Technical Specification Step 1 and Step 2 for FOC system (including IRS requirements)

Document information	
Project Title	System Specification and Architecture
Project Number	11.01.03
Project Manager	Lufthansa Systems GmbH & Co. KG
Deliverable Name	Technical Specification Step 1 and Step 2 for FOC system (including IRS requirements)
Deliverable ID	D24
Edition	02.00.00
Template Version	03.00.00
Task contributors	
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Abstract

This document contains the Step 1 and Step 2 system requirements for enhanced FOC functions, which have been derived from the operational requirements provided by P11.01.02 in its Step 1 and Step 2 OSED. The requirements presented herein were developed to support the software prototypes produced in P11.01.04 that allowed the validation of the operational concepts and requirements defined by P11.01.02. The traceability between the system requirements and the operational ones is included in the requirement tables of this technical specification. This specification may be used by Flight Planning Service Providers for the adaptation of their FOC systems and it can also be used by Airlines for the further development of their flight planning tools.

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5

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6

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7

Rational for rejection
None.

8

Document History

Edition	Date	Status	Author	Justification
00.00.01	13/05/2016	Draft	Max Hoffmann	New document
00.00.02	21/06/2016	Draft	Max Hoffmann, Marcus Hantschke, Thomas Eschenhagen	Consolidation of requirements previous WP11.1 Technical Specifications, review of requirements by Lufthansa Systems
00.00.03	13/07/2016	Draft	Olaf Belzer	Content from Sabre Airlines Solutions available
00.00.04	25/07/2016	Draft	Matej Papp	Content from Honeywell available
00.00.05	10/08/2016	Draft	Max Hoffmann,	Work on Chapters 1, 2, 4, 5,

			Marcus Hantschke	and the Appendices
00.00.06	11/08/2016	Draft	Max Hoffmann, Marcus Hantschke, Olaf Belzer, Matej Papp	Internal workshop
00.01.00	18/08/2016	Final Draft, ready for external review	Max Hoffmann, Marcus Hantschke, Thomas Eschenhagen, Olaf Belzer, Matej Papp	Completion of final draft document (Completion of all chapters, Completion of requirement traces, Completion of delete reasons, Incorporation of final comments from Sabre Airline Solutions and Honeywell)
00.01.01	01/09/2016	Final Draft including changes from external review	Max Hoffmann, Marcus Hantschke	Changes resulting from the external review have been incorporated, general improvements on the text, Version made available to reviewers for crosscheck
00.01.02	02/09/2016	Final Draft including changes from external review	Max Hoffmann, Marcus Hantschke	Final changes after proof-reading
01.00.00	02/09/2016	Final Document	Urban Weisshaar	Preparation for SJU upload
02.00.00	11/10/2016	Final Document	Max Hoffmann, Urban Weisshaar	Resubmission after SJU assessment

9 Intellectual Property Rights (foreground)

10 This deliverable consists of SJU foreground.

Table of Contents

129

List of tables

List of figures

Executive summary

This document contains the Step 1 and Step 2 system requirements for enhanced FOC functions, which have been derived from the operational requirements provided by P11.01.02 in its Step 1 and Step 2 OSED.

The document does not constitute an update to an older WP11.01.03 Technical Specification document, but is designed as an all-new document. It does take into account the content of the Technical Specification documents that have been produced throughout the course of SESAR 1 in WP11.01.03, however, for the purpose of this document all content has been completely reviewed and amended if necessary. The technical requirements presented herein were developed to support the software prototypes produced in P11.01.04 that allowed the validation of the operational concepts and requirements defined by P11.01.02.

The main topics covered by the technical requirements are Trajectory Management, Free Route, Advanced Flexible Use of Airspace (AFUA), User Driven Prioritization Process (UDPP), Extended Flight Plan (EFPL), Aeronautical Information Management (AIM), and Meteorology. An allocation of the requirements to the topics is provided in the document.

This specification may be used by Flight Planning Service Providers for the adaptation of their FOC systems and it can also be used by Airlines for the further development of their flight planning tools. It is supporting SESAR solutions #31 (Advanced Flexible Use of Airspace), #33 (Free Routing), #37 (Extended Flight Plan), and #57 (User Driven Prioritization Process). It shall also serve as a reference document in SESAR 2020, providing the complete list of technical requirements for the FOC identified in SESAR 1

1 Introduction

1.1 Purpose of the document

The purpose of this document is to provide the technical specification and interface requirements (TS/IRS) for the FOC functions.

The business trajectory base approach within SESAR expresses the specific intentions of Airspace Users. Project P11.01.03 is describing the adaptation and developments of technical means supporting the 4D business trajectory management. P11.01.03 is responsible for the design of the FOC system, from business objectives to systems requirements, fully compliant with the SESAR performance target, but is also responsible to ensure that the design of FOC system meets stakeholder needs and that system elements are developed accordingly. This document describes the translation of the operational requirements into system requirements for Step 1 and Step 2 as available. The document includes consequently the translation of the operational and business requirements for an FOC from P11.01.02 into system requirements and specifications for the FOC. This specification may be used by Flight Planning Service Providers for the adaptation of their FOC systems. This specification can also be used by Airlines for the further development of their flight planning tools.

All requirements, scenarios and use cases in this document are in accordance with the operational scenarios and requirements described in the WP11.01 Step 1 and Step 2 as available OSED [29][2] and have been designed taking into account the description of the Technical Architecture in the WP11.01 FOC Step 1 and Step 2 TAD [7] (see also Figure 1). The requirements presented herein have been developed to support the software prototypes produced in P11.01.04 that allowed the validation of the operational concepts and requirements defined by P11.01.02. For all requirements and traces, Dataset 16 has been used as the reference.

The system requirements of the FOC within this document consider in addition the topics of accuracy, safety, interoperability and conformity to standards.

Concluding, this technical specification defines the reference for system requirements of the FOC as a blue print for the development of future FOC. This specification should be used by Flight Planning Service Providers and airlines for the development of their enhanced FOC tools. The specification is prototype and release neutral.

[2] At the time of writing, no mature draft of the WP11.01 Step 1 and Step 2 (as available) INTEROP [30] was available. Therefore, this document could not serve as a reference for this TS document.

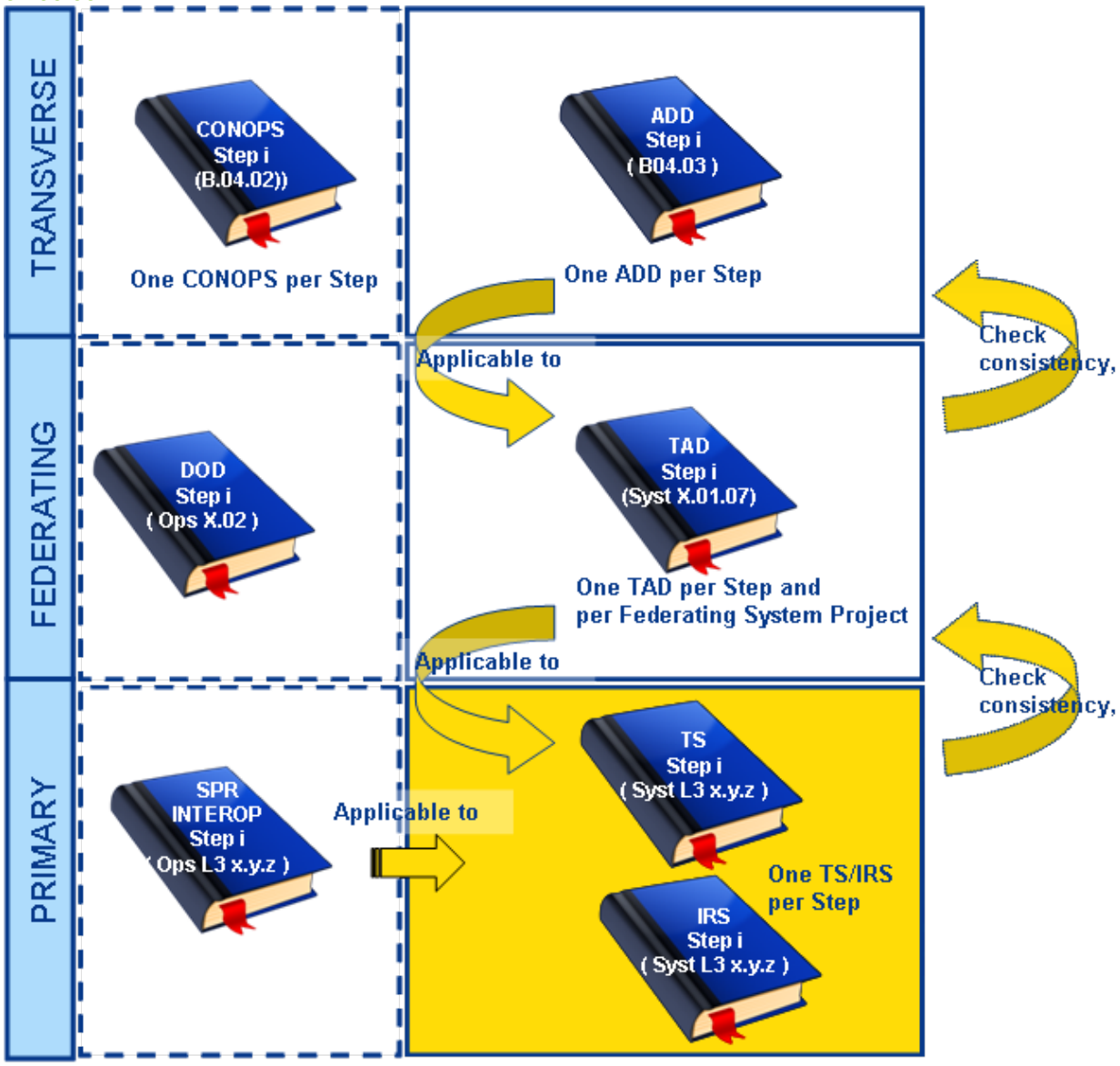

Figure 1: TS document with regards to the other SESAR deliverables

1.2 Intended readership

The intended readership includes:

- **P04.03**: Project that takes care about pre-operational validation across different concepts/ elements of En Route operating context. As concepts like Free Route are discussed in this document, this project might be interested in reading this document.
- **P04.05**: Operational project dealing with the definition of the business and mission trajectory within the En Route environment, which can provide additional operational inputs/needs to the FOC system functions in particular for the extended flight plan.
- **SWP05.05**: Operational project dealing with the needs relating to trajectory management, specifically the creation, amendment, distribution of the business trajectory and mission trajectory. The FOC related requirements are of importance here, therefore, this document if of interest to SWP05.05.

- **05.06.02**: Operational project dealing with the optimization of the vertical profile (departure/ arrival) under consideration of practices and limitations of ATC controllers and flight crews.
- **SWP07.02**: responsible for the ops/technical coordination in WP07 (Network Operations). As the AU with its FOC is one important stakeholder influencing network operations, the content of this Technical Specification is of interest to this project.
- **P07.05.04:** dealing with the flexible airspace management and airspace design. As the FOC related requirements of the AFUA concept as well as Free Route aspects are described in this TS document, members of this project might be interested in this document.
- **P07.06.02**: Operational project dealing with the support (by NM) of airspace user to allow them to operate their flights in an optimum way. In order to achieve this, many concepts described in here play an important part and, therefore, this document is of interest to this project.
- **SWP08.03**: Project dealing with the development and building of the service view by defining the logical shared information services and specifying the information (service) models. As the FOC requirements are satisfying several services, members of SWP08.03 might be interested in reading this document
- **P09.01**: System project implementing Initial 4D concept in aircraft which can be supported by time constraints and weather uplinks from FOC system. As the FOC side of the 4D concept is presented in this TS, the content should be taken into account by P09.01 in order to ensure that the AU FOC and the aircraft systems can work together seamlessly.
- **P13.02.02**: This project focuses on digital NOTAM and digital pilot briefing. As in this TS document the requirements for the FOC to handle this are detailed, the document is of interest to this project.
- **P14.02.09**: Project in charge of the realisation of the SWIM test platform. The descriptions given in this document should be used to deduce requirements for the SWIM environment. Furthermore this project might review web services that were developed in the course of this project.
- **P16.06.xx**: Projects dealing with safety, security, resilience, robustness and performance of technical and operational solutions within SESAR. This document is of interest to these projects in order to deduce input for the definition of respective requirements and to review the setup of the proposed system in regard to the aspects covered by the P16.06.xx projects.
- **PB04.03**: the members of the SESAR Technical Architecture project to check that content presented in line with the system decomposition/architecture.

Also all members of projects contributing to the following Enabling Areas and Operational Focus Areas might have an interest in reading this document:

- **ENB02.01.02** AIM/MET
- **ENB03.01.01 TMF** Trajectory Management Framework
- **OFA03.01.03** Free Routing
- **OFA03.01.04** Business and Mission Trajectory
- **OFA05.03.01** Airspace Management and AFUA
- **OFA05.03.06** UDPP

Naturally, the contents of this document may also be useful for any project, which is affected by the 4D Trajectory Management within SESAR and with its connected system developments. Also with regard to SESAR 2020 this document can provide beneficial input to many projects.

Finally, this document might be interesting for Aircraft Manufacturers, Original Equipment Manufacturers (OEM), and Aircraft Equipment Manufacturers, as well as regulators and standardization bodies, such as for example EUROCAE WG76 dealing with AIS/MET Datalink Applications.

1.3 Inputs from other projects

The following inputs have been considered while writing this system specification (ordered by project number):

- For a correct writing of all requirements, this document has taken into account the guidelines provided by the SJU [1][2][3][5][6].
- PB.04.02 - D106 - Transition ConOps SESAR 2020 – Consolidated deliverable with contribution from Operational Federating Projects [8]
- PB.04.03 - D98 - Architecture of the Technical Systems Description Document SESAR 2020 Transition edition [9]
- P04.07.02 - D37 - Free Route Operational Service and Environment Definition (OSED) for Step 1 – Iteration 2 [10]
- P04.07.02 - D63 - Free Route Safety and Performance Requirements (SPR) for Step 1 [11]
- P07.06.02 - D45 - Step 1 Business trajectory OSED 2015 update [12]
- P07.06.02 - D74 - User Driven Prioritisation Process (UDPP) Step 2 V2 Interim OSED [13]
- P09.01 - D01 - Aircraft and System Performance and Functional requirements -step 1 (WA1) [14]
- P09.48 - D05 - Validation Report for AIS/MET Services and Data distribution [15]
- P09.48 - D08 - Functional Requirement Document on AIS/MET Services and Data Distribution [16]
- P09.48 - D09 - High Level Architecture Document [17]
- P13.02.02 - D118 - OSED - Digital Integrated Briefing (the project is part of an AIM dedicated OFA focusing on digital NOTAM and digital pilot briefing) [18]

Furthermore, the following documents internal to WP11.1 have been used as reference, source or higher-level document:

- P11.01.03 - D01 - Step 1 Use Cases and System requirements for FOC system [19]
- P11.01.03 - D07 - BMT (FOC) Step 2 Technical Specification [20]
- P11.01.03 - D10 - EFPL (FOC) Step 1 Technical Specification [21]
- P11.01.03 - D13 - FR (FOC) Step 1 Technical Specification [22]
- P11.01.03 - D06 - AFUA (FOC) Step 1 Technical Specification [23]
- P11.01.03 - D21 - TS Step1 and Step 2 as available for FOC system Sabre [25]
- P11.01.03 - D21 - TS Step1 and Step 2 as available for FOC system Honeywell [26]
- P11.01.03 - D19 - Civil AU Operations Centre Technical Architecture Description (TAD) [7]
- P11.01.01 - D01 - DOD – Definition of trajectory requirements for Step 1 [28]

- P11.01.02 - D08 - FOC Operational Service and Environment Definition (OSED) Step 1 and Step 2, as available [29]

- P11.01.02 - D08 - FOC Interoperability Requirements (INTEROP) Step 1 and Step 2, as available [30]

- P11.01.02 - D01 - FOC Safety and Performance Requirements (SPR) Step 1 [31]

The requirements from the WUF (Weather Uplink FMS) TS [24] are not included in this document as Honeywell has agreed with SJU that no further deliverables are required, therefore, the WUF TS is considered by Honeywell as not being a subject of the overall common TS consolidation. Furthermore, the interface requirements for AIM also remain in a separate IRS document produced by Honeywell [27].

1.4 Structure of the document

The document is organised as followed:

- *Chapter 1* introduces the document. It defines the purpose and scope of the document and identifies its intended audience. It also provides a list of acronyms and terminology;

- *Chapter 2* provides a general description of the functional blocks;

- *Chapter 3* includes all system requirements, sorted by requirement type and sub-sorted by functional block affiliation;

- *Chapter 4* lists the assumptions considered while writing this document;

- *Chapter 5* lists the references and applicable documents.

- *Appendix A* provides an allocation of the requirements to the different topics

- *Appendix B* lists all requirements from the source documents that have been set to status “deleted”

- *Appendix C* lists all requirements that were already set to status “deleted” in the source documents

1.5 Requirements Definitions – General Guidance

With regard to the definition of the requirements, the following points are of importance:

As throughout the run time of WP11.1.3 multiple Technical Specifications have been produced (see Section 1.3), the requirements identifiers are strongly differing from each other as different numbering schemes have been used. In order to have a unified numbering scheme in this document, it was decided to adopt a new scheme as will be detailed below. In order to have a clean final requirement structure, the original requirements were set to status “deleted” in Appendix B with the delete reason “change of identifier (now REQ-11.01.03-TS-****.****)”. An identical requirement has then instead been added to Chapter 3 with the identifier. In some cases, a slight rewording of the requirements has been performed in this process in order to have a harmonized requirement formulation for different topics. In that cases the deletion reason “change of identifier (now REQ-11.01.03-TS-****.****) / wording harmonized” has been given in Appendix B.

The status of a requirement has been set to “validated” only if V3 maturity was reached in an exercise from WP11.1 point of view. Otherwise, the status of a requirement remains “in progress”.

The field validation method of a requirement was completed the following way: If the requirement has been successfully validated, then the validation method used for the V3 exercise is used. If a requirement is still “in progress”, then the validation method has been added that is expected to be used for achieving V3 maturity.

All “REQ Trace” tables of the requirement have been completed with information from affected Functional blocks and Enablers as well as Operational Focus Areas. As this Technical Specification has been produced in parallel to the WP11.01 Step 1 and Step 2 (as available) OSED [29] and before a mature draft of the WP11.01 Step 1 and Step 2 (as available) INTEROP [30] was available, the requirements were traced to the OSED instead of the INTEROP.

Requirements are numbered according to the following template:

REQ-11.01.03-TS-**nnoo.pqqq**

Where:

1. **‘nn’** identifies the SESAR Step.

   Table 1 gives an overview in regard to this 2 digit **nn** code.

nn	SESAR Step
S1	SESAR Step 1
S2	SESAR Step 2
S3	SESAR Step 3

Table 1: Requirement identifier – SESAR Step allocation

2. **‘oo’** identifies the source document of the requirement.

   Table 2 shows a list of all source documents together with their **oo** identifier.

oo	Source Document
TS	Step 1 Use Cases and System requirements for FOC system [7]
BT	BMT (FOC) Step 2 Technical Specification [18]
EF	EFPL - EFPL (FOC) Step 1 Technical Specification [21]
FR	FR (FOC) Step 1 Technical Specification [22]
AF	AFUA (FOC) Step 1 Technical Specification [23]
ST	TS Step1 and Step 2 as available for FOC system Sabre [25]
HT	TS Step1 and Step 2 as available for FOC system Honeywell [26]
NR	New requirement defined in this TS document

Table 2: Requirement identifier – Source document

3. **'p'** identifies the functional block that shall be described by the used requirements. Furthermore these digits refer to requirements that are non-functional as performance and safety requirements.

Table 3 provides the mapping of the value of **p** to the Functional Block.

p	Functional Block
1	Flight Management
2	Operations Management
3	Decision Support Management
4	Data Management
5	Communication Management
6	Flight Deck Management

Table 3: Requirement identifier – Functional Block allocation

4. **'qqq'** is a unique number identifying the single requirements. This numbering is started individually for each **'nnoo.p***'** combination. The counting interval is 5 (five).

1.6 Functional block Purpose

In order to have one comprehensive document (and in line with previous WP11.1 Technical Specifications), we decided on not producing one Technical Specification per Functional Block but to write one TS document including all Functional Blocks of the FOC operation. This way it is easier to show dependencies and interactions. Furthermore, this document can serve as a single general reference, summarizing all FOC requirements arising from SESAR1 based on the complete work experience from WP11.1.

Compared to the previous version of this document [7], a new set of functional blocks has been used that was first introduced in the SESAR2020 transition edition of the ADD [9]. In there, the FOC operation has been divided into the following new functional blocks, which cover specific areas of activity:

- Flight Management
- Operations Management
- Decision Support Management
- Data Management
- Communication Management
- Flight Deck Management

The functional blocks are highly dependent on each other and their interaction is not only necessary but a precondition to achieve a safe and smooth flight operation. Taken together, they reflect the entire FOC system.

To facilitate in getting an overview of how the functional blocks are involved in the procedural and technical process and how they interact, the functional blocks will be further decomposed into functions (as outlined in chapter 2.6.1 and 2.6.2).

The following sections will provide you with information about each functional block involved in the Business Trajectory Management, viewed from the FOC system point of view.

1.7 Functional block Overview

1.7.1 Flight Management

Flight Management covers all activities within the FOC system that deal with a particular flight. The activities are executed in the short-term planning and the execution phases of the flight. There are three main functions in this Functional Block. First, Flight and Trajectory Planning, that groups all functionalities that are related to the generation and exchange of the flight and trajectory data. Second, Flight monitoring, monitors both, the data domains considered during the generation of the trajectory and the trajectory adherence throughout the execution of the flight. Third, the Flight Deck Support, supporting the flight crew in all phases of flight. The main users of the functions within this Functional Block are in the flight dispatch department of the AU.

1.7.2 Operations Management

Operations Management covers all activities within the FOC system that deal with the whole set of flights operated by the AU. The activities cover the medium- and short-term planning as well as the execution phases of the flights. The three main functions are Flight Schedule Management (supporting the medium- and short-term planning of the flight leg sequence), Operations Control (focussing on ensuring legal compliance and safe conduct of the flight operations during the management of the flight leg sequence on the day of operations, also included is UDPP), and Workload Management of all users of the FOC system (includes for instance capabilities for task assignment, workload monitoring, and support for workload balancing). The main users of the functions within this Functional Block are in the operations control department of the AU.

1.7.3 Decision Support Management

This Functional Block supports the users of the FOC in the decision making process. The two main functions are the CDM support and the impact assessment. The CDM support is responsible for supporting CDM processes, both external (between other ATM actors and the FOC) and internal (between different users and functions of the FOC). The impact assessment supports what-if functionalities, providing means to analyse which part of the operation and to what extent it is affected. The users of these functions are either users of the other Functional Blocks of the FOC or specialised staff trained for the handling of complex situations.

1.7.4 Data Management

Data Management contains the functions for the retrieval, processing, and storage of all data required in the other Functional Blocks. This includes data provided by AIS or weather providers as well as internal AU's data. Moreover functions are provided to access the data as well as functions that allow a notification of human and system users about new, changed, or deleted data. The main users of the functions within this Functional Block work in the AU's back office department. But all users within the FOC might use functions of this Functional Block to access the processed data.

1.7.5 Communication Management

Communication Management provides the technical means for the communication with the flight crew and the aircraft, with the other ATM actors, and with other external data and service providers. Moreover it provides the means for the communication if the FOC acts as data or service provider. The main functions are Ground/Ground (G/G) communications, Air/Ground (A/G) Communication and SWIM TI, the SWIM-related technical infrastructure. The FOC system can have the capability to keep the electronic content of the portable devices of the flight crews (used instead of paper-based flight bags) updated. The provided technical means are used by the other Functional Blocks when needed during the realization of their functions. The main users are technical officers responsible for management and operation of the technical means.

1.7.6 Flight Deck Management

Flight Deck Management covers all activities executed by the flight deck crew during the preparation, execution, and wrap-up of a particular flight. These activities belong to the tasks that the flight deck crew has to conduct by order of the Airspace User. They complement the activities of the flight deck crew related to the control of the aircraft.

1.8 Glossary of terms

All terms have been defined in either one of the source documents [18][21][22][23][24][25][26][27] or one of the documents referenced therein. Furthermore, the WP11.1 OSED [29] can be used as a reference.

1.9 Acronyms and Terminology

Term	Definition
4D	Four Dimensional
4DT	Four Dimensional Trajectory
A/G	Air-Ground
A/C	Aircraft
AA2A	ATC Area to Avoid
ACARS	Airline Communication and Reporting System
A-CDM	Airport Collaborative Decision Making
ACK	Acknowledgement message
ADD	Architecture Definition Document
ADEP	Aerodrome of Departure
ADES	Aerodrome of Destination
AFUA	Advanced Flexible Use of Airspace
AIBT	Actual In Block Time
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIREP	Aircraft Report
AIS	Aeronautical Information Services
AIXM	Aeronautical Information Exchange Model
ALDT	Actual Landing Time

Term	Definition
AMAN	Arrival Manager
AMDAR	Aircraft Meteorological Data Relay
ANSP	Air Navigation Service Provider
AO	Aircraft Operators
AOBT	Actual Off Block Time
AP / APT	Airport
APOC	Airport Operations Centre
ARES	Airspace Reservation/Restriction
ARINC	Aeronautical Radio Incorporated
ARO	Aerodrome Reporting Office (ICAO acronym)
ASM	Airspace Management
ATCO	Air Traffic Controller
ATC	Air Traffic Control
ATFCM	Air Traffic Flow & Capacity Management
ATFM	Air Traffic Flow Management
ATIS	Automatic Terminal Information Service
ATM	Air Traffic Management
ATMS	Air Traffic Management System
ATOT	Actual Take Off Time
ATSU	Air Traffic Services Unit
AU	Airspace User
AUP	Airspace Use Plan
BGA	Business and General Aviation
BIRDTAM	Bird Notice to Airmen
BMT	Business/Mission Trajectory
B2B	Business to Business (B2B)
BT	Business Trajectory

Term	Definition
CCS	Capacity Constraint Scenario
CDM	Collaborative Decision Making
CHG	FPL Change message
CI	Confidence Index
COTS	Commercial-off-the-shelf
CPDLC	Controller-Pilot Data Link Communications
CTA	Controlled Time of Arrival
CTO	Controlled Time Over
CTOT	Calculated Take-off Time
D-ATIS	Digital Air Traffic Information Service
DCB	Demand Capacity Balancing
D-NOTAM	Digital NOTAM
D-MET	Digital Meteorological Information
D-METAR	Digital METAR
D-TAF	Digital TAF
DCT	Direct
DMA	Dynamic Mobile Area
D-MET	Digital Meteorological Information
D-NOTAM	Digital NOTAM
DOC	Direct Operating Cost
DOD	Detailed Operational Description
DOF	Day of Flight
DRA	Direct Routing Airspace
D-VOLMET	Digital Meteorological Information for Aircraft in Flight
E-ATMS	European Air Traffic Management System
EAUP	European Airspace Use Plan
ECAC	European Civil Aviation Conference

Term	Definition
ECHG	Modification message of the Extended FPL
ECNL	Extended CNL (Cancel) message
EDLA	Extended DLA (Delay) message
EFB	Electronic Flight Bag
EFPL	Extended Flight Plan
EFPM	Extended Flight Plan Message
EIBT	Estimated In Block Time
EID	Electronic Information Device
ENB	Enabler
EOBT	Estimated off-block time
ERNIP	European Route Network Improvement Plan
ETA	Estimated Time of Arrival
EUROCAE	European Organisation for Civil Aviation Equipment
EUUP	European Updated Airspace Use Plan
FAA	Federal Aviation Authority
FAB	Functional Airspace Block
FB	Functional Block
FC	Flight Crew
FCT	Function
FDA	Fleet Delay Apportionment
FF-ICE	Flight and Flow Information in a Collaborative Environment
FIBT	Forecasted In Block Time
FIXM	Flight Information eXchange Model
FIXM 4D	FIXM 4D Flight Plan Message
FL	Flight Level
FMS	Flight Management System
FOBT	Forecasted Off Block Time

Term	Definition
FOC	Flight Operations Centre
FOC-FM	Functional Block FOC Flight Management
FOC-OM	Functional Block FOC Operations Management
FOC-DSM	Functional Block FOC Decision Support Management
FOC-DM	Functional Block FOC Data Management
FOC-CM	Functional Block FOC Communication Management
FOC-FDM	Functional Block FOC Flight Deck Management
FPL	Flight Plan
FSPD	Flight Specific Performance Data
GAMET	General Aviation Meteorological Information
GAT	General Aviation Traffic
GUFI	Global Unique Flight Identifier
HSPT	HOT SPOT
IBT	In-Block Time
ICAO	International Civil Aviation Organization
ICAO FIXM	ICAO flight plan in FIXM format
ICAO FPL	ICAO flight plan
ICAO XML	ICAO flight plan in Eurocontrol XML format
ICAO TXT	ICAO flight plan in text format
ID	Identifier
IEI	Imbedded Element Identifier
IER	Information Exchange Requirements
IFPS	Initial Flight Plan Processing System
INTEROP	Interoperability Requirements
iRBT	Initial Reference Business Trajectory
IRS	Interface Requirements Specification
iSBT	Initial Shared Business Trajectory

Term	Definition
ISRM	Information Service Reference Model
ITCZ	Intertropical Convergence Zone
i4D	Initial 4D trajectory
KPA	Key Performance Area
KPI	Key Performance Indicator
Lat	Latitude
LOA	Letter of Agreement
Long	Longitude
LROPS	Long Range Operations
MCDU	Multifunction Control Display Unit
MEL/CDL	Minimum Equipment List / Configuration Deviation List
METAR	Meteorological Aviation Routine Weather Report
NM	Network Manager
NMF	Network Manager Function
NMOC	Network Manager Operations Centre
NOP	Network Operations Plan
NOTAM	Notice to Airman
NPR	Nominal Preferred Route
OBJ	Objective
OBT	Off Block Time
OC	Operating Credit
OEM	Original Equipment Manufacturer
OFA	Operational Focus Area
OFP	Operational Flight Plan
OI	In the context of this TS: Operating Index
OIS	On Board Information Service
OR	Operational Requirements

Term	Definition
OSED	Operational Service and Environment Definition
PANS	Procedures of Air Navigation Services
PANS-ATM	Procedures of Air Navigation Services – Air Traffic Management
PCS	Process
PDS	Pre-Departure Sequence
PIB	Pre-flight Information Bulletin
PIBT	Published In Block Time
POBT	Published Off Block Time
PTR	Profile Tuning Restrictions
PWI	Predicted Wind Information Message
RAD	Route Availability Document
RBT	Reference Business Trajectory
REJ	Reject Message
REQPWI	Request for Predicted Wind Information Message
RMAN	Runways Manager (first Airport process to organise departure)
RNP	Required Navigation Performance
RPAS	Remotely Piloted Aircraft Systems
RSA	Restricted Airspace
RTA	Required Time of Arrival
RTS	Real Time Simulation
RTSA	Real Time Status of Airspace
SARPs	Standards and Recommended Practices
SBT	Shared Business Trajectory
SCN	Scenario
SESAR	Single European Sky ATM Research Programme
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.

Term	Definition
SFC	Sub-function
SIGMET	Significant Meteorological Information
SFP	Selective Flight Protection
SFP OC	SFP Operating Credit
SFP OI	SFP Operating Index
SIBT	Scheduled In Block Time (initial Airline schedule)
SITA	Société Internationale de Télécommunication Aéronautique
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SJU Work Programme	The programme which addresses all activities of the SESAR Joint Undertaking Agency.
SOA	Service Oriented Architecture
SOBT	Scheduled Off Block Time (initial Airline schedule)
SPECI	Special METAR forecast
SPR	Safety and Performance Requirements
STAM	Short-Term ATFCM Measures
STD	Scheduled Time of Departure
SVC	Service
SWIM	System Wide Information Management
TAD	Technical Architecture Description
TAS	True Air Speed
TMA	Terminal Manoeuvring Area
TOD	Top of Descent
TR	Technical Requirements
TS	Technical Specification
TSAT	Target Start-up Approval Time
TT	Target Time
TTA	Target Time of Arrival

Term	Definition
TTO	Target Time Over
TTOT	Target Take-off Time
TW	Target Window
TXT	Text
UDPP	User Driven Prioritisation Process
UIBT	User In Block Time (prioritisation given by User)
UOBT	User Off Block Time (prioritisation given by User)
UUP	Updated Airspace Use Plan
VALP	Validation Plan
VALR	Validation Report
VPA	Variable Profile Area
WOC	Wing Operations Centre
WP	Work Package
WSA	Weather
WX	Weather
WXXM	Weather Information Exchange Model
XML	Extensible Markup Language

433

2 General Functional block Description

2.1 Context

The Airspace Users Operations consists of two Operational Nodes,

- the Airspace User Ops Support, and
- the Flight Deck.

These Operational Nodes interact with the Operational Nodes of the other ATM actors. Figure 2 gives an overview of all Operational Nodes that have been defined in the context of the SESAR programme.

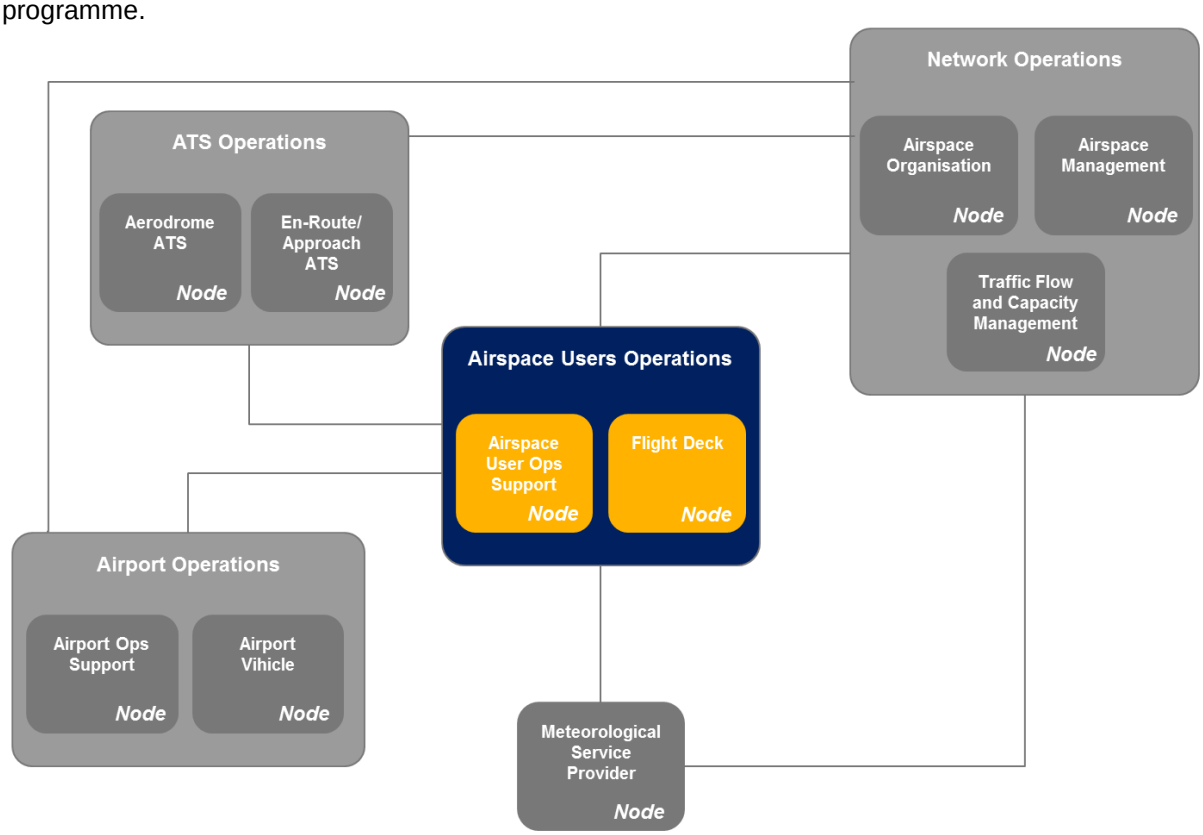

Figure 2: Operational Nodes overview

The two Operational Nodes of the Airspace Users Operations are supported by the Civil AU Operations Centre capability configuration. The Civil AU Operations Centre includes seven systems that support the airspace user to perform its operations. The seven systems are

- Civil AU Crew Operations Centre,
- Civil AU Flight Operations Centre,
- Civil AU Business Operations Centre,
- Civil AU Passenger Operations Centre,

- Civil AU Cargo Operations Centre,
- Civil AU Aircraft Operations Centre, and
- Civil AU Airport Operations Centre.

Further information about this structure can be found in the ADD SESAR 2020 Transition edition [9].

This Technical Specification focuses on the Civil AU Flight Operations Centre. In the remaining document Civil AU Flight Operations Centre will be referred to as Flight Operations Centre or its acronym FOC. Figure 3 gives an overview of the civil Airspace Users Operations, its nodes, capability configuration and supporting systems.

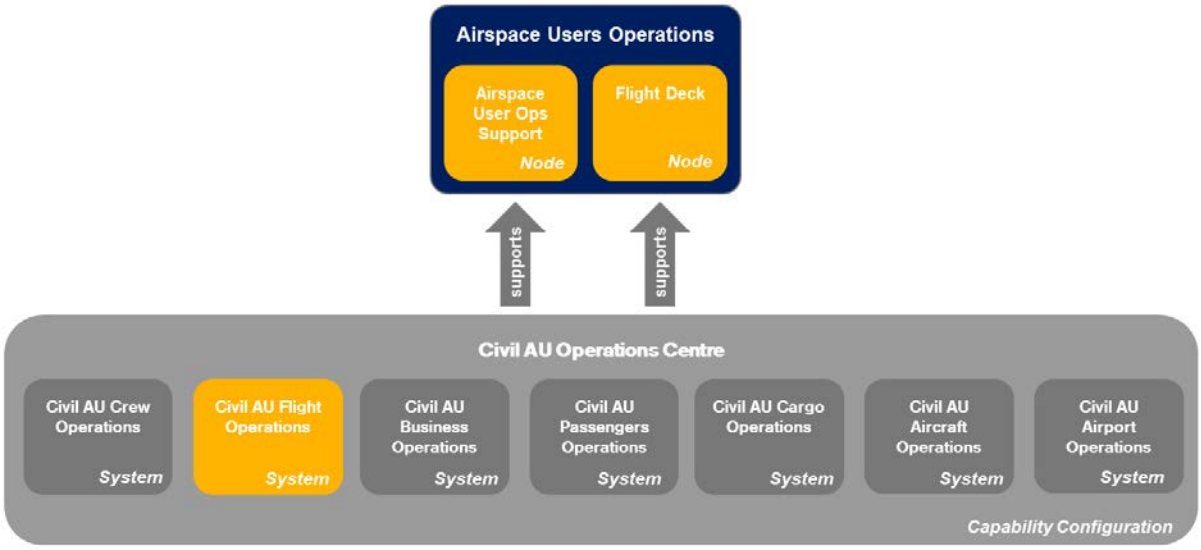

Figure 3: Overview Civil Airspace Users Operations

The Flight Operations Centre (FOC) system supports the operations of Airspace Users, performing manned or unmanned flight operations of civil aircraft.

The FOC Technical System represents the ‘Flight Operations’ domain as part of the whole operations of the airspace user. The domain ‘Flight Operations’ covers all activities that deal with the flights that are operated by the Airspace User. These activities refer to the medium- and short-term planning and the execution phases of the flights.

2.2 Functional block Modes and States

This section is not applicable to the FOC.

2.3 Major Functional block Capabilities

This chapter gives an overview of the grouping of requirements in accordance with the architecture and structure of the FOC. The structure of requirements is based on the functional block structure defined for the flight operations centre.

Figure 4: Structure of the FOC

Figure 4 gives an overview of the structure of the FOC and lists all specific functional blocks. This structure has been chosen to support system engineers and developers to assess the need to address changes in capabilities in the single components of the FOC.

2.4 User Characteristics

Table 4 lists all relevant user roles that relate to the Flight Operations Centre. These roles are in accordance with the Final FOC Step 1 and Step 2, as available, OSED document [29]. For more details on the FOC related user roles please consult the referenced document.

	24/7 access to system	8/5 access to system	Data editing	Data reading	Data communication	Data printout	Data base integration	Different languages
Flight Dispatcher	X			x	x	x		x
Flight Monitoring Officer	X		x		x	x		x
Flight Schedule Planner		x		x	x	x		x
Flight Schedule Monitoring Officer	X		x		x	x		x
Operations Control Officer	X		x		x			
Decision Support Officer	X		x		x			
Load Controller	X			x	x	x		x
Data Maintenance Officer		x	x		x	x		x
Technical Supervisor		x					x	x

Table 4: FOC user roles characteristics

2.4.1 System Access Times

System access times describe the time intervals in which a user of the FOC system will access the system. The system must be build up in a way that supports the respective access times. In the context of the FOC system two access time types are differentiated.

24/7 Access to system

The user of the FOC (a human being or process, simulating a human being) accesses the system continually without any interruption of it. That means that the system must be available at 24 hours, 7 days of a week.

8/5 Access to system

The user of the FOC (most likely a human being) accesses the system only during office times. Typically this office times are limited to 8 working hours during a week of 5 days. Deviations of these access times are depending on the organization using the FOC system. Longer or shorter access times are possible. The main difference between the 24/7 access to system capability and the 8/5 access to system capability is that the 8/5 access to system capability requires not a continuous access to the system

2.4.2 Flight Operations Management

The data handling capabilities deal with all tasks that are needed to handle data within the FOC system. These capabilities include entering, changing, reading and deleting. These tasks will be fulfilled using an HMI (Human Machine Interface). The respective user will directly change the data manually. The following capabilities are defined for the FOC system users.

Data edit capability

This capability includes entering and saving data into the FOC data system and changing or deleting of a stored data set. Users that have this capability are allowed to manipulate data sets available in the FOC system. This does not include the change of any system configuration.

Data read right

This capability includes the select of data stored in the FOC system. The data is typically displayed on a monitor. The data read capability is a subset of the data edit capability.

2.4.3 Data Distribution

The data distribution capability is granting the user of an FOC system access to data communication functionalities using AFTN, SITA, ACARS, e-mail or other means of communication interfaces. Furthermore this includes the printout of data. The following data distribution capabilities are defined for FOC system users.

Data communication

This includes sending and receiving data via e.g. AFTN, SITA, ACARS, e-mail, FAX messages.

Data printout

This includes sending data to a printer connected directly with the FOC or via a network.

Data base integration

This capability includes the integration of (external) databases not directly included with the FOC, e.g. an aircraft configuration database.

2.4.4 Human Machine Interface

Depending on the airline using the FOC different individual designs for the HMI will be implemented. In general we can differentiate between FOC system operation that is based on a high degree of automation with almost no interaction of human operators and those FOC operation that are based on manual interaction of a human operator. Such FOC setups should not be confused with the possibility to request – for example – trajectory options from outside of the AU organization. Such options might be implemented as part of a service. The AU operating the FOC system will be able to enable and disable services that are provided to 3rd parties in this context.

It would break the scope of this document to describe all possible kinds of different HMI designs. For that reason the respective selectors are only named.
To keep it simple only a very limited set of actions will be defined that can be used for FOC systems with a high degree of automation as well as for FOC systems that are based on human operator interaction only and for all degrees of automation in FOC systems between these both extremes.
The following table lists the main actions that will be available in an FOC system.

Action	Description
Trigger	*Trigger* is the action that will directly start a process within the FOC system. An example is the trigger that starts the filing process of a flight plan to the ATC unit. The action *trigger* will be available for the HMI (for direct interaction of a human operator) and for the system automation domain. If applicable in any requirement a *Trigger* will be defined.
Select	*Select* defines whether a defined action shall be triggered or which action shall be triggered in case that an action is optional or several options are available for an action. An example is the attachment of so-called Flight Performance Data into the Extended Flight Plan. As this is optional data the FOC operator will select whether this data set will be attached or even not. Whenever applicable in any requirement a *Selector* will be defined.
Return	*Return* will be used in case that any data or information (from the FOC system) must be acknowledged by a human operator. The term return can – in this case – be taken as a synonym for actions like *display* (on a screen) or *print-out* (on a printer). As the last terms are more related to individual FOC system design, they will be substituted by the term *return*.

Table 5: Process Word List of the FOC HMI

HMI Language

As FOC systems are used worldwide, user from different countries will have access to the system. Therefore it must be considered that users with different languages and different degree of English speaking capabilities are using the FOC system.

2.5 Operational Scenarios

The operational scenarios used as basis for this document can be found in chapter 5 of the Final FOC Step 1 and Step 2, as available, OSED document [29].

2.6 Functional

2.6.1 Functional decomposition

The Flight Operations Centre supports Airspace Users, performing ICAO compliant manned or unmanned flight operations, in the management of the operations of those flights. It consists of six Functional Blocks that group the functions that are required to perform the flight operations. In some cases the functions are separated into sub-functions (<SFC>)[3]. Figure 5 gives an overview of the functional break down of the flight operations centre. The following sub sections give descriptions of the respective elements.

[3] The grouping into function and sub-function only addresses sub-functions that relate to the concepts discussed within the SESAR programme. Other sub-functions are not mentioned here as they are not affected by the SESAR programme.

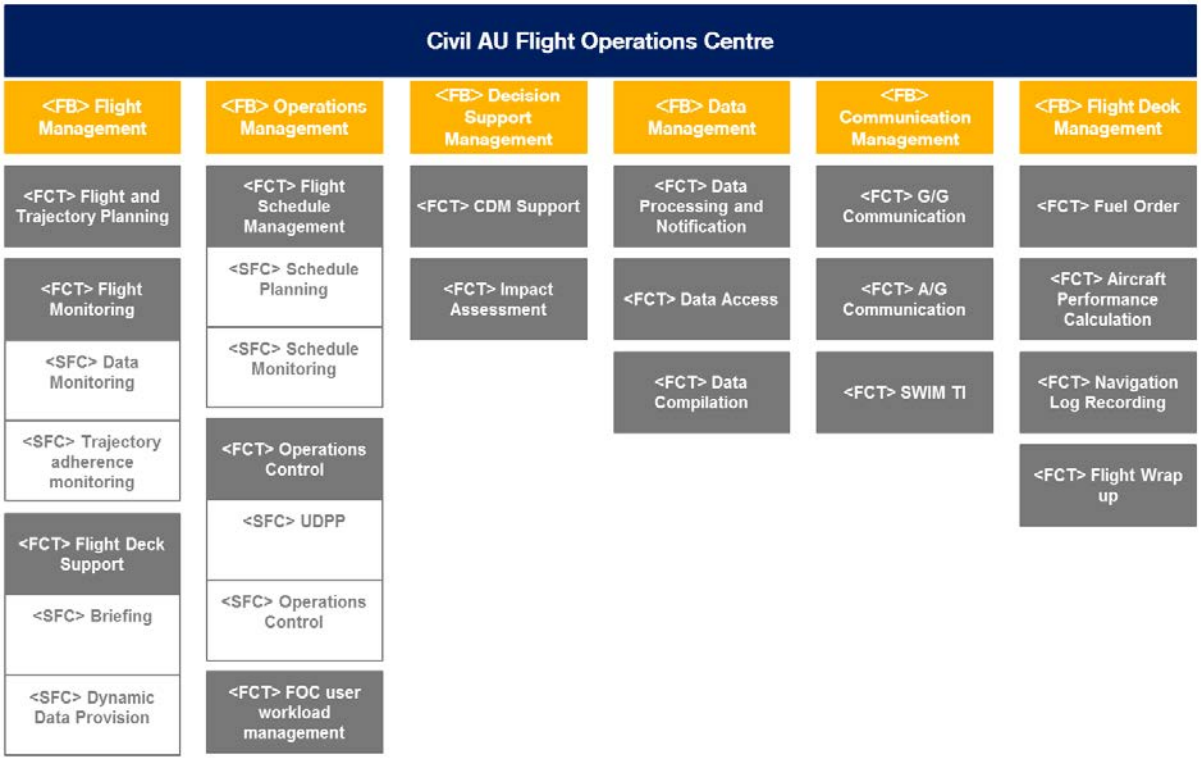

Figure 5: Function breakdown of the Flight Operations Centre

2.6.1.1 Flight Management (FOC-FM)

The functional block flight management refers to all activities that relate to an individual flight. This includes in particular the

- Flight and trajectory planning,
- Flight monitoring, and
- Flight deck support.

2.6.1.1.1 Flight and Trajectory Planning

The flight and trajectory planning includes the generation and exchange of trajectory data. This also includes the iterative planning of trajectories in the context of the SBT planning. Besides this the management of the RBT, including agreement dissemination and RBT revision is facilitated by the flight and trajectory planning. All these capabilities are not only limited to the pre-departure planning phase but also refer to the flight execution phase where the FOC can be used to support the flight crews and ATM stakeholders.

All these activities are based on a wide range of information that are properties or boundary conditions of the flight and have to be considered by the airspace user to allow efficient and cost optimal flight operations. This also includes activities like airport suitability check, flight cost and fuel amount evaluation, trajectory optimization, provision of information used for the flight crew briefing etc.

2.6.1.1.2 Flight Monitoring

The flight monitoring relates to the on-going process of monitoring all data that is in relation to the flight as well as the trajectory flown by the aircraft and to compare this with all data used for planning and the trajectory that has been planned (e.g. RBT as soon as available). Hence the flight monitoring can be separated into two aspects:

- Data monitoring, and
- Trajectory adherence monitoring.

2.6.1.1.2.1 Data monitoring

The data monitoring assesses the impact of any change of the boundary conditions of the flight onto the business trajectory. This includes an analysis whether any data change leads to an inability to fly the trajectory, respectively whether any data change might allow a more optimal trajectory to be planned. This monitoring starts with generation of the first trajectory that is used as SBT and can continue during the flight execution when the RBT has been agreed.

2.6.1.1.2.2 Trajectory adherence monitoring

The trajectory adherence monitoring relates to the comparison of the aircraft position and future path of the aircraft trajectory with the agreed reference trajectory, the RBT. This monitoring will be based on aircraft position data derived from the aircraft directly or from any surveillance system and besides that on trajectory predictions that estimate the path of future positions of the aircraft. This monitoring can be performed throughout the whole execution phase and is especially relevant for medium- and long-haul flights.

2.6.1.1.3 Flight Deck Support

This function supports the flight crew through the corresponding phases of the flight, when an involvement of the flight crew is required. The main purpose of this function is to keep the flight crew up to date with regard to the planned flight as well as with regard to the data that might impact their flight. Hence this function includes the two sub-functions:

- Briefing, and
- Dynamic Data Provision.

2.6.1.1.3.1 Briefing

This includes the initial provision of the operational flight plan that includes all relevant information that is required by the flight crew to safely and efficiently commend the planned flight. Initially the briefing is performed in the short-term planning phase. But the point of time when this briefing is performed might differ from AU to AU, as well as from flight to flight[4].

Besides that the briefing might be performed throughout the whole lifecycle of the flight, if significant changes to the operational flight plan have been done. An example could be a change of the planned trajectory due to an RBT revision. Such dynamic update of the operational flight plan could happen throughout the whole phase from initial briefing till the arrival at the airport of destination.

2.6.1.1.3.2 Dynamic Data Provision

The Flight Operations Centre provides permanently information to the flight crew that is relevant for the flight and increases their situational awareness. The dynamic data provision may start directly

[4] The briefing for a long-haul flight might be performed several hours before departure while on short-haul flights the briefing might be performed very close to the departure time.

after the briefing of the flight crew and will be perform until the arrival of the aircraft at its final parking position.

2.6.1.2 Operations Management (FOC-OM)

The functional block operations management relates to all activities that refer to the whole set of the flights operated by the AU. This refers especially to the schedule of flights including their interdependencies to each other flight. It takes care about the achievement of optimal overall flight operations efficiency. That means that every single flight is considered as single element of the whole flight operation that is in focus. Besides that it manages the workload of the FOC user to ensure that overloads are avoided and flight operation is supported in an efficient way. The operations management is separated into two main functions that are

- Flight schedule management,
- Operations control, and
- FOC User Workload Management.

The activities supported by the operations management cover a time period that lasts from the medium-term planning phase until the end of the flight execution.

2.6.1.2.1 Flight schedule management

The flight schedule management is grouped into different functions that relate to the planning of the sequence of flights that is intended to be executed. This also includes the provision of flight intent data in the context of the SBT planning. The schedule planning is based on the route network that has been provided route network management in the business operations centre. Such route network describes all intended flights in the form of a seasonal schedule that only includes intended airport connections that shall regularly be flown. Based on this data the schedule management creates the daily flight schedule and monitors its development over time throughout the medium- and short-term planning. This includes two main aspects that are:

- Schedule planning, and
- Schedule monitoring.

2.6.1.2.1.1 Schedule planning

The schedule planning relates to the planning of the flight leg sequence in the scope of the aircraft fleet that is operated by the airspace user. The result is the daily flight schedule of intended flights as they will be operated under static conditions.

2.6.1.2.1.2 Schedule monitoring

The schedule monitoring covers all activities that relate to the supervision of aspects that might impact the flight sequence in the flight schedule. That also relates to the analysis of the cascading effects of flight delays on other flights. This includes the interdependencies of flights operated with the same aircraft, as well as interdependencies of flights that are linked due to passenger/ cargo transfer etc.

2.6.1.2.2 Operations control

The operations control has the focus to ensure smooth and efficient flight operations on the day of operations with the focus on managing the flight leg sequence. This function is based on the flight

schedule provided by the schedule management but also establishes the link to other systems that provide information that relate to the individual flights in the flight sequence list. Besides the system link this function is tightly connected to the flight planning functions as both functions have strong dependencies onto each other. While the flight schedule will be optimized to reduce costs caused by delays and other deviations from the flight schedule, the flight planning is focussing on an optimal flight operation of a single flight event. Both aspects are competing in some cases to each other as recovering a flight schedule to avoid delay costs might require to fly faster; and consequently with a less optimal cost index, what might decrease the flight cost efficiency for a single flight. The will be on the achievement of a good trade-off between flight cost efficiency and overall flight operations efficiency.

The operations control function includes two main aspects:

- User Driven Prioritization Process,
- Operations Control.

2.6.1.2.2.1 User Driven Prioritization Process (UDPP)

UDPP is used to handle when one or more flights are not conducted anymore according their original schedule or when events appear that might influence the flight leg sequence. Such situations might be a consequence of reduced capacities at an airport in any ATC sector that requires delaying certain flights. UDPP can help to reduce deviations from the planned schedule by influencing the applied slot times and 4D constraints. This can help bring the flight closer to the original schedule or might influence the sequence of flights positively. This also includes the monitoring of constraint situations and to identify risks and opportunities with regard to the fleet prioritization.

2.6.1.2.2.2 Operations Control

The function Operations Control needs to deal with situations when UDPP options have been identified by the separate UDPP functionality that monitors the constraints situations at the airports or concerning the network. The UDPP options need to be evaluated if the possible benefit can be achieved and if this is the case consecutively the UDPP options need to be applied to the operations of the Airspace User.

2.6.1.2.3 FOC User Workload Management

The FOC User Workload management is used to assess the workload and work list of every user of the FOC with the target to balance the workload of every FOC user and to avoid work overloads and delays with regard to the tasks that are required to manage the flight operations of the Airspace User. This includes the task assignment, workload monitoring, and workload balancing support.

2.6.1.3 Decision Support Management (FOC-DSM)

The functional block decision support management is a kind of superordinate function that supports the airspace user in all coordination and decision making processes within the airspace user organization and with other ATM actors. It focuses on the management of complex situation that require the involvement of several different parties and the coordination of collaborative decision making. In particular this includes two main functions that are

- CDM support, and
- Impact assessment.

2.6.1.3.1 CDM support

CDM Support - supports the external and internal CDM processes. The external CDM processes refer to the collaboration with other ATM actors either triggered by them or by the FOC. The internal CDM processes refer to the collaboration between the different users and functions of the FOC. Both types of CDM processes are connected because external CDM processes require typically the support by internal CDM processes.

One supported CDM process is related to UDPP. User Driven Prioritisation Process (UDPP) is a collaborative AU Driven Process that gives the Airspace Users a role in the Demand Capacity Balancing (DCB). The actors in this process include Airport Operations Centres, the Network Manager, and the participating Airspace Users.

2.6.1.3.2 Impact Assessment

Impact Assessment - supports what-if functionalities. It provides means for the analysis which part of the operation is affected by an event and how much. Furthermore it collects the information about the impact from the different functions of the FOC allowing an evaluation of the overall impact of the event. Such events can refer for instance to the possible usage of opportunities (e.g. released restricted airspace). The FOC impact assessment is also executed when another ATM actor involves the FOC in its impact assessment (e.g. NM).

The impact assessment is furthermore applied to the analysis of UDPP options covering operational as well as commercial aspects. An UDPP option affects always a list of flights in which one or more flights shall be preferred and one or more flights shall be penalised compared to the initial situation. As a consequence of this the impact of the UDPP option to each single flight needs to be evaluated as well as its overall impact to the Airspace User. During this internal impact assessment the result of the impact assessment is taken into consideration that is executed by the other actors participating in the process.

2.6.1.4 Data Management (FOC-DM)

The data management is a foundation pillar of flight operations. This is due to the fact that the timely and correct provision of data is a key for safe, orderly and efficient flight operations. This functional block includes functions used for the retrieval, processing and storage of the data that is used by all other FOC functional blocks. Besides these functions a further focus is on the validation and qualification of retrieved data. This is especially important for data that is retrieved from electronic sources, as this data shall be – as much as possible – processed in an automatic way. The data management takes care about many different data domains as:

- Aeronautical data,
- Constraint data,
- Meteorological data,
- Terrain and obstacle data,
- Aircraft data, and
- Airspace User data.

In particular this includes three main functions that are

- Data processing and notification,
- Data access, and

- Data compilation.

2.6.1.4.1 Data Processing and Notification

The data processing and notification function includes retrieval, processing, and storing of data for the activities covered by the FOC. This also includes the tracking of changes in specific sets of data and the notification of human and system users about new, changed, and deleted data.

2.6.1.4.2 Data Access

This function allows human and system user to access data that is available in the FOC, to add, change, or delete such data.

2.6.1.4.3 Data Compilation

The purpose of this function is the generation of data, based on data that has been recorded, stored or entered during the lifecycle of a flight, with the purpose to provide analytical data relating to the activities performed in the context of flight operations centre. This includes all data within the FOC from the flight planning phases as well as from the flight execution phase. This function especially compiles FOC related data that will be used for post flight analysis.

2.6.1.5 Communication Management (FOC-CM)

The functional block communication management includes all technical resources that are required to establish the information exchange between the FOC with the flight crew and the aircraft, the other ATM actors and with other external data providers. This communication will be established in a bi-directional way allowing the FOC to act as data receptor as well as data or service provider. All other functional blocks of the FOC will draw from the functions of this functional block to fulfil their communication needs. This functional block includes three main functions that are:

- G/G communication,
- A/G communication, and
- SWIM TI.

2.6.1.5.1 G/G communication

The G/G communication includes all means of communication between the FOC and other ATM actors and other external data and service providers. Besides that the communication with the flight crew – if outside of the aircraft – is also included. This includes for example the communication with the briefing application used by the flights crews.

2.6.1.5.2 A/G communication

The A/G communication includes the communications between the FOC and the flight crew, respectively the flight deck. This relates mainly to all communication during the flight execution. This communication channel can be used to provide the flight crews with updated data (e.g. trajectory, or weather) and can allow to the establishment of an on-going flight crew decision support throughout the whole execution of a flight. The other way around the aircraft might provide information to the FOC (e.g. aircraft position) that can be used for the trajectory monitoring.

2.6.1.5.3 SWIM TI

This functions provides the technical infrastructure that is required to embed the FOC as a node into the overall SWIM infrastructure. This will enable an efficient and seamless communication with all ATM actors in real-time and will allow the consumption and provision of technical services from and to other ATM actors.

2.6.1.6 Flight Deck management (FOC-FDM)

The functional block flight deck management relates to the provision of functions that are used by the flight crews while preparing, executing and wrapping up a particular flight. These activities complement the activities of the flight deck crew that relate to controlling the aircraft and have to be conducted by order of the airspace user as holder of the aircraft operator certification. This functional block supports the following activities:

- Fuel order,
- Aircraft performance calculation,
- Navigation log recording, and
- Flight wrap-up.

2.6.1.6.1 Fuel order

This activity gives the flight crew overview about the calculated fuel amounts that are required to execute the flight including trip fuel, alternate fuel, holding fuel, contingency fuel, final reserve fuel and additional fuel. The flight crew will be enabled to influence the fuel amount by adding an additional margin of fuel to the overall amount of fuel. Based on this the flight crew can directly order the respective amount of fuel.

2.6.1.6.2 Aircraft performance calculation

This includes the evaluation of the current aircraft performance parameters on the basis of the current boundary conditions, as meteorological data and aircraft weight. This also includes the calculation of required runway length like take-off distance required for example. These evaluation activities relate all flight phases as take-off, climb-out, cruise, approach and landing and consider all relevant aircraft parameters as well as ambient conditions.

2.6.1.6.3 Navigation log recording

This activity relates to the on-going process to record the flight evolvement. This is especially important to comprehend differences between flight planning and execution and with that to provide statistical information that can improve the flight efficiency and safety.

2.6.1.6.4 Flight wrap-up

This activity supports the wrap-up of a flight by compiling of all relevant information that can be used to evaluate the flight conduction. It relates to the composition of flight reports by the flight crew with the purpose to feedback to other functions within the FOC.

2.6.2 Functional analysis

This section outlines how the functions of the Functional Blocks of the Flight Operations Centre system relate either to other functions of the same Functional Block or to functions of other Functional Blocks of the Flight Operations Centre system.

832 ### 2.6.2.1 Flight Management

833 **Flight and Trajectory Planning**

Functional Block	Function	Relation
FOC-FM	Flight Monitoring	The Flight and Trajectory Planning provides the flight and trajectory related information that builds the base for the monitoring of the flights. This applies to the data monitoring as well as to the trajectory adherence monitoring.
FOC-FM	Flight Deck Support	The Flight and Trajectory Planning provides the flight and trajectory related information that builds the base of the information that is used by the flight crew during the Briefing. Depending on the trajectory the other briefing information is collected. Also the Dynamic Data Provision depends on the trajectory concerning the selection of the provided data.
FOC-OM	Operations Control	The Flight and Trajectory Planning provides the flight and trajectory related information supporting the function Operations Control in the management of the flight leg sequence on the day of operations.
FOC-DM	Data Access	The Flight and Trajectory Planning uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function Flight and Trajectory Planning uses the means of the function G/G Communication to provide external stakeholders with flight plan information.
FOC-CM	SWIM TI	The function Flight and Trajectory Planning uses the means of the function SWIM TI in the case that the external stakeholders offer SWIM services for the provision of flight plan information.

834 **Flight Monitoring**

Functional Block	Function	Relation
FOC-FM	Flight and Trajectory Planning	In the case of an event (like affecting data or trajectory deviation) the function Flight Monitoring can request the revision of the trajectory via the function Flight and Trajectory Planning.
FOC-DSM	CDM Support	In the case that the operation of the Airspace User is affected beyond a particular flight the function Flight Monitoring can use the function CDM Support to find a solution under consideration of the needs of all affected internal and external stakeholders.
FOC-DSM	Impact Assessment	In the case of an event (like affecting data or trajectory deviation) the function Flight Monitoring can request the evaluation of the impact of this event via the function Impact Assessment. The results of the impact assessment are if a revision of the trajectory is required or recommended and if the operation of the Airspace User is affected beyond the particular flight.

FOC-DM	Data Access	The Flight Monitoring uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function Flight Monitoring uses the means of the function G/G Communication in the retrieval of additional data required for the realisation of its functionality (e.g. aircraft positions).
FOC-CM	SWIM TI	The function Flight Monitoring uses the means of the function SWIM TI in the case that SWIM services are available for the retrieval of additional data required for the realisation of its functionality (e.g. aircraft positions).

835 **Flight Deck Support**

Functional Block	Function	Relation
FOC-DM	Data Access	The Flight Deck Support uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function Flight Deck Support uses the means of the function G/G Communication to provide the flight crew with all required data (briefing and dynamic data) when the flight crew can access corresponding ground systems.
FOC-CM	A/G Communication	The function Flight Deck Support uses the means of the function A/G Communication to provide the flight crew with all required data (briefing and dynamic data) when the flight crew has access to aircraft systems only.
FOC-CM	SWIM TI	The function Flight Deck Support uses the means of the function SWIM TI in the case that SWIM services are available to provide the flight crew with all required data (briefing and dynamic data).

836 ### 2.6.2.2 Operations Management

837 **Flight Schedule Management**

Functional Block	Function	Relation
FOC-OM	Operations Control	The Flight Schedule Management provides the plan of the flight leg sequence that is the base for the flight leg sequence on the day of operations to be managed by the function Operations Control.
FOC-DSM	CDM Support	In the case that the operation of the Airspace User is affected beyond a particular flight the function Flight Schedule Management can use the function CDM Support to find a solution under consideration of the needs of all affected internal and external stakeholders.

FOC-DSM	Impact Assessment	In the case of an event that might influence the future flight leg sequence the function Flight Schedule Management can request the evaluation of the impact of this event via the function Impact Assessment. The result of the impact assessment is how much the operation of the Airspace User is affected.
FOC-DM	Data Access	The Flight Schedule Management uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function Flight Schedule Management uses the means of the function G/G Communication in the retrieval of additional data required for the realisation of its functionality that might influence the future flight leg sequence.
FOC-CM	SWIM TI	The function Flight Schedule Management uses the means of the function SWIM TI in the case that SWIM services are available for the retrieval of additional data required for the realisation of its functionality that might influence the future flight leg sequence.

838 **Operations Control**

Functional Block	Function	Relation
FOC-FM	Flight and Trajectory Planning	The Operations Control provides the information about the flight legs where the function Flight and Trajectory Planning has to execute the corresponding planning tasks.
FOC-DSM	CDM Support	In the case that the operation of the Airspace User is affected beyond a particular flight the function Operations Control can use the function CDM Support to find a solution under consideration of the needs of all affected internal and external stakeholders.
FOC-DSM	Impact Assessment	In the case of an event (like target time or UDPP information) the function Operations Control can request the evaluation of the impact of this event via the function Impact Assessment. The results of the impact assessment are if a revision of the trajectory is required or recommended and if the operation of the Airspace User is affected beyond the particular flight.
FOC-DM	Data Access	The Operations Control uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function Operations Control uses the means of the function G/G Communication in the retrieval of additional data required for the realisation of its functionality (e.g. target times). Moreover the function G/G Communication is used in the communication concerning UDPP with external stakeholders.
FOC-CM	SWIM TI	The function Operations Control uses the means of the function SWIM TI in the case that SWIM services are available for the retrieval of additional data required for the realisation of its functionality (e.g. target times). Moreover the function SWIM TI is used if the external stakeholders offer SWIM services for the communication concerning UDPP.

2.6.2.3 Decision Support Management

CDM Support

Functional Block	Function	Relation
FOC-DM	Data Access	The CDM Support uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-CM	G/G Communication	The function CDM Support uses the means of the function G/G Communication in the communication with the external stakeholders concerning the CDM processes (including UDPP).
FOC-CM	A/G Communication	The function CDM Support uses the means of the function A/G Communication in the communication with the flight crew concerning the CDM processes.
FOC-CM	SWIM TI	The function CDM Support uses the means of the function SWIM TI if the external stakeholders offer SWIM services for the communication concerning the CDM processes (including UDPP).

Impact Assessment

Functional Block	Function	Relation
FOC-DM	Data Access	The Impact Assessment uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.

2.6.2.4 Data Management

Data Processing and Notification

Functional Block	Function	Relation
FOC-FM	Flight Monitoring	The function Data Processing and Notification notifies the function Flight Monitoring about changes related to the data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-OM	Flight Schedule Management	The function Data Processing and Notification notifies the function Flight Schedule Management about changes related to the data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.
FOC-OM	Operations Control	The function Data Processing and Notification notifies the function Operations Control about changes related to the data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.

FOC-CM	G/G Communication	The function Data Processing and Notification uses the means of the function G/G Communication in the retrieval of all data that are in the scope of the Functional Block Data Management.
FOC-CM	SWIM TI	The function Data Processing and Notification uses the means of the function SWIM TI in the case that SWIM services are available for the retrieval of all data that are in the scope of the Functional Block Data Management.

844 **Data Access**

Functional Block	Function	Relation
N/A		

845 **Data Compilation**

Functional Block	Function	Relation
FOC-FM	Flight and Trajectory Planning	The function Data Compilation accesses the data resulting from the activities related to flight and trajectory planning for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-FM	Flight Monitoring	The function Data Compilation accesses the data resulting from the activities related to flight monitoring for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-FM	Flight Deck Support	The function Data Compilation accesses the data resulting from the activities related to flight deck support for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-OM	Flight Schedule Management	The function Data Compilation accesses the data resulting from the activities related to flight schedule management for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-OM	Operations Control	The function Data Compilation accesses the data resulting from the activities related to operations control for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-DM	CDM Support	The function Data Compilation accesses the data resulting from the activities related to CDM support for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.
FOC-DM	Impact Assessment	The function Data Compilation accesses the data resulting from the activities related to impact assessment for a particular flight. The data is compiled with other flight related information into a package used for instance for data analysis.

2.6.2.5 Communication Management

G/G Communication

Functional Block	Function	Relation
N/A		

A/G Communication

Functional Block	Function	Relation
N/A		

SWIM TI

Functional Block	Function	Relation
N/A		

2.6.2.6 Flight Deck Management

Fuel order

Functional Block	Function	Relation
FOC-FM	Flight Monitoring	The function Fuel order provides the function Flight Monitoring with the information about the amount of fuel that has been ordered by the flight crew.

Aircraft performance calculation

Functional Block	Function	Relation
FOC-DM	Data Access	The function Aircraft performance calculation uses the function Data Access to retrieve all data required for the realisation of its functionality and that is in the scope of the Functional Block Data Management.

Navigation log recording

Functional Block	Function	Relation
FOC-FDM	Flight wrap-up	The function Navigation log recording provides the function Flight wrap-up with the recorded navigation log information for compiling of all relevant information.

Flight wrap-up

Functional Block	Function	Relation
FOC-DM	Data Compilation	The function Flight wrap-up provides the function Data Compilation with all relevant information about the executed flight for the compilation with all other flight-related information.

2.7 Service View

The Flight Operations Centre system currently does not provide any service to other systems outside the Civil AU Operations Centre.

The description of the services is pending that realise the relation between the Functional Blocks of the Flight Operations Centre system or to the Functional Blocks of other systems of the Civil AU Operations Centre.

3 Functional block Functional and non-Functional Requirements

As mentioned already in Section 1.3, please note that the requirements from the WUF (Weather Uplink FMS) TS [24] are not included in this document as Honeywell has agreed with SJU that no further deliverables are required, therefore, the WUF TS is considered by Honeywell as not being a subject of the overall common TS consolidation.

3.1 Capabilities

3.1.1 Flight Management

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.1005
Requirement	The FOC shall generate flight trajectory data according to all PTR when selected by the PTR selector.
Title	PTR in trajectory generation
Status	<In Progress>
Rationale	The PTRs will be published by the NM manager to improve the trip fuel generation in the FOC system. PTRs can be considered directly, by adapting the generated vertical profile or indirectly by considering additional fuel amount and not adapting the vertical profile. PTRs must not be mandatorily considered in trajectory generation. If an FOC includes the PTR functionality, it shall be possible to enable or disable it.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S2TS.1005
Requirement	The FOC shall generate flight trajectory according to TTA constraints when selected by the TTA constraint selector
Title	TTA in Trajectory Generation
Status	<In Progress>
Rationale	The FOC system shall consider TTAs throughout the trajectory generation process if enabled by the Airspace User.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A

<ALLOCATED_TO>	<Project>	P11.01.03	N/A

876
877 [REQ]

Identifier	REQ-11.01.03-TS-S2TS.1010
Requirement	The FOC shall generate flight trajectory according to CTA constraints when selected by the CTA constraint selector.
Title	CTA flight calculation
Status	<In Progress>
Rationale	If a flight is affected by a CTA a trajectory calculation will be needed to consider this new input in the trajectory data. In case of an autonomous running FOC system this action can be automatically started if selected.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

878
879 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

880
881 [REQ]

Identifier	REQ-11.01.03-TS-S1FR.1005
Requirement	The FOC shall generate flight trajectory data according to the affecting Free Routing Airspace availability when selected by the Free Route selector.
Title	Trajectory generation according to FRA availability
Status	<In Progress>
Rationale	To make use of the flight planning opportunities that Free Routing offers, the FOC must be able to plan valid trajectories in FRA by obeying the FRA availability.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

882
883 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0105	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

884
885 [REQ]

Identifier	REQ-11.01.03-TS-S1NR.1005
Requirement	The FOC shall generate flight trajectory data according to the affecting Free Routing Airspace flight planning rules when selected by the Free Route selector.
Title	Trajectory generation according to FRA flight planning rules
Status	<In Progress>
Rationale	To make use of the flight planning opportunities that Free Routing offers, the FOC must be able to plan valid trajectories in FRA by obeying all existing flight planning rules in the FRA.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>

Verification Method	<Test>

886
887 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0105	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

888
889 [REQ]

Identifier	REQ-11.01.03-TS-S2NR.1005
Requirement	The FOC system shall receive and store aircraft position data.
Title	Receive Aircraft Position Data
Status	<In Progress>
Rationale	Aircraft Position Data is needed in order to monitor adherence to the RBT. Valid sources are for example ADS-B, ADS-C EPP.
Category	<Functional>
Validation Method	<Flight Trial><Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

890
891 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<SATISFIES>	<Enabler>	FOC-008	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

892
893 [REQ]

Identifier	REQ-11.01.03-TS-S2NR.1010
Requirement	Upon deviation of the aircraft trajectory from the RBT the FOC system shall generate a trajectory considering the aircraft position if selected with the RBT recovery selector.
Title	Trajectory generation from aircraft position
Status	<In Progress>
Rationale	If the FOC shall participate in an RBT revision it shall be able to generate a trajectory from the current aircraft position, regardless whether the aircraft is on the ground or in the air.
Category	<Functional>
Validation Method	<Flight Trial><Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

894
895 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<SATISFIES>	<Enabler>	FOC-008	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.1010
Requirement	Upon an update of the Free Routing Airspace availability the FOC shall assess whether a flight is affected by the update of the Free Routing Airspace availability.
Title	Assessment of FRA availability update
Status	<In Progress>
Rationale	If there is an update in the Free Routing Airspace availability, the FOC shall assess whether a new trajectory is required or beneficial.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0103	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.1001	<Full>
<SATISFIES>	<Enabler>	AOM-ATM-10	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1AF.1005
Requirement	Upon an update of the RTSA information the FOC shall assess whether a flight is affected by the update of the RTSA information.
Title	Assessment of RTSA information update
Status	<In Progress>
Rationale	If there is an update in the RTSA information, the FOC shall assess whether a new trajectory is required or beneficial.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<Enabler>	FOC-002	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.1010
Requirement	The FOC shall generate flight trajectory data according to the surface in/out time when selected by a surface in/out time update selector.
Title	Trajectory generation upon surface out time update
Status	<In Progress>
Rationale	The change of the surface time has an impact on the 4D trajectory which is defined in SESAR as gate to gate trajectory. Hence a change of the surface in or out time will have direct impact onto the planned trajectory.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>

Verification Method	<Test>

906
907 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-009	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

908
909 [REQ]

Identifier	REQ-11.01.03-TS-S1TS.1010
Requirement	The FOC shall generate EFPL based on FOC internal flight trajectory data when selected with the EFPL selector.
Title	EFPL generation
Status	<Validated>
Rationale	The EFPL data is based on the trajectory generated by the FOC system. The flight plan transmission functionality shall be able to use this data as input for the flight plan message
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

910
911 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

912
913 [REQ]

Identifier	REQ-11.01.03-TS-S1TS.1015
Requirement	The FOC system shall send the EFPL only to ATC Units that are selected with the EFPL ATC Accept selector.
Title	Use of EFPL
Status	<Validated>
Rationale	Not every ATC Authority or Network Manager is able to process a flight plan in EFPL format. Therefore the EFPL shall only be send to ATC authorities/ Network Manager that request this type of flight plan. Furthermore the

	Airspace User shall have the capability to decide whether the EFPL is sent to respective ATC Authorities/ Network Manager or not.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

914

915 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-13	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

916

917 [REQ]

Identifier	REQ-11.01.03-TS-S1TS.1020
Requirement	The FOC shall generate and attach Flight Performance Data to the Extended Flight Plan when the EFPL Flight Performance Data Selector is selected.
Title	Data Generation
Status	<Validated>
Rationale	Flight Performance Data is part of the Extended Flight Plan. The Flight Performance Data must not necessarily be added to the Extended Flight Plan. The Airspace User can decide whether Flight Performance Data is exchanged with the Network Manager.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

918

919 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

920

921 [REQ]

Identifier	REQ-11.01.03-TS-S1TS.1025
Requirement	The FOC shall generate and attach Gross Weight information to every point of the 4D profile in the EFPL if the EFPL Flight Performance Data selector is

	not selected.
Title	Gross Weight Information
Status	<Validated>
Rationale	Performance Data are part of the Extended Flight Plan. The Performance Data must not necessarily be added to the Extended Flight Plan. The Airspace User disables the exchange of Performance Data with the Network Manager the Gross Weight must be added to every point of the 4D profile.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1005
Requirement	The FOC system shall send EFPM message to the NOP/ NM, if the NM EFPL validation service is triggered with the EFPL validation trigger.
Title	EFPL based trajectory validation
Status	<In Progress>
Rationale	For a transition phase NM will deliver the 4D trajectory validation service in two different variances. This is due to the fact that the current implementation of the EFPL is based on an XML scheme that has been developed by EUROCONTROL. It is planned to use FIXM as the standard scheme for this EFPL data exchange. This might require a transition phase from the one variant to the other. The FOC might be able to support both variants during this transition phase.
Category	<Functional><Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0090	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0100	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>

<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

928
929 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1010
Requirement	The FOC system shall send a FIXM EFPL message to the NOP/ NM, if the NM EFPL FIXM validation service is triggered with the EFPL FIXM validation trigger.
Title	FIXM based trajectory validation
Status	<In Progress>
Rationale	For a transition phase NM will deliver the 4D trajectory validation service in two different variances. This is due to the fact that the current implementation of the EFPL is based on an XML scheme that has been developed by EUROCONTROL. It is planned to use FIXM as the standard scheme for this EFPL data exchange. This might require a transition phase from the one variant to the other. The FOC might be able to support both variants during this transition phase.
Category	<Functional><Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

930
931 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0090	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

932
933 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1015
Requirement	The FOC system shall send the EFPL as FIXM 4D message, if the addressed ANSP or Network Manager is able and requires to receive it.
Title	4DT FIXM filing
Status	<In Progress>
Rationale	For the 4D trajectory filing and update two different types of services, EFPL and FIXM, will be available in a transition phase. There is the choice to send the flight plan to the FIXM or EFPL variant of the service. Apart from that it must be checked whether the addressed recipient is able to receive the 4D trajectory in the respective format.

Category	<Functional><Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0090	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1020
Requirement	The FOC system shall send the 4D trajectory to the EFPL validation service if triggered with the EFPL validation trigger.
Title	EFPL validation
Status	<In Progress>
Rationale	This requirement covers the validation of a FOC trajectory based on EFPL data. It is only used to confirm that a calculated trajectory is according to all constraints and regulations and to get further information on offended restrictions and constraints in case that the trajectory has been rejected by NM.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1025
Requirement	The FOC system shall receive and store the content of the EFPL validation reply.
Title	Receive 4D trajectory validation reply data
Status	<Validated>
Rationale	If the validation of a 4D trajectory is done a reply will be received by the FOC. This reply will include the status of the trajectory, which can be “acknowledged” or “rejected”. Besides this trajectory status a number ‘n’ constraints with which the trajectory is in conflict. 1 ≤ ‘n’ < ∞ will be provided in case the 4D trajectory is “rejected” and a number ‘m’ PTRs that are applied to the 4D trajectory 0 ≤ ‘m’ < ∞ will be provided in case the 4D trajectory is “acknowledged”.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0110	<Partial>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0021	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0030	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0060	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1030
Requirement	Constraints and the FPL validity status returned by NM/ NOP in EFPL reply messages shall be stored in the FOC system.
Title	EFPL reply storage
Status	<Validated>
Rationale	The constraints and the validity status might be used for further analysis within the FOC. Therefore it must remain available in the FOC system.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1035
Requirement	The FOC system shall receive and store PTRs returned by NM/ NOP in the EFPL reply messages.
Title	Receive PTR
Status	<Validated>
Rationale	The Network Manager will send out PTRs for trajectories that have been filed to the NOP/ NM. The PTRs might be used for further analysis within the FOC: The airspace user might use them to calculate an updated vertical profile or to improve the fuel estimation for a certain flight. Therefore, they must remain available in the FOC system.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04b	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1040
Requirement	The FOC system shall be able to generate FIXM EFPL flight plans for flights planned with the FOC system.
Title	FIXM generation
Status	<In Progress>
Rationale	The flight plan filed to NM/ NOP will reflect the FOC trajectory that has been planned by the AU for a certain flight. This FOC trajectory must be converted to the FIXM format when filed to NM/ NOP when a filing or flight plan validation service based on the FIXM flight plan format is used.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.1015
Requirement	The FOC shall generate trajectories in accordance to all criteria that have been selected by any selector and all flight planning boundary conditions if triggered generate trajectory trigger.
Title	Trajectory generation capabilities
Status	<In Progress>
Rationale	All trajectories that are used by the airspace user for operational flight planning have to be as close as possible to the trajectory that is flown under the actual flight planning conditions. Besides that the airspace user has the possibility to enable or disable certain optional elements what can be set up by using the appropriate selectors. Besides legacy selectors the new selectors defined in this document can be used to tailor the trajectory generation. Selectors are: • PTR selector; • TTA constraint selector; • CTA constraint selector; • Free Route selector; • RBT recovery selector; • AFUA/ ARES selector; and • surface out time update selector.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-003	<Full>
<SATISFIES>	<Enabler>	FOC-004	<Full>

<SATISFIES>	<Enabler>	FOC-009	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

960
961 [REQ]

Identifier	REQ-11.01.03-TS-S1HT.1005
Requirement	The FOC system shall filter D-NOTAMs and D-METs according user defined 4D criteria applicable for given flight plan.
Title	D-NOTAM and D-MET filtering
Status	<In Progress>
Rationale	The system should be capable of displaying D-NOTAMs and D-METs that are relevant for the given flight plan, based on the 4D criteria: • lateral filtering according to the flight plan (distance from route) • vertical filtering above and under certain flight level • time-based filtering • airport filtering – departure, destination, alternate, en-route alternate, ETOPS alternate, etc. The user should be able to change the filtering criteria according to own preferences, to see what are filtering criteria currently applied, and to switch off the filtering function.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

962
963 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

964
965 [REQ]

Identifier	REQ-11.01.03-TS-S1HT.1010
Requirement	The FOC system should display the navigation information in the form of aeronautical chart when the flight plan is available.
Title	Navigation information for aeronautical chart
Status	<In Progress>
Rationale	The system allows the user to switch on or off any layer of the navigation information in the aeronautical chart, when the flight plan is available. The information should contain: • Waypoints • Navaids • Airways • Airspaces • Airports
Category	<HMI>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

966
967 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0070	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.1030
Requirement	The FOC system shall have a Human Machine Interface (HMI) that is used to enter Selectors and set Trigger to start FOC system functions.
Title	Human Machine Interface
Status	<In Progress>
Rationale	The FOC system will be operated by human beings that will manually start and stop different functions or define input parameters that are used for the system automation.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Deck Management	N/A
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.1035
Requirement	The HMI shall include the following selectors: • PTR selector • TTA constraint selector • CTA constraint selector • Free Route selector • RBT recovery selector • AFUA/ ARES selector • surface out time update selector
Title	HMI Selector List
Status	<In Progress>
Rationale	This requirement defines the selector that shall be available in the FOC system HMI.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S1NR.1015	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-003	<Full>
<SATISFIES>	<Enabler>	FOC-004	<Full>
<SATISFIES>	<Enabler>	FOC-009	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

976
977 [REQ]

Identifier	REQ-11.01.03-TS-S1NR.1020
Requirement	The FOC system shall display all flights impacted by any change of data.
Title	Affected Flight Display
Status	<In Progress>
Rationale	The user should be able to display all flights that are impacted by changed information in order to allow the FOC system user to be in the loop. This includes the comparison of the 4D trajectory planned by the FOC with the 4D trajectory provided by NM in reply to the EFPL provision.
Category	<HMI>
Validation Method	<Real Time Simulation><Expert Group (Judgement Analysis)>
Verification Method	<Test>

978
979 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0080	<Full>
<SATISFIES>	<Enabler>	FOC-002	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<SATISFIES>	<Enabler>	FOC-008	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

980
981 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1045
Requirement	The FOC system shall provide EFPL flight plans in a human readable format to the users of the FOC system.
Title	EFPL display
Status	<In Progress>
Rationale	The EFPL will be exchanged in the XML formats FIXM 4D and EFPM. Both are very hard to read for human beings. Therefore the FOC system must be able to provide the EFPL content in a way that the system users are able to read them.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design><Test>

982
983 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

984
985 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1050
Requirement	The FOC system shall provide EFPL flight plan filing and validation replies in a human readable format to the users of the FOC system.

Title	EFPL reply display
Status	<In Progress>
Rationale	The EFPL filing and validation replies will be provided in the XML formats. Both are very hard to read for human beings. Therefore the FOC system must be able to provide the content included in those replies in a way that the system users are able to read them.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design><Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.1.2 Operations Management

[REQ]

Identifier	REQ-11.01.03-TS-S1ST.2005
Requirement	The FOC should be capable of transmitting FDA priority to the DCB (NMF).
Title	Send FDA Priority
Status	<In Progress>
Rationale	FOC UDPP tool should be able to send the initial and subsequent FDA priority to the DCB (NMF) so that the flight sequence and delays can be calculated based on the AU priority.
Category	<Functional>
Validation Method	<Fast Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.02-DOD-0002.0091	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-UDP2.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1ST.2010
Requirement	The FOC should be capable of reading CCS information including OI and Duration published by the DCB (NMF).
Title	Read CCS Information
Status	<In Progress>
Rationale	FOC UDPP tool should be able to get the updated CCS information including OI and Duration from the DCB (NMF).
Category	<Functional>
Validation Method	<Fast Time Simulation>
Verification Method	<Test>

995 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.02-DOD-0002.0091	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0010	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-UDP2.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

996

997 [REQ]

Identifier	REQ-11.01.03-TS-S1ST.2015
Requirement	The FOC should be capable of transmitting OC to the DCB (NMF).
Title	Send OC
Status	<In Progress>
Rationale	FOC UDPP tool should be able to send the initial and subsequent OC's to the DCB (NMF) so that the flight sequence and delays can be calculated based on the OC's.
Category	<Functional>
Validation Method	<Fast Time Simulation>
Verification Method	<Test>

998

999 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.02-DOD-0002.0091	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-UDP2.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

1000

1001 [REQ]

Identifier	REQ-11.01.03-TS-S1ST.2020
Requirement	The FOC should be capable of reading baseline delay information published by the DCB (NMF).
Title	Read Delay EOBT Information
Status	<In Progress>
Rationale	FOC UDPP tool should be able to get the updated EOBT information based on the FDA priority and OC's provided by AU's from the DCB (NMF).
Category	<Functional>
Validation Method	<Fast Time Simulation>
Verification Method	<Test>

1002

1003 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.02-DOD-0002.0091	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0010	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-UDP2.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

1004

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.2005
Requirement	The FOC system shall receive and store TTA and CTA from the Network Manager.
Title	Receive TTA and CTA
Status	<In Progress>
Rationale	Operations Management is responsible for evaluating, processing and distributing up-to date flight data. Once a flight plan is filed to NM it could be that NM returns a TTA or CTA. The system must be able to receive such a Target Time Constraint message.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04b	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.1.3 Decision Support Management

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.3005
Requirement	The FOC shall provide cost information on delays caused by ATM restriction to analyse its impact (cost vs. delay).
Title	Operations Cost Management
Status	<In Progress>
Rationale	Enable AUs to make best use of the UDPP process in order to recover from ATM disturbances.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0050	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Decision Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.3010
Requirement	The FOC shall generate flight trajectory data according to the affecting RTSA information when selected by the AFUA/ARES selector.
Title	Trajectory generation according to RTSA information
Status	<In Progress>

Rationale	To assess the impact of an airspace release or booking, concerned trajectories shall be re-calculated to collect the information required by the FOC to make decisions. For flights too close to the released airspace (according to the parameters set by the individual airspace user) the trajectory revision might not apply. Therefore such condition must be recognized to avoid unintended workload on AU side.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Decision Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S2NR.3005
Requirement	The FOC shall receive and store AA2A data.
Title	AA2A reception and storage
Status	<In Progress>
Rationale	In order to use AA2A data in the trajectory generation, the AA2A data must be received and stored.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0110	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0180	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04b	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Decision Support Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S2BT.3005
Requirement	The FOC shall receive and store ATC-to-FOC-RBT-Conflict-Advisory from ATC.

Title	Reception of ATC Area to Avoid data
Status	<In Progress>
Rationale	The system shall store the data included in the ATC-to-FOC-RBT-Conflict-Advisory message internally to make it available for other functionalities. The ATC-to-FOC-RBT-Conflict-Advisory message will include: • An EFPL representing the trajectory that conflicts with other traffic • And one or several ATC Area(s) to Avoid.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Decision Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.1.4 Data Management

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.4005
Requirement	The FOC System shall receive and store ATM constraints from the Network Manager.
Title	Receive ATM constraints
Status	<In Progress>
Rationale	The FOC system stores received ATM constraints/restrictions in its internal database where it is available for retrieval by other FOC system components (e.g. Trajectory Generator)
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0110	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0180	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0190	<Partial>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Partial>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04b	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0060	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4005
Requirement	The FOC system shall receive and store the Free Routing Airspace volume availability
Title	Receive FRA volume availability information

Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the FRA volume availability.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0102	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4010
Requirement	The FOC system shall receive and store the Free Routing Airspace time availability
Title	Receive FRA time availability information
Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the FRA time availability.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0103	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4015
Requirement	The FOC system shall receive and store the Free Routing Airspace Horizontal Entry/Exit Features
Title	Receive FRA horizontal entry/exit features information
Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the horizontal entry/exit features.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0030	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0104	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4020
Requirement	The FOC system shall receive and store the Free Routing Airspace Vertical Entry/Exit Features
Title	Receive FRA vertical entry/exit features information
Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the vertical entry/exit features.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0104	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4025
Requirement	The FOC system shall receive and store the Free Routing Airspace Allowed Intermediate Points
Title	Receive FRA allowed intermediate points information
Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the allowed intermediate points for flight planning. These points can be currently published points or user-defined lat/long points.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0104	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.1002	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>

<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.4030
Requirement	The FOC system shall receive and store the Free Routing Airspace minimum/maximum segment length
Title	Receive FRA allowed minimum/maximum segment length information
Status	<In Progress>
Rationale	In order to be able to plan valid trajectories in FRA the FOC must know about the allowed minimum/maximum segment length.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FRA3.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.0104	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FRA1.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1AF.4005
Requirement	The FOC system shall receive and store the RTSA information.
Title	Receive RTSA Information
Status	<In Progress>
Rationale	Getting RTSA information (i.e. checking whether an ARES has been released or booked)) is the main trigger for the whole RTSA-related process of each individual FOC.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FUA3.0010	<Full>
<SATISFIES>	<Enabler>	FOC-002	<Full>
<SATISFIES>	<Enabler>	SWIM.INFR-05a	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FUA1.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>
<SATISFIES>	<Service>	ARESQuery	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1HT.4005
Requirement	For each airspace there shall be information about the airspace identifier, the type of airspace, vertical limitations and validity times displayed on request.
Title	Airspace information
Status	<In Progress>

Rationale	The user needs access to information about each airspace, containing the airspace identifier, the type of airspace, vertical limitations and validity times, to safely perform the flight.
Category	<HMI>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1HT.4010
Requirement	The FOC system shall display the airspace information in horizontal (lateral view) map projection.
Title	Airspaces projected in map
Status	<In Progress>
Rationale	To allow user to clearly identify the airspace shape, the airspace is presented in lateral graphical form as an object on the map.
Category	<HMI>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1HT.4015
Requirement	The design of the graphical presentation of airspaces should allow the user to clearly interpret multiple overlapping airspaces, and to distinguish between them.
Title	Multiple airspaces
Status	<In Progress>
Rationale	It should be obvious from the design that there are multiple airspaces one on top of another.
Category	<HMI>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

1067 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0090	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

1068

1069 [REQ]

Identifier	REQ-11.01.03-TS-S1NR.4005
Requirement	All changes to data stored in the FOC shall be indicated on a display if triggered by the FOC system user.
Title	Display of changes
Status	<In Progress>
Rationale	The user should be informed about all changed information related to the FOC, for example to indicate whether an airspace, which was not active on the briefing, becomes active, and also vice versa.
Category	<HMI>
Validation Method	<Real Time Simulation><Expert Group (Judgement Analysis)>
Verification Method	<Test>

1070

1071 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	FOC-007	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

1072

1073 [REQ]

Identifier	REQ-11.01.03-TS-S1HT.4020
Requirement	The FOC system shall be able to import D-NOTAM and D-MET information from external sources.
Title	D-NOTAM and D-MET import
Status	<In Progress>
Rationale	Import from external sources and internal processing will provide consistent information in time that will avoid inconsistent situational awareness and decision making.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

1074

1075 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>

<SATISFIES>	<Enabler>	AIMS-06	<Full>
<SATISFIES>	<Enabler>	AIMS-19a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationNotification	<Full>
<SATISFIES>	<Service>	IntegratedDigitalBriefing	<Full>

3.1.5 Communication Management

[REQ]

Identifier	REQ-11.01.03-TS-S1HT.5005
Requirement	The FOC system shall import the EAUP/EUUP from the Network Manager via B2B in AIXM (SWIM).
Title	EAUP/EUUP import via SWIM
Status	<In Progress>
Rationale	The Functional Block “Communication Management” of the FOC system needs to import the EAUP/EUUP information from Network Manager (NM) via B2B in AIXM format (SWIM).
Category	<Functional><Interface>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-FUA3.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<Enabler>	AIMS-06	<Full>
<SATISFIES>	<Enabler>	AIMS-19a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<ALLOCATED_TO>	<Functional block>	Communication Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-FUA1.0010	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.1.6 Flight Deck Management

N/A

3.2 Adaptability

3.2.1 Flight Management

[REQ]

Identifier	REQ-11.01.03-TS-S1FR.1015
Requirement	If the ATS route network remains available in the Free Routing Airspace, the FOC shall allow the airspace user to trigger whether a trajectory is planned using the ATS route network only or using all possibilities in the Free Routing Airspace.
Title	Flight Planning Options in FRA
Status	<In Progress>
Rationale	The airspace user may decide to only use the ATS route network for flight planning if it remains available in Free Routing Airspace and not to make use of all new flight planning options.
Category	<Functional>
Validation Method	<Fast Time Simulation><Real Time Simulation>

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1055
Requirement	The FOC system shall allow the system user to trigger whether an ICAO FPL or EFPL is generated for a flight.
Title	Flight plan type options
Status	<Validated>
Rationale	Flight plan information can include two different types of content. The first option only includes the flight plan according ICAO PANS-ATM doc 4444, the other type includes information as defined by Eurocontrol as Extended Flight plan. The FOC system must be adaptable in regard whether the ICAO FPL or the EFPL is used.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

3.2.2 Operations Management

[REQ]

Identifier	REQ-11.01.03-TS-S2NR.2005
Requirement	The AU shall be able to change and update prioritisation information during a UDPP time window of action given by DCB, according to the constraint and organisation.
Title	UDPP Reprioritisation
Status	<In Progress>
Rationale	The AU should have enough flexibility to update FDA / SFP Prioritisation during UDPP time window.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-UDP3.0070	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-17	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-18	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<ALLOCATED_TO>	<Functional block>	Operations Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-UDP2.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.06	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.2.3 Decision Support Management

N/A

3.2.4 Data Management

N/A

3.2.5 Communication Management

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.5005
Requirement	The FOC system shall allow the system user to trigger whether the ICAO FPL is transmitted to NM/ NOP using ICAO TXT data transmission, ICAO XML or ICAO FIXM based services.
Title	ICAO FPL format selection
Status	<In Progress>
Rationale	Depending on the way how the ICAO FPL is send NM/ NOP different type of ICAO FPL message formats are applicable. It must be possible to select how the flight plan is send to NM/ NOP. The respective selected way will define in which format the flight plan will be transmitted.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Communication Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.5010
Requirement	The FOC system shall allow the system user to trigger whether the EFPL is transmitted to NM/ NOP using EFPM or FIXM 4D message based services.
Title	EFPL format selection

Status	<In Progress>
Rationale	Depending on the way how the EFPL is send NM/ NOP different type of EFPL message formats are applicable. It must be possible to select how the flight plan is send to NM/ NOP. The respective selected way will define in which format the flight plan will be transmitted.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Communication Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

3.2.6 Flight Deck Management

N/A

3.3 Performance Characteristics

3.3.1 Flight Management

[REQ]

Identifier	REQ-11.01.03-TS-S2NR.1015
Requirement	Any reaction to updated data shall be done in a time window that allows executing the trajectory changes.
Title	Trajectory update assessment
Status	<In Progress>
Rationale	If there are new options or requirements to plan a trajectory, the airspace user must react in a given time window. This time window is determined by the current location of the aircraft and the point where the trajectory has to be changed at the latest.
Category	<Performance>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-04.07.02-SPR-FRFP.1001	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S1EF.1060
Requirement	The generation of the extended flight plan shall not affect the system performance in a negative way.
Title	EFPL performance impact
Status	<Validated>
Rationale	The provision of the EFPL is additional work that has to be done by the FOC. As the main purpose of the FOC is the planning of the flight operations and filing of a flight plan is only an interface function needed to ensure interoperability with all ATM stakeholders, it shall not influence the performance of the flight planning in a negative way.
Category	<Performance>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S2BT.1005
Requirement	The FOC shall steadily monitor the adherence to the RBT during all phases of the flight.
Title	On-going RBT monitoring
Status	<In Progress>
Rationale	To ensure an assessment of changing planning conditions or on a deviation from the planned route at all stages of a flight (especially in the in-flight phase) a continuous monitoring must be ensured.
Category	<Performance>
Validation Method	<Flight Trial><Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0110	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0180	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0190	<Partial>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<SATISFIES>	<Enabler>	FOC-008	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-05b	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.3.2 Operations Management

N/A

3.3.3 Decision Support Management

N/A

3.3.4 Data Management

N/A

3.3.5 Communication Management

N/A

3.3.6 Flight Deck Management

N/A

3.4 Safety & Security

3.4.1 Flight Management

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.1025
Requirement	The FOC shall use the RBT agreed with all other ATM stakeholders for flight monitoring.
Title	Seamless use of trajectory.
Status	<In Progress>
Rationale	The RBT is the trajectory that is agreed by all ATM stakeholders to be used as a reference.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0160	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.4.2 Operations Management

N/A

3.4.3 Decision Support Management

N/A

3.4.4 Data Management

N/A

3.4.5 Communication Management

N/A

3.4.6 Flight Deck Management

N/A

3.5 Maintainability

3.5.1 Flight Management

N/A

3.5.2 Operations Management

N/A

3.5.3 Decision Support Management

N/A

3.5.4 Data Management

N/A

3.5.5 Communication Management

N/A

3.5.6 Flight Deck Management

N/A

3.6 Reliability

3.6.1 Flight Management

N/A

3.6.2 Operations Management

N/A

3.6.3 Decision Support Management

N/A

3.6.4 Data Management

N/A

3.6.5 Communication Management

N/A

3.6.6 Flight Deck Management

N/A

3.7 Functional block Internal Data Requirements

3.7.1 Flight Management

N/A

3.7.2 Operations Management

N/A

3.7.3 Decision Support Management

[REQ]

Identifier	REQ-11.01.03-TS-S1NR.3015
Requirement	The FOC system shall store all data that is either directly linked to a flight or that has been assessed to affect that flight for at least the duration of the trajectory negotiation for this flight.
Title	Storage duration of flight relevant data
Status	<In Progress>
Rationale	In order to enable an efficient trajectory negotiation process, the FOC must have all relevant data available, even if received for example in a previous reject message.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0080	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0140	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0200	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Enabler>	FOC-003	<Full>
<SATISFIES>	<Enabler>	FOC-005	<Full>
<SATISFIES>	<Enabler>	FOC-006	<Full>
<ALLOCATED_TO>	<Functional block>	Decision Support Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>

<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0060	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.7.4 Data Management

N/A

3.7.5 Communication Management

[REQ]

Identifier	REQ-11.01.03-TS-S1HT.5010
Requirement	The FOC shall store track record about all information received from other systems and all updates performed by users in order to provide track of such information. The track record shall capture the source and the time of the change.
Title	FOC track record
Status	<In Progress>
Rationale	With the track record the FOC system will ensure all actors are working with the same set of information available to avoid negative impact on situational awareness and decision making caused by inconsistent information.
Category	<Functional>
Validation Method	<Real Time Simulation><Expert Group (Judgement Analysis)>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-AIM3.0060	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<ALLOCATED_TO>	<Functional block>	Communication Management	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.7.6 Flight Deck Management

N/A

3.8 Design and Construction Constraints

3.8.1 Flight Management

N/A

3.8.2 Operations Management

N/A

3.8.3 Decision Support Management

N/A

3.8.4 Data Management

[REQ]

Identifier	REQ-11.01.03-TS-S1TS.4010
Requirement	The FOC system shall use UTC time as reference.
Title	Align air and ground times
Status	<In Progress>
Rationale	The time reference for the air and the ground systems may vary. To ensure that the data obtained from the a/c can be mixed with the ground data for other flights there is a need to ensure that UTC time reference is used by all air and ground systems.
Category	<Design>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-13	<Full>
<ALLOCATED_TO>	<Functional block>	Data Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.8.5 Communication Management

N/A

3.8.6 Flight Deck Management

N/A

3.9 Functional block Interface Requirements

Please note, that the interface requirements for AIM can be found in a separate IRS document produced by Honeywell [27]. For the requirements therein no need for an update has been identified.

3.9.1 Flight Management

[REQ]

Identifier	REQ-11.01.03-TS-S1BT.1005
Requirement	The FOC shall send trajectory proposals in the EFPL format to the ATC system.
Title	Trajectory proposal format
Status	<In Progress>
Rationale	For the time being the EFPL format as used by NM for the EFPL creation B2B web service shall be used for the trajectory exchange between FOC and ATC. This requirement is driven by the need to align and standardize basic data that is exchanged between all ATM stakeholders.
Category	<Functional><Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>

<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

1212
1213 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1065
Requirement	The information provided by the Extended Flight Plan Filing request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL filing via SWIM
Status	<In Progress>
Rationale	SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

1214
1215 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

1216
1217 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1070
Requirement	The information provided by the Extended Flight Plan Update request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL update via SWIM
Status	<In Progress>
Rationale	SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

1218
1219 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>

<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

1220
1221 [REQ]

Identifier	REQ-11.01.03-TS-S1EF.1075
Requirement	The information provided by the Extended Flight Plan Validation request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL validation via SWIM
Status	<In Progress>
Rationale	SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Test>

1222
1223 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0030	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-04a	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Management	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>

1224
1225 [REQ]

Identifier	REQ-11.01.03-TS-S1BT.1010
Requirement	The FOC system shall receive ATC Reply messages from the ATC system.
Title	Reception of ATC reply
Status	<In Progress>
Rationale	Upon publication of a trajectory proposal to the ATC system it is expected to get an ATC Reply message in return. This data is directly linked to the flight for which a trajectory has been send to the ATC system.
Category	<Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

1226
1227 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT1.0040	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0060	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-BMT2.0110	<Full>
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<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange	IER-11.01.02-OSED-BMT1.0020	<Full>

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<ALLOCATED_TO>	<Project>	P11.01.03	N/A

3.9.2 Operations Management

N/A

3.9.3 Decision Support Management

N/A

3.9.4 Data Management

N/A

3.9.5 Communication Management

N/A

3.9.6 Flight Deck Management

N/A

4 Assumptions

As already mentioned in Section 1.5, this Technical Specification has been produced in parallel to the WP11.01 Step 1 and Step 2 (as available) OSED [29] and before a mature draft of the WP11.01 Step 1 and Step 2 (as available) INTEROP [30] was available. This is however not seen as a major issue, as all documents are produced by the same team of authors, therefore, it is ensured that the content is synchronized and that within the individual documents references and traces to the respective other documents are made in line with SJU guidelines wherever possible.

However, of course, there is a slight risk that during the review and/or assessment period some changes in the OSED and/or the INTEROP might become necessary. In that case, these changes could then not be respected in the Technical Specification anymore due to the deliverable schedule, which foresees a handover date for the OSED and the INTEROP after the handover date for this TS.

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Note: This document is still in production at time of writing, link to latest version:
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5.1 Use of copyright / patent material /classified material

5.1.1 Classified Material

There is no classified material included in this document.

Appendix A Allocation of Requirements to Topics

A.1 Requirements for AFUA (Advanced Flexible Use of Airspace)

- REQ-11.01.03-TS-S1AF.1005
- REQ-11.01.03-TS-S1NR.3010
- REQ-11.01.03-TS-S1AF.4005

A.2 Requirements for BMT (Business/Mission Trajectory)

- REQ-11.01.03-TS-S1TS.1005
- REQ-11.01.03-TS-S2TS.1005
- REQ-11.01.03-TS-S2TS.1010
- REQ-11.01.03-TS-S2NR.1005
- REQ-11.01.03-TS-S2NR.1010
- REQ-11.01.03-TS-S1NR.1010
- REQ-11.01.03-TS-S1TS.1010
- REQ-11.01.03-TS-S1TS.1015
- REQ-11.01.03-TS-S1TS.1020
- REQ-11.01.03-TS-S1TS.1025
- REQ-11.01.03-TS-S1EF.1005
- REQ-11.01.03-TS-S1EF.1010
- REQ-11.01.03-TS-S1EF.1015
- REQ-11.01.03-TS-S1EF.1020
- REQ-11.01.03-TS-S1EF.1025
- REQ-11.01.03-TS-S1EF.1030
- REQ-11.01.03-TS-S1EF.1035
- REQ-11.01.03-TS-S1EF.1040
- REQ-11.01.03-TS-S1NR.1015
- REQ-11.01.03-TS-S1TS.2005

- REQ-11.01.03-TS-S1NR.3010
- REQ-11.01.03-TS-S2NR.3005
- REQ-11.01.03-TS-S2BT.3005
- REQ-11.01.03-TS-S1TS.4005
- REQ-11.01.03-TS-S1FR.1015
- REQ-11.01.03-TS-S1EF.1055
- REQ-11.01.03-TS-S1EF.5005
- REQ-11.01.03-TS-S1EF.5010
- REQ-11.01.03-TS-S2NR.1015
- REQ-11.01.03-TS-S2BT.1005
- REQ-11.01.03-TS-S1NR.1025
- REQ-11.01.03-TS-S1NR.3015
- REQ-11.01.03-TS-S1HT.5010
- REQ-11.01.03-TS-S1BT.1005
- REQ-11.01.03-TS-S1BT.1010
- REQ-11.01.03-TS-S1EF.1065
- REQ-11.01.03-TS-S1EF.1070
- REQ-11.01.03-TS-S1EF.1075

A.3 Requirements for EFPL (Extended Flight Plan)

- REQ-11.01.03-TS-S1TS.1010
- REQ-11.01.03-TS-S1TS.1015
- REQ-11.01.03-TS-S1TS.1020
- REQ-11.01.03-TS-S1TS.1025
- REQ-11.01.03-TS-S1EF.1005
- REQ-11.01.03-TS-S1EF.1010
- REQ-11.01.03-TS-S1EF.1015
- REQ-11.01.03-TS-S1EF.1020
- REQ-11.01.03-TS-S1EF.1025

- REQ-11.01.03-TS-S1EF.1030
- REQ-11.01.03-TS-S1EF.1035
- REQ-11.01.03-TS-S1EF.1040
- REQ-11.01.03-TS-S1EF.1045
- REQ-11.01.03-TS-S1EF.1050
- REQ-11.01.03-TS-S1EF.1055
- REQ-11.01.03-TS-S1EF.5010
- REQ-11.01.03-TS-S1EF.1060
- REQ-11.01.03-TS-S1BT.1005
- REQ-11.01.03-TS-S1EF.1065
- REQ-11.01.03-TS-S1EF.1070
- REQ-11.01.03-TS-S1EF.1075

A.4 Requirements for Free Route

- REQ-11.01.03-TS-S1FR.1005
- REQ-11.01.03-TS-S1NR.1005
- REQ-11.01.03-TS-S1FR.1010
- REQ-11.01.03-TS-S1FR.4005
- REQ-11.01.03-TS-S1FR.4010
- REQ-11.01.03-TS-S1FR.4015
- REQ-11.01.03-TS-S1FR.4020
- REQ-11.01.03-TS-S1FR.4025
- REQ-11.01.03-TS-S1FR.4030
- REQ-11.01.03-TS-S1FR.1015

A.5 Requirements for UDPP (User Driven Prioritisation Process)

- REQ-11.01.03-TS-S1ST.2005
- REQ-11.01.03-TS-S1ST.2010
- REQ-11.01.03-TS-S1ST.2015

- REQ-11.01.03-TS-S1ST.2020
- REQ-11.01.03-TS-S1NR.3005
- REQ-11.01.03-TS-S2NR.2005

A.6 Requirements for AIM (Aeronautical Information Management)

- REQ-11.01.03-TS-S1HT.1005
- REQ-11.01.03-TS-S1HT.1010
- REQ-11.01.03-TS-S1NR.1020
- REQ-11.01.03-TS-S1HT.4005
- REQ-11.01.03-TS-S1HT.4010
- REQ-11.01.03-TS-S1HT.4015
- REQ-11.01.03-TS-S1NR.4005
- REQ-11.01.03-TS-S1HT.4020
- REQ-11.01.03-TS-S1HT.5005
- REQ-11.01.03-TS-S1HT.5010
- REQ-11.01.03-TS-S1TS.4010
- Related Interface Requirements can be found in a separate IRS document [27]

A.7 Requirements for HMI (Human Machine Interface)

- REQ-11.01.03-TS-S1HT.1005
- REQ-11.01.03-TS-S1HT.1010
- REQ-11.01.03-TS-S1TS.1030
- REQ-11.01.03-TS-S1TS.1035
- REQ-11.01.03-TS-S1NR.1020
- REQ-11.01.03-TS-S1EF.1045
- REQ-11.01.03-TS-S1NR.1020
- REQ-11.01.03-TS-S1EF.1050
- REQ-11.01.03-TS-S1HT.4005
- REQ-11.01.03-TS-S1HT.4010

- REQ-11.01.03-TS-S1HT.4015

- REQ-11.01.03-TS-S1NR.4005

Appendix B Deleted Requirements from WP11.01.03 Technical Specifications

B.1 FOC TS Specification Step 1

[REQ]

Identifier	REQ-11.01.03-TS-0105.0005
Requirement	The FOC system shall generate Nominal Preferred Route Information (NPR Information), when the generation has been started in the NPR Data Entry Control. Depending on Airspace Users' processes and system capabilities the generated NPR information shall include minimum: Airline designator Flight Number Period of Operation Days of Operation Service Type ICAO Aircraft Type ICAO Code of Departure Airport ICAO Airport of Destination Airport Scheduled Time of Departure Scheduled Time of Arrival Statistical Blocktime The FOC system shall store the Nominal Preferred Route Information and report it to the Operator Console.
Title	Nominal Preferred Route calculation
Status	<Deleted>
Rationale	Delete Reason: The concept of Nominal Preferred Route Information is conflicting with the dynamic approaches of free route, AFUA etc. as a nominal case cannot be pre-defined. Depending on Airspace Users' processes and system capabilities, Nominal Preferred Route may be provided with different levels of granularity.
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0001	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0105.0010
Requirement	The FOC system shall calculate a 4D route when the EFPL Selector is selected. The FOC system shall store the 4D Route to the Nominal Preferred Route Information and report the Nominal Preferred Route Information to the Operator Console.
Title	4D Route Calculation
Status	<Deleted>
Rationale	Delete Reason: The requirement is describing how to generate NPR data. There would be several options to do that. The described one is only one of them. Hence this requirement leaves the context of the TS document. Depending on Airspace Users processes and system capabilities the type of route may be provided as 4D route. The Nominal Preferred Route Information must be stored and reported to the HMI. This provides the Airspace User the possibility for verification of output and to do necessary adaptions.
Category	<Functional>

Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0005	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0105.0020
Requirement	The FOC shall calculate Flight Performance Data when the EFPL Flight Performance Data Selector is selected, else it shall add the Gross Weight to every routing point of the 4D trajectory and store this data to the Nominal Preferred Route Information.
Title	Flight Performance Data selection
Status	<Deleted>
Rationale	Delete Reason: This requirement is mixing different aspects. Besides the NPR topic it covers EFPL related aspects. EFPL related aspects are covered by requirements in chapter 3 of this document. NPR concept has still not reached maturity in superior documents and can hence not be worked out in this TS. Depending on the selection the Airspace User the FOC system either adds the Flight Performance Data or the Gross Weight to the Nominal Preferred Route Information.
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0005	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0255.0005
Requirement	The FOC system shall receive TTA messages from the Network Manager and store them.
Title	Receive TTA
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.2005) / wording harmonized. Flight Data Support Management is responsible for evaluating, processing and distributing up-to date flight data. Once a flight plan is filed to NM it could be that NM returns a TTA. The system must be able to receive such a Target Time Constraint message.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0255.0010
Requirement	The FOC shall store ATM constraints.
Title	Receive ATM constraints
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1TS.4005. Planning constraints applied to a flight by ATM should be processed and added to the FOC restriction database to be considered during trajectory generation

Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0055	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0010
Requirement	The FOC system shall generate flight trajectory data according to all PTR when selected with the PTR Selector.
Title	PTR in trajectory generation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1005) / wording harmonized. The PTRs will be published by the NM manager to improve the trip fuel generation in the FOC system. PTRs can be considered directly, by adapting the generated vertical profile or indirectly by considering additional fuel amount and not adapting the vertical profile. PTRs must not be mandatorily considered in trajectory generation. If an FOC includes the PTR functionality, it shall be possible to enable or disable it.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0015
Requirement	The FOC system shall generate trajectories that fulfil TTA constraints relevant for the respective flight when selected with the TTA Constraint Selector.
Title	TTA in Trajectory Generation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S2TS.1005) / wording harmonized. The FOC system shall consider TTAs throughout the trajectory generation process if enabled by the Airspace User.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0020
Requirement	The FOC system shall store all TTA/ CTA to the flight.
Title	CTA flight recalculation
Status	<Deleted>
Rationale	Delete Reason: Content already covered by REQ-11.01.03-TS-S1TS.2005. If a flight is affected by a CTA a recalculation will be needed to consider this new input in the trajectory data. In case of an autonomous running FOC system this action can be automatically started if selected.
Category	<Functional>

Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0022
Requirement	The FOC system shall trigger the trajectory generation process upon reception of TTA/CTA when selected with the TTA/CTA Recalculation Selector.
Title	CTA flight calculation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S2TS.1010) / wording harmonized. If a flight is affected by a CTA a recalculation will be needed to consider this new input in the trajectory data. In case of an autonomous running FOC system this action can be automatically stared if selected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0030
Requirement	The FOC shall generate EFPL based on FOC internal flight trajectory data when selected with the EFPL selector.
Title	EFPL generation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1010). The EFPL data is based on the trajectory generated by the FOC system. The flight plan transmission functionality shall be able to use this data as input for the flight plan message
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0310.0010
Requirement	The FOC system shall send the EFPL only to ATC Units that are selected with the EFPL ATC Accept selector.
Title	Use of EFPL
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1015). Not every ATC Authority or Network Manager is able to process a flight plan in EFPL format. Therefore the EFPL shall only be send to ATC authorities/ Network Manager that request this type of flight plan. Furthermore the Airspace User shall have the capability to decide whether the EFPL is sent to respective ATC Authorities/ Network Manager or not.

Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0310.0020
Requirement	The FOC shall generate and attach Flight Performance Data to the Extended Flight Plan when the EFPL Flight Performance Data Selector is selected.
Title	Data Generation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1020). Flight Performance Data is part of the Extended Flight Plan. The Flight Performance Data must not necessarily be added to the Extended Flight Plan. The Airspace User can decide whether Flight Performance Data is exchanged with the Network Manager.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0310.0025
Requirement	The FOC shall generate and attach Gross Weight information to every point of the 4D profile in the EFPL if the EFPL Flight Performance Data selector is not selected.
Title	Gross Weight Information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1025). Performance Data are part of the Extended Flight Plan. The Performance Data must not necessarily be added to the Extended Flight Plan. The Airspace User disables the exchange of Performance Data with the Network Manager the Gross Weight must be added to every point of the 4D profile.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0025
Requirement	The FOC system shall return information to the HMI upon reception of TTA/CTA if selected with the TTA/CTA Output Selector.
Title	CTA flight indication
Status	<Deleted>
Rationale	Delete Reason: This requirement leaves the scope of the TS document. A flight that is affected by a CTA must be indicated in the FOC system as the

	flight dispatcher, in flight monitoring or the irregularly cost manager must react on the new target time and recalculate the trajectory.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0020
Requirement	The FOC System shall calculate the surface out time when new de-icing throughput information is received
Title	Request Airport Capacity Data
Status	<Deleted>
Rationale	Delete Reason: Replaced with REQ-11.01.03-TS-S1NR.1010. In order to support A-CDM and UDPP the FOC system must be up-to-date with the latest airport capacity data. This is required to predict turnaround times and passenger connection probability.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0120	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0025
Requirement	The FOC System shall calculate the surface out and surface in times when new airport taxi time information is received.
Title	Request Airport Taxi Data
Status	<Deleted>
Rationale	Delete Reason: Replaced with REQ-11.01.03-TS-S1NR.1010. In order to support accurate turnaround planning, A-CDM and UDPP the FOC system must be up-to-date with the latest airport taxi information.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0130	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0135	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0030
Requirement	The FOC System shall calculate the surface out and surface in times when new gate assignments are received
Title	Request Gate Assignments and Parking Positions
Status	<Deleted>
Rationale	Delete Reason: Replaced with REQ-11.01.03-TS-S1NR.1010. In order to support accurate turnaround planning, A-CDM and UDPP the FOC system must be up-to-date with the latest gate assignments and parking position information.
Category	<Functional>
Validation Method	<Shadow Mode>

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0140	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0505.0005
Requirement	The FOC System shall store ATM constraints upon receipt from the Network Manager.
Title	Receive ATM constraints
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.4005) / wording harmonized. The FOC system stores received ATM constraints/restrictions in its internal database where it is available for retrieval by other FOC system components (e.g. Trajectory Generator)
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0055	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0004
Requirement	The FOC System shall store Upper Air Data Request upon receipt from the aircraft.
Title	Storing of Upper Air Data Request.
Status	<Deleted>
Rationale	Delete Reason: The Request must not necessarily be saved; the focus is on the reaction of the FOC (see deleted REQ-11.01.03-TS-0510.0005 below). The FOC system must be able to receive Upper Air Data requests sent from aircraft and store them in the internal storage for later response generation.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	FRD-INITIAL4D-846	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0155	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0005
Requirement	The FOC System shall send Upper Air Data Response to the aircraft triggered by the previously storage of Upper Air Data Request.
Title	Sending of Upper Air Data Response.
Status	<Deleted>
Rationale	Delete Reason: The content is covered by the requirements in the WUF TS document, whose requirements are not included in here. The FOC system shall generate Upper Air Data responses which include subsets of winds (direction and speed) and temperatures for subsets of flight phases based

	on content of the request for Upper Air Data sent by aircraft.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	FRD-INITIAL4D-846	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0155	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0010
Requirement	The FOC System shall send error message in selected ARINC standard to the aircraft instead of Upper Air Data Response when the Upper Air Data Request is not valid.
Title	Error message for invalid Upper Air Data request.
Status	<Deleted>
Rationale	Delete Reason: Error handling is rather a matter of how something is implemented. It is not part of the SESAR concept. Every aircraft requesting Upper Air Data should have valid flight plan in the FOC system and requested waypoints have to be known to FOC system too otherwise it is not able to process request. Flight Crew should be notified about failure of weather uplink by error message. Error message format is based on selected ARINC standard (e.g. ARINC 702 or ARINC 633)..
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	FRD-INITIAL4D-846	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0155	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0015
Requirement	FOC System shall send error message in selected ARINC standard to the aircraft instead of Upper Air Data Response in case that Upper Air Data are not available.
Title	Error message for missing Upper Air Data.
Status	<Deleted>
Rationale	Delete Reason: Error handling is rather a matter of how something is implemented. It is not part of the SESAR concept. In case that FOC system does not have corresponding weather data prediction, error message is sent to Flight Crew so that it knows about unsuccessful weather update. Error message format is based on selected ARINC standard. (e.g. ARINC 702 or ARINC 633).
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0155	<Full>
<SATISFIES>	<ATMS Requirement>	FRD-INITIAL4D-846	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0730.0005
Requirement	The FOC system shall expect an acknowledgement of correct reception from the Network Manager when a message has been sent and the Timeout Selector is selected. The timespan of the timeout shall be defined by the Timeout Selector.
Title	Loss of information – Timeouts and retries
Status	<Deleted>
Rationale	Delete Reason: This requirement leaves the scope of the TS document. Messages may be lost on the network of suffer from long delays. To cope with this the FOC system may expect an acknowledgment. On timeouts, the FOC system must assume the message was not received and retransmit it. In case of a permanently broken link, the retransmission has no effect so the retransmission is limited. Exceeding the retry limit is considered an error.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0730.0010
Requirement	The FOC system shall report an error to the Operator Console when the number of retransmissions has been exceeded. The number of retransmission shall be defined by the Retransmission Selector.
Title	Retransmission on timeouts
Status	<Deleted>
Rationale	Delete Reason: This requirement leaves the scope of the TS document. Messages may be lost on the network of suffer from long delays. To cope with this the FOC system may expect an acknowledgment. On timeouts, the FOC system must assume the message was not received and retransmit it. In case of a permanently broken link, the retransmission has no effect so the retransmission is limited. Exceeding the retry limit is considered an error.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0730.0015
Requirement	The FOC system shall generate the EFPL messages that shall be send to the NM according to the data requirements defined for the EUROCONTROL Extended Flight Plan Service
Title	Interoperability of EFPL data
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with multiple requirements in chapter 3. The EFPL that is exchanged with the NM manager must include all information required in the definition of the EUROCONTROL Extended Flight Plan Service and comply with the requirements given in regard to accuracy, units and formats.

Category	<Interoperability>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.00020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.00025	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0730.0020
Requirement	The FOC shall be able to receive Flight Plan reply messages in EFPL format sent by the Network Manager.
Title	Reply Message
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1EF.1025. If a flight plan was transmitted, the ATC Authority/ Network Manager will return a reply. This message may contain A flight plan validation reply Route proposal
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.00020	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0025
Requirement	The FOC system should implement ARINC 702 standard for Upper Air Data Request and Response formatting.
Title	Upper Air Data message formatting
Status	<Deleted>
Rationale	Delete Reason: The requirement has been identified as superfluous in an internal review process as it contains no changes compared to the current operating method. ARINC 702 is current industry standard for Upper Air Data exchange between FOC system and aircraft FMS via ACARS. Implementation of another standard in aircraft FMS is not envisioned for Step 1.
Category	<Interoperability>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0155	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0710.0005
Requirement	The FOC system shall use UTC time as reference.
Title	Align air and ground times
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.4010). The time reference for the air and the ground systems may vary. To ensure that the data obtained from the a/c can be mixed with the ground data for other flights there is a need to ensure that UTC time reference is used by all

	air and ground systems.
Category	<Performance>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	

[REQ]

Identifier	REQ-11.01.03-TS-0735.0005
Requirement	The FOC system shall have a Human Machine Interface (HMI) that is used to enter Selectors and set Trigger to start FOC system functions.
Title	Human Machine Interface
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1030). The FOC system will be operated by human beings that will manually start and stop different functions or define input parameters that are used for the system automation.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0010	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0015	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0735.0010
Requirement	The HMI shall include the following selectors: • TTA Constraints Selector • TTA/CTA Recalculation Selector • TTA/CTA Output Selector • PTR Selector • EFPL Selector • EFPL ATC Accept Selector • NPR Data Entry Control • NPR Selector • Timeout Selector • Retransmission Limit Selector
Title	HMI Selector List
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1TS.1035) / wording changed to reflect updated content. This requirement defines the selector that shall be available in the FOC system HMI
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0005	<Partial>

B.2 AFUA TS

[REQ]

Identifier	REQ-11.01.03-TS-0225.0005
Requirement	The FOC system shall link received RTSA information (SUUP and RTSA UUP) with flights whose trajectories are affected by the RTSA information.
Title	Flight Identification.
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1AF.1005. SUUPs /RTSA UUPs inform about the changing status of airspaces (release or booking) that may have been previously planned for usage by a certain amount of trajectories in the time interval of interest. The identification of concerned trajectories and of related flight numbers is crucial for creating the list of flights to be re-calculated within the <FB> Flight Planning, and – therefore – to trigger the individual AO's safety and impact assessment.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0070	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0225.0010
Requirement	The FOC system shall display all flights linked to the RTSA information (SUUP and RTSA UUP) with relevant operational attributes.
Title	Flight Listing
Status	<Deleted>
Rationale	Delete Reason: This requirement has been superseded by REQ-11.01.03-TS-S1NR.1020. Based on the outcome of the flight identification step, the FOC system shall list all flights linked to SUUPs/RTSA UUPs with relevant operational attributes (flight number, phase of flight, final fuel/fuel on-board, time to released ARES, availability of any datalink). Individual trajectories will be then re-calculated within the <FB> Flight Planning.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0070	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0225.0015
Requirement	The FOC system shall identify all flights linked to the SUUP/RTSA UUP that are too close to the released airspace based on individual airspace user's parameters and highlight them.
Title	Flight Listing/2
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1AF.1005. The FOC system shall identify and highlight all flights linked to SUUPs/RTSA UUPs that are too closed to the released airspaces in a way the airspace user can decide whether to re-calculate relevant

	trajectories within the <FB> Flight Planning or skip this step.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0070	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0035
Requirement	The FOC system shall re-calculate - consistently with the information brought about by the RTSA information - the trajectory of all flights that have been identified as affected by the RTSA information itself.
Title	Trajectory Re-calculation.
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1AF.1005) / wording harmonized. To assess the impact of an airspace release or booking, concerned trajectories shall be re-calculated to collect the information required by the FOC to make decisions. For flights too close to the released airspace (according to the parameters set by the individual airspace user) the trajectory revision might not apply. Therefore such condition must be recognized to avoid unintended workload on AU side.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0045	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0505.0010
Requirement	The FOC system shall receive the RTSA information (SUUP/RTSA UUP) sent by the NM system, validate and store it.
Title	SUUP/RTSA UUP Reception
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1AF.4005) / wording harmonized. Getting SUUPs and RTSA UUPs (i.e. checking whether an ARES has been released or booked)) is the main trigger for the whole RTSA-related process of each individual FOC.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AOC-ATM-13	<Full>
<SATISFIES>	<Enabler>	SWIM.INFR-05a	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0003	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0225.0020
Requirement	The FOC system shall initiate the RTSA impact assessment process in the shortest time possible
Title	Performance of RTSA Information Processing.
Status	<Deleted>
Rationale	Delete Reason: This requirement has been deleted as the content is assumed to be standard. As the time window especially for the in-flight trajectory revision is very short, the reaction time for the generation of a new trajectory must be as short as possible.
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	<Analysis>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0005	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0040
Requirement	The FOC system shall initiate a trajectory revision in the shortest time possible.
Title	Performance of Trajectory Re-calculation.
Status	<Deleted>
Rationale	Delete Reason: This requirement has been deleted as the content is assumed to be standard. As the time window especially for the in-flight trajectory revision is very short, the reaction time for the generation of a new trajectory must be as short as possible.
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	<Analysis>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0005	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0305.0045
Requirement	The FOC system shall generate a trajectory under consideration of all legal requirements that are essential for a safe execution of a flight.
Title	Safety of Trajectories.
Status	<Deleted>
Rationale	Delete Reason: The requirement has been identified as superfluous in an internal review process as it contains no changes compared to the current operating method. It must be ensured that the trajectory is generated under consideration of all safety relevant aspects. Only if all these parameters are considered a safe and orderly execution of trajectories can be ensured.
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	<Analysis>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0045	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0065	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0110	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0125	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0150	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0505.0015
Requirement	The FOC system shall receive relevant ACK or REJ messages from IFPS.
Title	EFPL Acknowledgment or Rejection
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1EF.1025.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AOC-ATM-13	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0510.0020
Requirement	The FOC system shall send updated flight plans and related briefing information to concerned crews.
Title	Flight Plan to Crews
Status	<Deleted>
Rationale	Delete Reason: The content of this requirement is considered legacy. It is already implemented in accordance with EASA OPS. To inform the pilots about the new operational scenario and enable Captain's decision-making.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AOC-ATM-20	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0004	<Partial>

B.3 BMT TS

[REQ]

Identifier	REQ-11.01.03-TS-S202.0010
Requirement	The FOC shall link data received with an ATC-to-FOC-RBT-Conflict-Advisory message with the flight identified in the ATC-to-FOC-RBT-Conflict-

	Advisory message.
Title	Linking of ATC Area(s) to Avoid with FOC flights.
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S2NR.3005. The ATC Area to Avoid, included in the ATC-to-FOC-RBT-Conflict-Advisory is not generic data; it is only related to the flight defined in the advisory message (EFPL).
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S202.0020
Requirement	The FOC shall update the Operational Scenarios of a flight identified in an ATC-to-FOC-RBT-Conflict-Advisory message upon reception of an ATC-to-FOC-RBT-Conflict-Advisory message.
Title	Update of Operational Scenarios due to ATC-to-FOC-RBT-Conflict-Advisory
Status	<Deleted>
Rationale	Delete Reason: The concept of an “Operational Scenario” is one way how to implement efficient trajectory negotiations and, thus, shall not be described in a requirement. Instead, a new requirement (REQ-11.01.03-TS-S1NR.3015) has been added that provides the base for efficient trajectory negotiations. The reception of AA2A data shall lead to the initialization of a Trajectory Review within the FOC. Such Trajectory Review could generally be triggered by an update of the Operational Scenario. As different events might lead to such updates, this intermediate requirement is needed.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S202.0020
Requirement	The FOC shall update the Operational Scenarios of a flight identified in an ATC Reply message upon reception of an ATC Reply message.
Title	Update of Operational Scenarios due to ATC Reply

Status	<Deleted>
Rationale	Delete Reason: The concept of an "Operational Scenario" is one way how to implement efficient trajectory negotiations and, thus, shall not be described in a requirement. Instead, a new requirement (REQ-11.01.03-TS-S1NR.3015) has been added that provides the base for efficient trajectory negotiations. The ATC Reply will include information about the validity of the proposed trajectory, a reject reason if the trajectory has been rejected and one or several AA2A(s) if the trajectory causes further conflicts. This information must be related to the respective flight. The update of the respective OS shall trigger further actions.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0010
Requirement	The FOC shall initiate a new RBT Review Scenario if the Operational Scenario was updated, the Inflight Trajectory Revision Selector is selected and no active RBT Review Scenario is available for the respective flight.
Title	Trajectory revision start
Status	<Deleted>
Rationale	Delete Reason: This requirement is unnecessary due to REQ-11.01.03-TS-S1TS.4005 and REQ-11.01.03-TS-S1EF.1030. Not all AU might intend to support the inflight trajectory revision; therefore it must be optional to avoid unintended workload on AU side. In such case ATC will re-plan the trajectory on their side in accordance with the FC. The ATC-to-AOC-RBT-Conflict-Advisory is a message will only be received for flights that are already in the execution phase or close to the execution phase.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0020
Requirement	The FOC shall update the active RBT review Scenario of a certain flight with the AA2A data upon reception of new AA2A data.
Title	AA2A allocation to RBT Review Scenario
Status	<Deleted>
Rationale	Delete Reason: This requirement is unnecessary due to REQ-11.01.03-TS-S1TS.400 and REQ-11.01.03-TS-S1EF.1030. As the negotiation of the trajectory is an iterative process where the number of AA2As might increase with every iteration step, the data must be kept and gathered until the trajectory negotiation has been finished. The AA2A data will be linked with this RBT Review Scenario and not further be used after it has been inactivated.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0030
Requirement	The FOC shall generate a new trajectory triggered by an update of the RBT Review Scenario.
Title	Trajectory generation upon RBT Review Scenario update
Status	<Deleted>
Rationale	Delete Reason: This requirement has been superseded by REQ-11.01.03-TS-S1NR.1015. The update of the RBT Review Scenario shall trigger the generation of a new trajectory that shall be proposed to ATC as a solution for the identified conflict. The trajectory will be generated according to all requirements of flight planning and under consideration of the received AA2A data.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0060	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0040
Requirement	The FOC shall update the Operational Scenario of a certain flight and the respective filed trajectory with the ATC Validity Status upon reception from the ATC system.
Title	Trajectory status update.
Status	<Deleted>
Rationale	Delete Reason: This requirement was determined in an internal review process.as being redundant: A trajectory is considered valid unless rejected. Furthermore, this requirement was a special requirement in the context of VP-775. Whenever a trajectory has been published its current status must be updated accordingly to avoid any confusion. Therefore it must be indicated whether the trajectory has been accepted or rejected by ATC.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0045	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0050
Requirement	The FOC shall initiate the Trajectory Distribution after reception of the ATC Validity Status “Accepted”.
Title	Initialization of trajectory distribution (filing/ briefing/ RBT trigger)
Status	<Deleted>
Rationale	Delete Reason: This requirement was a special requirement in the context of VP-775. After review it has not been considered a general requirement. As in a holistic Trajectory Management Process all ATM stakeholder must be considered and as it is yet not defined how the SBT becomes RBT, this “black box” has be defined to gather all these open items in one process until the respective concepts are mature.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0040	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0060
Requirement	The FOC shall inactivate the active RBT Review Scenario upon initialization

	of the trajectory distribution process.
Title	RBT Review Scenario deactivation
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. The negotiation ends when a trajectory has been found that can be used as RBT. If this has been achieved the purpose of the RBT Review Scenario has been achieved and it is not further needed.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0030	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0010
Requirement	The FOC shall receive ATC-to-FOC-RBT-Conflict_Advisories coming from an ATC system.
Title	Reception of ATC-to-FOC-RBT-Conflict_Advisories
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S2NR.3005. Within Europe the data exchange between FOC and ATC is still not established. Therefore it is required to develop interfaces between these two domains to allow an trajectory negotiation between these two ATM stakeholder and beyond that to achieve the target to implement a Trajectory management between all ATM stakeholders.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<SATISFIES>	<Enabler>	ENB02.01 SWIM	<Partial>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0055	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0020
Requirement	The FOC shall store ATC-to-FOC-RBT-Conflict-Advisory data upon

	reception from ATC.
Title	Reception of ATC Area to Avoid data
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S2BT.3005) / wording harmonized. The system shall store the data included in the ATC-to-FOC-RBT-Conflict-Advisory message internally to make it available for other functionalities. The ATC-to-FOC-RBT-Conflict-Advisory message will include: • An EFPL representing the trajectory that conflicts with other traffic • And one or several ATC Area(s) to Avoid.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Partial>
<SATISFIES>	<Enabler>	ENB02.01 SWIM	<Partial>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<Enabler>	AUO-0204-B Agreed Reference Business/Mission Trajectory/RBT/RMT in Step 2	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0050	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0055	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0030
Requirement	The FOC shall store data received in an ATC Reply messages coming from the ATC system
Title	Reception of ATC reply
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S2BT.3005. The system shall store the data included in the ATC-to-FOC-RBT-Conflict-Advisory message internally to make it available for other functionalities. The ATC-to-FOC-RBT-Conflict-Advisory message will include: • The Validation Status of the sent trajectory • The Reason in case of a reject • And one or several ATC Area(s) to Avoid in case of a reject.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0050	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2600.0055	<Full>

1702
1703 [REQ]

Identifier	REQ-11.01.03-TS-S205.0035
Requirement	The FOC shall update the Operational Scenario with AA2A data and trajectory data in real-time.
Title	Performance of Operational Scenario update.
Status	<Deleted>
Rationale	Delete Reason: The concept of an “Operational Scenario” is one way how to implement efficient trajectory negotiations and, thus, shall not be described in a requirement. Instead, a new requirement (REQ-11.01.03-TS-S1NR.3015) has been added that provides the base for efficient trajectory negotiations. As the time window especially for the inflight trajectory revision is very short, the reaction time for the generation of a new trajectory must be as short as possible. The update of the Operational Scenario is one of the task that has to be performed in the process chain of trajectory revision.
Category	<Performance>
Validation Method	<Live Trial><Real Time Simulation><Shadow Mode>
Verification Method	<Test>

1704
1705 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Partial>

1706
1707 [REQ]

Identifier	REQ-11.01.03-TS-S203.0060
Requirement	The FOC shall monitor the trajectory steadily during all phases of the flight.
Title	On-going trajectory monitoring
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S2BT.1005) / wording changed to refer to RBT. To ensure an assessment of changing planning conditions or on a deviation from the planned route at all stages of a flight (especially in the in-flight phase) a continuous monitoring must be ensured.
Category	<Performance>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation><Shadow Mode>
Verification Method	<Test>

1708
1709 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>

1710
1711 [REQ]

Identifier	REQ-11.01.03-TS-S203.0065
Requirement	The FOC shall initiate a trajectory review in real-time.
Title	Performance of trajectory review initiation
Status	<Deleted>

Rationale	Delete Reason: It is assumed that there is by default no delay in the initiation of a trajectory review process, which makes this requirement superfluously. As the time window especially for the inflight trajectory revision is very short, the reaction time for the generation of a new trajectory must be as short as possible. The initiation of the trajectory review process is one of the task that has to be performed in the process chain of trajectory revision
Category	<Performance>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0070
Requirement	The FOC shall generate trajectories under consideration of all legal requirements that are essential for a safe execution of a flight.
Title	Safety of trajectories.
Status	<Deleted>
Rationale	Delete Reason: Duplicate with also deleted REQ-11.01.03-TS-0305.0045. Whenever a trajectory is planned or predicted by any ground system it must be ensured that it was generated under consideration of all safety relevant aspects as fuel requirements, working and layup time requirements of crew members, ATFM and ATM requirements etc. Only if all these parameters are considered a safe and orderly execution of trajectories can be ensured. A source for such requirements is the EU-OPS requirements.
Category	<Safety>
Validation Method	<Real Time Simulation><Shadow Mode><Expert Group (Judgement Analysis)>
Verification Method	<Inspection><Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0060	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S203.0075
Requirement	The FOC shall use the same trajectory during the flight monitoring that was distributed to the other ATM stakeholders.
Title	Seamless use of trajectory
Status	<Deleted>
Rationale	Delete Reason: Requirement is not needed anymore as replaced by REQ-11.01.03-TS-S2NR.1010 that refers to RBT monitoring. The trajectory management will be based on the monitoring of the trajectory during the whole trajectory lifecycle. The monitoring will compare the flown trajectory

	with the RBT that has been agreed between all ATM stakeholders. Hence the FOC has to ensure that the trajectory published to the NOP (published to all other ATM stakeholders) corresponds with the trajectory the AU wants to fly.
Category	<Safety>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability with air ground data sharing	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0055	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0040
Requirement	The FOC shall send trajectory proposals in the EFPL format to the ATC system.
Title	Trajectory proposal format
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1BT.1005). For the time being the EFPL format as used by NM for the EFPL creation B2B web service shall be used for the trajectory exchange between FOC and ATC. This requirement is driven by the need to align and standardize basic data that is exchanged between all ATM stakeholders.
Category	<Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability	<Partial>
<SATISFIES>	<Enabler>	ENB02.01 SWIM	<Partial>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<SATISFIES>	<Enabler>	AOC-ATM-20 Sharing of trajectory data between AOC/WOC and the ATM world using B2B web services	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-13 Sharing of updated data for CDM process between AOC/WOC ATM systems and ATM world	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0050
Requirement	The FOC system shall receive ATC Reply messages from the ATC system.
Title	Reception of ATC reply
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1BT.1010). Upon publication of a trajectory proposal to the ATC system it is expected to get an ATC Reply message in return. This data is directly linked to the flight for which a trajectory has been send to the ATC system.
Category	<Interface>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04 Business and Mission Trajectory	N/A
<SATISFIES>	<Enabler>	ENB03.01.01 TMF Trajectory Management Framework and System Interoperability	<Full>
<SATISFIES>	<Enabler>	ENB02.01 SWIM	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-20 Sharing of trajectory data between AOC/WOC and the ATM world using B2B web services	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-13 Sharing of updated data for CDM process between AOC/WOC ATM systems and ATM world	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication management	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0045	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.01-DOD-2100.0045	<Full>

B.4 EFPL TS

[REQ]

Identifier	REQ-11.01.03-TS-S102.0050
Requirement	Upon reception of an EFPL validation reply the FOC system shall link the validation status, and constraints with the flight identified in the EFPL validation reply.
Title	Processing of 4D trajectory validation reply data
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1025) / wording harmonized. If the validation of a 4D trajectory is done a reply will be received by the FOC. This reply will include the status of the trajectory, which can be “acknowledged” or “rejected” and a number ‘n’ constraints with which the trajectory is in conflict. 0 ≤ ‘n’ < ∞
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0021	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0030	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S102.0055
Requirement	The FOC system shall update the Operational Scenarios of a flight identified in a flight plan validation reply received from NOP/ NM with the validation status of the trajectory and delivered constraints.

Title	Flight data update upon flight plan validation reply
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. When a flight plan is validated using the 4D trajectory validation service of NM a reply will be returned by this service. It will include the validation status for the validated trajectory which can be “acknowledged” or “rejected” and a number ‘n’ of constraints the trajectory is not adhering to, where 0 ≤ ‘n’ < ∞. As this information is directly related to the validated trajectory its dataset must be updated with this information.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0050	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0021	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0030	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S102.0060
Requirement	The FOC system shall link soft constraints received in a flight plan filing reply from NOP/ NM with the flight identified in the reply message.
Title	Processing of filing replies including soft constraints
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. If a trajectory is filed to NM/ NOP it will be validated and analysed in regard whether there are tactical constraints that might be considered in the vertical profile of the trajectory. If such tactical constraints (that do not lead to rejects and therefore are called soft constraints) are identified by NM they will be reported to the AU/ FOC who can decide whether a trajectory with updated vertical profile shall be provided to NM/ NOP or not. If no update is send to NM/ NOP, NM will generate this updated vertical profile himself. If an updated vertical profile is delivered by AU/ FOC it will be used by NM/ NOP directly.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0021	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0030	<Full>

1742
1743 [REQ]

Identifier	REQ-11.01.03-TS-S102.0065
Requirement	The FOC system shall update the Operational Scenarios of a flight identified in a flight plan filing reply received from NOP/ NM with the soft constraints.
Title	Flight data update upon reception of soft constraints
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. If a trajectory has been filed to NM/ NOP a reply message will be returned. Apart from reject messages that will include constraints that are not adhered by the filed trajectory, for acknowledged trajectories a set of “soft constraints” could be included. These “soft constraints” are not invalidating the trajectory but might be applied to the profile of the trajectory as an addition. This data is related to the flight for which a trajectory has been filed. Therefore the flight data must be updated with the “soft constraints”.
Category	<Functional>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

1744
1745 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0021	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0030	<Full>

1746
1747 [REQ]

Identifier	REQ-11.01.03-TS-S103.0070
Requirement	The FOC system shall send the 4D trajectory to the EFPL validation service if triggered by the airspace user.
Title	EFPL validation
Status	<Deleted>

Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1020). This requirement covers the validation of a FOC trajectory based on EFPL data. It is only used to confirm that a calculated trajectory is according to all constraints and regulations and to get further information on offended restrictions and constraints in case that the trajectory has been rejected by NM.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0050	<Partial>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S103.0075
Requirement	The FOC system shall recalculate the vertical profile of a trajectory according to the soft constraints and all ATM constraints available in the FOC system if triggered by the airspace user.
Title	Profile tuning according to soft constraints
Status	<Deleted>
Rationale	Delete Reason: This requirement is superseded by REQ-11.01.03-TS-S1NR.1020. Soft constraints, like profile tuning restrictions, will be returned if applicable when a trajectory is filed to NM/ NOP. Those soft constraints can be used to file a new profile for a given trajectory (flight plan update) or to re-estimate the required fuel for the flight execution.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S103.0080
Requirement	The FOC system shall update the vertical profile of a filed trajectory in the NOP by sending an EFPL update to the NOP/ NM if triggered by the airspace user.
Title	Update of vertical profile
Status	<Deleted>
Rationale	Delete Reason: This requirement is deleted as no adaption as described in

	the requirement is performed. If soft constraints have been received for a filed trajectory the airspace user can decide to send an updated trajectory (which includes a new vertical profile) to NM/ NOP. This information is additional information for NM and is used instead of a profile generated by NM himself.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S103.0085
Requirement	The FOC system shall be able to generate EFPL flight plans for flights planned with the FOC system if triggered by the Airspace User.
Title	FIXM generation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1040). The flight plan filed to NM/ NOP will reflect the FOC trajectory that has been planned by the AU for a certain flight. This FOC trajectory must be converted to the FIXM format when filed to NM/ NOP when a filing or flight plan validation service based on the FIXM flight plan format is used.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0070
Requirement	The FOC system shall send EFPM message to the NOP/ NM, if the NM

	EFPL validation service is triggered by the airspace user.
Title	EFPL based trajectory validation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1005). The 4D trajectory validation service provided by NM (Eurocontrol) will available for two different formats. One format will be the EFPL format, defined by Eurocontrol, the other will be based on the FIXM format. Depending on what is setup/ triggered by the airspace user the FOC system must comply with one of the two formats.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0075
Requirement	The FOC system shall send a FIXM 4D message to the NOP/ NM, if the NM EFPL FIXM validation service is triggered by the airspace user.
Title	FIXM based trajectory validation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1010) / wording slightly changed. The 4D trajectory validation service provided by NM (Eurocontrol) will available for two different formats. One format will be the EFPL format, defined by Eurocontrol, the other will be based on the FIXM format. Depending on what is setup/ triggered by the airspace user the FOC system must comply with one of the two formats.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A

<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0080
Requirement	The FOC system shall receive soft constraint information from the Network Manager.
Title	Receive soft constraints
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1EF.1035. The Network Manager will send out soft constraint IDs for trajectories that have been filed to the NOP/ NM. The airspace user might use them to calculate an updated vertical profile or to improve the fuel estimation for a certain flight.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0055	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	AeronauticalInformationFeature	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0020	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0085
Requirement	The FOC system shall send the EFPL as FIXM 4D message, if the addressed ANSP or Network Manager is able and requires to receive it and if triggered by the airspace user.
Title	4DT FIXM filing
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1015). For the 4D trajectory filing and update two different types of format, EFPL and FIXM, will be available. The airspace user has the choice to send the flight plan in FIXM or EFPL format. Apart from that it must be checked whether the addressed recipient is able to receive the 4D trajectory in the respective format.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0025	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0000	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0105
Requirement	The FOC system shall allow the system user to trigger whether an ICAO FPL or EFPL is generated for a flight.
Title	Flight plan type options
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1055). Flight plan information can include two different types of content. The first option only includes the flight plan according ICAO PANS-ATM doc 4444, the other type includes information as defined by Eurocontrol as Extended Flight plan. The FOC system must be adaptable in regard whether the ICAO FPL or the EFPL is used.
Category	<Interoperability><Maintainability>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0110
Requirement	The FOC system shall allow the system user to trigger whether the ICAO FPL is transmitted to NM/ NOP using ICAO TXT, ICAO XML or ICAO FIXM based services.
Title	ICAO FPL format selection
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.5005). Depending on the way how the ICAO FPL is send NM/ NOP different type of ICAO FPL message formats are applicable. It must be possible to select how the flight plan is send to NM/ NOP. The respective selected way will define in which format the flight plan will be transmitted.

Category	<Interoperability><Maintainability>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0115
Requirement	The FOC system shall allow the system user to trigger whether the EFPL is transmitted to NM/ NOP using EFPM or FIXM 4D message based services.
Title	EFPL format selection
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.5010). Depending on the way how the EFPL is send NM/ NOP different type of EFPL message formats are applicable. It must be possible to select how the flight plan is send to NM/ NOP. The respective selected way will define in which format the flight plan will be transmitted.
Category	<Interoperability><Maintainability>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0055
Requirement	It shall be possible to adapt the flight plan contents and formats.
Title	Adaptability of flight plan data and formats
Status	<Deleted>
Rationale	Delete Reason: This requirement is purely describing an implementation

	aspect and, therefore, is considered to be out of the scope of this TS document. The content, especially of the EFPL as well as the format, especially of all XML flight plan messages might develop within the next years. Therefore it is important to ensure the adaptability within the FOC system.
Category	<Maintainability>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-SPR-FPS1.0021	<Full>
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0060
Requirement	The generation of the extended flight plan shall not affect the system performance in a negative way.
Title	EFPL performance impact
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1060). The provision of the EFPL is additional work that has to be done by the FOC. As the main purpose of the FOC is the planning of the flight operations and filing of a flight plan is only an interface function needed to ensure interoperability with all ATM stakeholders, it shall not influence the performance of the flight planning in a negative way.
Category	<Performance>
Validation Method	<Real Time Simulation><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S102.0070
Requirement	Constraints and the FPL validity status returned by NM/ NOP in EFPL reply messages shall be stored in the FOC system for later analysis.
Title	EFPL reply storage
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1030). The constraints and the validity status might be used for further analysis within the FOC. Therefore it must remain available in the FOC system.
Category	<Metadata>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0060	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S102.0075
Requirement	Soft constraints returned by NM/ NOP in EFPL reply messages shall be stored in the FOC system for later analysis.
Title	Soft constraint storage
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1035) / wording harmonized and soft constraints have been replaced by PTRs. The soft constraints might be used for further analysis within the FOC. Therefore it must remain available in the FOC system.
Category	<Metadata>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0003	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0030	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0065
Requirement	The FOC system shall provide EFPL flight plans in a human readable format to the system users.
Title	EFPL display
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1045) / wording slightly changed. The EFPL will be exchanged in the XML formats FIXM 4D and EFPM. Both are very hard to read for human beings. Therefore the FOC system must be able to provide the EFPL content in a way that the system users are able to read them.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design><Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0030	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A

<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0070
Requirement	The FOC system shall provide EFPL flight plan filing and validation replies in a human readable format to the system users.
Title	EFPL reply display
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1050). The EFPL filing and validation replies will be provided in the XML formats. Both are very hard to read for human beings. Therefore the FOC system must be able to provide the content included in those replies in a way that the system users are able to read them.
Category	<HMI>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Review of Design><Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0030	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.06.02-OSED-0001.0035	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<Enabler>	AOC-ATM-11	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0075
Requirement	The information provided by the Extended Flight Plan Filing request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL filing via SWIM
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1065). SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0075	<Full>
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0080
Requirement	The information provided by the Extended Flight Plan Update request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL update via SWIM

Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1070). SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0075	<Full>
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S107.0085
Requirement	The information provided by the Extended Flight Plan Validation request message shall be in accordance with WS-N WSDL and XSD format.
Title	EFPL validation via SWIM
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1EF.1075). SWIM-TI binding: REQ-14.01.04-TS-0901.0304
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Information and Communication Management	N/A
<ALLOCATED_TO>	<Project>	11.01.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.04	N/A
<APPLIES_TO>	<Operational Focus Area>	ENB03.01.01 TMF	N/A
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0070	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.03-TS-S105.0075	<Full>
<SATISFIES>	<Service>	ExtendedFlightPlanSubmission	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0060	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.06.02-OSED-EFPL.0070	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0010	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-11.01.02-OSED-BMT1.0020	<Full>

B.5 Free Route TS

[REQ]

Identifier	REQ-11.01.03-TS-S102.0100
Requirement	Upon reception of the Free Routing Airspace volume availability the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA volume availability information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4005) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the FRA volume availability.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0105
Requirement	Upon reception of the Free Routing Airspace time availability the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA time availability information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4010) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the FRA time availability.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0110
Requirement	Upon reception of the rule “Free Routing Airspace Horizontal Entry/Exit features” the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA horizontal entry/exit features information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4015) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the horizontal entry/exit features.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	

<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0115
Requirement	Upon reception of the rule “Free Routing Airspace Vertical Entry/Exit features” the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA vertical entry/exit features information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4020) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the vertical entry/exit features.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0120
Requirement	Upon reception of the rule “Free Routing Airspace allowed Intermediate Points” the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA allowed intermediate points information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4025) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the allowed intermediate points for flight planning. These points can be currently published points or user-defined lat/long points.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0125
Requirement	Upon reception of the rule “Free Routing Airspace Minimum/Maximum allowed segment length” the FOC shall process this data such that it is available for trajectory planning.
Title	Processing of FRA allowed minimum/maximum segment length information

Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.4030) / wording harmonized. In order to be able to plan valid trajectories in FRA the FOC must know about the allowed minimum/maximum segment length.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S103.0100
Requirement	The FOC shall generate trajectories under consideration of the Free Routing airspace availability and all rules valid in the Free Routing Airspace.
Title	Trajectory generation in FRA
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.1005) / wording harmonized. To make use of the flight planning opportunities that Free Routing offers, the FOC must be able to plan valid trajectories in FRA by obeying all rules existing.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Planning	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S104.0100
Requirement	A change of the Free Routing Airspace availability shall trigger the FOC to reassess the planned trajectory.
Title	Trajectory update in FRA
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.1010) / wording harmonized. If there is a change in the Free Routing Airspace availability, the FOC shall reassess the planned trajectory to determine whether changes are necessary as the route may have become invalid or whether a now possible trajectory is more beneficial to the airspace user.
Category	<Functional><Operational>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOM-ATM-10	<Full>
<SATISFIES>	<Enabler>	TBD	<Full>

<ALLOCATED_TO>	<Functional block>	Flight Operations Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S103.0105
Requirement	If the ATS route network remains available in the Free Routing Airspace, the FOC shall allow the airspace user to trigger whether a trajectory is planned using the ATS route network only or using all possibilities in the Free Routing Airspace.
Title	Flight Planning Options in FRA
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1FR.1015). The airspace user may decide to only use the ATS route network for flight planning if it remains available in Free Routing Airspace and not to make use of all new flight planning options.
Category	<Functional>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S102.0130
Requirement	Upon changes in the possibilities for planning a trajectory in Free Routing Airspace, the FOC shall update the affected data internally sufficiently fast.
Title	Change induced data update
Status	<Deleted>
Rationale	Delete Reason: It is assumed that there is by default no delay in the “receive and store” process, which makes this requirement superfluously. In addition, no similar requirements for other kind of data (like for example RTSA) has been identified. In order to be constantly able to plan valid trajectories in FRA, the FOC must immediately incorporate any changes to any data relevant for trajectory generation in FRA.
Category	<Operational><Performance>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Data Support Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

[REQ]

Identifier	REQ-11.01.03-TS-S104.0105
Requirement	Upon changes in the options to plan a trajectory in Free Routing Airspace, the airspace user shall complete the assessment of the need for a recalculation of the trajectory by the FOC sufficiently fast.
Title	Trajectory update assessment in FRA
Status	<Deleted>

Rationale	Delete Reason: This requirement is superseded by REQ-11.01.03-TS-S2NR.1015. If there are new options to plan a trajectory in the FRA due to for example a change in the volume availability, the airspace user must assess, whether it wants to recalculate the previously calculated trajectory in order to take advantage of the new planning option. However, this assessment must be completed sufficiently fast in order to initiate the necessary processes in the FOC and affected airspace user units.
Category	<Operational><Performance>
Validation Method	<Fast Time Simulation><Live Trial><Real Time Simulation>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	
<SATISFIES>	<Enabler>	AOC-ATM-10	<Full>
<SATISFIES>	<Enabler>	ENB03.01.01	<Full>
<ALLOCATED_TO>	<Functional block>	Flight Operations Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA03.01.03	N/A
<ALLOCATED_TO>	<Project>	P11.01.03	N/A

B.6 EFPL-AIM-UDPP-FR TS Honeywell

[REQ]

Identifier	REQ-11.01.03-TS-S105.0090
Requirement	The FOC system shall import the EAUP/EUUP from the Network Manager via B2B in AIXM (SWIM).
Title	EAUP/EUUP import via SWIM
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.5005). The Functional Block “Information and Communication Management” of the FOC system needs to import the EAUP/EUUP information from Network Manager (NM) via B2B in AIXM format (SWIM).
Category	<Operational>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-06	<Full>
<SATISFIES>	<Enabler>	AIMS-19a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0150	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0005	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0095
Requirement	The FOC system shall be able to import D-NOTAM information from the NM via B2B in AIXM format
Title	D-NOTAM consistency
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.4020) / wording changed to also include D-MET information. Consistent information in time will avoid inconsistent situational awareness and decision making
Category	<Operational>
Validation Method	<Real Time Simulation>
Verification Method	

1876
1877 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-06	<Full>
<SATISFIES>	<Enabler>	AIMS-19a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0003	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0005	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

1878
1879 [REQ]

Identifier	REQ-11.01.03-TS-S105.0100
Requirement	The FOC system shall present only valid D-NOTAM information in UTC time format
Title	D-NOTAM consistency
Status	<Deleted>
Rationale	Delete Reason: All D-NOTAM related aspects have been covered in the corresponding requirements in chapter 3. Consistent information in time will avoid inconsistent situational awareness and decision making
Category	<Operational>
Validation Method	<Real Time Simulation>
Verification Method	

1880
1881 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	A/C-57	<Full>
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	AIMS-19a	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

1882
1883 [REQ]

Identifier	REQ-11.01.03-TS-S105.0150
Requirement	The FOC system shall indicate a time when the last update of information has been performed
Title	D-NOTAM consistency
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.5010) / wording changed to widen the scope. Consistent information in time will avoid inconsistent situational awareness and decision making
Category	<Design>
Validation Method	<Real Time Simulation>
Verification Method	

1884
1885 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

1886
1887 [REQ]

Identifier	REQ-11.01.03-TS-S205.0100
Requirement	The FOC system shall display the airspace information in horizontal (lateral view) map projection
Title	Airspaces projected in map

Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.4010). To allow user to clearly identify the airspace shape, the airspace is presented in lateral graphical form as an object on the map
Category	<Design>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0105
Requirement	The FOC system should display the navigation information in the form of aeronautical chart when the flight plan is available
Title	Navigation information for aeronautical chart
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.1010). The system allows the user to switch on or off any layer of the navigation information in the aeronautical chart, when the flight plan is available. The information should contain: - Waypoints - Navaids - Airways - Airspaces - Airports
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S105.0155
Requirement	For each airspace there shall be information about the airspace identifier, the type of airspace, vertical limitations and validity times displayed on request
Title	Airspace information
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.4005). The user needs access to information about each airspace, containing the airspace identifier, the type of airspace, vertical limitations and validity times, to safely perform the flight.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0115
Requirement	The design of the graphical presentation of airspaces should allow the user to clearly interpret multiple overlapping airspaces, and to distinguish between them
Title	Multiple airspaces
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.4015). It should be obvious from the design that there are multiple airspaces one on top of another
Category	<Design>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0120
Requirement	The FOC system shall filter D-NOTAMs according user settings criteria applicable for given flight plan
Title	D-NOTAM filtering
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1HT.1005) / wording changed to also reflect filtering of D-METs. The system should be capable of displaying D-NOTAMs that are relevant for the given flight plan, based on the 4D criteria: - lateral filtering according to distance from route in the flight plan - vertical filtering above and under certain flight level - time-based filtering The user should be able to change the filtering criteria according to own preferences, and to see what are filtering criteria currently applied.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0125
Requirement	The FOC system shall store filtering criteria when triggered by the user

Title	Saving of filtering criteria
Status	<Deleted>
Rationale	Delete Reason: The storage of filter criteria was determined to be not absolutely necessary for the system in an internal review process. The FOC system should allow saving of users setting for filtering criteria
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-S205.0130
Requirement	The FOC system shall display any change of airspace information (indication of activation/deactivation of airspace)
Title	Airspace status change
Status	<Deleted>
Rationale	Delete Reason: This requirement has been superseded by REQ-11.01.03-TS-S1NR.4005. The user should be informed about airspace related information, for example to indicate whether an airspace, which was not active on the briefing, becomes active, and also vice versa.
Category	<Functional>
Validation Method	<Real Time Simulation>
Verification Method	

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AIMS-07	<Full>
<SATISFIES>	<Enabler>	AIMS-07a	<Full>
<SATISFIES>	<Enabler>	SWIM-APS-02b	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-SPR-D001.0004	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-INTEROP-D001.0007	<Full>
<APPLIES_TO>	<Operational Focus Area>	ENB02.01.02	<Full>

B.7 EFPL-AIM-UDPP-FR TS Sabre Airline Solutions

[REQ]

Identifier	REQ-11.01.03-TS-0410.0040
Requirement	The FOC should be capable of transmitting FDA priority to Airport Gaming Platform.
Title	SendFDAPriority
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1ST.2005) / wording slightly changed. FOC UDPP prototype should be able to send the initial and subsequent FDA priority to the Airport CDM system so that the flight sequence and delays can be calculated based on the AU priority .
Category	<Functional>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0045
Requirement	The FOC should be capable of reading CCS information including OI and Duration published by Airport Gaming Platform.
Title	ReadCCSInformation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1ST.2010) / wording slightly changed. FOC UDPP prototype should be able to get the updated CCS information including OI and Duration from the Airport Gaming Platform .
Category	<Functional>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0050
Requirement	The FOC should be capable of transmitting OC to Airport CDM Platform.
Title	SendOC
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1ST.2015) / wording slightly changed. FOC UDPP Prototype should be able to send the initial and subsequent OC's to the Airport CDM system so that the flight sequence and delays can be calculated based on the OC's.
Category	<Functional>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0410.0055
Requirement	The FOC should be capable of reading EOBT information published by Airport Gaming Platform.
Title	ReadDelayEOBTInformation
Status	<Deleted>
Rationale	Delete Reason: Change of identifier (now REQ-11.01.03-TS-S1ST.2020) / wording slightly changed. FOC UDPP prototype should be able to get the updated EOBT information based on the FDA priority and OC's provided by AU's from the Airport Gaming Platform.
Category	<Functional>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0320.001
Requirement	The FOC system shall visualize D-MET information.

Title	PTR in trajectory generation
Status	<Deleted>
Rationale	Delete Reason: Requirements on visualization are not included in this TS document, unless considered as absolutely necessary for a specific SESAR concept. The PTRs will be published by the NM manager to improve the trip fuel generation in the FOC system. PTRs can be considered directly, by adapting the generated vertical profile or indirectly by considering additional fuel amount and not adapting the vertical profile. PTRs must not be mandatorily considered in trajectory generation. If an FOC includes the PTR functionality, it shall be possible to enable or disable it.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

[REQ]

Identifier	REQ-11.01.03-TS-0320.002
Requirement	The FOC system shall visualize D-NOTAM information.
Title	TTA in Trajectory Generation
Status	<Deleted>
Rationale	Delete Reason: Requirements on visualization are not included in this TS document, unless considered as absolutely necessary for a specific SESAR concept. The FOC system shall consider TTAs throughout the trajectory generation process if enabled by the Airspace User.
Category	<Functional>
Validation Method	<Live Trial><Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0320.003
Requirement	The FOC system shall provide configurable filter capabilities for D-MET and D-NOTAM information.
Title	CTA flight recalculation
Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1HT.1005. If a flight is affected by a CTA a recalculation will be needed to consider this new input in the trajectory data. In case of an autonomous running FOC system this action can be automatically started if selected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Partial>

[REQ]

Identifier	REQ-11.01.03-TS-0320.004
Requirement	The FOC system shall provide update capabilities for D-MET and D-NOTAM information.
Title	CTA flight calculation

Status	<Deleted>
Rationale	Delete Reason: Not necessary anymore as redundant with REQ-11.01.03-TS-S1HT.4020. If a flight is affected by a CTA a recalculation will be needed to consider this new input in the trajectory data. In case of an autonomous running FOC system this action can be automatically stared if selected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0040	<Partial>

[REQ]

[REQ]Identifier	REQ-11.01.03-TS-0810.0005
Requirement	FOC UDPP prototype would integrate with the Airport Gaming Platform using XML message exposed through Webservice
Title	UDPPIntegrationbetweenFOCand Airport
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. FOC UDPP prototype would integrate with the Airport Gaming Platform using webservice exposing the following elements which would be used for UDPP validation • Individual FDA Priorities for Flights • CCS information including OI and Duration • Individual OC's for Flights • Flight Delay EOBT information for Flights
Category	<Functional>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	

[REQ]

Identifier	REQ-11.01.03-TS-0745.0005
Requirement	The FOC UDPP Prototype system shall have a Human Machine Interface (HMI) that is used by Operator to get the CCS information published by the Airport Gaming Platform
Title	Human Machine Interface
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. The FOC system will be operated by human beings will allow the operators to get the CCS information including OI and Duration published by the Airport Gaming Platform
Category	<HMI>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0745.0005
Requirement	The FOC UDPP Prototype system shall have a Human Machine Interface (HMI) that is used to update the FDA Priority and OC for flights
Title	Human Machine Interface
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. The FOC system will be operated by human beings will allow the operators to update the FDA priority and OC's for flights which are impacted by the CCS
Category	<HMI>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

[REQ]

Identifier	REQ-11.01.03-TS-0745.0005
Requirement	The FOC UDPP Prototype system shall have a Human Machine Interface (HMI) that is used by Operator to get the EOBT information published by the Airport Gaming Platform
Title	Human Machine Interface
Status	<Deleted>
Rationale	Delete Reason: The structural composition of requirements has changed with this TS document to align the concepts coming from the different TS documents. This new structure makes this requirement not necessary anymore. The FOC system will be operated by human beings will allow the operators to get the EOBT information and flight sequence published by the Airport Gaming Platform
Category	<HMI>
Validation Method	Human-in-the-Loop Simulation
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Full>

Appendix C Deleted requirements in the source documents

[REQ]

Identifier	REQ-11.01.03-TS-0410.0005
Requirement	The FOC system shall provide an EOBT release button in the HMI.
Title	Request Air Traffic Demand Data
Status	<Deleted>
Rationale	Note for deletion: Will be moved to IER.in the next D11.1.2-1 (OSED Step 1) iteration The FOC system must be able to connect to the NM using SWIM to pull demand data. The demand shall afterwards be used for flight scheduling purposes or to estimate a 4D trajectory.
Category	<Functional>
Validation Method	<Shadow Mode>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0145	

[REQ]

Identifier	REQ-11.01.03-TS-0410.0010
Requirement	The FOC system shall update the AOP with the latest EOBT when the EOBT release button is pressed
Title	Request Air Traffic Demand Data
Status	<Deleted>
Rationale	Note for deletion: Will be moved to IER.in the next D11.1.2-1 (OSED Step 1) iteration The FOC system must be able to connect to the NM using SWIM to pull demand data. The demand shall afterwards be used for flight scheduling purposes or to estimate a 4D trajectory
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

[REQ]

Identifier	REQ-11.01.03-TS-0410.0035
Requirement	The FOC System shall calculate the turn around times when new airport environmental information is received.
Title	Request Airport Environmental Information
Status	<Deleted>
Rationale	Note for deletion: Will be moved to SESAR Step 2. Note: This requirement remains deleted in this step 2 document, as it has no FOC relevance, but more Airport Operations Centre (ApOC) relevance. For the avoidance of doubt the term environmental information is used in the context of physical architecture of the airport (e.g.: gate to gate distances).In order to support accurate turn-around planning, A-CDM and UDPP the FOC system must be up-to-date with the latest airport environmental data. This includes gate to gate distances and terminal transfer times. The Operations Controller and the Irregularity Recovery Manager needs that information to predict passenger connection times and thus help the In-Flight Monitoring Officer and the Flight Dispatcher to accurately consider delay costs
Category	<Functional>
Validation Method	<Shadow Mode>

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-11.01.02-OSED-D001.0135	

1977 **-END OF DOCUMENT-**

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