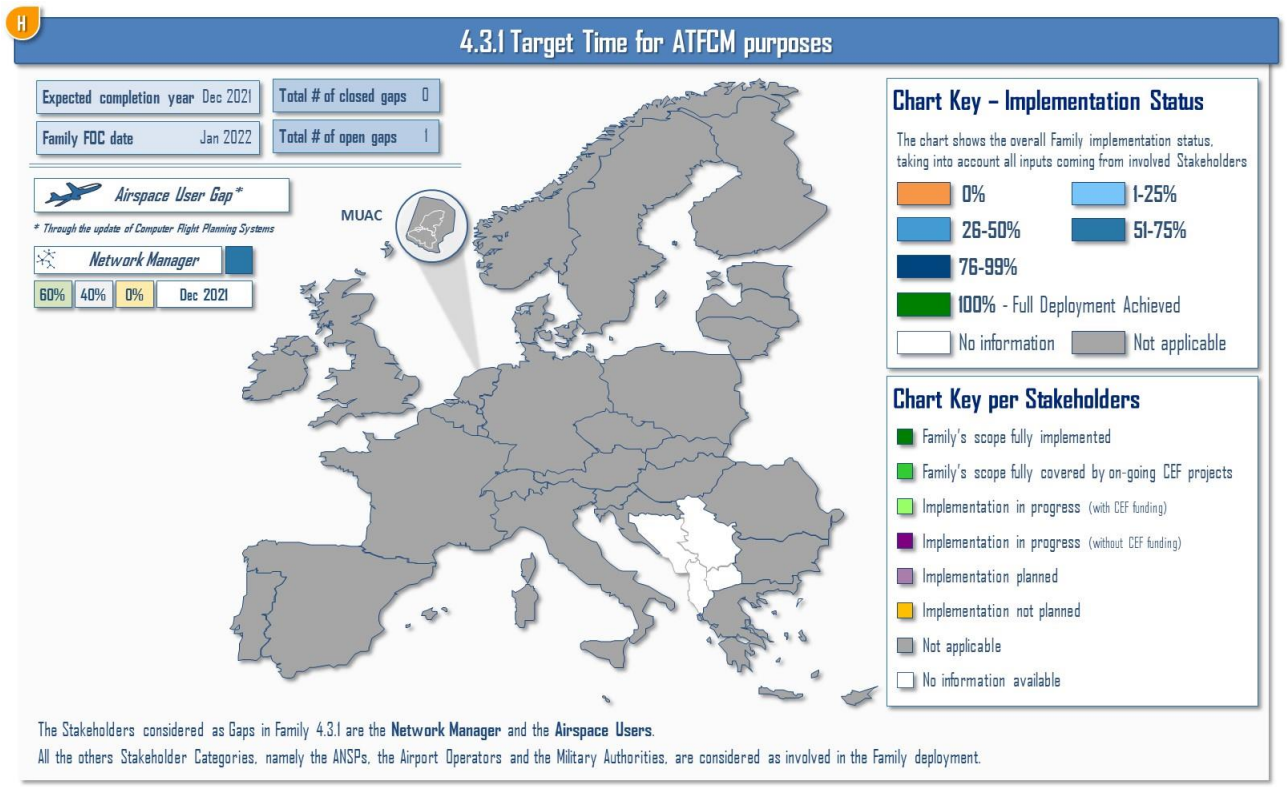
- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

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

(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 in the Family deployment		
					Network Manager	Airport Operators	ANSPs	Military Authorities	MET Providers
(N) Amsterdam Schiphol	0%	100%	0%	Jun 2020					
(N) Barcelona El Prat	0%	100%	0%	Sep 2020					
Berlin Brandenburg Airport	0%	90%	10%	Oct 2021					
Brussels National	0%	100%	0%	Jun 2020					
Copenhagen Kastrup	0%	100%	0%	Dec 2021					
Dublin Airport	0%	0%	100%	-					
Dusseldorf International	0%	100%	0%	Dec 2021					
(N) Frankfurt International	0%	100%	0%	Dec 2019					
(N) London Gatwick	0%	0%	100%	-					
(N) London Heathrow	0%	100%	0%	Dec 2019					
London Stansted	0%	100%	0%	Dec 2021					
Madrid Barajas	0%	100%	0%	Sep 2020					
Manchester Ringway	0%	100%	0%	Dec 2021					
Milan Malpensa	0%	100%	0%	Dec 2021					
Munich Franz Josef Strauss	0%	100%	0%	Dec 2021					
Nice Cote D'Azur	0%	100%	0%	Dec 2021					
Oslo Gardermoen	0%	0%	100%	-					
Palma de Mallorca Son San Juan	0%	100%	0%	Sep 2020					
Paris Charles De Gaulle	0%	100%	0%	Dec 2019					
(N) Paris Orly	0%	100%	0%	Dec 2019					
Rome Fiumicino	0%	100%	0%	Dec 2021					
Stockholm Arlanda	0%	100%	0%	Jun 2020					
Vienna Schwechat	0%	100%	0%	Dec 2021					
(N) Zurich Kloten	0%	100%	0%	Dec 2021					


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

4.3.2 Reconciled target times for ATFCM and arrival sequencing

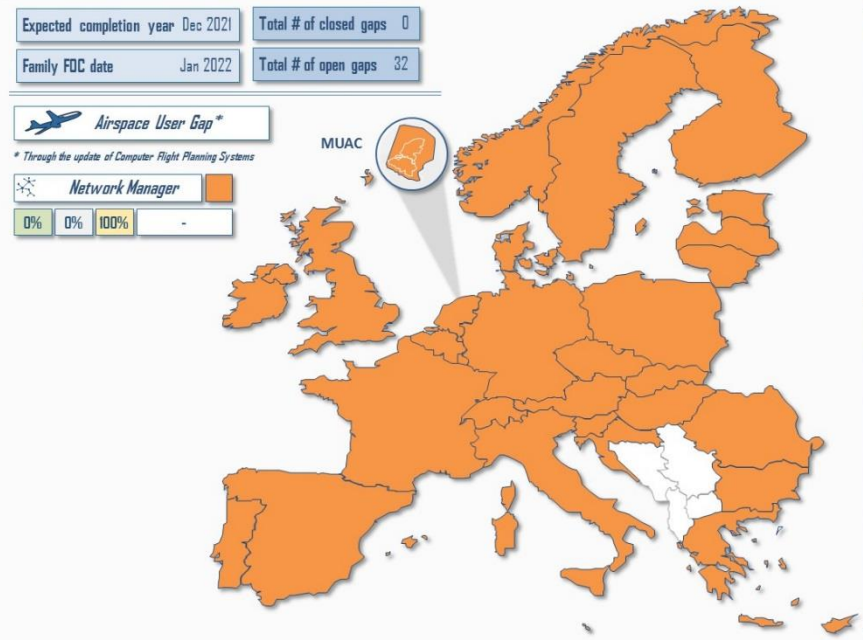


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

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

4.4.2 Traffic Complexity tools

Expected completion year: Dec 2024 | Total # of closed gaps: 3
Family FOC date: Jan 2022 | Total # of open gaps: 29

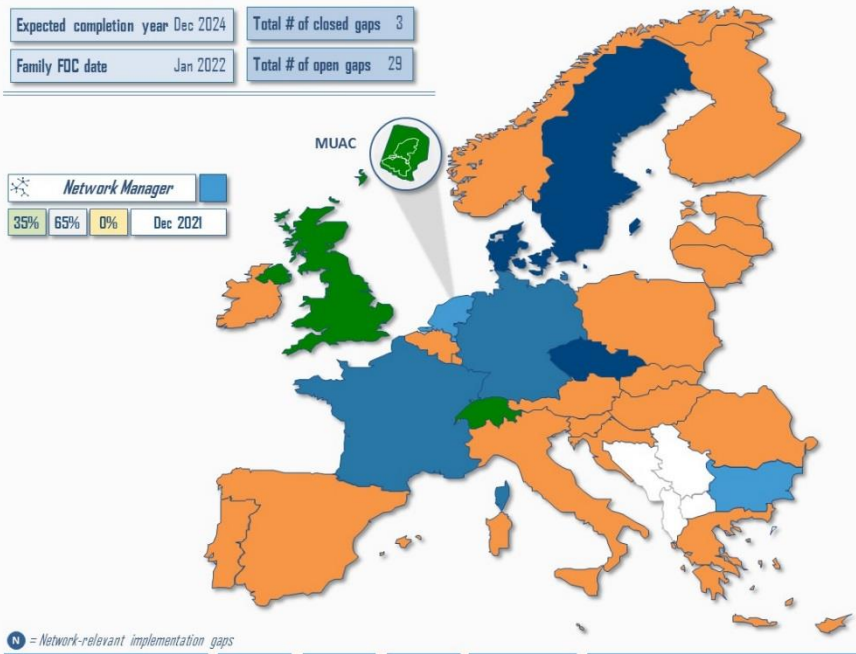


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

(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	Military Authorities
Austria	0%	100%	0%	Dec 2024			
Belgium	0%	100%	0%	Jun 2019			
Bulgaria	40%	60%	0%	Sep 2020			
Croatia	0%	100%	0%	Dec 2021			
(N) Cyprus	0%	100%	0%	Dec 2021			
(N) Czech Republic	95%	5%	0%	Dec 2018			
Denmark	95%	5%	0%	Dec 2021			
Estonia	0%	100%	0%	Dec 2021			
Finland	0%	100%	0%	Dec 2021			
(N) France	70%	30%	0%	Dec 2021			
(N) Germany	65%	35%	0%	Dec 2021			
Greece	0%	100%	0%	Dec 2021			
Hungary	0%	100%	0%	Dec 2019			
Ireland	0%	100%	0%	Dec 2021			
Italy	0%	100%	0%	Dec 2020			
Latvia	0%	0%	100%	Dec 2021			
Lithuania	0%	100%	0%	Dec 2022			
Luxembourg	0%	100%	0%	Dec 2021			
Malta	0%	100%	0%	Dec 2021			
MUAC	✓			✓			
Netherlands	45%	55%	0%	Dec 2020			
Norway	0%	100%	0%	Dec 2021			
Poland	0%	100%	0%	Dec 2021			
(N) Portugal	0%	100%	0%	Dec 2021			
Romania	0%	0%	100%	-			
Slovak Republic	0%	100%	0%	-			
Slovenia	0%	100%	0%	-			
Spain	0%	100%	0%	Dec 2021			
Sweden	95%	5%	0%	Dec 2021			
Switzerland	✓			✓			
United Kingdom	✓			✓			

AF #5 – Initial SWIM

5.1.1 PENS 1: Pan-European Network Service version 1

Expected completion year: Dec 2019
Family FOC date: Dec 2019
Total # of closed gaps: 29
Total # of open gaps: 2

Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Network Manager
Austria	✓			✓		
Belgium	✓			✓		
Bulgaria	✓			✓		
Croatia	✓			✓		
Cyprus	✓			✓		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	✓			✓		
France	✓			✓		
Germany	✓			✓		
Greece	0%	100%	0%	Dec 2019		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	✓			✓		
Lithuania	✓			✓		
Luxembourg	✓			✓		
Malta	0%	100%	0%	-		
MUAC	✓			✓		
Netherlands	✓			✓		
Norway	✓			✓		
Poland	✓			✓		
Portugal	✓			✓		
Romania						
Slovak Republic	✓			✓		
Slovenia	✓			✓		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

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 32

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

40% | 60% | 0% | Dec 2020

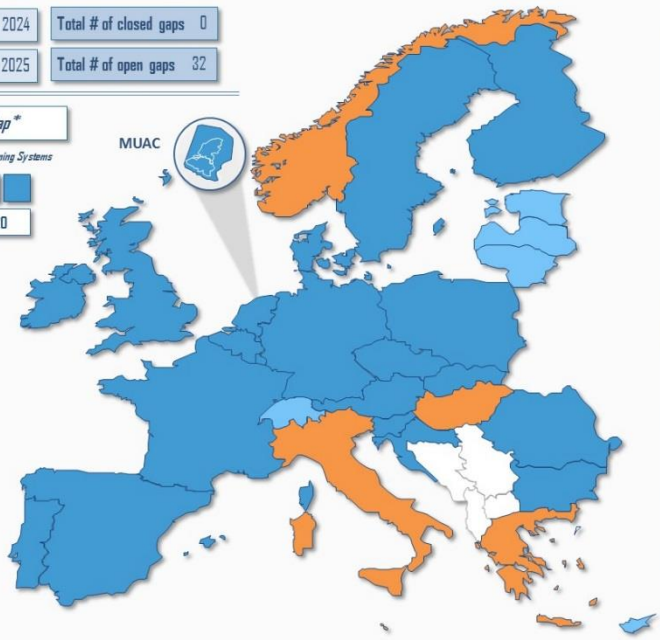


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	40%	60%	0%	Dec 2020					
Belgium	40%	60%	0%	Dec 2020					
Bulgaria	40%	60%	0%	Dec 2020					
Croatia	40%	60%	0%	Dec 2020					
Cyprus	10%	90%	0%	Dec 2021					
Czech Republic	40%	60%	0%	Dec 2020					
Denmark	40%	60%	0%	Dec 2020					
Estonia	10%	90%	0%	Dec 2020					
Finland	40%	60%	0%	Dec 2020					
France	40%	60%	0%	Dec 2020					
Germany	40%	60%	0%	Dec 2019					
Greece	0%	100%	0%	Dec 2020					
Hungary	0%	100%	0%	Apr 2019					
Ireland	40%	60%	0%	Dec 2020					
Italy	0%	100%	0%	Dec 2024					
Latvia	10%	90%	0%	Dec 2024					
Lithuania	10%	90%	0%	Jun 2020					
Luxembourg	40%	60%	0%	Mar 2020					
Malta	0%	100%	0%	Dec 2019					
MUAC	40%	60%	0%	Dec 2020					
Netherlands	40%	60%	0%	Dec 2020					
Norway	0%	100%	0%	Dec 2024					
Poland	40%	60%	0%	Dec 2020					
Portugal	40%	60%	0%	Dec 2020					
Romania	40%	60%	0%	Dec 2020					
Slovak Republic	40%	60%	0%	Dec 2020					
Slovenia	40%	60%	0%	Dec 2020					
Spain	40%	60%	0%	Dec 2020					
Sweden	40%	60%	0%	Dec 2020					
Switzerland	10%	90%	0%	Dec 2019					
United Kingdom	40%	60%	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 Agreement[6].

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 the first iteration of its work. The first set of deliverables of this task was delivered mid-2018:

- **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 has started the 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 drafted security requirements and, more importantly, a draft security policy.

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 will be drafted, which will detail the relevant processes of the SWIM Governance. Once Task 04 will be fully on execution, an operational SWIM Governance will exist.

Thus, the project is on the way to complete "MM.1 – SWIM governance structure and processes set up". This milestone will be fully achieved when the Governance bodies are working and the process definition has concluded.

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
- Task 02 - Develop Common PKI specifications (for both development and operations)
- Task 03 - Define the (SWIM) interfaces to the Common PKI
- Task 04 - Interface with SWIIM governance
- Task 05 - Prepare the material for the potential launch of a CFT (scope still to be defined)
- Task 06 - Prepare all necessary material for operations
- Task 07 - Project Management

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

5.2.1 Stakeholders Internet Protocol Compliance

Expected completion year: Dec 2024
Family FOC date: Jan 2018
Total # of closed gaps: 11
Total # of open gaps: 21

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
75% | 25% | 0% | Dec 2024

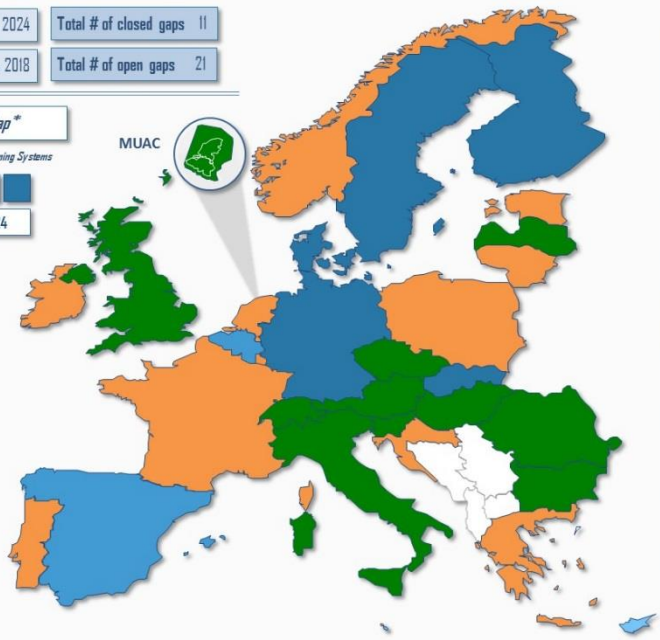


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	✓			✓					
Belgium	50%	50%	0%	Dec 2019					
Bulgaria	✓			✓					
Croatia	0%	100%	0%	Dec 2019					
Cyprus	5%	95%	0%	Dec 2020					
Czech Republic	✓			✓					
Denmark	60%	40%	0%	Dec 2024					
Estonia	0%	0%	100%	-					
Finland	60%	40%	0%	Dec 2024					
France	0%	100%	0%	Dec 2024					
Germany	60%	40%	0%	Dec 2018					
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	5%	95%	0%	Dec 2020					
MUAC	✓			✓					
Netherlands	0%	100%	0%	Dec 2024					
Norway	0%	0%	100%	Dec 2024					
Poland	0%	100%	0%	Dec 2019					
Portugal	0%	100%	0%	Dec 2024					
Romania	✓			✓					
Slovak Republic	60%	40%	0%	Dec 2022					
Slovenia	✓			✓					
Spain	40%	60%	0%	Dec 2020					
Sweden	55%	45%	0%	Dec 2024					
Switzerland	✓			✓					
United Kingdom	✓			✓					

5.2.2 Stakeholders SWM Infrastructures Components

Expected completion year Dec 2024 | Total # of closed gaps 0

Family FOC date Jan 2025 | Total # of open gaps 32

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

15% | 45% | 40% | Dec 2024

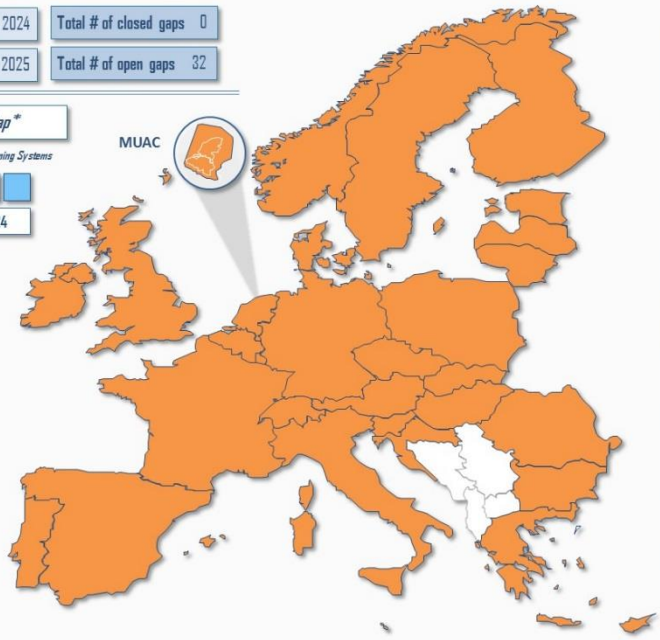


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	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%	60%	40%	-					
Greece	0%	100%	0%	Dec 2022					
Hungary	0%	10%	90%	Dec 2024					
Ireland	0%	100%	0%	Jan 2020					
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	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 2024					
Romania	0%	100%	0%	Dec 2024					
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					

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: 32

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
60% | 40% | 0% | Dec 2024

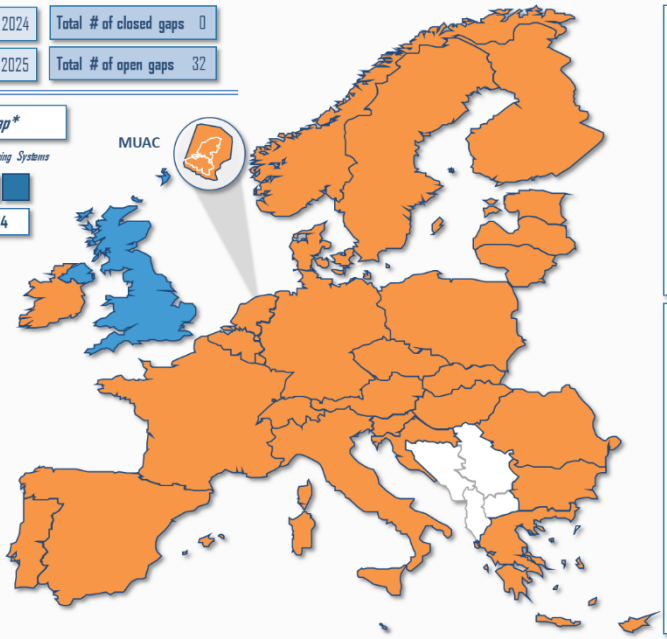


Chart Key – Implementation Status

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

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

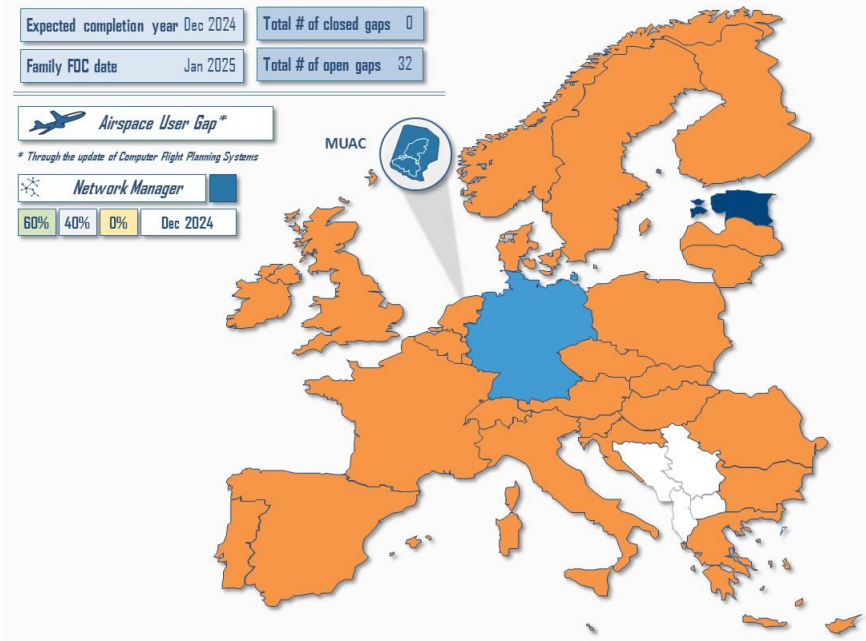
Chart Key per Stakeholders

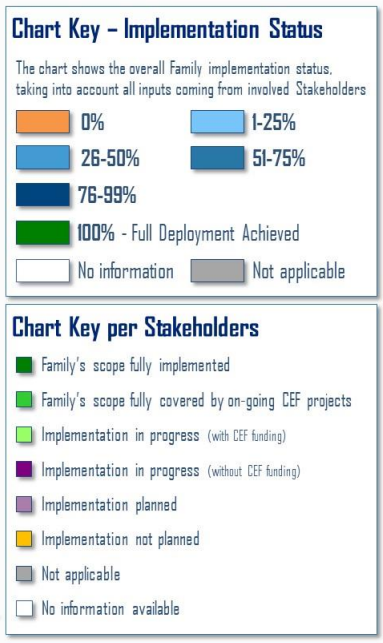
- Family's scope fully implemented
- Family's scope fully covered by on-going CEF projects
- Implementation in progress (with CEF funding)
- Implementation in progress (without CEF funding)
- Implementation planned
- Implementation not planned
- Not applicable
- No information available

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	0%	60%	40%	Dec 2020					
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%	60%	40%	Dec 2024					
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%	100%	0%	Jan 2020					
Italy	0%	100%	0%	Dec 2024					
Latvia	0%	100%	0%	Dec 2024					
Lithuania	0%	100%	0%	Jun 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%	-					
Poland	0%	100%	0%	Dec 2024					
Portugal	0%	0%	100%	-					
Romania	0%	0%	100%	-					
Slovak Republic	0%	100%	0%	Dec 2024					
Slovenia	0%	30%	70%	Dec 2021					
Spain	0%	100%	0%	Dec 2024					
Sweden	0%	100%	0%	Dec 2023					
Switzerland	0%	100%	0%	-					
United Kingdom	30%	70%	0%	Dec 2024					

H

5.3.1 Upgrade / Implement Aeronautical Information Exchange system / service





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%	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 2021				
Estonia	80%	10%	10%	Dec 2020				
Finland	0%	100%	0%	Dec 2024				
France	0%	80%	20%	Dec 2024				
Germany	30%	20%	50%	Dec 2024				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	0%	100%	-				
Ireland	0%	100%	0%	Dec 2024				
Italy	0%	100%	0%	Dec 2024				
Latvia	0%	100%	0%	Dec 2024				
Lithuania	0%	100%	0%	Dec 2024				
Luxembourg	0%	100%	0%	Mar 2021				
Malta	0%	20%	80%	-				
MUAC	60%	30%	10%	Dec 2024				
Netherlands	0%	20%	80%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	0%	100%	0%	Dec 2024				
Portugal	0%	100%	0%	-				
Romania	0%	0%	100%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	0%	100%	-				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	100%	0%	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: 32

Airspace User Gap*

* Through the update of Computer Flight Planning Systems

Network Manager

10% | 90% | 0% | Dec 2024

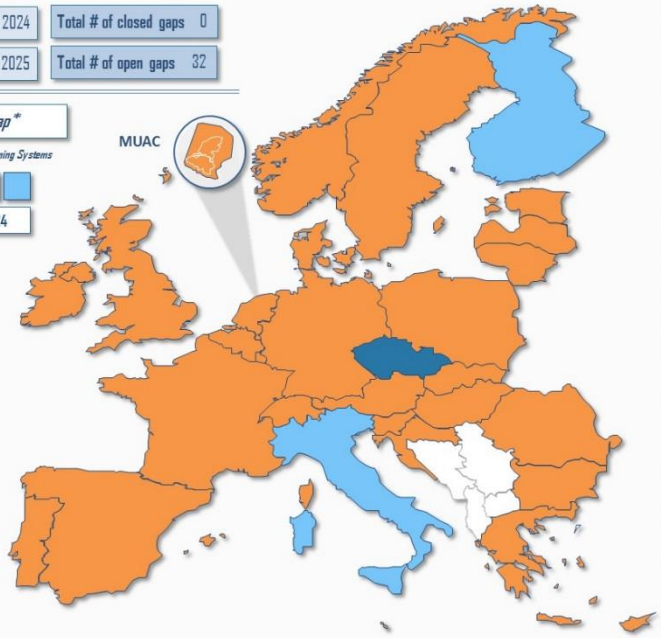


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities	MET Providers
Austria	0%	100%	0%	Dec 2024					
Belgium	0%	100%	0%	Dec 2024					
Bulgaria	0%	0%	100%	-					
Croatia	0%	100%	0%	Dec 2024					
Cyprus	0%	0%	100%	-					
Czech Republic	60%	40%	0%	Dec 2020					
Denmark	0%	100%	0%	Dec 2024					
Estonia	0%	100%	0%	Dec 2024					
Finland	20%	80%	0%	Dec 2024					
France	0%	100%	0%	Dec 2024					
Germany	0%	100%	0%	-					
Greece	0%	100%	0%	Dec 2022					
Hungary	0%	55%	45%	Dec 2024					
Ireland	0%	100%	0%	Dec 2024					
Italy	20%	80%	0%	Dec 2024					
Latvia	0%	100%	0%	Dec 2024					
Lithuania	0%	100%	0%	Dec 2024					
Luxembourg	0%	100%	0%	Dec 2024					
Malta	0%	0%	100%	-					
MUAC	0%	100%	0%	Dec 2024					
Netherlands	0%	100%	0%	Dec 2024					
Norway	0%	0%	100%	-					
Poland	0%	0%	100%	-					
Portugal	0%	100%	0%	Dec 2019					
Romania	0%	45%	55%	Dec 2024					
Slovak Republic	0%	80%	20%	-					
Slovenia	0%	0%	100%	-					
Spain	0%	100%	0%	Dec 2024					
Sweden	0%	45%	55%	Dec 2024					
Switzerland	0%	20%	80%	-					
United Kingdom	0%	100%	0%	Dec 2020					

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: 32

Airspace User Gap*
* Through the update of Computer Flight Planning Systems
Network Manager
70% | 30% | 0% | Dec 2020

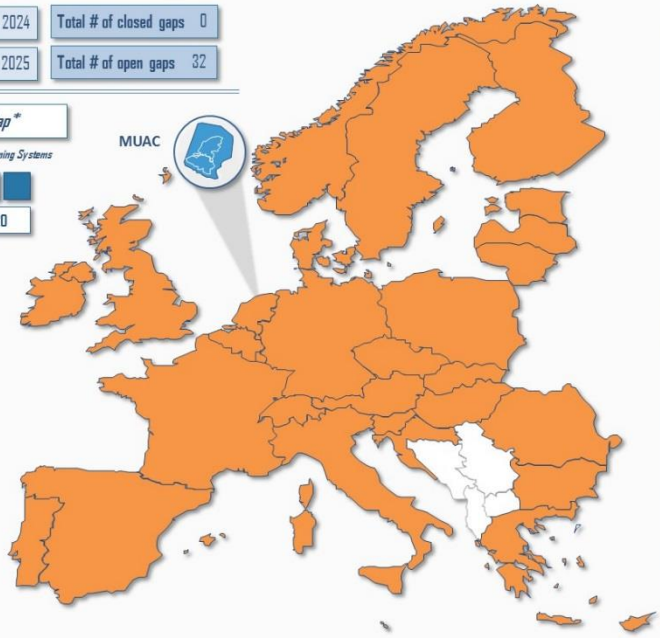


Chart Key – Implementation Status

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

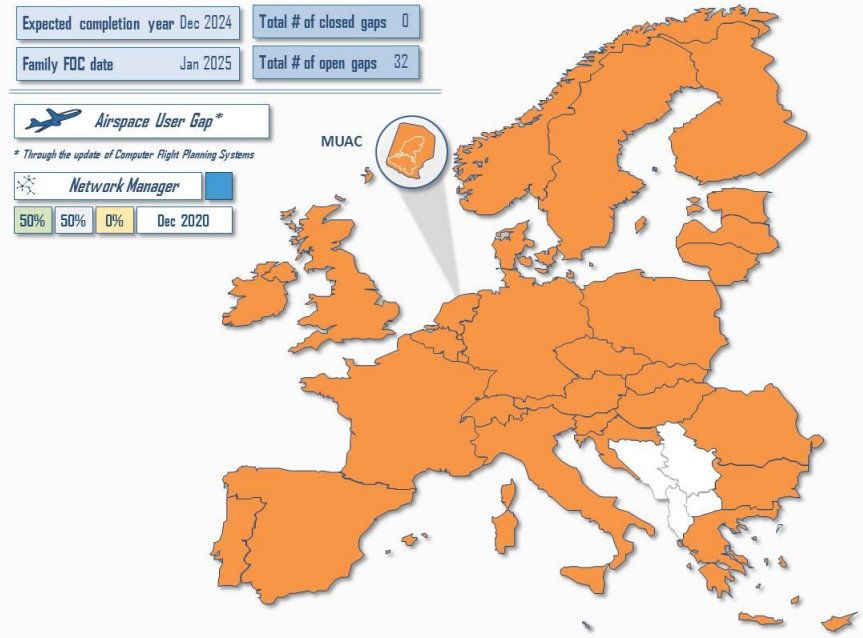
- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps: ANSPs	Airport Operators	Network Manager	Military Authorities
Austria	0%	100%	0%	Dec 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%	100%	0%	Dec 2024				
Finland	0%	100%	0%	Dec 2024				
France	0%	100%	0%	Dec 2024				
Germany	0%	100%	0%	-				
Greece	0%	100%	0%	Dec 2022				
Hungary	0%	0%	100%	-				
Ireland	0%	100%	0%	Oct 2020				
Italy	0%	100%	0%	Dec 2024				
Latvia	0%	0%	100%	-				
Lithuania	0%	100%	0%	Dec 2021				
Luxembourg	0%	100%	0%	Dec 2024				
Malta	0%	100%	0%	Dec 2020				
MUAC	45%	55%	0%	Dec 2024				
Netherlands	0%	20%	80%	Dec 2024				
Norway	0%	0%	100%	-				
Poland	0%	100%	0%	Dec 2024				
Portugal	0%	0%	100%	-				
Romania	0%	0%	100%	-				
Slovak Republic	0%	0%	100%	-				
Slovenia	0%	0%	100%	-				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	20%	80%	Dec 2024				
Switzerland	0%	100%	0%	-				
United Kingdom	0%	100%	0%	Dec 2024				

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



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%	20%	80%	Dec 2024				
Belgium	0%	0%	100%	-				
Bulgaria	0%	0%	100%	-				
Croatia	0%	20%	80%	Dec 2024				
Cyprus	0%	0%	100%	-				
Czech Republic	0%	100%	0%	Nov 2020				
Denmark	0%	20%	80%	Dec 2024				
Estonia	0%	100%	0%	Dec 2021				
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%	0%	100%	-				
Ireland	0%	20%	80%	Dec 2024				
Italy	0%	100%	0%	Dec 2024				
Latvia	0%	0%	100%	Dec 2024				
Lithuania	0%	100%	0%	Dec 2024				
Luxembourg	0%	100%	0%	Dec 2024				
Malta	0%	0%	100%	-				
MUAC	0%	100%	0%	Mar 2020				
Netherlands	0%	0%	100%	-				
Norway	0%	0%	100%	-				
Poland	0%	0%	100%	-				
Portugal	0%	0%	100%	-				
Romania	0%	0%	100%	-				
Slovak Republic	0%	100%	0%	Dec 2023				
Slovenia	0%	0%	100%	-				
Spain	0%	100%	0%	Dec 2024				
Sweden	0%	80%	20%	Dec 2024				
Switzerland	0%	70%	30%	-				
United Kingdom	0%	100%	0%	Dec 2024				

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

Expected completion year: Dec 2027
Family FOC date: Jan 2025
Total # of closed gaps: 0
Total # of open gaps: 31

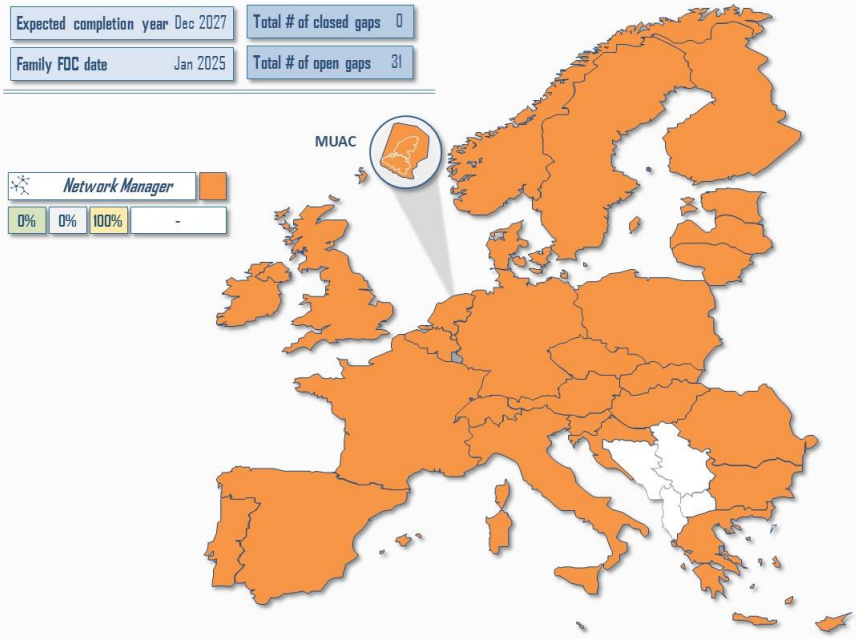


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category		
					Stakeholders considered as Gaps		Other stakeholders involved
					ANSPs	Network Manager	Military Authorities
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%	100%	0%	Dec 2024			
Finland	0%	100%	0%	Dec 2024			
France	0%	100%	0%	Dec 2024			
Germany	0%	100%	0%	Dec 2027			
Greece	0%	100%	0%	Dec 2022			
Hungary	0%	0%	100%	-			
Ireland	0%	0%	100%	-			
Italy	0%	100%	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%	0%	100%	-			
Norway	0%	0%	100%	-			
Poland	0%	100%	0%	Dec 2024			
Portugal	0%	0%	100%	-			
Romania	0%	0%	100%	-			
Slovak Republic	0%	0%	100%	-			
Slovenia	0%	0%	100%	-			
Spain	0%	100%	0%	Dec 2024			
Sweden	0%	0%	100%	-			
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.

A large number of operational stakeholders report an 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;
- SWIM Governance material, in particular the service delivery policy; and the
- EUROCAE ED-254 standard "*Arrival Sequence Service Performance Specification*".

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. Some more advanced stakeholders even envision a transition to an information-oriented organization.

While the above-mentioned foundations provide a starting point for drafting implementation plans, currently missing details on 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 and 5.5.1 are being considered more 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 partly SWIM compliant. Implementation initiatives in this Family are based on NM B2B services or the alternative NM access via the NM portal.
- Families 5.6.1 and 5.6.2 are lagging behind with regard to the planning coverage; especially 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.

AF #6 – Initial Trajectory Information Sharing

6.1.1 ATN B1 based services in ATSP domain

Expected completion year Nov 2022 | Total # of closed gaps 14

Family FOC date Feb 2018 | Total # of open gaps 14

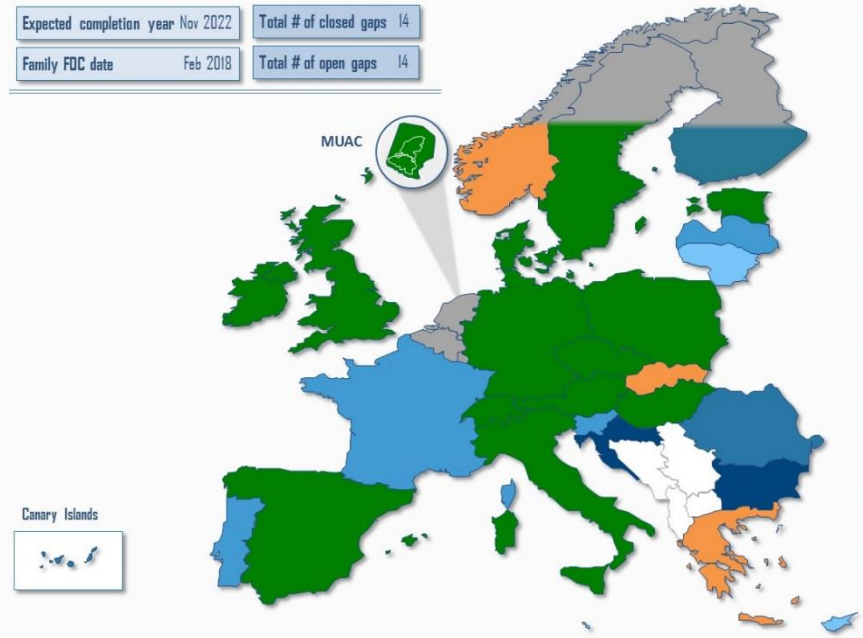


Chart Key – Implementation Status

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

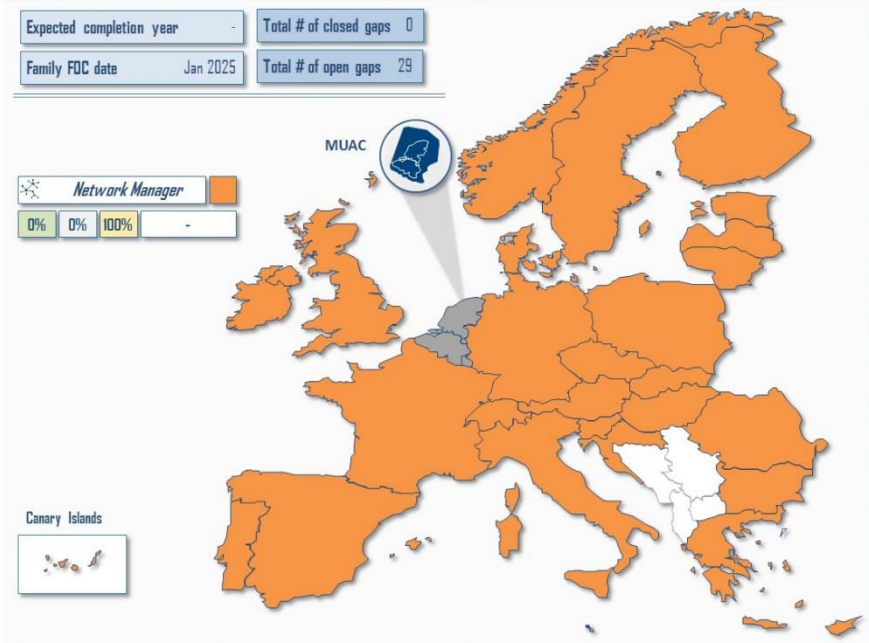
- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-99%
- 100% - Full Deployment Achieved
- No information
- Not applicable

Chart Key per Stakeholders

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

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category	
					Stakeholders considered as Gaps	Other stakeholders involved in the Family deployment
					ANSPs	*Military Authorities*
Austria	✓			✓		
Belgium						
Bulgaria	95%	5%	0%	Dec 2018		
Croatia	80%	0%	20%	-		
Cyprus	20%	55%	25%	-		
Czech Republic	✓			✓		
Denmark	✓			✓		
Estonia	✓			✓		
Finland	60%	0%	40%	-		
France	40%	60%	0%	Nov 2022		
Germany	✓			✓		
Greece	0%	100%	0%	-		
Hungary	✓			✓		
Ireland	✓			✓		
Italy	✓			✓		
Latvia	40%	15%	45%	-		
Lithuania	10%	40%	50%	-		
Luxembourg						
Malta	20%	0%	80%	-		
MUAC	✓			✓		
Netherlands						
Norway	0%	60%	40%	-		
Poland	✓			✓		
Portugal	40%	0%	60%	-		
Romania	55%	20%	25%	-		
Slovak Republic	0%	100%	0%	Dec 2020		
Slovenia	50%	50%	0%	Jan 2019		
Spain	✓			✓		
Sweden	✓			✓		
Switzerland	✓			✓		
United Kingdom	✓			✓		

6.1.2 ATN B2 based services in ATSP domain



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	Military Authorities
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	80%	0%	20%	-			
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%	-			

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

Expected completion year -
Family FOC date Dec 2022
Total # of closed gaps 13
Total # of open gaps 15

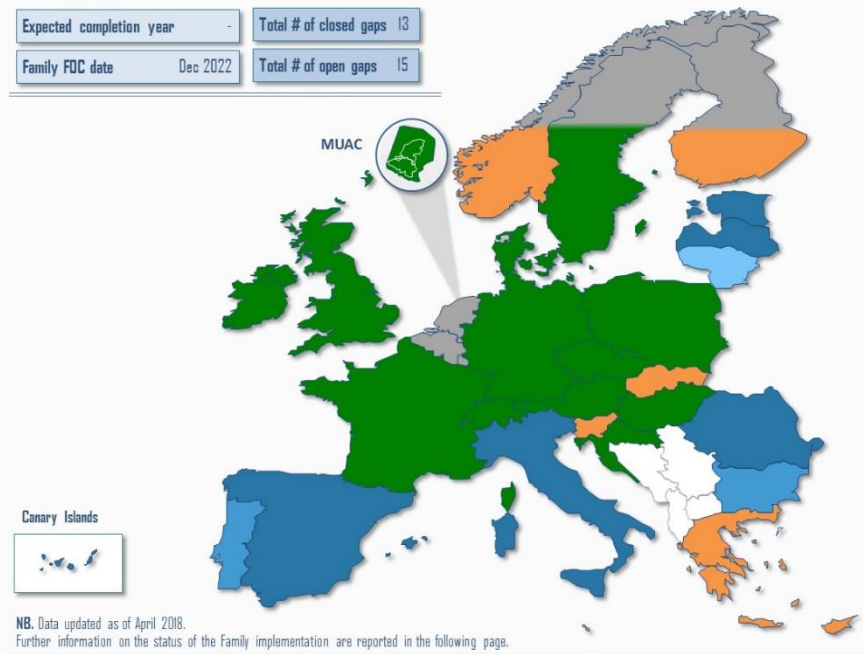


Chart Key – Implementation Status

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

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

Chart Key per Stakeholders

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

NB. Data updated as of April 2018.
Further information on the status of the Family implementation are reported in the following page.

Country	Currently deployed	In progress / Planned	Not planned	Expected completion date	Implementation Status by Operational Stakeholder Category – Stakeholders considered as Gaps – ANSPs
Austria	✓			✓	
Belgium					
Bulgaria	45%	50%	5%	-	
Croatia	✓			✓	
Cyprus	0%	0%	100%	-	
Czech Republic	✓			✓	
Denmark	✓			✓	
Estonia	65%	35%	0%	-	
Finland	0%	0%	100%	-	
France	✓			✓	
Germany	✓			✓	
Greece	0%	100%	0%	-	
Hungary	✓			✓	
Ireland	✓			✓	
Italy	60%	0%	40%	-	
Latvia	60%	0%	40%	-	
Lithuania	15%	30%	55%	-	
Luxembourg					
Malta	0%	0%	100%	-	
MUAC	✓			✓	
Netherlands					
Norway	0%	90%	10%	-	
Poland	✓			✓	
Portugal	50%	50%	0%	-	
Romania	60%	0%	40%	-	
Slovak Republic	0%	0%	100%	-	
Slovenia	0%	0%	100%	-	
Spain	65%	35%	0%	-	
Sweden	✓			✓	
Switzerland	✓			✓	
United Kingdom	✓			✓	

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*"[7], 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 2018.

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).

[7] *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

With specific regard to the 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.

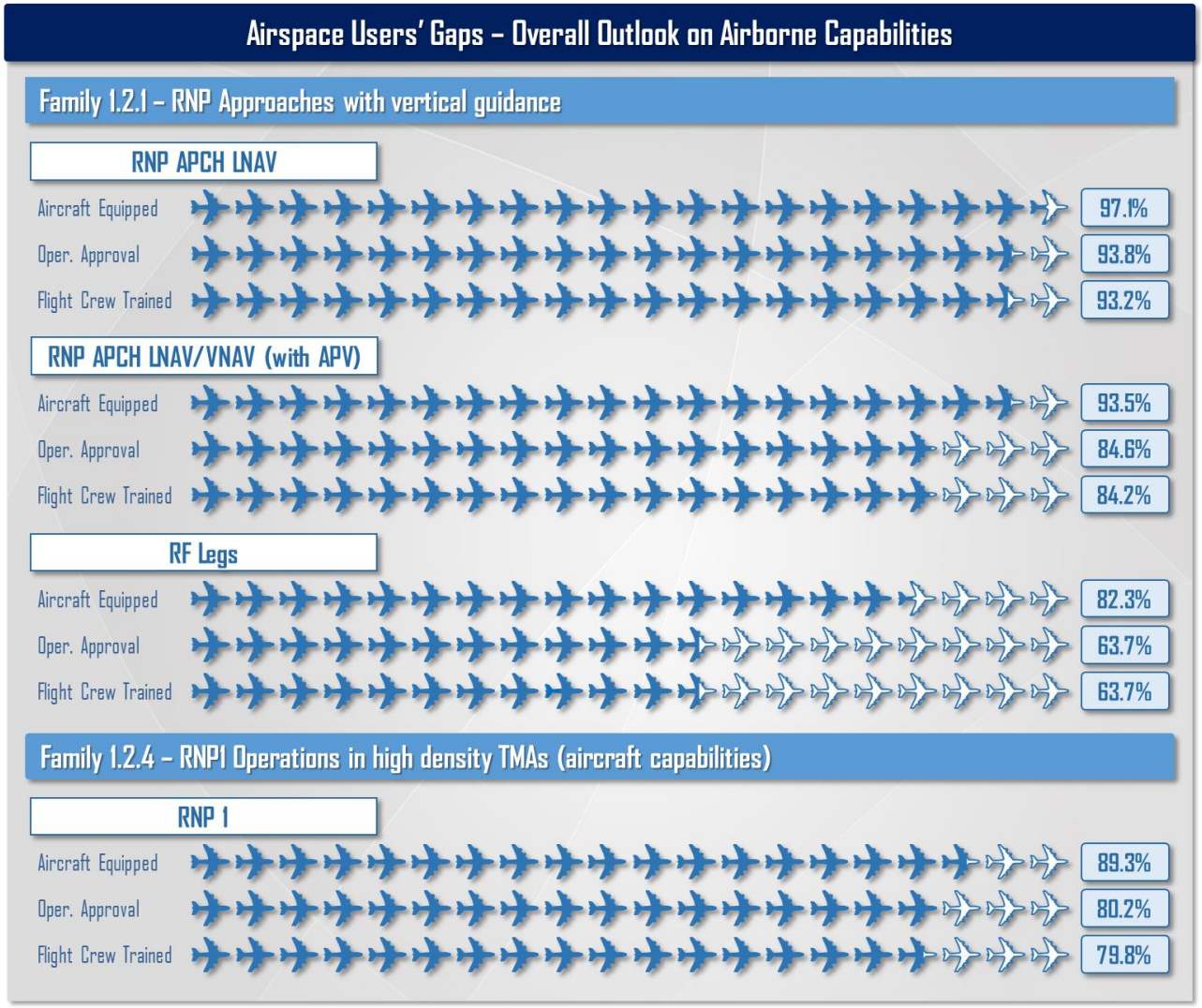


Figure 17 - Airspace Users' Gaps - Overall Outlook on Airborne Capabilities

Taking into account the gap analysis performed on current aircraft capabilities and the associated operational readiness, the differences between the percentage of aircraft already equipped and the percentage of crews trained and their operational approvals highlights the need of considering the airlines' crew training as part of the overall PCP implementation.

The increasing pace of change that SESAR is bringing to the ATM modernization (e.g. switching from legacy radar-based navigation and radio communications environment to a new satellite-based navigation and digital communications environment), creates a need to train flight crew for what could be an extended transitional period, whereby both legacy and higher technological systems are in simultaneous operational use. With this significant step change and growing flight crew training burden on the airlines, there could also be a significant impact on the current training simulator capability and overall operational capacity across Europe. Therefore, consideration should be given to a wide ranging and careful logistical training plan, including the provision of additional simulator availability and capability.

Having in mind that crew training is a costly process for the airlines and would be only performed if the approaches / procedures can be actually used in the network wide operational environment, the synchronized implementation of the respective families together with ANSPs and airport operators included in the PCP geographical scope are key factors for successful implementation.

With regard to the PCP-associated flight planning capabilities, most of the responding Europe-headquartered airlines refer to the need for synchronized implementation of the Network Manager systems, the ANSPs systems and their Computer Flight Planning System Providers (CFSPs) systems. In this sense,

the involvement of the Airspace Users to upgrade their flight plan systems capabilities is a key factor for success of the PCP implementation. Due to the nature of the Airspace Users operations, spreading across the whole European airspace, the NM system availability for AF4 and the ANSPs readiness throughout the whole network are key factors. The synchronization task of the SDM towards ANSPs, AUs and NM is therefore expected to have the highest priority in planning, executing and monitoring a harmonized implementation.

DLS Update – Airborne domain equipage rate

A dedicated monitoring session has been performed by SDM with the aim of providing an updated and overall picture of the DLS implementation status in the airborne domain. Specifically, a detailed questionnaire was distributed to the Airspace Users in July 2018 in order to have a clear and complete picture on the VDL Mode 2 deployment in the airborne domain, according to Regulation (EU) n. 310/2015.

The following charts indicate the percentage of fleet, operated by Airlines headquartered in Europe, that is already or expected to be compliant with the DLS regulatory framework, in terms of aircraft equipage, focusing on the "*Best-in-class (BIC)*"[8]. The following charts, therefore, outline the current situation (2018) and the expected status by 2020, according to the information provided by the SDM survey.

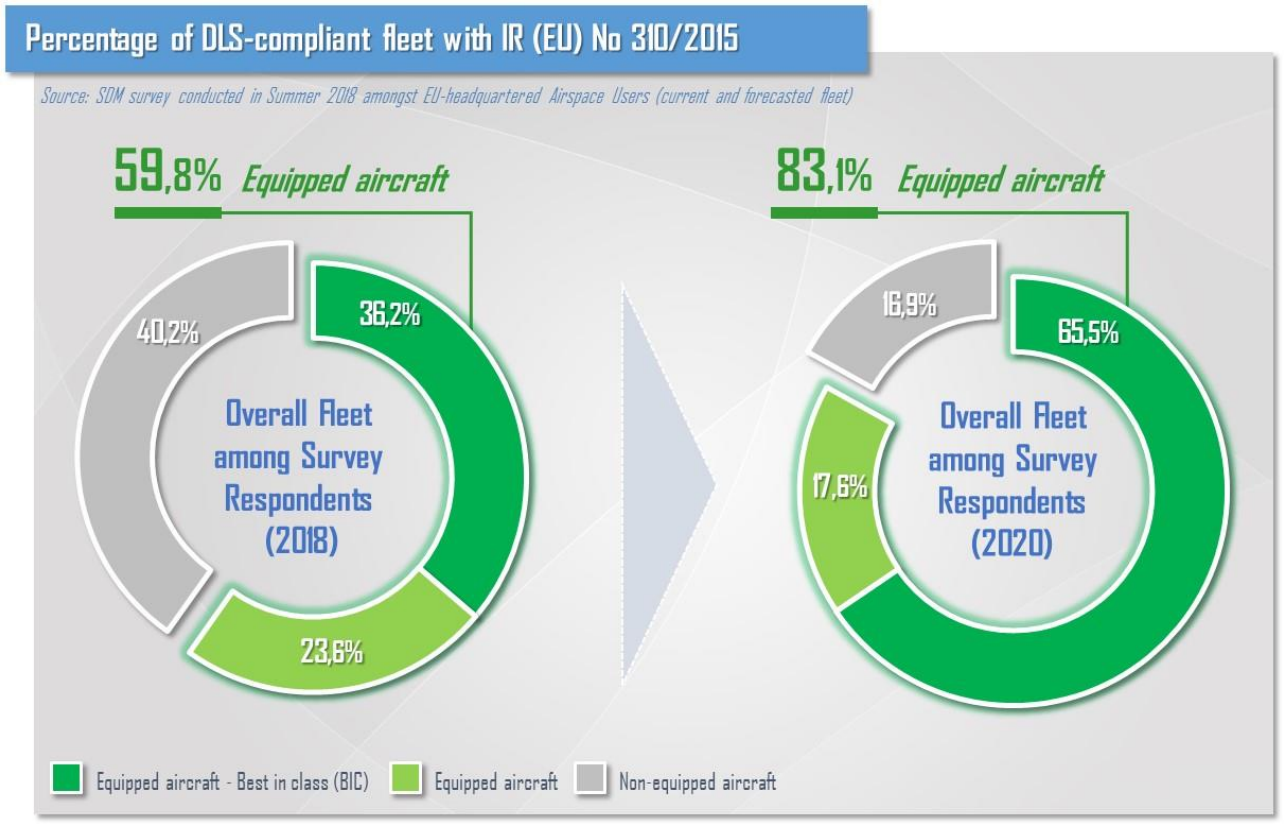


Figure 28 - Percentage of DLS-compliant fleet – Current and planned scenario

Figure 18 provides evidence that the scenario is progressing well, as the overall number of equipped aircraft is expected to increase of around 25 percentage points, raising from 59,8% to 83,1%. As a result of this progress, the amount of not equipped aircraft is expected to significantly decrease to 16,9% in 2020.

[8] i.e. A set of airborne equipment necessary to comply with the ATN/VDL2 performance expectations in multi-frequency (MF) environment

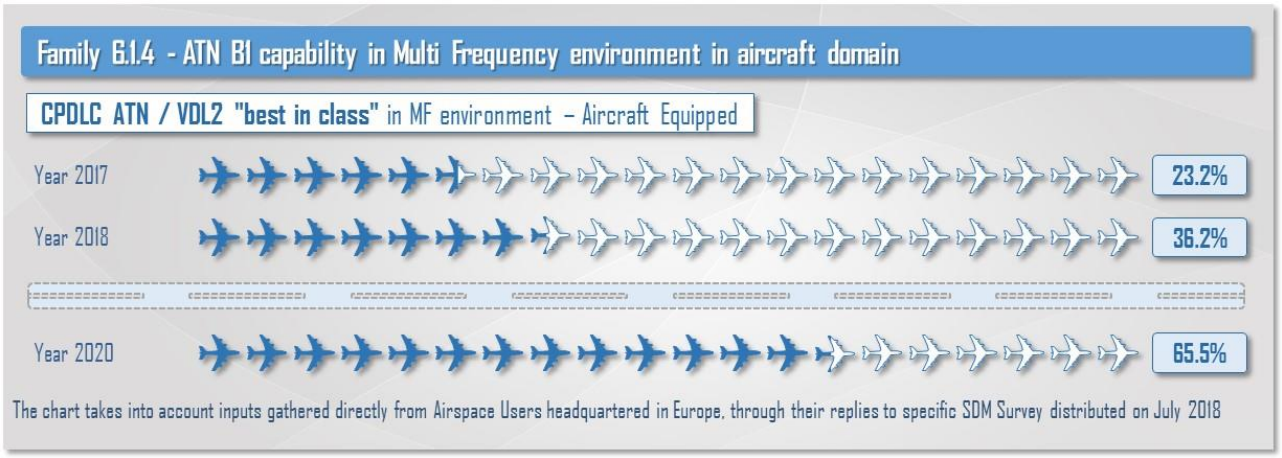


Figure 39 – CPDLC ATN/VDL2 "best in class" Aircraft equipped in MF environment

More specifically, with reference to the Best-in-class (BIC), the current outlook faces a substantial improvement, also benefitting from the outcomes of EU-funded and SDM-coordinated Implementation Projects, awarded in the Framework of CEF Call 2016 and 2017.

Taking into account the results of the DLS survey, by the end of 2020 the overall percentage of VDL2 Best-in class in Multi Frequency environment is expected to boost considerably, thus leading to a relevant improvement from 2018, up to 65,5% of aircraft equipped.

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;

- Status of coverage for each gap associated to a Family of the Deployment Programme, encompassing the following percentages and information:

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

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

Austria

Number of gaps: 41

Current status of implementation: Already implemented 11 | In progress / Planned 28 | Not planned 2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	75%	25%	0%	Dec 2019	Yes
1.1.2	0%	75%	25%	Dec 2023	
1.2.1	90%	10%	0%	Mar 2019	Yes
1.2.2	0%	100%	0%	Dec 2020	
1.2.3	0%	100%	0%	Dec 2023	Yes
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓	
2.1.2	✓			✓	
2.1.3	45%	55%	0%	Dec 2018	Yes
2.1.4	0%	100%	0%	Dec 2021	
2.2.1	✓			✓	
2.3.1	0%	100%	0%	Dec 2023	Yes
2.4.1	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes
2.5.2	✓			✓	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	0%	100%	0%	Dec 2018	Yes
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	95%	5%	0%	Dec 2021	Yes
3.2.1	75%	25%	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	70%	30%	0%	Dec 2019	
4.2.4	0%	100%	0%	Dec 2021	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2024	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	70%	30%	Dec 2024	Yes
5.2.3	0%	60%	40%	Dec 2020	Yes
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	20%	80%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

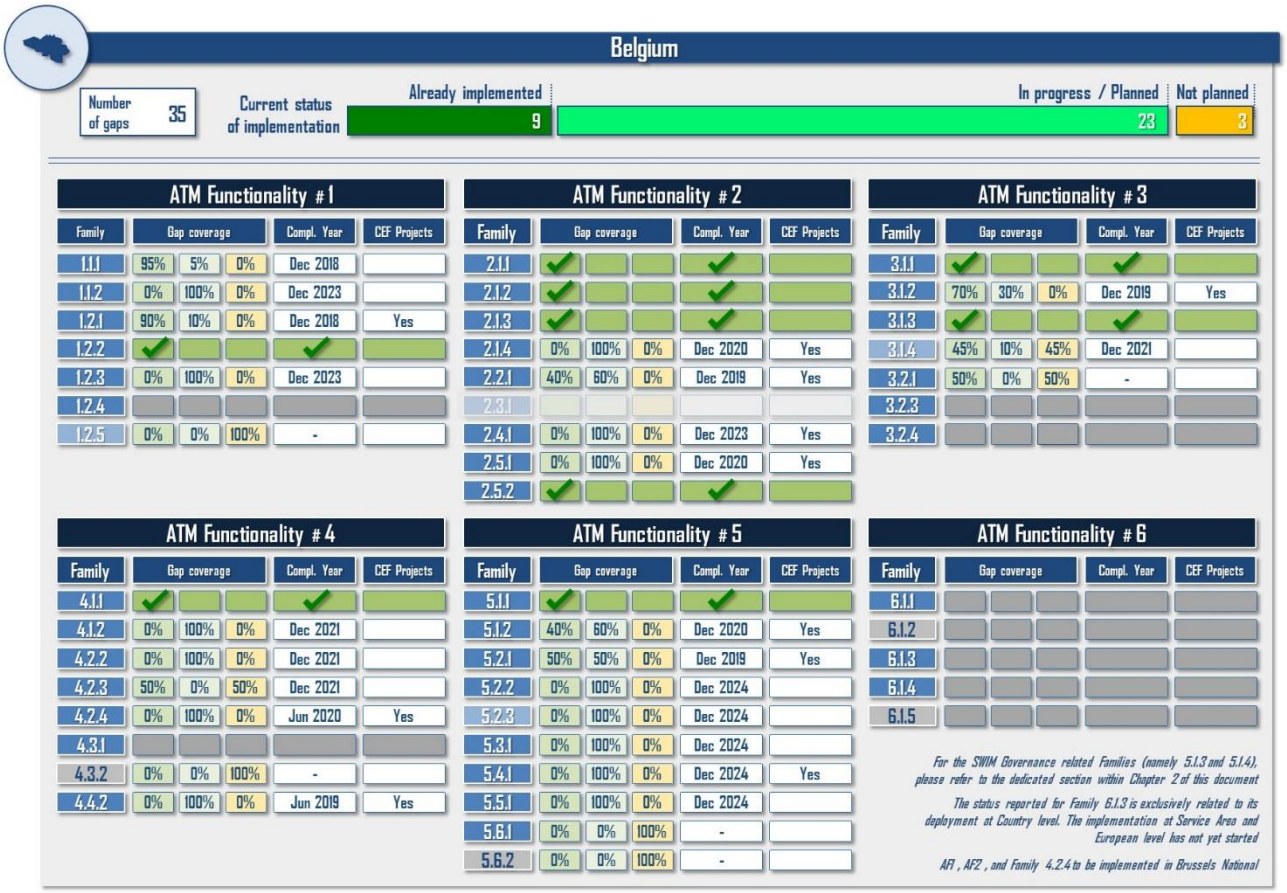
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

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

List of CEF-funded initiatives awarded to Austrian Stakeholders

✓ Completed project

✓	#006AF5	ATM Data Quality (ADQ)	Austro Control		2016_008_AF4	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	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Austro Control		2017_004_AF1	Flight Crew Training for RNP1 Operations	Austrian Airlines
	2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	Austro Control		2017_052_AF4	AOP-NOP Integration - Extended Implementation	Vienna Schwechat
	2015_220_AF2	AF2_MET-Compliance-Programme	Austro Control		2017_053_AF3	Implementation of rolling ASM/ATFCM	Sabre
	2015_230_AF5	AF5 AIM Compliance Program	Austro Control		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Sabre
	2015_231_AF5	METSW-DB PCP Evolution	Austro Control		2017_058_AF2	ITWP4LOWW (Integrated Tower Working Position for Vienna Schwechat)	Austro Control
	2015_232_AF2	TBS4LOWW (Time Based Separation for Vienna Airport)	Austro Control		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	Austro Control
	2015_234_AF1_A	AMAN LOWW initial	Austro Control		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Austro Control
	2015_234_AF1_B	AMAN LOWW initial	Austro Control		2017_089_AF6	IPI - DLS European Target Solution assessment	Austro Control, University of Salzburg
	2015_236_AF3	VHF Concept Implementation 2020	Austro Control				



Belgium

Number of gaps: 35

Current status of implementation: Already implemented 9 | In progress / Planned 23 | Not planned 3

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	95%	5%	0%	Dec 2018	
1.1.2	0%	100%	0%	Dec 2023	
1.2.1	90%	10%	0%	Dec 2018	Yes
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	0%	100%	0%	Dec 2020	Yes
2.2.1	40%	60%	0%	Dec 2019	Yes
2.3.1					
2.4.1	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes
2.5.2	✓			✓	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	70%	30%	0%	Dec 2019	Yes
3.1.3	✓			✓	
3.1.4	45%	10%	45%	Dec 2021	
3.2.1	50%	0%	50%	-	
3.2.3					
3.2.4					

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	50%	0%	50%	Dec 2021	
4.2.4	0%	100%	0%	Jun 2020	Yes
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Jun 2019	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	50%	50%	0%	Dec 2019	Yes
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

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

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

Belgium

Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
35		9	28	3

List of CEF-funded initiatives awarded to Belgian Stakeholders

✓ Completed project

	#013AF1	RNP Approach with Vertical Guidance at the Belgian civil aerodromes within the Brussels TMA	Belgocontrol		2015_145_AF5_B	AIM Deployment Toolkit	ECTL / Network Manager
	#014AF5	MPLS WAN Project	Belgocontrol		2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager, ECTL / MUAC, Belgocontrol
✓	#015AF3	LARA integration in CANAC 2	Belgocontrol		2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager
✓	#016AF5	Initial WXXM Implementation on Belgocontrol systems	Belgocontrol		2015_196_AF1_A	XMAN - Cross-centre arrival management	ECTL / MUAC
✓	#018AF2	Enhancement of Airport Safety Nets for Brussels Airport (EBBR)	Belgocontrol		2015_232_AF2	TBS4LDWW (Time Based Separation for Vienna Airport)	ECTL / Network Manager
✓	#022AF2	Vehicle Tracking System (VTS)	Brussels National	✓	2015_244_AF2	APOC implementation	Brussels National
	#073AF5	SWIM Common Components	ECTL / Network Manager		2015_245_AF2	AIRSTAT	Brussels National
✓	#077AF4	Interactive Rolling NOP	ECTL / Network Manager		2015_319_AF5	SWIM Common Components - Phase 2	ECTL / Network Manager
✓	#078AF4	ATFCM measures (STAM)	ECTL / Network Manager		2016_023_AF1	XMAN - Cross-center arrival management - Part 2	ECTL / MUAC
✓	#079AF4	Trajectory accuracy and traffic complexity	ECTL / Network Manager	✓	2016_027_AF5	European Deployment Roadmap for Flight Object	ECTL / Network Manager, ECTL / MUAC
	#080AF3	ASM and AFUA Implementation	ECTL / Network Manager		2016_100_AF4	Provision of EFPL data and initial FF-ICE/ 1	ECTL / Network Manager
✓	#081AF3	NM DCT/FRA Implementation and support	ECTL / Network Manager		2016_129_AF5	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ECTL / Network Manager
✓	#082AF5	SWIM compliance of NM systems	ECTL / Network Manager		2016_131_AF4	AOP-NOP Integration - Extended Implementation	ECTL / Network Manager, Brussels National
✓	#083AF1	AMAN extended to en-route	ECTL / Network Manager		2016_133_AF3	NM system management of real time airspace data	ECTL / Network Manager
	2015_021_AF4	Slot Manager for PCP airports	Brussels Airlines		2016_134_AF3	Implementation of rolling ASM/ATFCM	ECTL / Network Manager
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	EUMETNET BG, ECTL / Network Manager		2016_135_AF3	Implementation of pre-defined airspace configuration	ECTL / Network Manager
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather	EUMETNET BG, ECTL / Network Manager		2016_141_AF5	Deploy SWIM governance	EUMETNET BG, Eurocontrol
	2015_069_AF5	European MET Information Exchange (MET-GATE)	EUMETNET BG, ECTL / Network Manager		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Brussels National
	2015_101_AF1	Network Support to extended Arrival Management	ECTL / Network Manager		2016_159_AF6	DLS Implementation Project – Path 2	ECTL / MUAC
	2015_105_AF4	Interactive Rolling Network Operations Planning	ECTL / Network Manager		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Brussels National, Belgocontrol
	2015_106_AF4	Flight evolution and upgrade of interfaces with NM stakeholders	ECTL / Network Manager		2017_037_AF2	TBS deployment at Paris CDG	ECTL
	2015_107_AF3	NM Systems upgrades in support of DCTs and FRA	ECTL / Network Manager		2017_052_AF4	AOP-NOP Integration - Extended Implementation	ECTL / Network Manager
	2015_110_AF4	STAM Phase 2 (NM)	ECTL / Network Manager		2017_053_AF3	Implementation of rolling ASM/ATFCM	ECTL / Network Manager
	2015_112_AF5	Integrate the Aeronautical Information Exchange Services in NM Systems	ECTL / Network Manager		2017_054_AF4	Network Collaborative Management	ECTL / Network Manager
	2015_113_AF4	AOP-NOP Integration	ECTL / Network Manager		2017_055_AF3	NM Systems upgrades in support of FRA	ECTL / Network Manager
	2015_114_AF4	Implementation of Target Times for ATFCM purposes (NM)	ECTL / Network Manager		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	ECTL / Network Manager
	2015_115_AF4	Traffic Complexity Management	ECTL / Network Manager		2017_058_AF2	ITWP4LDWW (Integrated Tower Working Position for Vienna Schwechat)	ECTL
	2015_117_AF5	Improve NM SWIM Infrastructure	ECTL / Network Manager		2017_062_AF4	Traffic Complexity Assessment and Simulations Tool - TCAST	Belgocontrol
	2015_141_AF5	Improve NM Flight Information Exchange Services	ECTL / Network Manager		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ECTL, Belgocontrol
	2015_143_AF5	Improve Cooperative Network Information Exchange Services	ECTL / Network Manager		2017_089_AF6	IP1 - DLS European Target Solution assessment	ECTL / Network Manager
	2015_145_AF5_A	AIM Deployment Toolkit	ECTL / Network Manager				

Bulgaria

Number of gaps: 25

Current status of implementation: Already implemented 8 | In progress / Planned 10 | Not planned 7

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

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

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	40%	60%	0%	Sep 2020	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	0%	100%	-	
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
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	95%	5%	0%	Dec 2018	
6.1.2	0%	0%	100%	-	
6.1.3	45%	50%	5%	-	Yes
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to Bulgarian Stakeholders

✓ Completed project

2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	BULATSA	2016_159_AF6	DLS Implementation Project - Path 2	BULATSA
2015_217_AF4	tCAT implementation in Sofia ACC	BULATSA	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	BULATSA
2016_062_AF5	Creating Local Security Operation Center	BULATSA	2017_089_AF6	IPI - DLS European Target Solution assessment	BULATSA
2016_141_AF5	Deploy SWIM governance	BULATSA			

Croatia

Number of gaps: 26

Current status of implementation: Already implemented 6 | In progress / Planned 18 | 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	50%	50%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	50%	20%	30%	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	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%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	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	Yes
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	20%	80%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

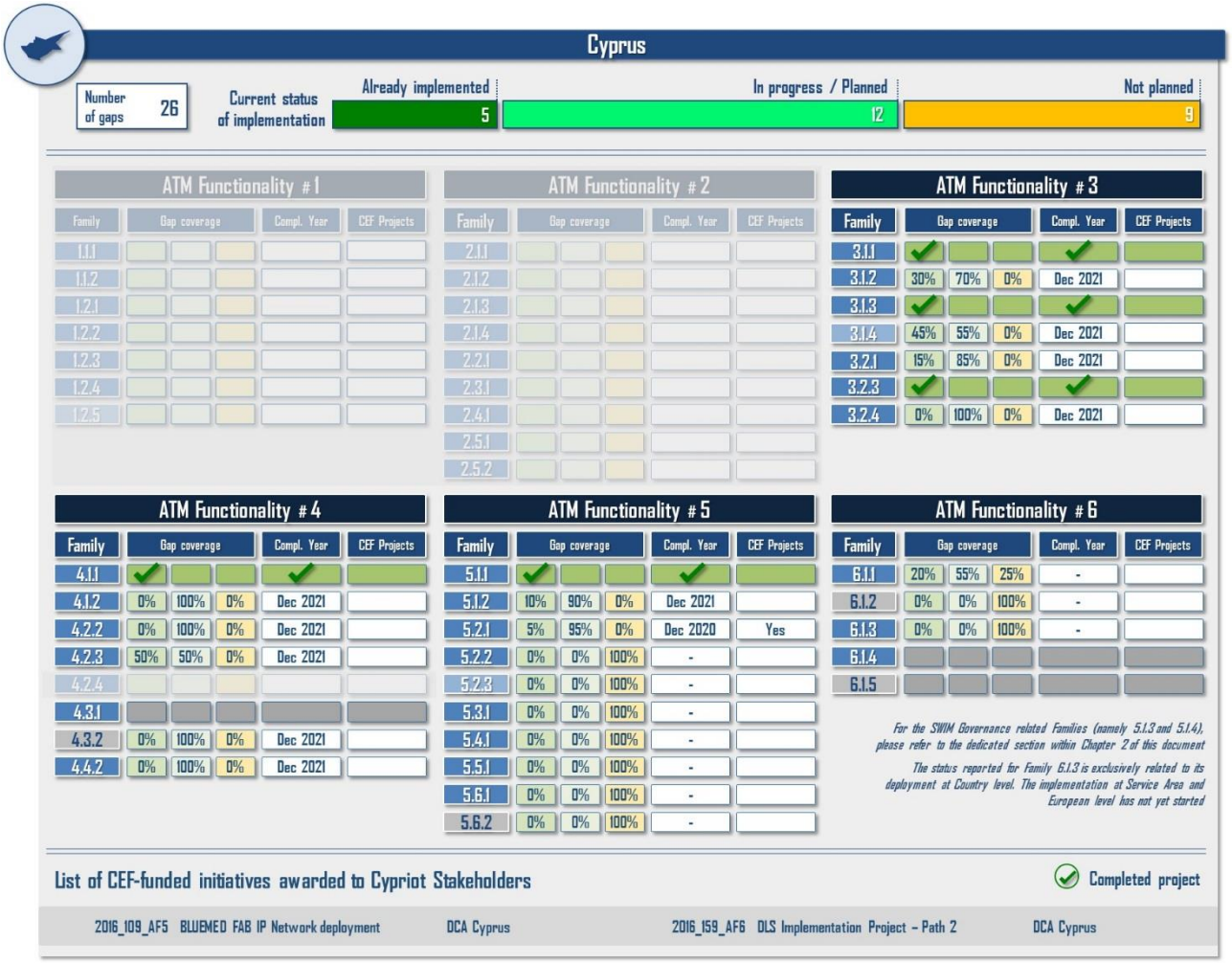
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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

List of CEF-funded initiatives awarded to Croatian Stakeholders

✓ Completed project

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



Cyprus

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
5	12	9

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

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

ATM Functionality # 4

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

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	10%	90%	0%	Dec 2021	
5.2.1	5%	95%	0%	Dec 2020	Yes
5.2.2	0%	0%	100%	-	
5.2.3	0%	0%	100%	-	
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	20%	55%	25%	-	
6.1.2	0%	0%	100%	-	
6.1.3	0%	0%	100%	-	
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to Cypriot Stakeholders

✓ Completed project

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

Czech Republic

Number of gaps: 26

Current status of implementation: Already implemented 6 | In progress / Planned 19 | Not planned 1

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	15%	85%	0%	Dec 2020	Yes
3.1.2	0%	100%	0%	Dec 2020	Yes
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	Yes
3.2.1	35%	50%	15%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	5%	95%	0%	Dec 2021	Yes

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	10%	90%	0%	Dec 2021	Yes
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	75%	25%	0%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	95%	5%	0%	Dec 2018	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	60%	40%	0%	Dec 2020	Yes
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Nov 2020	Yes
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

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

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

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

List of CEF-funded initiatives awarded to Czech Stakeholders

✓ Completed project

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

Denmark

Number of gaps: 41

Current status of implementation: Already implemented 13 | In progress / Planned 26 | Not planned 2

ATM Functionality #1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	70%	0%	30%	Dec 2023	Yes
1.2.1	15%	85%	0%	Dec 2019	Yes
1.2.2	✓			✓	
1.2.3	15%	85%	0%	Dec 2019	Yes
1.2.4					
1.2.5					

ATM Functionality #2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	35%	65%	0%	Dec 2019	Yes
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	0%	90%	10%	Dec 2021	Yes
2.2.1	✓			✓	
2.3.1	0%	100%	0%	May 2022	Yes
2.4.1	0%	100%	0%	Dec 2020	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	30%	35%	35%	-	
3.1.3	✓			✓	
3.1.4	95%	5%	0%	Dec 2018	Yes
3.2.1	70%	10%	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	✓			✓	
4.2.4	0%	100%	0%	Dec 2021	
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	95%	5%	0%	Dec 2021	

ATM Functionality #5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	60%	40%	0%	Dec 2024	Yes
5.2.2	0%	60%	40%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2021	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	Yes
5.6.1	0%	20%	80%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality #6

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

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

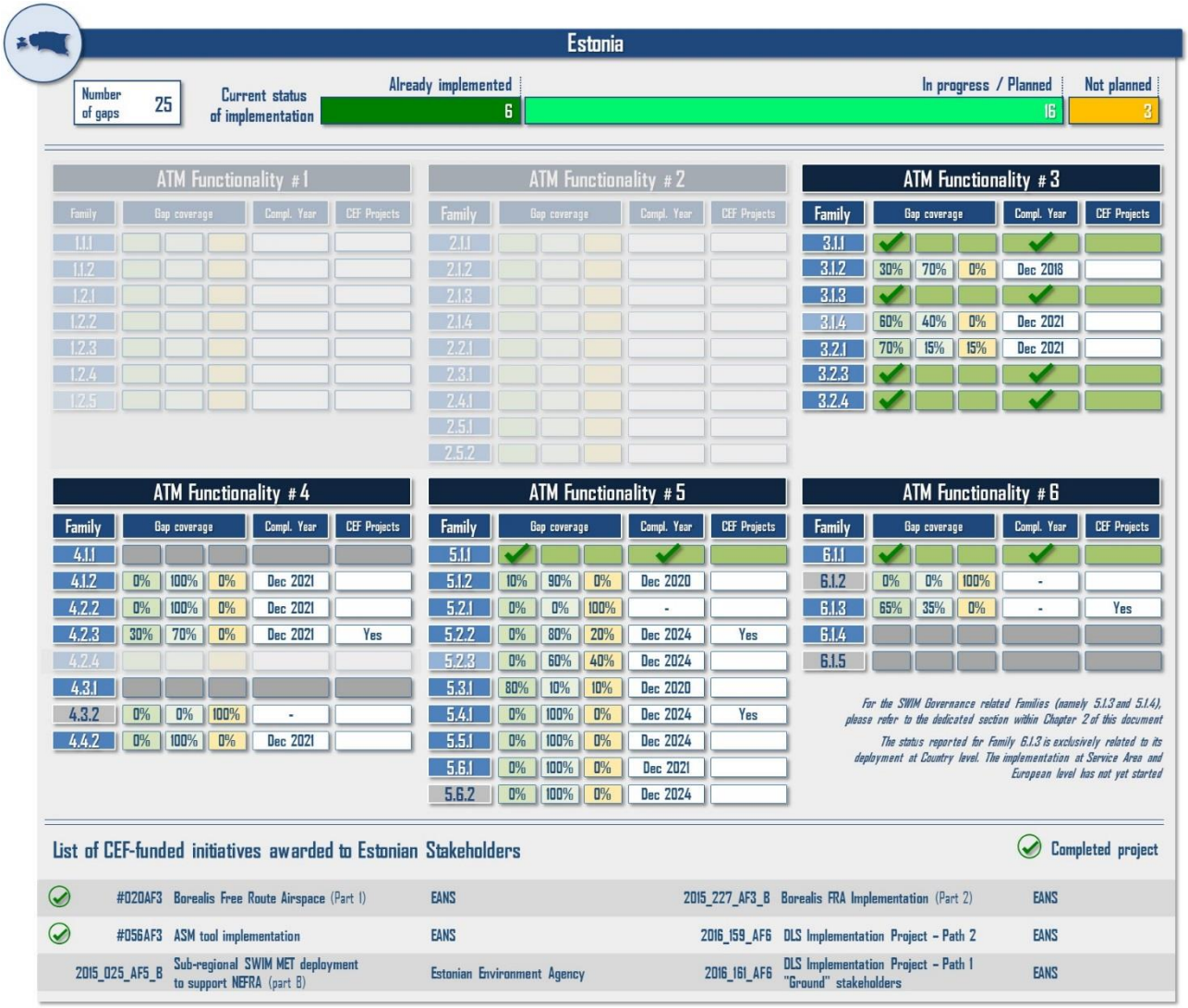
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

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



Estonia

Number of gaps: 25

Current status of implementation: Already implemented 6 | In progress / Planned 16 | Not planned 3

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2018	
3.1.3	✓			✓	
3.1.4	60%	40%	0%	Dec 2021	
3.2.1	70%	15%	15%	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	30%	70%	0%	Dec 2021	Yes
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	10%	90%	0%	Dec 2020	
5.2.1	0%	0%	100%	-	
5.2.2	0%	80%	20%	Dec 2024	Yes
5.2.3	0%	60%	40%	Dec 2024	
5.3.1	80%	10%	10%	Dec 2020	
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2021	
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	65%	35%	0%	-	Yes
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to Estonian Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	EANS	2015_227_AF3_B	Borealis FRA Implementation (Part 2)	EANS
✓	#056AF3	ASM tool implementation	EANS	2016_159_AF6	DLS Implementation Project – Path 2	EANS
	2015_025_AF5_B	Sub-regional SWIM MET deployment to support NEFRA (part B)	Estonian Environment Agency	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	EANS

Finland

Number of gaps: 26

Current status of implementation: Already implemented 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	70%	10%	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	Yes
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	40%	60%	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	20%	80%	0%	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 SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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

List of CEF-funded initiatives awarded to Finnish Stakeholders

✓ Completed project

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

France

Number of gaps: 69

Current status of implementation

Already implemented	In progress / Planned	Not planned
14	50	5

ATM Functionality # 1

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		✓			✓	
1.1.2	50%	35%	15%	Dec 2023	Yes	50%	10%	40%	Dec 2023	Yes	50%	5%	45%	Dec 2023	Yes
1.2.1	✓			✓		90%	10%	0%	Dec 2022	Yes	✓			✓	
1.2.2	30%	70%	0%	Dec 2020	Yes	30%	70%	0%	Dec 2020	Yes	15%	55%	30%	-	Yes
1.2.3	0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-	
1.2.4															
1.2.5	0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-	

ATM Functionality # 2

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2020	Yes	65%	35%	0%	Dec 2020	Yes
2.1.2	20%	80%	0%	Dec 2021	Yes	30%	70%	0%	Dec 2021	Yes	20%	80%	0%	Dec 2021	Yes
2.1.3	✓			✓		✓			✓		0%	100%	0%	Dec 2020	Yes
2.1.4	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2020	Yes
2.2.1	85%	15%	0%	Dec 2020	Yes	85%	15%	0%	Dec 2020	Yes	30%	70%	0%	Dec 2020	Yes
2.3.1						0%	0%	100%	-						
2.4.1	0%	100%	0%	Dec 2022	Yes	0%	100%	0%	Dec 2022	Yes	0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2022	Yes	0%	100%	0%	Dec 2022	Yes	0%	100%	0%	Dec 2022	Yes
2.5.2	✓			✓		✓			✓		30%	0%	70%	-	Yes

ATM Functionality # 4 (Airport Gaps)

Family	Paris Charles de Gaulle					Paris Orly					Nice Cote d'Azur				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	100%	0%	Dec 2019	Yes	0%	100%	0%	Dec 2019	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	55%	0%	45%	Dec 2018	
3.2.1	15%	70%	15%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	Yes

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	50%	50%	0%	Dec 2021	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	70%	30%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	0%	100%	0%	Dec 2024	
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	80%	20%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Dec 2024	Yes
5.6.1	0%	100%	0%	Dec 2024	Yes
5.6.2	0%	100%	0%	Dec 2024	Yes

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	40%	60%	0%	Nov 2022	
6.1.2	0%	0%	100%	-	
6.1.3	✓			✓	
6.1.4					
6.1.5					

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

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

France

Number of gaps	69	Current status of implementation	Already implemented	In progress / Planned	Not planned
			14	50	5

List of CEF-funded initiatives awarded to French Stakeholders

✓ Completed project

	#023AF2	SMAN-Vehicle	Aéroports De Paris		2015_196_AF1_A	XMAN - Cross-centre arrival management	DSNA
✓	#024AF2	SAIGA	Aéroports De Paris		2015_247_AF3	4Flight deployment in military En-route ACC (CMCC)	French MOD
✓	#025AF2	TSAT to the Gate	Aéroports De Paris		2015_249_AF5	PATRUS (Secured real time gateway) for data exchange between civil and military systems	French MOD
✓	#026AF2	Evolutions CDM-CDG	Aéroports De Paris		2016_023_AF1	XMAN - Cross-center arrival management - Part 2 (CEF2016)	DSNA
✓	#027AF2	SMAN-Airport	Aéroports De Paris	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	DSNA
✓	#030AF2	Equipment of ground vehicles to supply the A-SMGCS	Aéroports de la Côte d'Azur		2016_055_AF3	Upgrade of French Military CRCs for civil- military interoperability	French MOD
	#031AF2	Data exchanges with the Air Navigation Service Provider	Aéroports de la Côte d'Azur		2016_100_AF4	Provision of EFPL data and initial FF-ICE/ 1 readiness	Air France
✓	#032AF2	Data exchanges with the Network Manager Operations Center	Aéroports de la Côte d'Azur		2016_121_AF3	Free Route	Air France
	#033AF2	Data exchanges with COHOR	Aéroports de la Côte d'Azur		2016_123_AF4	STAM Phase 2 in combination with Target Times	Air France
	#048AF2	SYSAT@CDG	DSNA		2016_134_AF3	Implementation of rolling ASM/ATFCM	Air France, Sabre France SARL
	#049AF2	SYSAT@NCE	DSNA		2016_141_AF5	Deploy SWIM governance	DSNA, Air France, French MOD
	#050AF2	SYSAT@ORY	DSNA		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	ADP, Aéroports de la Côte d'Azur, Air France, DSNA
	#051AF1a	RNP Approaches at CDG Airport with vertical guidance (Part A)	DSNA, Air France		2016_159_AF6	DLS Implementation Project – Path 2	DSNA, ESSP
✓	#051AF1b	RNP Approaches at CDG Airport with vertical guidance (Part B)	Air France		2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	DSNA
	#053AF3	4-Flight deployment in DSNA pilot ACCs	DSNA		2016_165_AF6	Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics	Air France, HOP
✓	#054AF2	CDG 2020 Step 1	DSNA, Air France		2017_002_AF5	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	Air France
✓	#067AF5	Coflight-eFDP System Development	DSNA		2017_008_AF6	Air France Group Datalink upgrade to best in class avionics - Lot2	Air France, Transavia
✓	#129AF2	CDM-ORLY	Aéroports De Paris		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Aéroports De Paris, Aéroports de la Côte d'Azur
	#130AF2	BOREAL-Orly	Aéroports De Paris		2017_034_AF5	Deploying Cyber Infrastructure at DSNA	DSNA
2015_062_AF3_Phase_I		4-Flight Deployment in PARIS Area - Phase I	DSNA		2017_035_AF5	Deploying SWIM infrastructure at DSNA	DSNA
2015_062_AF3_Phase_II		4-Flight Deployment in PARIS Area, Upgrade in Marseille and Aix ACCs - Phase II	DSNA		2017_037_AF2	TBS deployment at Paris CDG	DSNA, Meteo France
2015_067_AF5		European Weather Radar Composite of Convection Information Service	Meteo France		2017_038_AF4	Enablers of Network Collaborative Management for En Route and Airports at DSNA	Aéroports De Paris, Air France, DSNA
2015_068_AF5		European Harmonised Forecasts of Adverse Weather	Meteo France		2017_039_AF5	SEPIA - Deploying SWIM based AIM services in French Airspace	DSNA
2015_069_AF5		European MET Information Exchange (MET-GATE)	Meteo France		2017_043_AF3	Coflight-eFDP Development (Step 2)	DSNA
2015_073_AF1		AMAN upgrade for extended horizon at DSNA airports	DSNA, Aéroports De Paris, Air France		2017_052_AF4	AOP-NOP Integration - Extended Implementation	Aéroports de la Côte d'Azur
2015_083_AF2		iAOP implementation	Aéroports de la Côte d'Azur		2017_053_AF3	Implementation of rolling ASM/ATFCM	Air France, Sabre France SARL
2015_085_AF2		DMAN and Pre-departure sequence (PDS) implementations for the CDM implementation	Aéroports de la Côte d'Azur, DSNA		2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	Sabre France SARL
2015_113_AF4		AOP-NOP Integration	Aéroports De Paris		2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	Air France
2015_133_AF2		Initial AirPort Operational Centre (iAPOC)	Aéroports de Paris, Air France, DSNA		2017_080_AF5	PATRUS niveau 2 - Gateway Updgrade for 4Flight compliance	French MOD
2015_135_AF2		CDG and ORLY - Initial Airport Operational Plan (AOP)	Aéroports de Paris, Air France		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Aéroports De Paris, Air France, DSNA, French MOD
2015_139_AF1		Geographic Database – AIM TOOL	DSNA, Aéroports de Paris		2017_089_AF6	IPI - DLS European Target Solution assessment	ALTYS, DNSA, ESSP, SITA IT Services France, Thales
2015_174_AF5_A		NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	Aéroports De Paris, DSNA				

Germany

Number of gaps	85

Current status of implementation

Already implemented	In progress / Planned	Not planned
21	59	5

ATM Functionality # 1

Family	Berlin Brandenburg Airport					Dusseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	75%	25%	0%	Oct 2020	Yes	75%	25%	0%	Oct 2020	Yes	✓			✓		✓			✓	
1.1.2	10%	90%	0%	Dec 2023	Yes	10%	80%	10%	Dec 2023	Yes	80%	20%	0%	Dec 2023	Yes	80%	20%	0%	Dec 2023	Yes
1.2.1	0%	50%	50%	Dec 2020		50%	0%	50%	Dec 2020		50%	0%	50%	Dec 2020		50%	0%	50%	Dec 2020	
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					Dusseldorf International					Frankfurt International					Munich Franz Josef Strauss				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	0%	100%	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	0%	100%	0%	Dec 2020		90%	10%	0%	Jan 2019	Yes	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				Dusseldorf International				Frankfurt International				Munich Franz Josef Strauss			
	Gap coverage		Compl. Year	CEF Projects	Gap coverage		Compl. Year	CEF Projects	Gap coverage		Compl. Year	CEF Projects	Gap coverage		Compl. Year	CEF Projects
4.2.4	0%	90%	10%	Oct 2021	0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2019	Yes	0%	100%	0%	Dec 2021

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Dec 2021	Yes
3.1.3	70%	30%	0%	Dec 2021	Yes
3.1.4	0%	100%	0%	Dec 2020	Yes
3.2.1	65%	35%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	55%	45%	0%	Dec 2020	Yes

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	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	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2019	
5.2.1	60%	40%	0%	Dec 2018	Yes
5.2.2	0%	60%	40%	-	Yes
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	30%	20%	50%	Dec 2024	Yes
5.4.1	0%	100%	0%	-	Yes
5.5.1	0%	100%	0%	-	Yes
5.6.1	0%	100%	0%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2027	

ATM Functionality # 6

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

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

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

Germany

Number of gaps: 85

Current status of implementation: Already implemented 21 | In progress / Planned 59 | Not planned 5

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 I	DFS
✓	#041AF5	EASI – EAD AIM System Integration	DFS		2016_023_AF1	XMAN - Cross-center arrival management - Part 2 (CEF2016)	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 EFPL data and initial FF-ICE/ 1 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 (BORA)	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/ATFCM	Deutsche Lufthansa, LH Systems
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	DWD		2016_137_AF2	Initial AOP 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 29 Vienna	Deutsche Lufthansa
	2015_113_AF4	AOP-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 FOC 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 RNPI Operations	Lufthansa Group *
	2015_194_AF5	STANLY_ACOS 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 I)	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 I+ incl. Service Architecture	DFS
	2015_222_AF2	Advanced Airport Moving Map (AAMM) Prototype Implementation	Fraport, Deutsche Lufthansa		2017_052_AF4	AOP-NOP Integration - Extended Implementation	Düsseldorf International
	2015_225_AF2	Initial Airport Operations Plan @ FRA	Fraport		2017_053_AF3	Implementation of rolling ASM/ATFCM	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 AOP	Munich Airport		2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	Deutsche Lufthansa, LH Systems
	2016_008_AF4	Flight 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	IPI - DLS European Target Solution assessment	DFS

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

Greece

Number of gaps: 25

Current status of implementation: Already imp. 2 | In progress / Planned 22 | Not planned 1

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	0%	100%	0%	Dec 2018	
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	0%	100%	0%	Dec 2020	Yes
3.2.1	0%	100%	0%	Dec 2020	Yes
3.2.3	✓			✓	
3.2.4	0%	100%	0%	Dec 2021	Yes

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	0%	100%	0%	Dec 2020	Yes
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	0%	100%	0%	Dec 2019	
5.1.2	0%	100%	0%	Dec 2020	
5.2.1	0%	100%	0%	Dec 2022	
5.2.2	0%	100%	0%	Dec 2022	
5.2.3	0%	100%	0%	Dec 2022	
5.3.1	0%	100%	0%	Dec 2022	
5.4.1	0%	100%	0%	Dec 2022	
5.5.1	0%	100%	0%	Dec 2022	
5.6.1	0%	100%	0%	Dec 2022	
5.6.2	0%	100%	0%	Dec 2022	

ATM Functionality # 6

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

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

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

List of CEF-funded initiatives awarded to Greek Stakeholders

✓ Completed project

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

Hungary

Number of gaps: 26

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	13	5

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	✓			✓	
3.1.2	30%	70%	0%	Jul 2020	Yes
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	Yes
3.2.1	60%	40%	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	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 2019	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	0%	100%	0%	Apr 2019	
5.2.1	✓			✓	
5.2.2	0%	10%	90%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	0%	100%	-	
5.4.1	0%	55%	45%	Dec 2024	
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

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

List of CEF-funded initiatives awarded to Hungarian Stakeholders

✓ Completed project

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

Ireland

Number of gaps	41

Current status of implementation

Already implemented	In progress / Planned	Not planned
8	28	5

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	95%	0%	5%	Dec 2019	
1.1.2	0%	100%	0%	Dec 2023	
1.2.1	50%	50%	0%	Dec 2018	
1.2.2	✓			✓	
1.2.3	0%	100%	0%	Dec 2018	
1.2.4					
1.2.5					

ATM Functionality # 2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	65%	35%	0%	Dec 2018	Yes
2.1.2	✓			✓	
2.1.3	55%	45%	0%	Jun 2019	Yes
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	
2.5.1	0%	100%	0%	Dec 2020	
2.5.2	0%	100%	0%	Dec 2020	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	0%	100%	0%	Dec 2018	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	0%	0%	100%	-	
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	40%	0%	60%	-	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 2020	
4.2.3	75%	25%	0%	Dec 2021	
4.2.4	0%	0%	100%	-	
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	0%	100%	0%	Dec 2020	Yes
5.2.2	0%	100%	0%	Jan 2020	Yes
5.2.3	0%	100%	0%	Jan 2020	Yes
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	100%	0%	Oct 2020	Yes
5.6.1	0%	20%	80%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

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

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

List of CEF-funded initiatives awarded to Irish Stakeholders

✓ Completed project

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

Italy

Number of gaps	56

Current status of implementation

Already implemented	In progress / Planned	Not planned
13	40	3

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	50%	50%	0%	Mar 2019	Yes	70%	30%	0%	Mar 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	✓			✓		✓			✓	
2.1.3	✓			✓		✓			✓	
2.1.4	0%	100%	0%	Dec 2024	Yes	0%	100%	0%	Dec 2020	Yes
2.2.1	10%	90%	0%	Dec 2020	Yes	10%	90%	0%	Dec 2020	Yes
2.3.1	0%	0%	100%	-		0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2023	Yes
2.5.1	10%	90%	0%	Dec 2020	Yes	10%	90%	0%	Dec 2020	Yes
2.5.2	10%	90%	0%	Dec 2020	Yes	10%	90%	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	55%	45%	0%	Dec 2018	Yes
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	
3.2.1	65%	35%	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	60%	40%	0%	Dec 2021	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	
5.2.3	0%	100%	0%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	20%	80%	0%	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	Yes

ATM Functionality # 6

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

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

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

Italy

Number of gaps	Current status of implementation	Already implemented	In progress / Planned	Not planned
56		13	40	3

List of CEF-funded initiatives awarded to Italian Stakeholders

✓ Completed project

✓	#004AF3	Traffic flow Restriction (TFR) – UDO planning system	Alitalia	2016_116_AF5	ENAV Security Operational Centre (iSOC) Upgrade	ENAV
✓	#005AF3	Free flight – Direct Optimization	Alitalia	2016_117_AF2	ENAV Implementation of A-SMGCS Level 1 and 2 with Safety Nets in MXP and FCO	ENAV, Rome Fiumicino, SEA Milano Airports
	#062AF4	ENAV initiative for the identification of Network Collaborative Management requirements	ENAV	2016_118_AF5	ENAV Network enhancement toward NewPENS	ENAV
✓	#063AF3	ENAV implementation of Free Route	ENAV	2016_119_AF5	ENAV Airport MET System and UPM-MET database upgrade	ENAV
	#064AF2	ENAV Airport System upgrade	ENAV	2016_120_AF1	ENAV Introduction of RNP1+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 RNP1 Operations	Air Dolomiti
	2015_202_AF3	ASM tool Implementation	ENAV	2017_020_AF5	Initial SWIM security deployment	Rome Fiumicino
	2015_203_AF1	AMAN Extended Horizon	ENAV	2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	ENAV, Rome Fiumicino, SEA Milano Airports
✓	2015_204_AF3	4-Flight deployment in Italy 2016-2017 (Phase I)	ENAV	2017_040_AF5	AERONET/ENET2 Interoperability	ENAV, Italian MOD
	2015_204_AF3	4-Flight deployment in Italy 2019-2020 (Phase II)	ENAV	2017_041_AF3	ASM - LARA Enhancement – Implementation in Italy	ENAV, Italian MOD
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	ENAV	2017_042_AF3	Automatic Tactical Controller Tool implementation	ENAV, Italian MOD
✓	2016_089_AF6	2016_089_AF6_IT_ITAF ATC Control Systems to i4D	Italian MOD, ENAV	2017_043_AF3	Coflight-eFDP Development (Step 2)	ENAV
	2016_092_AF5	2016_092_AF5_ITAF WAN	Italian MOD	2017_045_AF4	ENAV Deployment of traffic complexity tool and STAM phase 2	ENAV
	2016_108_AF5	ENAV ADQ – Aeronautical Data Quality system interface evolution (ADQ2)	ENAV	2017_052_AF4	AOP-NOP Integration - Extended Implementation	Rome Fiumicino, SEA Milano Airports
	2016_109_AF5	BLUEMED FAB IP Network deployment	ENAV	2017_069_AF5	Italian Air Force Integrated Briefing	Italian MOD
	2016_110_AF3	ENAV Automated ENV Data Interchange for FDP/ERATO	ENAV	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ENAV
	2016_114_AF4	ENAV Traffic Complexity Tool Implementation	ENAV	2017_089_AF6	IP1 - DLS European Target Solution assessment	ENAV, Leonardo – Finmeccanica
	2016_115_AF3	ENAV 4-Flight Deployment in Italy – Third Stage 2017-2018	ENAV			

Latvia

Number of gaps: 25

Current status of implementation: Already implemented 6 | In progress / Planned 11 | Not planned 8

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	40%	60%	0%	Dec 2020	
3.1.2	0%	0%	100%	-	
3.1.3	✓			✓	
3.1.4	95%	5%	0%	Dec 2020	
3.2.1	60%	0%	40%	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%	0%	100%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	0%	100%	Dec 2021	

ATM Functionality # 5

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

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	40%	15%	45%	-	Yes
6.1.2	0%	0%	100%	-	
6.1.3	60%	0%	40%	-	Yes
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to Latvian Stakeholders

✓ Completed project

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

Lithuania

Number of gaps: 26

Current status of implementation: Already implemented 6 | In progress / Planned 19 | Not planned 1

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	50%	50%	0%	Dec 2018	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	0%	100%	0%	Dec 2021	Yes
3.2.1	50%	50%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

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

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	10%	90%	0%	Jun 2020	
5.2.1	0%	100%	0%	Dec 2021	
5.2.2	0%	100%	0%	Dec 2022	
5.2.3	0%	100%	0%	Jun 2021	Yes
5.3.1	0%	100%	0%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2021	
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	10%	40%	50%	-	
6.1.2	0%	0%	100%	-	
6.1.3	15%	30%	55%	-	Yes
6.1.4					
6.1.5					

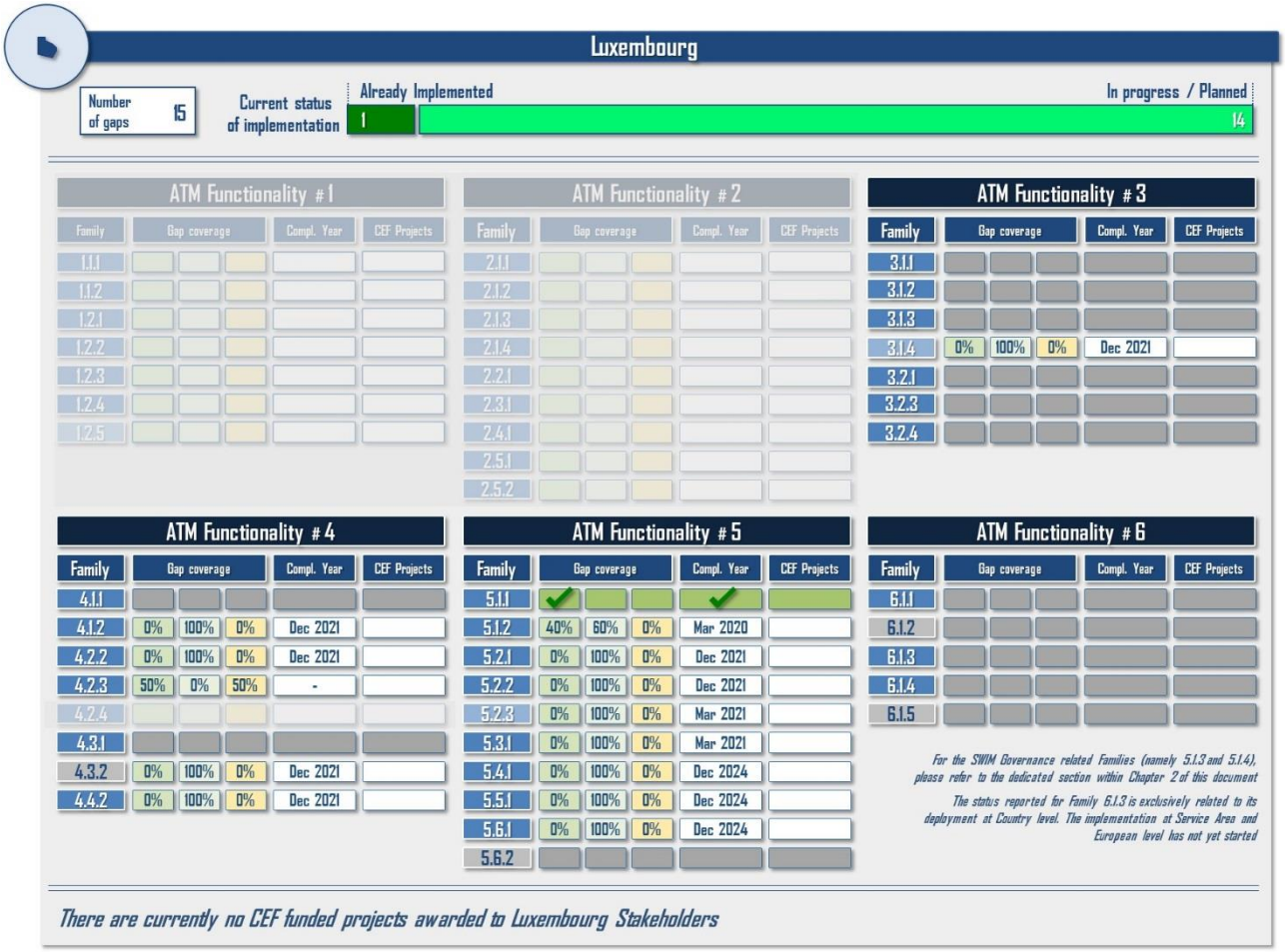
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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

List of CEF-funded initiatives awarded to Lithuanian Stakeholders

✓ Completed project

2016_087_AF3	iTEC Tests, Validations and Planning (iTEC-TVP)	Oro Navigacija	2017_057_AF4	Local traffic complexity management	Oro Navigacija
2016_159_AF6	DLS Implementation Project – Path 2	Oro Navigacija	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Oro Navigacija
2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Oro Navigacija			



Luxembourg

Number of gaps: 15

Current status of implementation: Already Implemented: 1 | In progress / Planned: 14

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

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

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1					
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	50%	0%	50%	-	
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	40%	60%	0%	Mar 2020	
5.2.1	0%	100%	0%	Dec 2021	
5.2.2	0%	100%	0%	Dec 2021	
5.2.3	0%	100%	0%	Mar 2021	
5.3.1	0%	100%	0%	Mar 2021	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2024	
5.6.2					

ATM Functionality # 6

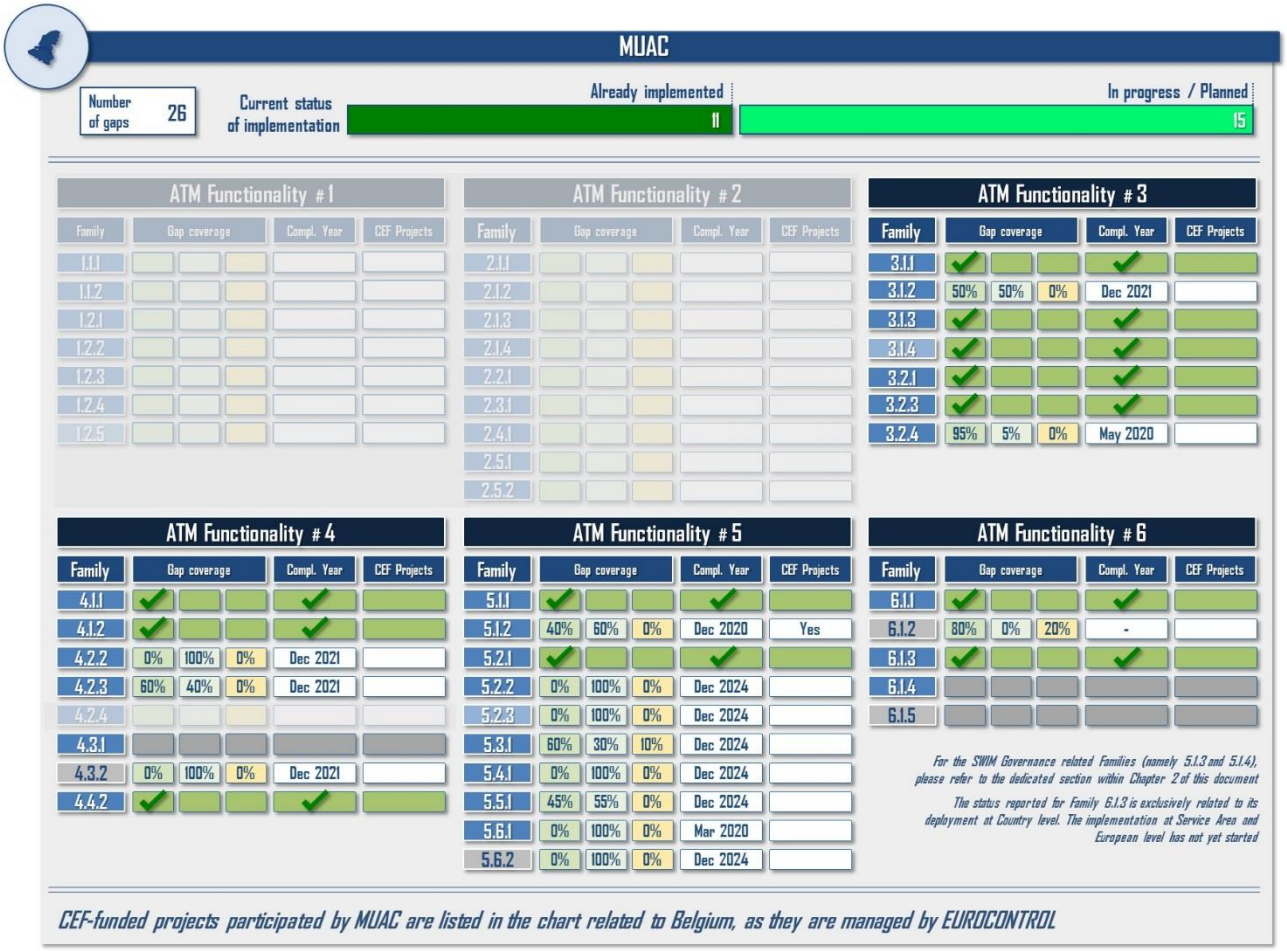
Family	Gap coverage			Compl. Year	CEF Projects
6.1.1					
6.1.2					
6.1.3					
6.1.4					
6.1.5					

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

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

There are currently no CEF funded projects awarded to Luxembourg Stakeholders


Malta
Number of gaps 26
Current status of implementation
Already impl. 3
In progress / Planned 11
Not planned 12
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% 0% 100% -
3.1.2 0% 0% 100% -
3.1.3 0% 0% 100% -
3.1.4 0% 0% 100% -
3.2.1 70% 15% 15% Dec 2021
3.2.3
3.2.4
ATM Functionality # 4
Family | Gap coverage | Compl. Year | CEF Projects
4.1.1 0% 0% 100% -
4.1.2 0% 0% 100% -
4.2.2 0% 100% 0% Dec 2021
4.2.3
4.2.4
4.3.1
4.3.2 0% 0% 100% -
4.4.2 0% 100% 0% Dec 2021
ATM Functionality # 5
Family | Gap coverage | Compl. Year | CEF Projects
5.1.1 0% 100% 0% -
5.1.2 0% 100% 0% Dec 2019
5.2.1 5% 95% 0% Dec 2020 Yes
5.2.2 0% 60% 40% Dec 2020
5.2.3 0% 100% 0% Dec 2020
5.3.1 0% 20% 80% -
5.4.1 0% 0% 100% -
5.5.1 0% 100% 0% Dec 2020
5.6.1 0% 0% 100% -
5.6.2 0% 0% 100% -
ATM Functionality # 6
Family | Gap coverage | Compl. Year | CEF Projects
6.1.1 20% 0% 80% -
6.1.2 0% 0% 100% -
6.1.3 0% 0% 100% -
6.1.4
6.1.5
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started
List of CEF-funded initiatives awarded to Maltese Stakeholders
Completed project
2016_109_AF5 BLUEMED FAB IP Network deployment MATS
2016_159_AF6 DLS Implementation Project – Path 2 MATS
2016_161_AF6 DLS Implementation Project - Path 1 "Ground" stakeholders MATS
2017_089_AF6 IPI - DLS European Target Solution assessment MATS



MUAC

Number of gaps: 26

Current status of implementation: Already implemented: 11; In progress / Planned: 15

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	50%	50%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	✓			✓	
3.2.1	✓			✓	
3.2.3	✓			✓	
3.2.4	95%	5%	0%	May 2020	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	✓			✓	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	60%	40%	0%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	✓			✓	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	60%	30%	10%	Dec 2024	
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	45%	55%	0%	Dec 2024	
5.6.1	0%	100%	0%	Mar 2020	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

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

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

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

CEF-funded projects participated by MUAC are listed in the chart related to Belgium, as they are managed by EUROCONTROL

Netherlands

Number of gaps: 31

Current status of implementation: Already implemented 2 | In progress / Planned 27 | Not planned 2

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	40%	60%	0%	Dec 2020	Yes
1.1.2	0%	100%	0%	Dec 2023	Yes
1.2.1	10%	90%	0%	Dec 2023	Yes
1.2.2	0%	100%	0%	Dec 2018	Yes
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	0%	100%	0%	Dec 2020	Yes
2.1.2	0%	100%	0%	Dec 2020	Yes
2.1.3	✓			✓	
2.1.4	0%	100%	0%	Dec 2020	Yes
2.2.1	0%	100%	0%	Dec 2020	Yes
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	0%	100%	0%	Dec 2021	Yes
4.2.4	0%	100%	0%	Jun 2020	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	45%	55%	0%	Dec 2020	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	0%	100%	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%	20%	80%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	Yes
5.5.1	0%	20%	80%	Dec 2024	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

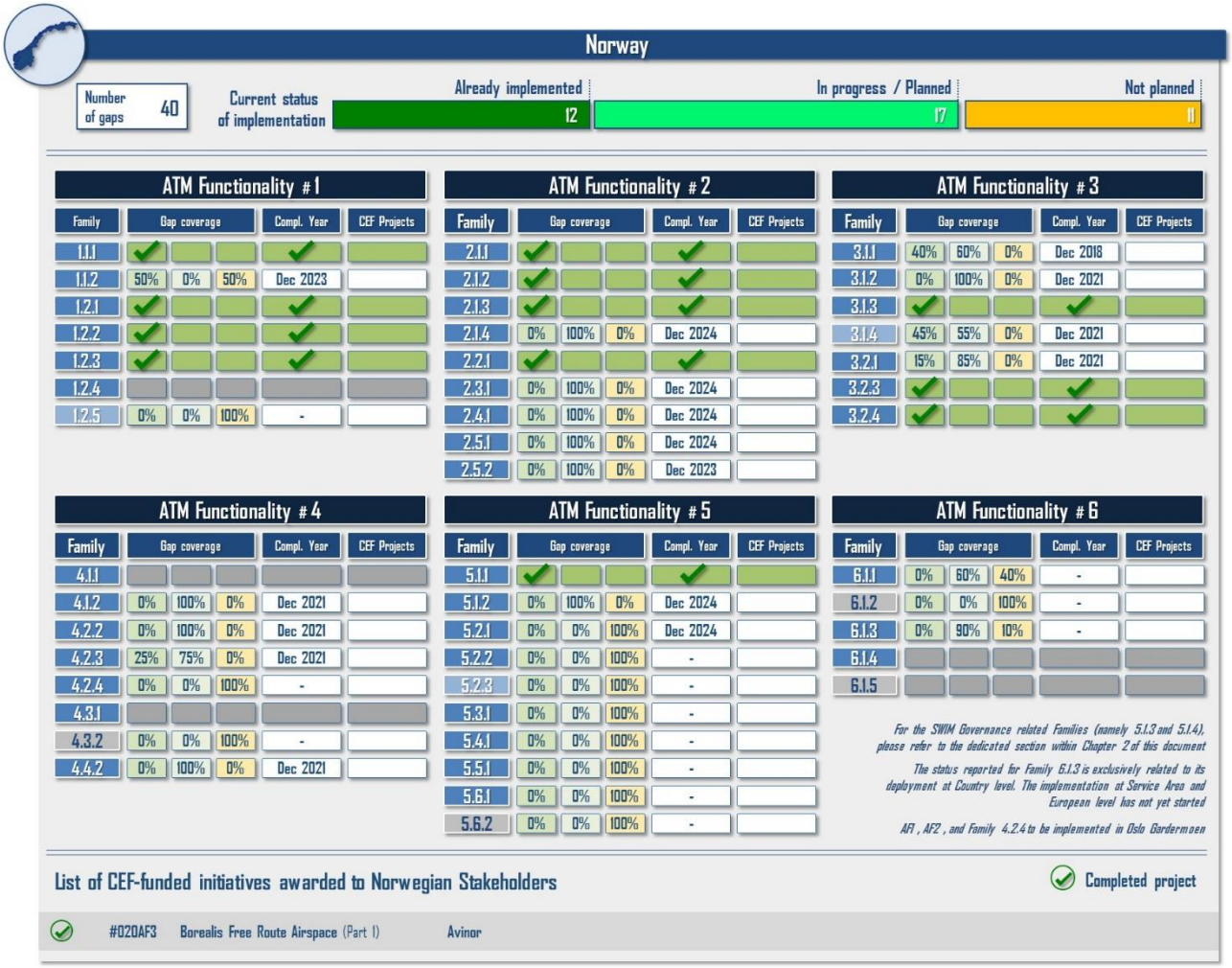
The status reported for Family 6.1.3 is exclusively related to its deployment at Country level. The implementation at Service Area and European level has not yet started

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

List of CEF-funded initiatives awarded to Dutch Stakeholders

✓ Completed project

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



Norway

Number of gaps: 40

Current status of implementation

Already implemented	In progress / Planned	Not planned
12	17	11

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	50%	0%	50%	Dec 2023	
1.2.1	✓			✓	
1.2.2	✓			✓	
1.2.3	✓			✓	
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	0%	100%	0%	Dec 2024	
2.2.1	✓			✓	
2.3.1	0%	100%	0%	Dec 2024	
2.4.1	0%	100%	0%	Dec 2024	
2.5.1	0%	100%	0%	Dec 2024	
2.5.2	0%	100%	0%	Dec 2023	

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	40%	60%	0%	Dec 2018	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	
3.2.1	15%	85%	0%	Dec 2021	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

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

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	0%	100%	0%	Dec 2024	
5.2.1	0%	0%	100%	Dec 2024	
5.2.2	0%	0%	100%	-	
5.2.3	0%	0%	100%	-	
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
5.5.1	0%	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	0%	60%	40%	-	
6.1.2	0%	0%	100%	-	
6.1.3	0%	90%	10%	-	
6.1.4					
6.1.5					

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

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

AF1 , AF2 , and Family 4.2.4 to be implemented in Oslo Gardermoen

List of CEF-funded initiatives awarded to Norwegian Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	Avinor

Poland

Number of gaps: 26

Current status of implementation: Already implemented 5 | In progress / Planned 17 | Not planned 4

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	70%	30%	0%	Dec 2018	
3.1.2	30%	70%	0%	Dec 2021	
3.1.3	30%	70%	0%	Dec 2021	Yes
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	50%	50%	0%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	35%	65%	0%	Feb 2019	

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	✓			✓	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	Dec 2021	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	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	0%	100%	0%	Dec 2024	
5.4.1	0%	0%	100%	-	
5.5.1	0%	100%	0%	Dec 2024	Yes
5.6.1	0%	0%	100%	-	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

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

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

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

List of CEF-funded initiatives awarded to Polish Stakeholders

✓ Completed project

✓	#131AF3	1st part of the upgrade of the P_21 PEGASUS system to SESAR functionalities	PANSA	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	PANSA
	2015_035_AF5	LAN network upgrade	PANSA	✓ 2016_162_AF6	Implementation off Data Link Services for the ATM in the FIR Warsaw	PANSA
	2015_038_AF5	The ECG Communication System upgrade	PANSA	2017_002_AF5	Aeronautical Information Exchange system for Airlines FOC at Lufthansa & Air France	LH Systems Poland
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	PANSA	2017_053_AF3	Implementation of rolling ASM/ATFCM	LH Systems Poland, SABRE Polska SP Z.o.o
	2016_085_AF3	ATM System Upgrade Towards Free Route Airspace	PANSA	2017_056_AF5	Towards Shared Business Trajectory / Trajectory Based Operations	LH Systems Poland, SABRE Polska SP Z.o.o
	2016_087_AF3	iTEC Tests, Validations and Planning (iTEC - TVP)	PANSA	2017_057_AF4	Local traffic complexity management	PANSA
	2016_129_AF5	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	PANSA	2017_076_AF5	Meteorological Information Exchange service for Airlines FOC at Lufthansa & Air France	LH Systems Poland
	2016_141_AF5	Deploy SWIM governance	PANSA	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	PANSA
	2016_159_AF6	DLS Implementation Project – Path 2	PANSA	2017_089_AF6	IPI - DLS European Target Solution assessment	PANSA

Portugal

Number of gaps: 26

Current status of implementation: Already implemented 7 | In progress / Planned 14 | 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	90%	10%	0%	Dec 2018	Yes
3.1.2	30%	70%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2021	
3.2.1	✓			✓	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

Family	Gap coverage			Compl. Year	CEF Projects
4.1.1	✓			✓	
4.1.2	0%	100%	0%	Dec 2021	
4.2.2	0%	100%	0%	Dec 2021	
4.2.3	✓			✓	
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	40%	60%	0%	Dec 2020	Yes
5.2.1	0%	100%	0%	Dec 2024	Yes
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	0%	100%	-	
5.3.1	0%	100%	0%	-	Yes
5.4.1	0%	100%	0%	Dec 2019	
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	40%	0%	60%	-	
6.1.2	0%	0%	100%	-	
6.1.3	50%	50%	0%	-	Yes
6.1.4					
6.1.5					

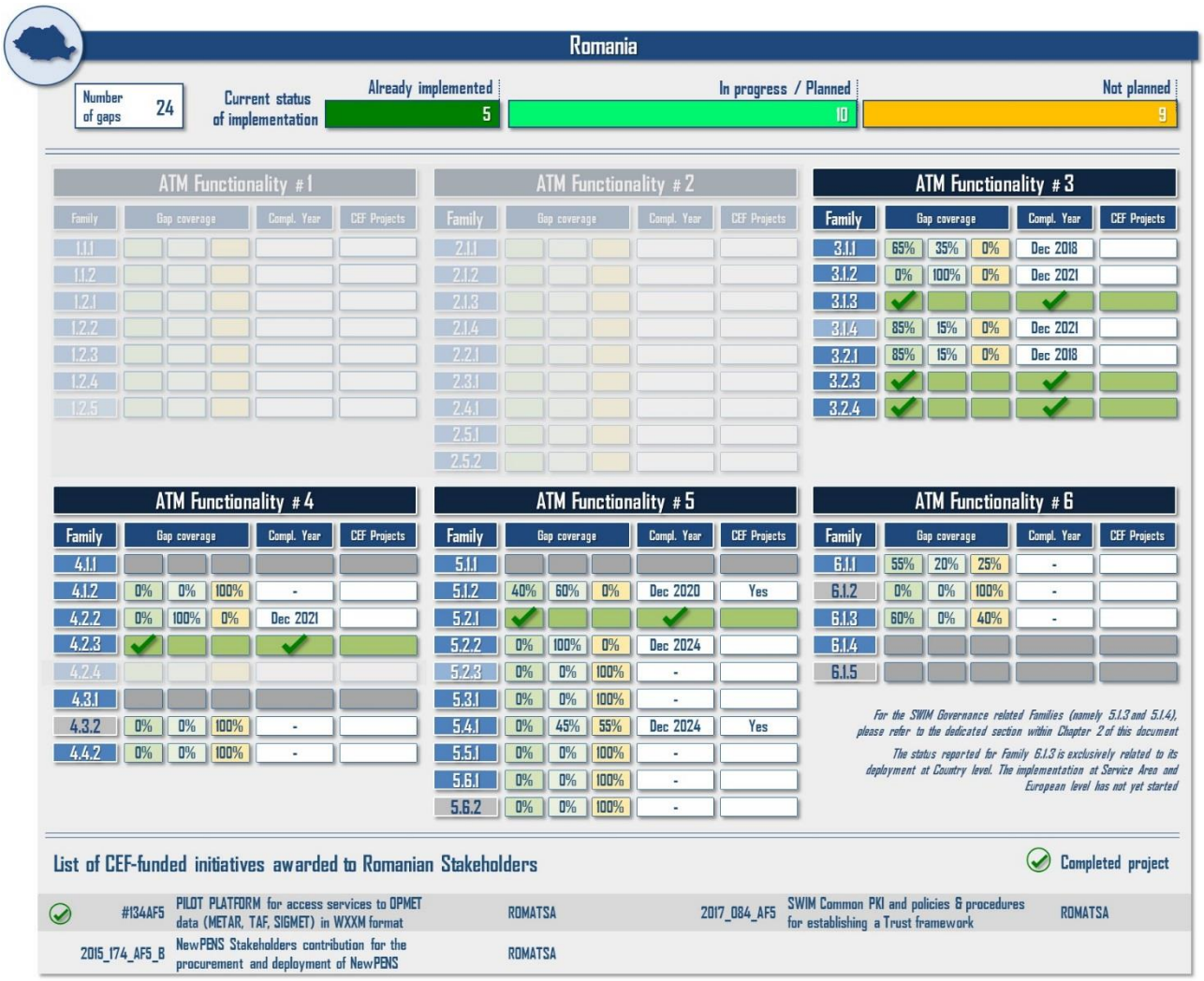
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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

List of CEF-funded initiatives awarded to Portuguese Stakeholders

✓ Completed project

	#122AF3	FT 3.1.1 NAV Portugal – Initial ASM tool to support AFUA	NAV Portugal	2016_069_AF2	Runway Overrun Prevention System (ROPS) bundled application for TAP Portugal	TAP Portugal
	#123AF4	FT 4.2.3 NAV Portugal Interface to NMS AFP	NAV Portugal	2016_071_AF5	2016_071_AF5_PT_Implement a PT Air Force IP Backbone connected into NewPENS	PT MOD
	2015_138_AF5	Implementation of a solution for electronic Terrain and Obstacle Data management	NAV Portugal	2016_141_AF5	Deploy SWIM governance	NAV Portugal
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	NAV Portugal	2016_159_AF6	DLS Implementation Project – Path 2	NAV Portugal, TAP Portugal
	2015_262_AF5	Aeronautical Data Quality and Exchange	PT MOD	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	NAV Portugal
	2015_278_AF1	C-130H RNP-1 Avionics Upgrade for 5 A/C	PT MOD	2017_083_AF6	Portugalia E195 - Deployment of ATN B1 capability	PGA – Portugália Airlines
	2015_279_AF1	Falcon 50 RNP-1 Avionics Upgrade for 3 A/C	PT MOD	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	NAV Portugal
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	NAV Portugal	2017_089_AF6	IPI - DLS European Target Solution assessment	NAV Portugal
	2016_061_AF6	Deployment of ATN B1 capability within TAP Group	TAP Portugal, PGA – Portugália Airlines			



Romania

Number of gaps: 24

Current status of implementation: Already implemented 5 | In progress / Planned 10 | Not planned 9

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	65%	35%	0%	Dec 2018	
3.1.2	0%	100%	0%	Dec 2021	
3.1.3	✓			✓	
3.1.4	85%	15%	0%	Dec 2021	
3.2.1	85%	15%	0%	Dec 2018	
3.2.3	✓			✓	
3.2.4	✓			✓	

ATM Functionality # 4

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

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1					
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	
5.2.3	0%	0%	100%	-	
5.3.1	0%	0%	100%	-	
5.4.1	0%	45%	55%	Dec 2024	Yes
5.5.1	0%	0%	100%	-	
5.6.1	0%	0%	100%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	55%	20%	25%	-	
6.1.2	0%	0%	100%	-	
6.1.3	60%	0%	40%	-	
6.1.4					
6.1.5					

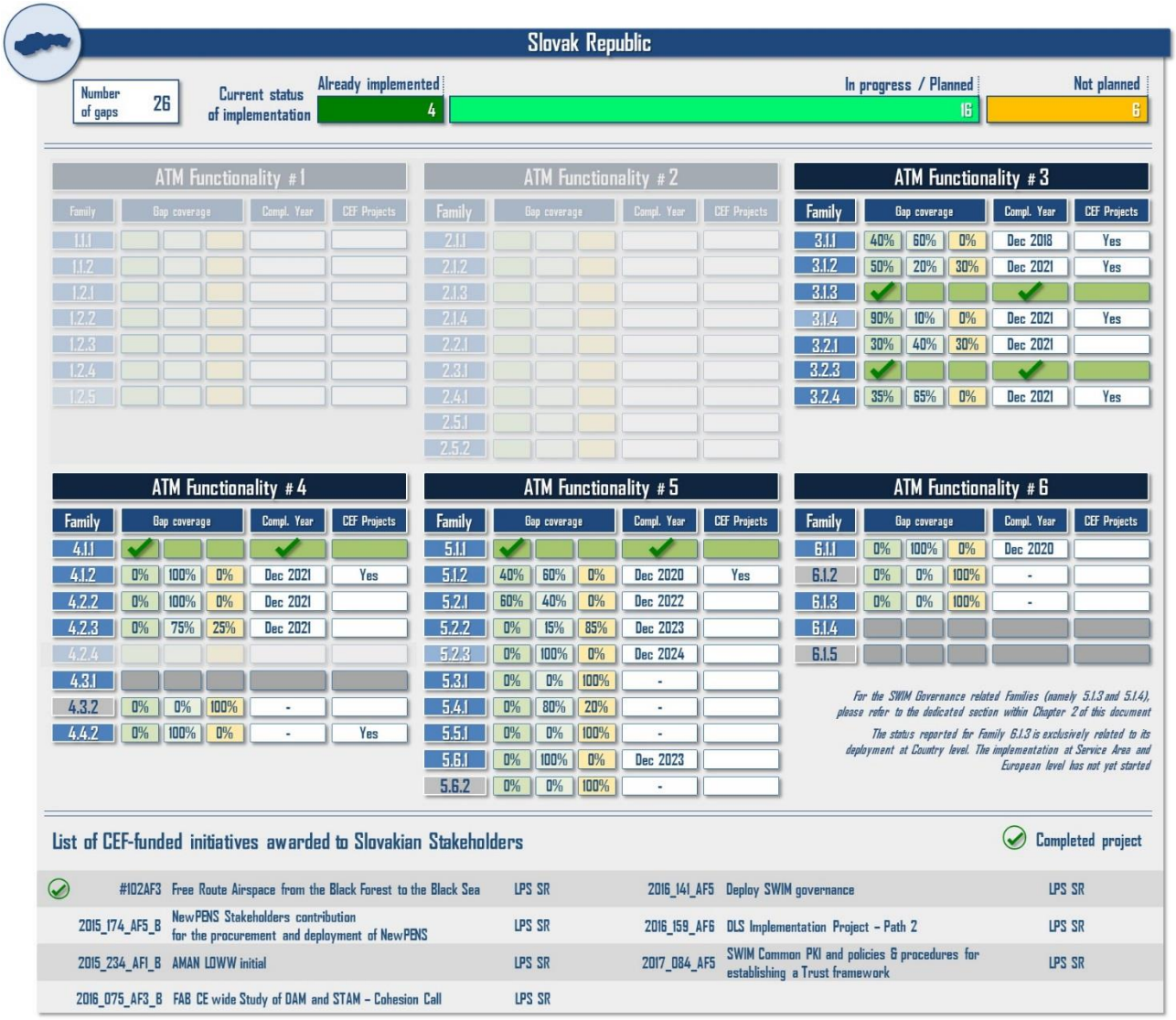
For the SWIM Governance related Families (namely 5.1.3 and 5.1.4), please refer to the dedicated section within Chapter 2 of this document

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

List of CEF-funded initiatives awarded to Romanian Stakeholders

✓ Completed project

✓	#134AF5	PILOT PLATFORM for access services to OPMET data (METAR, TAF, SIGMET) in WXXM format	ROMATSA	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	ROMATSA
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ROMATSA			



Slovak Republic

Number of gaps: 26

Current status of implementation: Already implemented 4 | In progress / Planned 16 | Not planned 6

ATM Functionality # 1

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

ATM Functionality # 2

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

ATM Functionality # 3

Family	Gap coverage			Compl. Year	CEF Projects
3.1.1	40%	60%	0%	Dec 2018	Yes
3.1.2	50%	20%	30%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	90%	10%	0%	Dec 2021	Yes
3.2.1	30%	40%	30%	Dec 2021	
3.2.3	✓			✓	
3.2.4	35%	65%	0%	Dec 2021	Yes

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	0%	75%	25%	Dec 2021	
4.2.4					
4.3.1					
4.3.2	0%	0%	100%	-	
4.4.2	0%	100%	0%	-	Yes

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	60%	40%	0%	Dec 2022	
5.2.2	0%	15%	85%	Dec 2023	
5.2.3	0%	100%	0%	Dec 2024	
5.3.1	0%	0%	100%	-	
5.4.1	0%	80%	20%	-	
5.5.1	0%	0%	100%	-	
5.6.1	0%	100%	0%	Dec 2023	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	0%	100%	0%	Dec 2020	
6.1.2	0%	0%	100%	-	
6.1.3	0%	0%	100%	-	
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to Slovakian Stakeholders

✓ Completed project

✓	#102AF3	Free Route Airspace from the Black Forest to the Black Sea	LPS SR	2016_141_AF5	Deploy SWIM governance	LPS SR
	2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LPS SR	2016_159_AF6	DLS Implementation Project – Path 2	LPS SR
	2015_234_AFI_B	AMAN LOWW initial	LPS SR	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LPS SR
	2016_075_AF3_B	FAB CE wide Study of DAM and STAM – Cohesion Call	LPS SR			

Slovenia

Number of gaps: 26

Current status of implementation: Already implemented 5 | In progress / Planned 13 | Not planned 8

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	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	0%	100%	-	
5.2.3	0%	30%	70%	Dec 2021	
5.3.1	0%	0%	100%	-	
5.4.1	0%	0%	100%	-	
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	50%	50%	0%	Jan 2019	Yes
6.1.2	0%	0%	100%	-	
6.1.3	0%	0%	100%	-	
6.1.4					
6.1.5					

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

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

List of CEF-funded initiatives awarded to 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	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	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	In progress / Planned	Not planned
18	50	1

ATM Functionality # 1

Family	Barcelona El Prat					Madrid Barajas					Palma de Mallorca Son San Juan				
	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	50%	50%	0%	Dec 2023	Yes	60%	40%	0%	Dec 2023	Yes
1.2.1	10%	90%	0%	Dec 2020	Yes	10%	90%	0%	Dec 2020	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 San Juan				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		✓			✓	
2.1.2	50%	50%	0%	Dec 2019	Yes	50%	50%	0%	Dec 2019	Yes	75%	25%	0%	Dec 2019	Yes
2.1.3	✓			✓		✓			✓		✓			✓	
2.1.4	0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2021	
2.2.1	75%	25%	0%	Dec 2019	Yes	75%	25%	0%	Dec 2019	Yes	75%	25%	0%	Dec 2019	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 San Juan				
	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	70%	30%	0%	Dec 2018	Yes
3.1.2	0%	100%	0%	Dec 2021	Yes
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2023	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	75%	25%	0%	Nov 2018	Yes
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	40%	60%	0%	Dec 2020	Yes
5.2.1	40%	60%	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%	100%	0%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2024	
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2024	
5.6.2	0%	100%	0%	Dec 2024	

ATM Functionality # 6

Family	Gap coverage			Compl. Year	CEF Projects
6.1.1	✓			✓	
6.1.2	0%	0%	100%	-	
6.1.3	65%	35%	0%	-	Yes
6.1.4					
6.1.5					

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

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

Spain

Number of gaps: 69

Current status of implementation: Already implemented 18 | In progress / Planned 50 | 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 LARA System in Spain	ENAIRE, Spanish Air Force
✓	#058AF2a	Fulfillment of the prerequisite A-SMGCS 2: Airport Integration and Throughput (Phase A)	ENAIRE	2016_038_AF5	Implementation of an IP-based G/G data communication network in ENAIRE (REDAN)	ENAIRE
	#059AF5	Implementation and operation of an IP-based G/G data communication network in ENAIRE	ENAIRE	2016_039_AF4	STAM Phase 1 Implementation in Spain	ENAIRE
✓	#060AF1	ENAIRE reference geographic database (FT I.2.2)	ENAIRE	2016_040_AF3	Upgrade of trajectory management in SACTA-iTEC	ENAIRE
✓	#061AF1a	RNP APCH Implementation in Palma de Mallorca	ENAIRE	2016_077_AF1	2016_077_AF1_ES_FALCON 900 compliance with RNP 1 and RNP APCH	Spanish Air Force
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	ENAIRE	2016_125_AF6	2016_125_AF6_ES_Airbus A310 ATN VDL2 Compliance	Spanish Air Force
	2015_210_AF5	AMHS/SWIM gateway	ENAIRE	2016_126_AF6	2016_126_AF6_ES_FALCON 900 compliance with Air Ground ATN VDL2 Data Link	Spanish Air Force
	2015_211_AF2	Fulfillment of the prerequisite A-SMGCS 2: Airport Integration and Throughput (2017-2019)	ENAIRE	2016_131_AF4	AOP-NOP Integration - Extended Implementation	AENA
	2015_212_AF2	Fulfillment of the prerequisite EFS: Airport Integration and Throughput (2017-2019)	ENAIRE	2016_141_AF5	Deploy SWIM governance	ENAIRE
	2015_215_AF1	RNP APCH Implementation in Madrid and Barcelona	ENAIRE	2016_159_AF6	DLS Implementation Project – Path 2	ENAIRE
	2015_221_AF3	Implementation of Voice over IP (VoIP) systems and services in ENAIRE	ENAIRE	2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	ENAIRE
	2015_271_AF1	CECAF RNP Procedures Design	Spanish Air Force	2017_400_BLD	Implementation of Voice over IP (VoIP) in Barcelona ACC	ENAIRE
	2015_272_AF1_AIR	CECAF RNP Procedures Implementation (Pilots and flight operators courses)	Spanish Air Force	2017_018_AF5	SWIM-enabled OCC	Boeing
✓	2015_272_AF1_GND	CECAF RNP Procedures Implementation (Pilots and flight operators courses)	Spanish Air Force	2017_049_AF3	Electronic Flight Strip (EFS) in En-Route and TMA in SACTA system	ENAIRE
✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	ENAIRE	2017_050_AF3	Controller Working Position (CWP) upgrade	ENAIRE
	2016_035_AF5	ENAIRE exchange of Aeronautical Information Data in AIXM5.1	ENAIRE	2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Spanish Air Force
	2016_036_AF3	Deployment of SACTA-iTEC	ENAIRE	2017_089_AF6	IPI - DLS European Target Solution assessment	ENAIRE

Sweden

Number of gaps: 40

Current status of implementation: Already implemented: 9 | In progress / Planned: 29 | Not planned: 2

ATM Functionality #1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	60%	0%	40%	Dec 2023	Yes
1.2.1	30%	70%	0%	Dec 2022	Yes
1.2.2	65%	35%	0%	Dec 2020	Yes
1.2.3	0%	100%	0%	Dec 2020	Yes
1.2.4					
1.2.5	0%	0%	100%	-	

ATM Functionality #2

Family	Gap coverage			Compl. Year	CEF Projects
2.1.1	50%	50%	0%	Dec 2019	Yes
2.1.2	✓			✓	
2.1.3	✓			✓	
2.1.4	0%	100%	0%	Dec 2020	Yes
2.2.1	60%	40%	0%	Dec 2018	Yes
2.3.1					
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	0%	100%	0%	Dec 2019	
3.1.2	0%	30%	70%	Dec 2021	
3.1.3	✓			✓	
3.1.4	60%	40%	0%	Dec 2021	Yes
3.2.1	65%	10%	25%	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 2018	
4.2.4	0%	100%	0%	Jun 2020	Yes
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	95%	5%	0%	Dec 2021	

ATM Functionality #5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	55%	45%	0%	Dec 2024	Yes
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	0%	100%	0%	Dec 2023	Yes
5.3.1	0%	100%	0%	Dec 2022	Yes
5.4.1	0%	45%	55%	Dec 2024	Yes
5.5.1	0%	20%	80%	Dec 2024	Yes
5.6.1	0%	80%	20%	Dec 2024	
5.6.2	0%	0%	100%	-	

ATM Functionality #6

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

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

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

AF1 , AF2 , and Family 4.2.4 to be implemented in Stockholm Arlanda

List of CEF-funded initiatives awarded to Swedish Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part I)	LFV	✓	2015_309_AF1_GND	Implementation of GBAS (operation in the Rights Operations Dept and training of flight crew)	Nova Airlines AB
✓	#104AF1	Lower Airspace Optimization	LFV		2015_320_AF3	Implementation of VoIP	LFV
✓	#136AF2	A-CDM Optimization	Swedavia	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	LFV
✓	#137AF2	Enhancement of Airport Safety Nets at Stockholm Arlanda Airport	Swedavia		2016_131_AF4	AOP-NOP Integration - Extended Implementation	Swedavia
	2015_025_AF5_A	Sub-regional SWIM MET deployment to support NEFRA (part A)	SMHI		2016_141_AF5	Deploy SWIM governance	LFV
	2015_098_AF5	Implementing redundant WAN	LFV		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	Swedavia
	2015_099_AF5	DK-SE FAB Aeronautical Data Quality (ADQ)	LFV		2016_159_AF6	DLS Implementation Project – Path 2	LFV
	2015_118_AF5	More efficient Flight Planning	LFV		2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	LFV
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	LFV		2016_166_AF1	Stockholm Arlanda Airport RNP Project (SAARP)	Swedavia, Nova Airlines AB
	2015_207_AF3_A	Harmonisation of Tech ATM Platform in 5 ANSP including support of FRA and preparation of PCP	LFV		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	Swedavia
	2015_227_AF3_A	Borealis FRA Implementation (Part 2)	LFV		2017_060_AF5	ADQ Components in the SWIM Infrastructure - upstream data inclusion in the full data chain	LFV, Swedavia
✓	2015_288_AF5	ADQ implementation Stockholm Arlanda	Swedavia		2017_061_AF5	Application of cyber security to ANSP and SWIM services at LFV	LFV
	2015_290_AF2	Initial AOP	Swedavia		2017_066_AF5	Implementing harmonised SWIM (Y) solution in COOPANS ANSPs and general PCP compliance	LFV
	2015_291_AF2	A-SMGCS Level 2 implementation	Swedavia		2017_075_AF5	SWIMARN - SWIM with Cyber Security at Stockholm Arlanda Airport	Swedavia
	2015_292_AF2	DMAN Stockholm Arlanda Airport	Swedavia		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	LFV
	2015_294_AF2	Implementation of OTP	Swedavia		2017_089_AF6	IPI - DLS European Target Solution assessment	LFV
✓	2015_309_AF1_AIR	Implementation of GBAS (operation in the Rights Operations Dept and training of flight crew)	Nova Airlines AB				

Switzerland

Number of gaps: 41

Current status of implementation

Already implemented	In progress / Planned	Not planned
17	19	5

ATM Functionality # 1

Family	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓	
1.1.2	65%	35%	0%	-	
1.2.1	25%	75%	0%	Dec 2020	
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 2023	
2.5.1	0%	100%	0%	Dec 2018	
2.5.2	0%	0%	100%	-	

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	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%	0%	100%	-	
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%	20%	80%	-	
5.5.1	0%	100%	0%	-	
5.6.1	0%	70%	30%	-	
5.6.2	0%	0%	100%	-	

ATM Functionality # 6

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

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

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

AF1 , AF2 , and Family 4.2.4 to be implemented in Zurich Kloten

List of CEF-funded initiatives awarded to Swiss Stakeholders

✓ Completed project

2017_004_AF1 Flight Crew Training for RNPI Operations Swiss

2017_089_AF6 IP1 - DLS European Target Solution assessment SITA OnAir SARL Switzerland

United Kingdom

Number of gaps	85

Current status of implementation

Already implemented	In progress / Planned	Not planned
26	55	4

ATM Functionality # 1

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
1.1.1	✓			✓		✓			✓		0%	100%	0%	Dec 2019		0%	40%	60%	Dec 2021	
1.1.2	0%	100%	0%	Dec 2023		85%	15%	0%	Mar 2019	Yes	0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2021	
1.2.1	50%	0%	50%	Dec 2020		50%	0%	50%	Dec 2019		50%	50%	0%	Dec 2019		15%	85%	0%	Dec 2023	Yes
1.2.2	✓			✓		✓			✓		✓			✓		✓			✓	
1.2.3	0%	80%	20%	Dec 2023	Yes	50%	50%	0%	Dec 2022	Yes	50%	50%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2023	Yes
1.2.4																				
1.2.5	0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-		0%	0%	100%	-	

ATM Functionality # 2

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
2.1.1	✓			✓		✓			✓		0%	100%	0%	Dec 2020		0%	100%	0%	Dec 2021	Yes
2.1.2	✓			✓		✓			✓		✓			✓		✓			✓	
2.1.3	✓			✓		✓			✓		0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2021	Yes
2.1.4	0%	100%	0%	Dec 2020	Yes	✓			✓		0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2021	Yes
2.2.1	✓			✓		90%	10%	0%	Dec 2018	Yes	✓			✓		0%	100%	0%	Dec 2020	Yes
2.3.1	0%	100%	0%	Dec 2023	Yes	✓			✓							0%	0%	100%	-	
2.4.1	0%	100%	0%	Dec 2023	Yes	0%	100%	0%	Dec 2021		0%	100%	0%	Dec 2023		0%	100%	0%	Dec 2023	Yes
2.5.1	0%	100%	0%	Dec 2020	Yes	0%	100%	0%	Dec 2021	Yes	0%	100%	0%	Dec 2020		0%	100%	0%	Dec 2020	Yes
2.5.2	0%	0%	100%	-		45%	55%	0%	Nov 2018		✓			✓		0%	100%	0%	Dec 2020	Yes

ATM Functionality # 4 (Airport Gaps)

Family	London Gatwick					London Heathrow					London Stansted					Manchester Ringway				
	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects	Gap coverage			Compl. Year	CEF Projects
4.2.4	0%	0%	100%	-		0%	100%	0%	Dec 2019	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	70%	30%	0%	-	
3.1.2	0%	100%	0%	Dec 2020	
3.1.3	✓			✓	
3.1.4	45%	55%	0%	Dec 2021	
3.2.1	60%	0%	40%	Dec 2021	Yes
3.2.3	✓			✓	
3.2.4	65%	35%	0%	Dec 2020	Yes

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	75%	25%	0%	Dec 2021	
4.3.1					
4.3.2	0%	100%	0%	Dec 2021	
4.4.2	✓			✓	

ATM Functionality # 5

Family	Gap coverage			Compl. Year	CEF Projects
5.1.1	✓			✓	
5.1.2	40%	60%	0%	Dec 2020	Yes
5.2.1	✓			✓	
5.2.2	0%	100%	0%	Dec 2024	Yes
5.2.3	30%	70%	0%	Dec 2024	Yes
5.3.1	0%	100%	0%	Dec 2024	Yes
5.4.1	0%	100%	0%	Dec 2020	Yes
5.5.1	0%	100%	0%	Dec 2024	
5.6.1	0%	100%	0%	Dec 2024	
5.6.2	0%	100%	0%	-	

ATM Functionality # 6

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

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

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

United Kingdom

Number of gaps	85

Current status of implementation

Already implemented	In progress / Planned	Not planned
26	55	4

List of CEF-funded initiatives awarded to British Stakeholders

✓ Completed project

✓	#020AF3	Borealis Free Route Airspace (Part 1)	NATS		2015_227_AF3_A	Borealis FRA Implementation (Part 2)	NATS
	#091AF1	Enhanced Terminal Airspace (TMA) using RNP- Based Operations	London Gatwick		2015_269_AF3	Mil MTCD Advanced Controller Tools (FOURSIGHT)	UK MOD
✓	#092AF2	Enhanced Departure Management integrating airfield surface assets	London Gatwick	✓	2015_286_AF2	Introduction of Electronic Flight Strips	NATS
✓	#094AF2	Time-based separation for Final Approach	London Gatwick		2015_298_AF2	A-SMGCS upgrade to provide airport safety nets and routing & planning functions	London Gatwick
✓	#097AF2	Time Based Separation	London Heathrow, British Airways, NATS		2015_299_AF2	Integrated Ground Management (GMAN)	London Gatwick
✓	#099AF2	Initial Airport Operational Plan (AOP)	London Heathrow	✓	2016_027_AF5	European Deployment Roadmap for Flight Object Interoperability	NATS
✓	#100AF2	Airport Safety Nets associated with A-SMGCS Level 2 – Preparation for SMAN	London Heathrow		2016_041_AF2	Basic A-CDM implementation at London Stansted Airport	London Stansted
	#117AF5	Implementation of Initial SWIM Capability (AF5) across NATS	NATS		2016_042_AF1	Enhanced Terminal Airspace using RNP Based Operations at STN	London Stansted
	#119AF1	Manchester TMA Re-Development	NATS		2016_141_AF5	Deploy SWIM governance	NATS
✓	#120AF1a	London Airspace Management Programme (LAMP) (Part A)	NATS, London Heathrow		2016_150_AF2	Enablers for Airport Surface Movement related to Safety Nets	London Stansted, Manchester Ringway
✓	#120AF1b	London Airspace Management Programme (LAMP) (Part B)	British Airways		2016_159_AF6	DLS Implementation Project – Path 2	Arinc, NATS
	2015_016_AF2	ASMGCS Level 1 & 2	London Heathrow		2016_161_AF6	DLS Implementation Project – Path 1 "Ground" stakeholders	Arinc
	2015_060_AF2	Airport Operating Plan AOP	London Heathrow		2017_022_AF2	Synchronized stakeholder decision on process optimization at airport level	London Stansted, Manchester Ringway
	2015_067_AF5	European Weather Radar Composite of Convection Information Service	UK Met Office		2017_023_AF1	Enhanced Terminal Airspace using RNP Based Operations at Manchester Ringway Airport	Manchester Ringway
	2015_068_AF5	European Harmonised Forecasts of Adverse Weather (Icing, Turbulence, Convection and Winter weather)	UK Met Office		2017_024_AF1	RNP approaches to landing runways (23R, 05L and 05R) at Manchester Ringway Airport	Manchester Ringway
	2015_069_AF5	European MET Information Exchange (MET-GATE)	UK Met Office		2017_025_AF5	Stakeholders' SWIM PKI and cyber security	Manchester Ringway
	2015_113_AF4	AOP-NOP Integration	London Heathrow		2017_052_AF4	AOP-NOP Integration - Extended Implementation	London Stansted, Manchester Ringway
	2015_137_AF5	European Meteorological Aircraft Derived Data Center (EMADDC)	UK Met Office		2017_084_AF5	SWIM Common PKI and policies & procedures for establishing a Trust framework	Manchester Ringway, NATS
	2015_174_AF5_A	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	NATS		2017_089_AF6	IPI - DLS European Target Solution assessment	Arinc, Inmarsat, NATS

List of Acronyms

Acronym	Meaning
A-CDM	Airport – Collaborative Decision Making
AF	ATM Functionality
AFUA	Advanced Flexible Use of Airspace
AMAN	Arrival Manager
ANSP	Air Navigation Service Provider
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
DP	Deployment Programme
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
FPA	Framework Partnership Agreement
FRA	Free Route Airspace
iAOP	Initial Airport Operations Plan
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
SESAR	Single European Sky ATM Research
SJU	SESAR Joint Undertaking
STAM	Short Term ATFCM Measures
SWIM	System Wide Information Management
TBS	Time Based Separation
TMA	Terminal Manoeuvring Area

Notes