



FAS



**Centralised Service on
Flight Plan and Airport Slot
Consistency (FAS)
Concept of Operations
(CONOPS)**

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Abstract	
<p>The Flight Plan and Airport Slot Consistency Service (FAS) will match Flight Plan Data (FPD) and Airport slots (APSL) for all coordinated airports in the EUROCONTROL Member States. The FAS will provide an information service to Airport Coordinators, Airports and Airspace Users on mismatches as well as to the respective EUROCONTROL Member States.. The FAS will inform the stakeholders about mismatches between Flight Plan Data (FPD) and the APSL. In order to correlate the Flight Plans with the APSL, APSL data from the national Airport Slot Coordinators will be received and correlated with the Flight Plans as filed in the Initial Integrated Flight Planning System (IFPS).</p> <p>The FAS will further provide post-operational data and statistics on APSL/FPL matching performance. This service will support better consistency of FPL and APSL and therefore, contribute to higher predictability of the European Air Traffic Management Network (EATMN) and the better use of existing airport capacity.</p> <p>FAS will be operated under the auspices of EUROCONTROL as the Network Manager and will encompass all coordinated airports of the EUROCONTROL Member States. The FAS is in full compliance with e.g. the ICAO Global Air Navigation Plan and the ICAO Global Air Traffic Management Operational Concept. Further the FAS is in-line with the SESAR Masterplan and the FAS supports and is fully compliant with European legislation as e.g. the Single European Sky package as well as the Airport Slot Regulation.</p>	

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Authors			
Matthis BIRENHEIDE – FAS project manager			
Andy WOOLLIN – IFPS domain manager			
Herman BARET – Centralised services programme manager			
Contact(s) Person	Tel	Unit	
Matthis BIRENHEIDE	+32 2 729 3449	NMD/NOM/APT	
Andy WOOLLIN	+32 2 729 9786	NMD/NOM/NOS/DOM	

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DOCUMENT APPROVAL

The following table identifies all management authorities who have successively approved the present issue of this document.

AUTHORITY	NAME AND SIGNATURE	DATE
Project Manager	Matthis Birenheide	
Programme Manager	Herman Baret	
Director Single Sky	Luc Tytgat	
Director Network Manager	Joe Sultana	
Principle Director ATM	Bo Redeborn	
Director General for the Board of Directors	Frank Brenner	

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EUROCONTROL Headquarters
 96 Rue de la Fusée
 B-1130 BRUSSELS

Tel: +32 (0)2 729 1152

Fax: +32 (0)2 729 5149

E-mail: publications@eurocontrol.int

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EXECUTIVE SUMMARY

In the past airport slots were not normally considered in air traffic management; the flow management was mainly focussing on airspace capacity, i.e. en-route management. When the EU has decided to reinforce its competence in the ATM through the adoption in 2008 of a second legislative package for the implementation of the Single European Sky (SES 2), it has incorporated the airport dimension as a dedicated pillar to that package. Later the European Commission presented to the EU Council and the European Parliament the "Better Airport Package" which includes the revision of the Airport Slot Regulation. Airport slots had been a pure market instrument since the establishment of the airport slot regulation in 1993 and were not used as a means of measuring performance. This changed with the implementation of the network management functions and the revised framework of the SES.

The implementing rules on flow management 255/2010 and on the network management functions 677/2011 required EUROCONTROL to consider airport slots, as the requirement is set to ensure better consistency between flight plans issued and airport slots allocated, with the aim of a better integration of airports within the ATM network. Today, the airport slots are being allocated during the planning phase prior to the two IATA scheduling seasons (summer and winter). Through an iterative process those slots are adjusted according to the needs of the Airspace Users on the one hand and the available slots being allocated by the coordinator on the other. For business aviation traffic airport slots are issued even on the day of operations and this demonstrates that coordinators are impacting the tactical operations but based on their planning parameters only. Airport Coordinators do not normally have information on changes of the actual airport capacities (e.g. changes due to weather or other reasons); flow management has no knowledge of short-term flight intentions being confirmed by an airport slot as the flow management gains first information through receiving a flight plan.

In tactical operations, the airport slots are not normally taken into account as today there is no process in place of matching airport slots against flight plans, nor live updates on changes to airport slots or of ad-hoc airport slots. The Network Manager (NM), more specifically the Network Manager Operations Centre (NMOC), has so far no regular knowledge through its systems if a flight plan issued by an aircraft operator requires an airport slot or not and if so, the flight plan filed would be in accordance with the airport slot allocated.

Therefore, it can be concluded that planning and operations with respect to agreed and allocated airport capacity is currently not linked, respectively not taken into account during tactical operations.

IATA statistics on scheduling show that the European region (including all EUROCONTROL Member States) provides for 97 (IATA Level 3) coordinated airports whereas the remaining regions of the globe only provide for 62 (IATA Level 3) coordinated airports in total.

In the latest report by the Performance Review Commission (PRC) published in May 2013 and covering 2012, the independent review body identifies airports as one of the main challenges to future air traffic growth and calls for increased focus on their

integration with the ATM network. The PRC report indicates that, for a significant number of airports, the peak declared capacity is higher than the peak service rate. It calls for more coordination to enable capacity-demand balancing to be improved in an efficient way at saturated airports. With 94 (European Union) airports already slot coordinated by 24 airport slot coordinators, according to Eric Herbane from the European Airport Coordinators Association, there is plenty of scope for efficiency improvements.

The recent update of the Challenges of Growth (CoG) study in 2013 has demonstrated that the better use of existing airport capacity becomes even more important as expansion plans have been reduced compared to the 2008 study. Traffic growth will continue and the lack of airport capacity will cause that "...around 1.9 million flights (accounting for 12% of the demand) will not be accommodated in 2035".

In order to meet today's and future capacity needs at the congested and therefore coordinated European airports, the available capacity needs to be exploited to the utmost. Any potential waste in capacity at the coordinated airports needs to be prevented. One important measure to increase the usage of the available capacity is supporting the consistency between flight plans and airport slots, as embedded in the ATFM regulation 255/2010. In particular, the Flight Plan and Airport Slot Consistency Service (FAS) supports the Aircraft Operators and the Airport Coordinators by informing them whether the Flight Plan is in accordance with the respective Airport Slot or whether no Airport Slot could be matched to the Flight Plan departing or arriving at a coordinated airport in the EUROCONTROL Member States.

Further on FAS information in combination with the Integrated Initial Flight Planning System (IFPS) EUROCONTROL will support Member States should they decide to apply measures under the airport slot regulation 95/93. FAS is a supporting step for the Network Manager in preparing for the upcoming revision of the airport slot regulation 95/93 and the included enhanced role of the NM.

FAS will lead to a higher level of predictability of traffic, in the air and on the ground, preventing over-demand and thus reducing delays. It will also support reducing noise and fuel burn on the ground created by aircraft waiting for a stand to become free, or aircraft waiting on the tarmac or taxiway for departure with engines running. It thereby will make better use of the scarce resource of airport capacity. The FAS will provide post-operational data and statistics on Airport Slot (APSL) performance.

INTRODUCTION

Introduction by the Director General of EUROCONTROL

Following a request of the European Commission in November 2012, EUROCONTROL developed the concept of Centralised Services (CS).

Version 2.0, dated March 2013 of the EUROCONTROL proposal for a first set of nine Centralised Services to contribute to SES Performance Achievement is attached as Annex 3. A short description of the proposed CS is attached as Annex 4.

The Agency proposed the CS concept in order to significantly support:

- The Member States and their ANSPs to reach or at least to come closer to the EU performance targets;
- The implementation of SESAR results on a central pan-European level;
- The development of high tech solutions by European ATM manufacturers to be deployed on a central level providing the services to all ANSPs of the EUROCONTROL Member States;
- The creation of pan-European operational concepts for the Centralised Services proposed;
- The creation of a pan-European market for these ANS support services;
- The implementation of market mechanisms for some ANS support services through tendering of the services with time limited performance based contracts;
- The creation of market opportunities for the ANSPs of EUROCONTROL Member States to provide services outside of their national boundaries, cooperating in newly founded consortia;
- The strengthening of the European Network, increasing capacity and safety;
- In the planning and execution phase much more user friendly 4D trajectories throughout the European airspace.

EUROCONTROL works closely with the Member States, ANSPs, civil and military airspace users, airports, the aerospace industry, professional organisations, intergovernmental organisations and the European institutions.

On 29 April 2013 EUROCONTROL invited the Airspace Users to participate in a workshop where the concept of Centralised Services was briefed. The Minutes of this Workshop are attached as Annex 5.

EUROCONTROL also invited the EUROCONTROL Member States on 4 March 2013, the ANSPs on 24 April 2013 and the ATM Manufacturing Industry on 17 May 2013 to

demonstrate the Centralised Services concept. The minutes of these workshops are respectively attached as Annex 6, 7 and 8.

Following the PC/39 on 16 May 2013 and PCC/31 on 2 July 2013 EUROCONTROL updated on the CS concept. The working papers and slides presented as well as an extract from the Minutes of both meetings are respectively attached as Annex 9 and 10.

EUROCONTROL advisory groups such as AAB, NMB, MAB, CMIC, as well as EU bodies such as the SSC, ICB and its subgroups were briefed. These briefings were followed by so called CS specific workshops. This was a series of 9 workshops held in June and July 2013 - for each proposed CS one specific workshop was held; CS1 (FAS) workshop was held on 04 July 2013. The slides presented as well as the minutes of this meeting are attached as Annex 11.

The questions asked and answered in an intensive dialogue since the beginning of the program are publicly available. We like to refer to the FAQ list that is constantly updated and available on the EUROCONTROL homepage.

The CBA figures presented in detail for all the 9 CS support the initial assessment done, that a 150 to 200 million € cost reduction for the airspace users is possible through the implementation of the 9 centralised services proposed by EUROCONTROL. Specific focus was put on the synergy effects foreseen between the different centralised services.

It was agreed with the stakeholders, that the Agency would invite the participants to the individual CS workshops, as well as the existing EUROCONTROL advisory groups to participate in specific meetings in September and October 2013 to develop a pan-European ops concept for each of the Centralised Services.

This draft ops concept has been prepared for the presentation and discussion with all interested stakeholders at the Ops Concept Workshop for CS1 (FAS) which will be held on 11 October 2013.

The Ops Concept will be used by EUROCONTROL to develop requirements to be part of a Call for Interest and a Call for Tender for CS1 (FAS). All proposed Centralised Services will be operated under performance based contracts by a Service Provider on behalf of EUROCONTROL.

Our partners are involved at every level of the corporate governance structure. The deployment and operation of CS will impact the remit of the Network Manager. Therefore, its governing body, i.e. the Network Management Board where the EC, EUROCONTROL, ANSPs, airspace user, airports and the military are represented could be extended in the future, the operation of the CS being regulated by EASA; the latter is already supporting the European Commission in the oversight of the Network Manager. Through its nomination as Network Manager, EUROCONTROL will be entrusted to manage the centralised services.

Frank Brenner

Director General of EUROCONTROL

October 2013

CHAPTER 1 – Context

1.1 Geographical Applicability

The FAS service is intended to be applied in all EUROCONTROL Member States. It may be expanded to adjacent States if so required as part of the NM area of interest and in case it is identified as being beneficial for the overall ATM network.

1.2 Aim and intended benefits

The Flight Plan and Airport Slot Consistency Service (FAS) is one means of bringing planning and operations closer together and thus, supporting the idea of the Single European Sky.

It will foster the better integration of airports within the ATM network as the scarce resource of airport capacity requires appropriate consideration in the planning of traffic and the execution of such plans on the day of operations.

At airports where demand exceeds the available capacity it is pivotal to make best use of the capacity and achieve a fair distribution of airport slots (APSL) amongst the airspace users that are intending to operate at that airport. This is achieved through medium- to long-term planning based on the global IATA method of scheduling and in the European Union complemented by a Regulation.

Impartial bodies have been created, the Airport Coordinators, to ensure that the limited capacity is best used and fairly distributed. In the past these plans, which in the end represent the agreed capacity and the agreed operations at such coordinated airports, have not been taken into account on the day of operations by the Network Operations Control Centre (NMOC), i.e. the flow management.

The FAS will overcome this lack of coherence between planning and operations. It will ensure that predictability within the entire network will increase as it verifies that the intended operations are in line with allocated airport slots, which are made available as a result of the slot coordination, making best use of the agreed capacities of airports. This information will also feed traffic prediction systems used by the ANSPs and thus provide for a more accurate and reliable picture of the traffic to be expected. The information will be made available to airports and their A-CDM systems which already foresee that such a correlation of Flight plans and airport slots is essential, Airspace Users, the Network Manager and the Member State concerned.

The FAS is not designed to change or supersede any existing decision making process at local or national level, but to complement them with more accurate information so that operations meet planning to the highest possible extent to avoid wasting available scarce airport capacity.

1.3 *Intended Audience*

The intended audience are the CS1 CONOPS workshop participants and all the stakeholders who are interested in the development of CS1. The document will also be used to define the operational requirements for the Call-for-Tenders for the Centralised Service on Flight Plan and Airport Slot Consistency (FAS).

CHAPTER 2 –Operational Concept

2.1 Scope

The Flight Plan and Airport Slot Consistency Service (FAS) will match Flight Plan Data (FPD) against arrival and departure airport slots (APSL) and check both data sets for consistency for all coordinated airports in the EUROCONTROL Member States. It will establish a highly automated process comparing FPD with allocated APSL provided to FAS through the APSL management systems of the Airport Coordinators. The FAS will provide an information service to Airport Coordinators, Airports, Airspace Users and the Network Manager on mismatches.

The FAS will further provide post-operational data and statistics on APSL/FPL coherence performance per coordinated airport of the EUROCONTROL Member States. These reports will be made available by the Network Manager as part of its monthly reporting, so that interested stakeholders, like the Airport Coordinator of the State concerned, the Member State concerned, the Airport concerned, and the Airspace Users can have an easy access to those statistics.

2.2 Components

2.2.1 Dynamic Airport Slot database

The service will consist of establishing and running a data repository (database) that is dynamically fed by the local airport slot coordination systems with all airport slots (APSL) allocated by the coordination offices. APSL data will be sent to the FAS database immediately and any changes thereto as to allow the on-time verification of flight plans (FPL) versus APSL by the FAS. This is particular important for, e.g. ad-hoc allocation of APSL to General and Business Aviation (GA/BA) traffic or short-term changes to already allocated APSL.

The APSL Coordinators will enable their individual systems to provide a defined data set for each APSL allocated to the FAS database.

The APSL database will record all airport slot history and enable automatically the identification of the most recent APSL allocation for the matching process.

The Aircraft Operators will have to insert an APSL-ID in their FPL for those airports where a Member State (i.e. the Airport Coordinator) has made this mandatory (currently France, Germany, Belgium and Switzerland for General and Business Aviation only).

The APSL database, part of the FAS, will interface with allocation databases operated at national or regional levels via the PENS network service (CS8).

2.2.2 Matching Service (software)

As a minimum level of service, the FAS will be established as a pure information service. The matching software will receive FPD from the Initial Integrated Flight Planning Service IFPS.

Those FPD shall include an APSL-ID where this is required by a Member State. The software compares the FPD with its APSL database and identifies in a first step if an APSL is allocated based on a matching algorithm that shall provide for a very high level of matching accuracy that will be validated during the feasibility study.

In case no match can be made, i.e. no APSL can be identified the matching Service sends the message 'WARNING, no APSL' to IFPS. The IFPS will then issue a related warning message to the Airspace User (flight plan originator), the relevant Coordinator and Airport.

In case a valid APSL is identified but the arrival or departure time filed deviates from the allocated APSL time (including the locally defined tolerance), the FAS will send the message 'WARNING, APSL out of tolerance' to IFPS. The IFPS will then issue a related warning message to the Airspace User (flight plan originator), the relevant Coordinator and Airport.

In case a Member State has decided to make use of article 14(1) of Regulation (EEC) 95/93 and has asked EUROCONTROL to reject a FPL in case no matching APSL can be identified by the FAS, IFPS rejects the flight plan and sends a rejection message to the Airspace User (flight plan originator), indicating that the FPL has either no APSL or an incorrect APSL. The FPL originator would then be responsible to rectify the mismatch by either correcting the FPL or, in case no APSL was allocated, contacting the relevant Airport Coordinator office to obtain a valid APSL. Once the mismatch is solved, the FPL originator re-files the FPL. Once the match is correct, the matching service sends the message 'ACKNOWLEDGE' to IFPS and the FPL is distributed to the relevant ANS systems.

Rules will be defined on the interaction between the matching service (FAS) and the IFPS to ensure that the timely processing of FPL is not jeopardised.

2.2.3 Interfaces between the matching service (FAS) and Airport Coordinators

A B2C and/or B2B interface from the FAS will be established between the Airport Coordinators and the FAS via CS8 in order to exchange APSL data sets and mismatch information. Usage of internet is being considered.

2.2.4 Interface between the matching service (FAS) and the IFPS

The FAS and the IFPS will be connected through B2B via CS8. The information exchange between the matching service and the IFPS will be based on automated messages without human intervention required to the highest extent possible.

The FAS will provide the list of airports for which FPD are required to perform the matching process to IFPS.

The FAS will provide the IFPS with the parameters for which airports the FPD are required.

The messages from the IFPS to the FAS will contain all FPD related to the defined coordinated airports participating in the matching service.

The messages from the FAS to the IFPS will be an information message, with either 'WARNING' or 'ACKNOWLEDGE' (see 2.2.2).

2.2.5 Interface between NM data warehouse and FAS

The FAS will receive data of the NM data warehouse on relevant ATFM measures applied through B2B via CS8 to enable the establishment of statistics as set out in section 2.2.8.

2.2.6 Interface between FAS and Airports

The FAS will interface with airports A-CDM systems through IFPS that will provide the warning messages triggered by the FAS.

2.2.7 Interface between FAS and Airspace Users

The FAS will interface with Airspace Users through IFPS that will issue the warning messages triggered by the FAS to the Airspace User (flight plan originator).

2.2.8 Provision of statistics and data

The FAS will establish a statistical data provision tool that enables access to the original data stored and results of the matching process. These statistical data will be made available through a B2C or B2B service via CS8 to the relevant parties, as e.g. the Airport Coordinators and the relevant Member States through the Airport Coordinators, Airports concerned, Airspace Users, and the NM.

The statistics will allow assessing the number of operations without APSL and deviation from the time allocated. This can be reviewed per State, per airport and per Airline Operator. Parameters for deviation 'off' APSL can be set by the individual user (e.g. Airport Coordinators, NM or other users if so agreed).

The statistics will allow assessing if the operations off-APSL is due to but not limited to, e.g. reactionary delay, or ATFCM measures, or weather. Relevant parameters will be provided by the Airport Coordinators and the NM as user requirements, and required data will be made available by the NM.

2.3 Roles and responsibilities

2.3.1 General

To operate the service as smoothly and cost-effectively as possible, some principles need to be considered for implementation.

As a correlation algorithm to match the correct APSL with the FPD will not be able to achieve a 100% matching accuracy a certain number of appropriately trained staff is to be available to handle errors occurring during the matching process. This staff will be operational within the FAS.

Based on Regulation (EEC) 95/93, article 14(1), a EUROCONTROL Member State may want to exercise its right, to mandate the Network Manager with rejecting a flight plan, if no correct match with an APSL is possible. In such cases NM would request from the Member State a specific instruction in writing, as it also was already possible in the past. Further, it would be desirable and of added value for an expeditious level of service, to implement pre-defined rules in the matching services on how the system will react in case of a mismatch. This can be implemented per Member State, per coordinated airport or as an agreed overall procedure, given that the various Member States agree on such an overall procedure. It will allow for a very high degree of automation and thus less cost and diversity. It will also ensure unlocking the highest level of operational benefits of the service.

The before mentioned high level of automation will also allow that the matching service can be operated 24/7 with minimum human intervention and with almost no change to the current practices of Airport Coordinators operating their services in most cases during weekdays and office hours only.

2.3.2 Member States (MS)

- a) Ensure that the national Airport Coordinators are connected to the FAS.
- b) Include GA/BA traffic in the APSL coordination scheme where this is not the case.
- c) Inform the NM and the FAS provider if they have implemented the usage of an APSL-ID and for which traffic types.
- d) Inform the NM if they wish to exercise their right of FPL rejections; in such case mandate the NM to do so on their behalf.

2.3.3 Airport Coordinators

- a) Define and inform on the APSL tolerance window for the matching process and the post operational analysis.
- b) Ensure that all changes to APSL allocation, even outside office hours, are updated in their local APSL allocation systems instantly.
- c) Notify the FAS if there are exemptions from the APSL allocation scheme (e.g. Military, Medevac, etc.).
- d) Provide the complete detailed national scheme on APSL allocation to the NM as to enable the correct development of related algorithms for the FAS.
- e) Enable their local APSL coordination systems to provide live updates on any changes to APSL allocation to the FAS APSL database.

2.3.4 Network Manager

- a) Enable the IFPS to provide all relevant FPD concerning coordinated airports to the matching service.
- b) Enable the IFPS to send warning messages to flight plan originators/Airspace Users, Airport Coordinators and Airports in case no APSL or a deviation from the allocated APSL is identified by the FAS.
- c) If the relevant Member State has decided so and mandated EUROCONTROL accordingly, enable the IFPS to send rejection messages, to flight plan originators/Airspace Users, Airport Coordinators and Airports.
- d) Provide relevant operational procedures for the NMOC.
- e) Ensure sufficient fall-back procedures for planned and unplanned service interruption in cooperation with the FAS provider and the Airport Coordinators.
- f) Provide data to the FAS for the post-operational statistics provision.

2.3.5 Airspace User

- a) Ensure that their operations centres are aware of the relevant allocated airport slots for flights to/from coordinated airports.
- b) React on warning messages and rectify inconsistencies by contacting the relevant Airport Coordinators, where required.
- c) Where it is required due to local rules, ensure that FPLs of such flights contain the correct APSL-ID for the intended operations in the remark sub-field of FPL field 18.

2.3.6 FAS Service Provider

- a) Ensure the 24/7 operations of the service, including the required fall-back processes.
- b) Ensure that the post operational data and statistics are available during office hours. Typically from 07:00 to 17:00 UTC.
- c) Implement and maintain the specified Quality Management System.
- d) Implement and maintain the specified Safety Management System.

2.4 Safety

2.4.1 Safety Case

Operational and technical safety requirements will be developed as part of the specifications for the set-up of the service. During the development and prior to putting the FAS into operations a safety case will be prepared to demonstrate that the service itself as well as its interaction with other ATM functions is safe.

CHAPTER 3 – Regulatory requirements

3.1 *Current and upcoming Regulations*

3.1.1 EU SES package

Adopted on the basis of Articles 7 and 8 of the Airspace Regulation No 551/2004 of 10 March 2004, Commission Regulation (EU) 255/2010 of 25 March 2010 laying down common rules on air traffic flow management, notably addresses in its article 9 the consistency between flight plans and airport slots.

This provision foresees that the central Unit for ATFM (currently the Network Manager – see below) or the local ATFM unit provides the airport slot coordinator or the managing body of a coordinated airport, at their request, with the accepted flight plan of a flight operating from that airport. It also foresees that operators shall provide to the airports concerned necessary information to enable the correlation between the flight plans and the slots. Finally, it is expected that the central unit for ATFM (NM) reports on repeated non-compliances.

The implementation of the FAS centralised service would facilitate the execution of these provisions by the parties concerned.

The FAS centralised service would also have to comply with Regulation (EC) No 552/2004, on the interoperability of the European Air Traffic Management network (the interoperability Regulation, amended by Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009, notably its Article 6 (8), a).

Finally, reference has to be made also to Regulation No 677/2011 of 7 July 2011 laying down detailed rules for the implementation of air traffic management network functions, in particular its Article 3.5 entrusting the Network Manager with the ATFM function and its Article 21 providing that the European Commission ensures, with the assistance of EASA, the oversight of the Network Manager and its compliance with the requirements set in Annex VI of this Regulation. In the context, the safety oversight is ensured directly by EASA in application of Article 3.d of Regulation N 1034/2011.

The Commission has issued a proposal to revise the SES package, with a view notably to reinforce the role of the network manager.

3.1.2 EU Airport package

The current Council regulation No (EEC) 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports allows in its Article 14.1 the rejection of flight plans by the competent ATM authority. Due to lack of detailed provisions in the regulation, the Member State has to decide which organisation is mandated as the competent ATM authority in order to decide on a rejection/suspension. The current suspension procedures

differ from State to State, if applied at all, and the execution of the suspension is done by the Network Manager Operations Centre (NMOC) on request of the designated authority.

This Regulation (EEC) 95/93 is under revision as part of the new EU Airport Package and a proposed amendment has been drafted by the European Commission (EC), which is under review and debate in the European Parliament (EP) and the European Council.

The Commission's proposal aims at a better integration of airport slot management with the Single European Sky (SES) framework and consequently foresees an enhanced role for the NM as well as for the Airport Coordinators. As far as it concerns the consistency of airport slots and flight plans, the proposal currently includes the following elements:

- Art. 17.1: the obligation for the NM to reject¹ flight plans that have no allocated airport slot and, in the case of Business Aviation, to also reject flight plans that are out of their slot's window (draft text under negotiation), if so requested by the Member State.
- Art. 17.1: the obligation for air carriers to include a reference to their allocated airport slot when they submit a flight plan (draft text under negotiation).

3.2 Requirements for new/updated regulations to implement the FAS

EUROCONTROL will have to ensure that the FAS and its components fit in an adequate regulatory framework and are compliant with the relevant provisions.

3.2.1 Requirements related to the ICAO framework

If so requested by the EUROCONTROL Member States, and in coordination with the airport slot coordinators, a proposal could be submitted to ICAO with regard to the creation of a dedicated field on flight plans for a unique and harmonised airport slot identifier (APSL-ID).

3.2.2 Requirements related to the EU framework

To facilitate the implementation of the FAS centralised service, it would appear useful to reflect the following elements in the EU regulatory framework:

- make the technical migration to the future centralised services (or 'support services') mandatory for States and operational stakeholders (e.g. in Commission Regulation No 677/2011);
- foresee the obligation for air carriers to provide, as a transitional measure pending ICAO modifications, information on an harmonised and unique airport slot identifier in field 18 of the flight plans (e.g. by completing Art. 17.1 of the new Airport slot Regulation, or by amending Art. 9.2 of Regulation No 255/2010 on ATFM);
- make the provision of the required airport slot data (to be exactly defined and listed) to EUROCONTROL/NM mandatory for the purposes of the FAS service (e.g. by updating Article 9 of Regulation No 255/2010 and completing it with an Annex).

3.2.3 Requirements related to the EUROCONTROL framework

The FAS will be implemented as a Pan-European Service in the applicability area of the

¹ "Rejection" is a process already in place and executed today within IFPS. The submitted flight plan is verified against defined parameters and if one of the parameters is not met, the flight plan is rejected, requiring the flight plan originator to correct the parameter. The airport slot verification will be an additional parameter in the system that is verified through the FAS.

EUROCONTROL Member States. To unlock the full benefits for airports on one side and the airspace users and the Network on the other, it is pivotal that all Member States and their Airport Coordinators are connected to the FAS, providing their data to the Service as well as cooperating in the set-up of the related processes.

While the above-mentioned regulations will apply to EU member States and their operational stakeholders, as well as ultimately to the non EU member States having signed relevant agreements with the EU for the implementation of aviation regulations (e.g. ECAA), they might not apply to some of the EUROCONTROL member States.

It is however expected that, by a Decision, the permanent Commission of EUROCONTROL will make the centralised services and their related conditions binding on all the EUROCONTROL member States and their operational stakeholders. The EU regulatory framework would just reinforce this obligation for the States concerned.

3.2.4 Requirements related to the national legal/regulatory frameworks

In principle, updated EU regulations would become directly applicable in the Member States concerned and would not require measures at national level.

For Member States not bound by EU rules, appropriate rules and regulations would have to be adopted at national level to comply with the obligations deriving from the decision of the Permanent Commission of EUROCONTROL.

CHAPTER 4 – Links of the CS1 (FAS) to ICAO GANP, SESAR Deployment, ESSIP – current procedures and future evolution

4.1 *Baseline - Interim Deployment Programme (IDP)*

Centralised Services (CS) are in line with the Interim Deployment Programme (IDP). The conformity analysis was initiated by EUROCONTROL and further completed at the Interim Deployment Steering Group (IDSG) Expert Team in the meeting of 27 June 2013.

The possible relationships between CS and IDP deployments have been analysed and clustered in four categories of potential interactions, which are:

1. **No relationships** between IDP activities and CS. This means that the functions and services deployed in a centralised manner by the CS do not directly interface any of the deployments of the IDP.
2. IDP deployment is improved by the independent CS capabilities. The functions and services deployed in a centralised manner by the CS will be used by one or several IDP deployments but in an independent way. This is the case when CS does not impact functionalities already deployed, i.e. **Independent function improvements**, or when the CS implements some add-on function or services such as equipment performance monitoring, centralised management of shared parameters, i.e. **Development of supporting option**.
3. IDP is a **pre-requisite** for CS. This means that the functions and services deployed in a centralised manner by the CS reuse an IDP deployment.
4. IDP deployment is an **alternative** to the CS solution. The functions and services deployed in a centralised manner by the CS offer a different implementation of an IDP deployment.

The FAS centralised service is categorised as **independent function improvements**, which means a better Flight Plan alignment with slots that will benefit to the IDP deployment. It ensures harmonisation between Flight Plans and Airport slots for a more effective use of Airport capacity and for improved predictability.

There is no IDP deployment that deals with the slot consistency. The FAS centralised service does not change the existing interfaces, i.e. airport slots and FPL. Therefore, the FAS

centralised service is independent from IDP.

The benefit dependency is that the FAS centralised service will ensure more predictable traffic demand which will augment benefits of STAM (WP1.2 “STAM Phase 1”), FUA (WP2.1 “Rolling ASM/ATFCM processes” and Airport CDM (WP3 “Airport CDM”). The up to date Flight Plans due to AFP updates (WP1.1 “AFP automatically generated”) improves benefits of the FAS centralised service.

The FAS centralised service is related to the IDP Work Packages:

- WP1.1 “AFP Automatically generated”;
- WP1.2 “STAM Phase 1”;
- WP2.1 “Rolling ASM/ATFCM processes”;
- WP3.2 “Network integration”.

The figure below illustrates the IDP Breakdown structure for the FAS relevance.

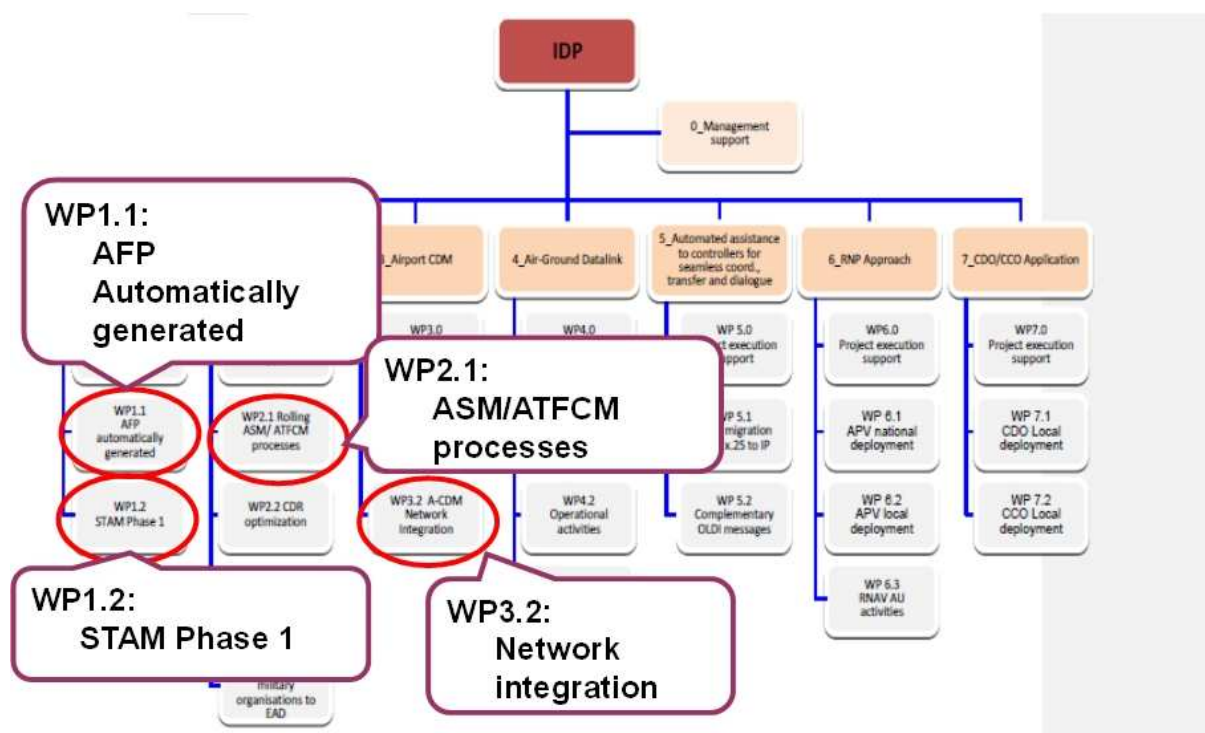


Figure 1: IDP breakdown relevant for FAS

4.2 Pilot Common Projects (PCP) and Common Projects (PC)

Centralised Services interact with the Pilot Common Project (PCP). Interdependencies between Centralised Services and the six ATM Functionalities (AFs) of the Pilot Common Projects (PCP) have been analysed.

The Centralised Services will influence the future Common Projects (CP).

The FAS centralised service is categorised as **independent function improvements** and related to the PCP ATM Functionality AF#4 ‘Network & Collaborative Management’. The dependency is limited to pre-flight phase including more from CTOT to TTA.

The nature of the interdependencies is related to the following ATM Master Plan Aggregated ATM Technology Changes for Step 1: Airspace Management Systems, AMAN, AMAN/SMAN/DMAN integration, Enhanced FDP, Enhanced DCB, Flight Planning and demand data, Airport CDM (AOP).

The FAS centralised service improves the demand predictability and as a result the Step 1 investments will be more beneficial.

4.3 European Single Sky Implementation (ESSIP)

The possible relationships between CS and ESSIP, being the Level 3 of the European ATM Master Plan, have been analysed.

The FAS centralised service is categorised as **independent function improvements** and is related to the ESSIP Objectives:

- AOM19 “Advanced Airspace Management ”
- AOP05 “Airport Collaborative Decision Making”
- FCM01 “Enhanced tactical flow management services”
- FCM03 “Collaborative flight Planning”
- FCM04 “STAM Phase 1”
- FCM05 “Rolling NOP”

The FAS centralised service will complement benefits of the identified ESSIP objectives.

Depending on the evolution of the EAIMS centralised service, in future, new ESSIP Objectives may have to be developed or existing ones may have to be amended.

4.4 ICAO Global Air Navigation Plan (GANP)

The possible relationships between CS and ICAO Global Air Navigation Plan (GANP) have been analysed.

The FAS centralised service contributes to GANP’s integration of airport with ATM (B1-ACDM Optimised Airport Operations through Airport-CDM).

It is also used to improve performance of flow management in line with B1-NOPS – Enhanced Flow Performance through Network Operational Planning.

The FAS centralised service works initially with FPL2012, Extended FPL and then FF-ICE (B1-FICE – Increased Interoperability, Efficiency & Capacity through FF-ICE/1 application before Departure).

Furthermore, it is enabled by IPV-6 ground network in GANS COM roadmap (CS8 “Pan-European Network Services (PENS)).

4.5 Current procedures and future evolution

4.5.1 Current procedures

Today, airport slots at coordinated airports are used for planning purposes to allocate the available capacity of a coordinated airport in a fair and non-discriminatory way to airspace users that want to operate at such airports. For the European Union Member States this is

laid down in Council Regulation (EEC) No 95/93 on common rules for the allocation of slots at Community airports, OJ L 14, 22.1.1993, including the relevant amendments (further in this text called the airport slot regulation).

Article 14(1) of the airport slot regulation foresees the possibility for Member States to reject flight plans in case they intend to operate 'without having a slot allocated by the Coordinator'. Prior to operating a flight, during the process of flight plan issuance, airport slots are not normally taken into account in ATM. This means, planning in this particular area is not verified towards operations. As this is not the case, rejections of flight plans are not taking place today at NM level. For a number of special events manual suspensions have been performed on request of Member States.

Usually, violations on airport slots are investigated and followed up post operationally by the Airport Coordinators, and Member States have put in place the possibility of applying financial penalties; but the variety of application is wide and not consistent. Another possibility to follow up violations is to withdraw historic rights on series of airport slots or individual airport slots.

However, today, in terms of airport slot management, planning is not meeting operations, the necessary link is missing.

4.5.2 Future evolution

The development and implementation of the FAS in combination with the IFPS and the NM functions, as described in chapter 2, offer the possibility to overcome the missing link outlined in section 4.5.1. It provides the possibility to execute flight plan rejections if this would be required and mandated by the Member States. It would be desirable, that all EUROCONTROL Member States apply the same harmonised processes, which should support the acceptance by airspace users and unlock the full benefits at network level as well as at local airport level. It will also provide for the full benefits in terms of delay avoidance that the Airspace Users can expect.

For achieving this, the following sub-sections are provided for consideration to better tailor the FAS to the needs of the Stakeholders and the Network performance. These are no prerequisites to start operating the service as described in chapter 2.

4.5.2.1 No-APSL operations

Airports are only designated as coordinated airports in case the demand exceeds the available capacity, at least during certain times on the day or during the year (seasonal). Therefore, flights that do not obtain a valid APSL where there is one required should not operate from/to those airports in order to prevent over-demand at times where the capacity is saturated. In most cases such flights will create the need for implementing ATFCM that will negatively affect all flights to that airport for a given time, even those who operate with and in accordance to their APSL. Such flights will have to accept delay, in coordination with the relevant Airport Coordinators and operate at times where capacity allows.

In order to allow for the full operational benefits in the network to materialise it would be desirable to implement a harmonised rule on rejecting flight plans that have no valid airport slot in order to maintain a high level of predictability of traffic as well as to avoid over-demand and consequent delay for airspace users.

The European Member States Regulation (EEC) 95/93 requires Airspace Users to obtain a valid APSL for coordinated airports. It is the intention of this CONOPS that all EUROCONTROL Member States support the application of such a harmonised rule throughout all EUROCONTROL Member States to prevent flights from arriving at such times that would create over demand by arriving at such airports unplanned. The Regulation also provides for the possibility for a Member State to exercise its right of rejecting such flight

plans, which can be executed through identifying the missing APSL by the FAS and rejecting the FPL through the IFPS as a Network Manager task.

The process of rejecting FPLs is a common operational procedure already in place in the IFPS for several parameters in the FPL in case an inconsistency is identified (like e.g. a formatting error). The consequent actions do not differ from established processes. This means, the FPL originator receives the rejection message with the reason for rejection and takes action to rectify the mismatch and re-files the FPL.

It is not the intention of the FAS to hinder or prevent the operation of flights but rather to enhance reliability and predictability of the ATM Network. The ultimate negative consequence for a single flight could be that the flight without an APSL would be delayed until a time where an APSL is available. This would negatively impact one single flight but not all other flights operating in accordance with the defined rules.

4.5.2.2 Off-APSL operations

Identifying the reasons for off-APSL operations is much more complex as in many cases the operations off-APSL might be caused for reasons that are not within the responsibility or control of the Airspace User. This may be due to reactionary delay from previous flights, unforeseen technical reasons or ATFM measures in other areas as e.g. en-route sectors.

However, there are also cases where operators have accepted an APSL for times that they did not intend to operate and therefore, arrive regularly at times when they are not expected, creating over-demand with negative impact to other Airspace Users and airport throughput. Since the identification of whether an AO operates outside the defined APSL tolerance intentionally or unintentionally is complex, this service can only be offered in close cooperation with the relevant Airport Coordinator. This may lead to the need for a 24/7 service provision of such Coordinators.

However, based on the initial (first) flight plan filed an indication on the intention of the flight operations is given. In case the FAS identifies a deviation from the allocated APSL time (including the defined tolerance) the FAS will trigger a warning message being issued through the IFPS.

In such cases where a Member State wants to exercise its right to reject a flight plan that deviates from its allocated APSL, the Member State can mandate EUROCONTROL to execute the rejection through the IFPS based on the trigger message from the FAS.

4.5.2.3 Harmonised Unique Airport Slot Identifier (APSL-ID)

4.5.2.3.1 Problem Statement

Today, the NM is using APSL data to enrich traffic forecast and prediction of expected sector occupancy, which is provided to ANSPs. The same data is also used for post-operational performance analysis within the NM and also made available for Coordinators.

To fully unlock the benefits of the service it would be necessary to identify the right APSL for the FPL. One draw-back in this process today is that APSL are allocated based on the IATA global scheduling system and consequently on IATA flight numbers, whereas the FPL system is based on ICAO call-signs. Further, GA/BA traffic often does not have an IATA flight number and are using their registration for issuing a FPL.

Airports have as well an IATA three-letter code being used for the APSL allocation as an ICAO four-letter code being used in the FPL. An additional layer of complexity is introduced through code-shared flights, which make it difficult to match the right APSL with the correct flight.

This leads to a situation that for matching FPL with APSL a number of matching tables have to be created and maintained, which is prone to errors and resource intensive.

Another solution to match FPL with APSL is the use of algorithms that take FPD information and making the 'best guess' on correctness based on weighting criteria. This or a combination of both methods will be used for the proposed FAS.

Both methods cannot achieve a 100% identification quality; the average, based on experience is at 97% identification. This leaves 3% of FPL that require manual intervention and thus creating potential delay in the FPL handling process within IFPS as well as the need for a significant number of resources.

4.5.2.3.2 Possible solution

A harmonised unique APSL-ID would be introduced and would become a mandatory part of the FPL for flights operating to/from coordinated airports. As the creation of a dedicated field for APSL in the FPL is a lengthy process that requires global (ICAO) consultation and agreement, an intermediate solution would be to use the remark sub-field in FPL field 18.

A harmonised unique APSL-ID will ensure that, despite the amount of information already inserted in this FPL field 18 today, the APSL can be identified automatically as it is a unified code that is machine readable.

The proposed solution is that NM develops, as part of the FAS / an evolution of the FAS presented in section 2, such a harmonised unique APSL-ID in close cooperation with the Airport Coordinators through their European association (EUACA) as this affects their local systems and allocation process. NM would organise the necessary coordination with the Member States and the European Commission to ensure the appropriate regulatory provisions. NM would further ensure that all EUROCONTROL Member States will be consulted accordingly as to promote the described solution.

ANNEX 1 – Information flows

A1.1 Operational process

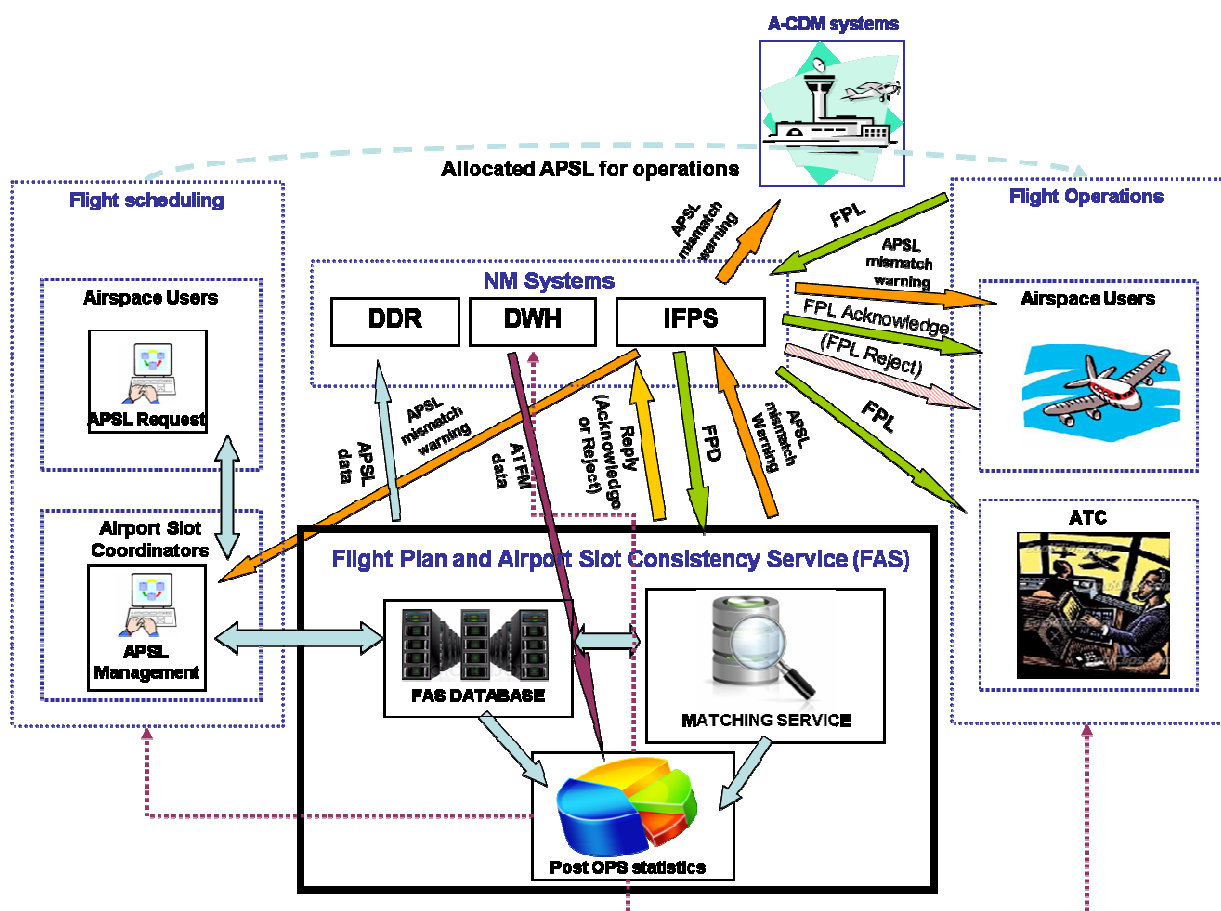


Figure 2: Operational process

A1.2 Technical process

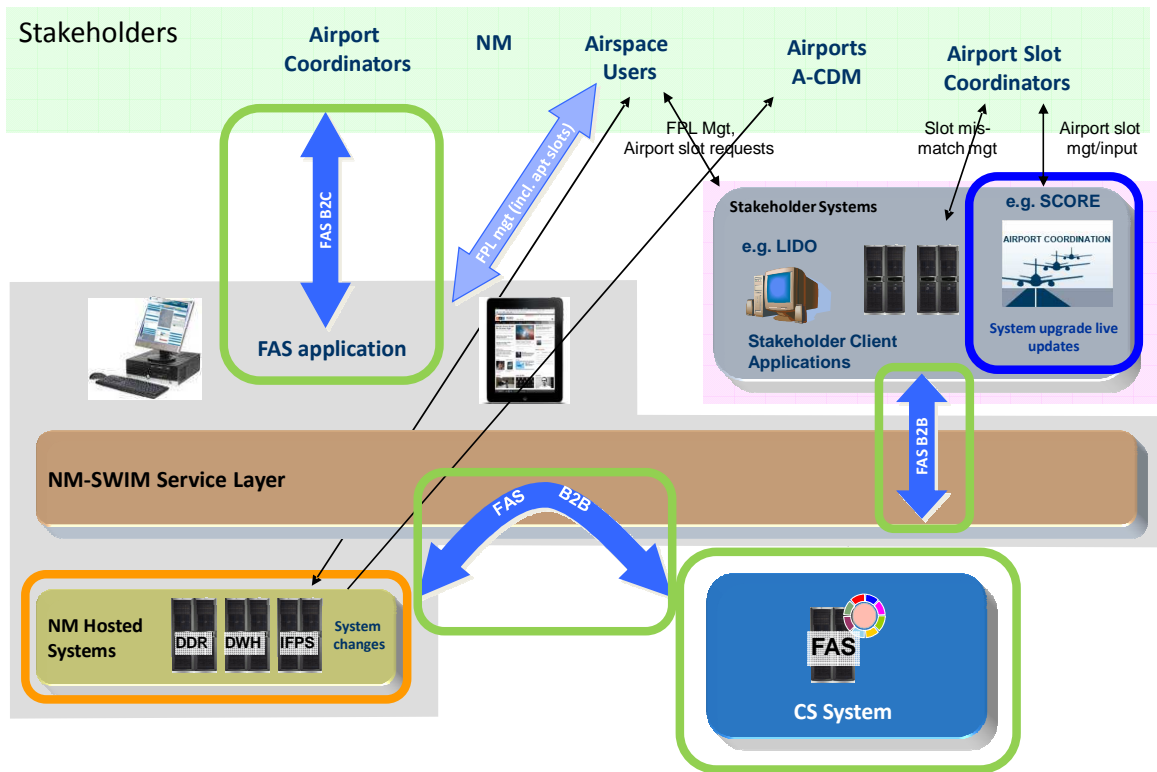


Figure 3: Technical process

- = FAS development
- = NM development / upgrade
- = Airport Coordinator development / upgrade

ANNEX 2 – Data set

A2.1 *TBD*

Will be elaborated as part of the Call-for-Tenders

ANNEX 3 – EUROCONTROL Proposal for a first set of Centralised Services

ANNEX 4 – Brief description of the Centralised Services

ANNEX 5 – Minutes of the 29 April 2013 Airspace Users CS workshop

ANNEX 6 – Minutes of the 4 March 2013 Member States CS workshop

ANNEX 7 – Minutes of the 24 April 2013 ANSPs CS workshop

ANNEX 8 – Minutes of the 17 May Manufacturing Industry CS workshop

ANNEX 9 – Working papers, slides and extract from the Minutes of PC/39, 16 May 2013

ANNEX 10 – Working papers, slides and extract from the Minutes of PCC/31, 2 July 2013

ANNEX 11 – Slides and Minutes of the CS#1 specific workshop 04th July 2013

ANNEX 12 – EUROCONTROL Member States and airport coordination levels

These annexes are provided in a separate file

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9. Communication from the Commission of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions:” Airport policy in the European Union – addressing capacity and quality to promote growth, connectivity and sustainable mobility – COM (2011) 823 Final of 1.12.2011
10. Decision of the EUROCONTROL permanent Commission No.....ofDecember 2013 (*to be completed when the Decision will be adopted*)
11. Challenges of Growth Study 2013: <http://www.eurocontrol.int/articles/challenges-growth>

GLOSSARY

Term	Description
Operator	Airspace User / Airline Operator / Aircraft Operator
Airport Coordinator	Airport (Slot) Coordinator

ABBREVIATIONS

Abbreviation	Description
AAB	Agency Advisory Body
AO	Airline Operator
APSL	Airport Slot
APSL-ID	Airport Slot Identifier
ANS	Air Navigation Service
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATFCM	Air Traffic Flow Control Measure
ATM	Air Traffic Management
B2B	Business to Business
B2C	Business to Customer
CIMIC	Civil-Military Coordination
CoG	Challenges of Growth
COM	Communication (of the European Commission)
CONOPS	Concept of Operations
CS	Centralised Service
EC	European Commission
EU	European Union

EUACA	European Airport Coordinators Association
EOBT	Estimated Off-Block Time
FAS	Flight Plan and Airport Slot Consistency Service
FPD	Flight Plan Data
FPL	Flight Plan
GA/BA	General Aviation / Business Aviation
IACA	International Air Carrier Association
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICB	Industry Consultation Body
IFPS	Integrated Initial Flight Planning System
MAB	Military Advisory Board
NMB	Network Manager Board
NM	Network Manager
NMOC	Network Manager Operations Centre
OJ	Official Journal (of the European Union)
SSC	Single Sky Committee