Final Technical Specifications

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Abstract

This document describes the technical specifications for project 12.4.3, which aims to define the enhancement of the Airport Flight Data Processing system and to implement the Aerodrome Flight Data Processing functional block as defined by project 12.1.7. This document is an evolution of phase 3 document, in which the project team has analysed the maturity and status of each requirement at the end of the project as a result of all the development and validation activities performed.

The aFDPS is a key actor for the evolution of other subsystems, mainly in the AERODROME ATC domain. It supports the SESAR Solutions #22 "Automated Assistance to Controller for Surface Movement Planning and Routing" and #02 "Airport Safety Nets for Controllers", which are part of the SESAR Deployment Programme [20]. .

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Rational for rejection

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Intellectual Property Rights (foreground)

This deliverable consists of SJU foreground.

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Executive summary

This document is focused on the technical requirements that will guide the project to the development of software prototypes for Flight Data Processing systems at airports (aFDPS). Prior to the definition of technical requirements, the document explains the different interactions of the airport FDP system with other components and/or functional blocks.

The main particularity of these technical requirements is that they are not directly derived from operational requirements, typically described by WP6 projects in the framework of SESAR. The needs for the enhancement of airport FDP systems come mainly from other sub-system needs and interactions. Most of WP12 projects were targeted at the beginning of the production of this document as potential input suppliers. After analysing their schedules and the content of their TS deliverables, a limited set of documents were finally selected as inputs. This document is an evolution of the work done in phases 1, 2 and 3 of this project [11], from which an analysis of the each requirement maturity and status has been made according to the development and validation activities carried on along the SESAR programme and more specifically during the different Release 5 validation exercises carried out in WP6 [20]. The latest validation exercises from which most of the conclusions of maturity are extracted are:

- EXE-06.03.01-VP-758 (ENAIRE) will validate Indra prototypes from projects 12.03.02, 12.03.03, 12.03.04, 12.04.03 and 12.05.04
- EXE-06.03.01-VP-719 (ENAV) will validate Selex prototypes from projects 12.03.02, 12.04.03, 12.04.04 and 12.05.04
- EXE-06.03.01-VP-699 (DSNA) will validate Thales prototypes from projects 12.03.02, 12.04.03, 10.07.01 and 12.05.04

Project 12.04.03 belongs to OFA04.02.01 ("Integrated Surface Management") along with projects 12.03.01, 12.03.03 and 12.03.04 as WP12 contributors to this OFA. Due to the integrating role of this project, it is considered in a V3 maturity level, and has supported the development of the following SESAR Solutions which have reached this maturity level [20]:

- SESAR Solution #22 "Automated Assistance to Controller for Surface Movement Planning and Routing"
- SESAR Solution #02 "Airport Safety Nets for Controllers"

It is also noticeable that SESAR Solution #47 "Guidance assistance through airfield ground lighting", which is part of OFA04.02.01, relies on the aFDPS as the provider of the necessary route information.

1 Introduction

1.1 Purpose of the document

The purpose of this document is to specify the system requirements allocated to P12.4.3 "Enhanced FDPs at Airports". This project aims to implement the function block "Aerodrome Flight Data Processing" defined in the technical architecture description of project 12.1.7 [7].

This is the final document of project 12.04.03. During the different phases 1, 2 and 3, this project has been analysing the upgrades of the AFDPS and comparing them to the existing AFDPS systems. These upgrades come often from other sub-systems improvements instead of coming from a SESAR operational project. This is because the AFDPS is a central service in the Airport ATC domain and feeds most of the sub-systems. The objective of this document is to focus on SESAR developments, yet some pre-SESAR information is included to make it comprehensive. The final duty performed over this document is an analysis of the maturity of each requirement by the end of the project lifecycle and the update of their status to "validated" when considering that the requirements has passed the V3 maturity level.

1.2 Intended readership

Project needs come mainly from system projects. The following SESAR system projects have interactions with 12.4.3 identified:

- OFA04.02.01 system projects: 12.3.1, 12.3.3 and 12.3.4

- Projects 12.3.2, 12.4.4, 12.5.4 and 12.6.7 as identified dependencies

- Others: 12.1.7 for domain consolidation

Operational projects within OFA04.02.01 are also targeted: 6.7.2 and 6.7.3

1.3 Inputs from other projects

This project will use as background:

- Completed or on-going programmes where the partners were/are involved;

- System Requirements provided by expertise of the partners involved [8][9][10]

- As input Technical Requirements coming from other P12.x.y projects:

    o 12.03.01 Improved surveillance for surface management [12]

    o 12.03.02 Enhanced Surface Safety Nets [15]

    o 12.03.03 Enhanced Surface Routing [16]

    o 12.03.04 Enhanced Surface Guidance [13]

    o 12.04.04 Integration of Departure Management and Surface Management [14]

    o 12.05.04 Integrated Tower Working Position (iCWP) Design, Specification Prototyping and Test/Validation [17]

    o 12.06.07 AMAN, SMAN and DMAN fully integrated into CDM processes [18]

1.4 Structure of the document

This document is divided into five sections:

- Section 1 is the introduction. It describes the purpose and scope of the document
- Section 2 gives a general description of the AFDPS
- Section 3 describes the capabilities, conditions and constraints of the AFDPS. In particular it contains the functional and non-functional requirements.
- Section 4 gives assumptions used for writing the document.
- Section 5 describes the referenced documents

1.5 Requirements Definitions – General Guidance

The guidelines for writing requirements specifications are described in the SESAR guidelines document [1][2][3]. This document in particular worth explaining the numbering used for the requirements writing of section 3, constructed as follows:

REQ-12.04.03-TS-xxxx.yyyy, where:
- TS indicates that it is a Technical Specification requirement,
- x [phase] xxx [req. type], in particular :
  - x010 flight coordination
  - x020 Data interchange Requirements
  - x050 flight coordination atsu
  - x030 internal Data Requirements
  - x040 interface
- yyyy is used for numbering reasons

1.6 Functional block Purpose

The main output of this project is a system that stores and manages the Flight Plan information needed at airports.

1.7 Functional block Overview

The main scope of this project is to obtain an Airport FDP system that satisfies the needs of all new systems in the airport environment that need to interact (processes or data exchange) with the FDP system and among them.

The benefits coming from the "centralized" architecture will allow:
- quick access to all data: correct information in right time
- a common information management
- improvement of the performance of all subsystems in the entire Airport domain
- increase the controller's performance and reduce their workload

In addition every airport needs to exchange FP information with external systems (TMA and En Route systems, Aeronautical data, Met data, etc.) to improve the overall interoperability in whole ATM domain.

More details of the functional blocks can be found in section 2.6.

1.8 Glossary of terms

N/A

1.9 Acronyms and Terminology

Term	Definition
ACC	Area Control Centre

Term	Definition
A-CWP	Airport Controller Working Position
ADEXP	ATS Data Exchange Presentation
aFDPS	Airport Flight Data Processing System
AFP	ATC Flight Plan Proposal
ALDT	Actual Landing Time
AOP	Airport Operational Plan
APP	Approach Centre
ASDI	Aircraft Situation Display to Industry
ATM	Air Traffic Management
ATOT	Actual Take Off Time
ATS	Air Traffic Service
ATSU	Air Traffic Service Unit
CC	Capability Configuration
CHMIM	Control Human Machine Interaction Management
ELDT	Estimated Landing Time
ETOT	Estimated Take Off Time
EXOP	Expected Taxi Period from Off-Block (including push-back duration) to Runway Holding Point (with no other delay than the one coming from predicted traffic) including time to line up and roll to airborne
FDPS	Flight Data Processing Systems
FP	Flight Plan
FPL	Flight Plan Message
ICAO	International Civil Aviation Organization
INTEROP	Interoperability Requirements
OFA	Operational Focus Area
OSED	Operational Service and Environment Definition
RTUM	Runway and Taxiway Usage Management
SESAR	Single European Sky ATM Research Programme

Term	Definition
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SFPL	System Flight Plan
SGS	Surface Guidance Server
SID	Standard Instrument Departure
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SJU Work Programme	The programme which addresses all activities of the SESAR Joint Undertaking Agency.
SSN	Surface Safety Nets
SSR	Secondary Surveillance Radar
STAR	Standard Terminal Arrival Route
TLDT	Target Landing Time
TSAT	Target Start-up Approval Times
TTOT	Target Take Off Times
TS	Technical Specification
TAD	Technical Architecture Description
VFR	Visual Flight Rules

2 General Functional block Description

2.1 Context

Today, in an ATC tower, the controller is surrounded by a number of individual systems often without a common information management. This situation is impacting the controller's efficiency by increasing the workload and workspace, and affecting situational awareness. An enhanced FDP is required to allow the quick access to all data in order to optimize human resources (ATCO).

The upcoming systems at airports like sequencing tools (AMAN, DMAN), CDM, or A-SMGCS (safety nets, routing and guidance), will need a better coordination, by means of a common Flight Plan data and interoperability of services. An enhanced aFDPS system will ensure the performance of all related airport sub-systems playing this centralized role..

However, an airport needs to exchange Flight Plan information outwards the airport context, meaning external systems (EnRoute, Aeronautical data, Met data, etc.) if this information has an impact to the Flight plan data.
It's important to highlight that from Airport Logical Architectural point of view, the connection among the Functional Block (Aerodrome Flight Data Processing) that covers P12.04.03 and other Functional Blocks, is different and more complex.

The Logical Architecture is illustrated in section 2.6 of this document. There is still on-going work by P12.01.07 and OFA04.02.01 on consolidation of the high level architecture, including external actors. This work will be added in the relevant SESAR Solution packs.

In order to provide a brief comparison among the Logical Architectural view and the OFA view, in the table below is showed the coverage of the Functional Blocks VS OFA04.02.01 systems depicted in Figure 1.

Function Block	OFA04.02.01 Physical System / Projects
Aerodrome Flight Data Processing	Airport FDP / 12.04.03
Surface Routing	Surface Routing / 12.03.03
CHMIM (control Human Machine interface Management)	Controller HMI / 12.05.04
Surface Guidance Management	Surface Guidance / 12.03.04
Aerodrome Surveillance	Surveillance / 12.03.01

Table 1: Functional Blocks VS OFA04.02.01 systems

2.2 Functional block Modes and States

2.2.1 States

A state is a technical configuration of the system. The system can be in only one state at a time even if it is possible to switch from one state to another by a supervision command.

The 12.04.03 states can be configured in three different states to provide operational and test capabilities:

- **Operational** state identifies the 12.04.03 states running in the operational environment and the system is able to meet all the operational objectives.

- **Shadow** state identifies the 12.04.03 states running in the operational environment but is it not used to run user daily operational tasks but to verify and to test them.

- **Test** state identifies the 12.04.03 running in the Tower ATC test environment.

2.2.2 Modes

The mode characterises the way the system is operating in respect to the availability of its functions.

The 12.04.03 can be in three different modes:

- **Operational**: In operational mode, the 12.04.03 is designed to provide continuous operational service despite the failure of a function. This mode is the operational one which is the normal mode of operation of the system.

- **Degraded**: A function can be automatically (as a result of failure) or manually switched off, at any time, leading to a degraded mode of operation. The user can continue working but some functions of the 12.04.03 are missing.

- **Failed**: In case a significant set of functions necessary for the continuation of the service are not available, the 12.04.03 is considered in failed mode.

2.3 Major Functional block Capabilities

Airport Flight Data Processing is responsible for the management of flight and vehicle plans manoeuvring on the aerodrome surface and flight data sharing with external systems.

Major aFDPS capabilities include the following functionalities:
- System flight plan management
- System vehicle plan management
- Flight coordination

2.3.1 Management of system flight plan

The system flight plan involves all information concerning the aircraft traffic on the aerodrome surface. From the final approach to its take-off, the flight is managed by aFDPS system and the following functionalities are included:

a. Life cycle Management of the system flight plan (creation and deletion)

b. Update the system flight plan at the occurrence of identified significant events such as, for example: request and approval clearance for Start-Up, Push Back, Taxi, Line-Up, Take-Off and similarly for landing aircraft.

Keep up to date the flight plan information is a major aFDPS capability and it's applied both to the others FB in the domain system and to External systems:

- Information sharing with FBs within the Aerodrome ATC system

- Information sharing with other Systems in related capability configurations

2.3.2 Management of system vehicle plan

The system vehicle plan involves all information concerning the vehicular traffic on the manoeuvre area of the aerodrome (taxi, runway). The vehicle plan is managed by aFDPS system and the following functionalities are included:

a. Management of the life cycle of vehicle plan

b. Update the vehicle plan at the occurrence of identified significant events such as, for example: clearances related to ground operations or taxi modification.

2.3.3 Flight Coordination and transfer with other ATSU

Flight Coordination is a major capability for aFDPS and refers to the functionality based on the transfer of flight control between ATCOs or ATSU:

- Flight coordination and transfer between ATCOs within TWR

- Flight coordination and transfer with other ATSU

Coordination and transfer of control within Aerodrome systems involves the system flight data sharing between Functional blocks.

Coordination and transfer between adjacent ATSU requires the data exchange with the other CCs performed by a proper interface.

2.4 User Characteristics

Tower Runway Controller

The Tower Runway Controller is responsible for the provision of air traffic services to aircraft within the control zone, or otherwise operating in the vicinity of controlled aerodromes (unless transferred to Approach Control/ACC, or to the Tower Ground Controller), by issuing clearances, instructions and permission to aircraft, vehicles and persons as required for the safe and efficient flow of traffic. The Tower Runway Controller will be assisted by arrival, departure and surface management systems, where available.

Responsibilities

The Tower Runway Controller's main responsibilities are:

1.	Issue clearance to enter/ leave/ cross the control zone.
2.	Issue clearance to enter the traffic circuit.
3.	Give instructions to integrate VFR flights with IFR flights to achieve a landing sequence.
4	Issue clearance for Visual Approach to IFR flights
5	Sequence departures.
6	Ensure sufficient spacing between successive departures.
7	Issue landing clearance to arriving flights and the runway exit point, as appropriate.
8	Issue instructions to arriving flights to go-around when it is unsafe to land (e.g. runway still occupied).
9.	Provide information on runway braking action.
10	Operate the arresting gear system during take-off and landing phases for equipped aircraft. (MIL)
11	Provide information wind direction and speed on final approach.

12.	Give instructions to taxi to the take-off position for departing flights and operate the stop bars if required.
13.	Issue take-off clearance to departing flights in accordance with the CTOT, if issued.
14	Issue clearance for the dropping of parachutists in coordination with the Tower Ground Controller (MIL)
15	Issue clearance for aerobatic manoeuvres over runways
16	Issue clearances for the crossing of runways, or give authorization to the Tower Ground Controller for the crossing of runways where locally agreed.
17.	Operate the aerodrome lighting system in co-operation with the Tower Ground Controller.
18	Trigger additional runway inspections in case of suspected Foreign Object Debris (FOD) or unexpected pollution of the runway surface.
19	Issue essential local traffic information and essential aerodrome information.
20.	Perform a flight information service within his area of responsibility.
21.	Issue reports/observations of significant weather changes from that published.
22.	Perform alerting service within his area of responsibility
23	Trigger alert and intervention of emergency vehicles in case of incident or accident
24	Manage integration of departures in the arrival sequence in mixed-mode operations.

Tower Ground Controller

The Tower Ground Controller is part of the controller team responsible for providing an Air Traffic Service at controlled aerodromes. His main task is the provision of ATS to aircraft and vehicles on the manoeuvring area. He must also ensure that airport maintenance vehicles carrying out necessary improvements on an active manoeuvring area do not interfere with the movement of aircraft. He will be assisted by an advanced surface movement guidance and control system (A-SMGCS).

Responsibilities

The Tower Ground Controller's main responsibilities are:

1.	Issue clearances, instructions and permission to aircraft, vehicles and persons operating on the manoeuvring area as required for the safe and efficient flow of traffic, e.g.: • essential local traffic information, essential aerodrome information, meteorological information; • taxi instructions to arriving and departing flights, and to towed movements; • permission to push-back; • instructions to towing aircraft • instruction on arrival stand; • information on de-icing procedures.
2.	Operate the aerodrome lighting system in co-operation with the Tower Runway Controller.
3.	Co-ordinate ground movements on the landing area with the Tower Runway Controller.
4.	Monitor all aircraft and vehicle movements on the manoeuvring area and issue instructions where appropriate to ensure separation between aircraft and other ground mobiles.
5	Co-ordinate ramp departures and arrivals with the Airport Operator.
6.	Monitoring the progress of arriving aircraft until the aircraft is safely parked on stand and the engines shut down.
7	Co-ordinate helicopters starting-up, aircraft taxiing with the Tower Runway Controller when parachute dropping in progress. (MIL)
8	Co-ordinate runway/taxiway maintenance vehicle operations with the Airport Duty Officer.
9	Co-ordinate runway/taxiway maintenance vehicle operations with the Tower Runway Controller.
10	Coordinate remote de-icing procedures with De-icing Agent.
11.	Direct the operation of emergency vehicles on the runways/taxiways when required.

Note: On military aerodromes the role of Ground Controller is generally combined with that of the Runway Controller.

Changes in Responsibilities

- The Automated Assistance System for Surface Movement Planning and Routing provides Controller with the most efficient taxi route
- Coordinate with the relevant APOC stakeholders on the feasibility of specific airport scenario's
- Update the AOP with information within the Airport ATC area of responsibility.

Tower Clearance Delivery Controller

The Clearance Delivery Controller is part of the controller team responsible for providing an Air Traffic Service at controlled aerodromes. His main task is the verification of Flight data (e.g. FPL, stand, TSAT etc.) and the delivery of ATC Clearance (Departure Clearance) and Start-Up Approval. He may be assisted by a departure management system (DMAN).

It is important to note that, according to the aerodrome environment (e.g. airport complexity, traffic density, etc.) and the local regulations at a specific airport, the tower positions may share tasks and responsibilities. To this respect, control areas and responsibilities are clearly defined in local documents and agreements at each airport.

Responsibilities

The Tower Clearance Delivery Controller's main responsibilities are:

1.	Issue departure clearances to departing IFR flights.
2.	Issue Start-Up Approval.
3.	Verify Flight data, e.g. FPL, Stand, TSAT etc.

Note:

- At some airports, the coordination with APOC stakeholders is the responsibility of the Apron Manager

- The update of the AOP is expected to be largely automated to reduce controller workload

2.5 Operational Scenarios

The new operational scenarios that will be used in the airport environment will be based on the concepts defined in the CONOPS of SESAR [7]. In those terms, it will be applied the Initial 4D Business Trajectory concept, in which users are main actors and data will be more precise and accessible for every actor.

The "FDP at Airports" component is a coordination piece that will work using the Initial Reference Business Trajectories of each flight, receiving its modifications and publishing them to interested subsystems. Any scenario that involves an airport subsystems requiring an updated FP or to apply an update will be in the scope of this component.

Some scenarios that could be applied affecting this component are based on:

- Interfacing with airport sequencing tools (AMAN, DMAN) to publish and receive FPL update.

- Management of the Airport Operational Plan (AOP). Planning Initial Shared Business Trajectory, consolidation of Initial Reference Business Trajectory and re-planning.

- Changes on trajectory based on regulations and TTA target.

- Collaborative Decision Making processes. Every CDM process affecting the airport in this scope will be considered.

- New operational scenarios based on the new functionalities of the A-SMGCS, and on the information that the FDP provide, notably for the taxi routes and taxi times.

- Update of flight planning and delays based on information of other airports.

2.6 Functional

In the Airport Domain (WP12) the reference for the Logical Architecture is the 12.1.7 TAD. It assures that the Functional Blocks Structure identified is well defined and compliant with the Capability Configuration identified and under responsibility of the B.4.3 project,

The TAD document shows all logical connection among systems in the whole Airport domain. It assures also the alignment among the 12.xx.yy projects in terms of connections identified.

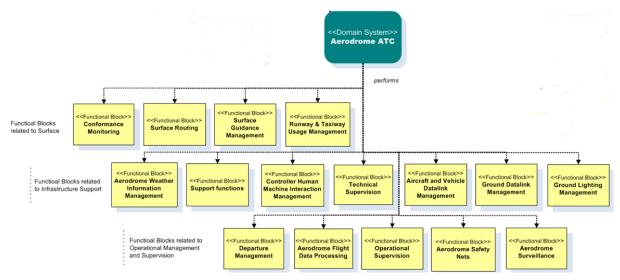The relevant Domain System for P12.04.03 is Aerodrome ATC, included in the Tower Capability Configuration.

Figure 1: Aerodrome ATC Domain System - Functional Breakdown

2.6.1 Functional decomposition

The 12.4.3 project impacts on Aerodrome Flight Data Processing functional block.

- **Aerodrome Flight Data Processing** is an Operational and Supervision functional block which manages the creation, update and modification of system flight plans up to/from the moment the aircraft takes-off/final approach. In addition, it calculates the predicted trajectory by taking into account applicable constraints and relevant data (e.g. aircraft performance, weather data, airport configuration data, wake vortex characteristics associated to each aircraft). Aerodrome Flight Plan should be updated at the occurrence of identified significant events such as, for example: request and approval clearance for Start-Up, Push Back, Taxi, Line-Up, Take-Off and similarly for landing aircraft.

All capabilities identified by P12.04.03 and the prototypes developed from 12.04.03 requirements will address the functionalities expressed in this functional block.

Beyond the system flight plan management, the Airport FDP covers a key role in the interoperability within the whole ATM domain. Becoming a centralized data source, AFDPS is responsible for the provision of the flight data inward and outwards the airport domain.

2.6.2 Functional analysis

As a central function of the Aerodrome ATC system, the Aerodrome Flight Data Processing function has strong interactions with many other Functional Blocks:

1. **Surface Routing**: interfaces with Aerodrome Flight Data Processing function to get flight plan Information. It sends back information about taxi routes and estimated taxi times, which are stored by the aFDPS with the corresponding flight data.

2. **Conformance Monitoring +Aerodrome Safety Nets** : interfaces with Aerodrome Flight Data Processing function to get flight plan Information in order to compute alerts based on discrepancies between flight plan information and target report information

3. **Aerodrome Surveillance**: interfaces with Aerodrome Flight Data Processing function to get flight plan Information to perform the correlation between target tracks and flight plans

4. **Departure Management**: Aerodrome Flight Data Processing provides SFPL to Departure Manager and receives back updates with the Departure Sequence

5. **Controller Human Machine Interaction Management** (CHMIM): for display of flight plan data, and input of flight plan modifications)

6. **Technical Supervision**: interfaces with Aerodrome Flight Data Processing to allow the users all the different functionalities to use, operate and administrate the systems

7. **Runway/Taxiway Usage Management:** The aFDPS shall interface with the RTUM (Runway and Taxiway Usage Management)to receive the updated schedule and real-time allocation of runways

8. **Surface Guidance Management: The Surface Guidance Server (SGS)** provides to the automatic dynamic ground signs switching and on-board guidance to aircraft, in addition to the current provision of guidance service to aircraft and other vehicles on the apron and the manoeuvring area using visual aids and including lighting systems.

9. **Ground Datalink Management:** The Ground Datalink Management provides the front-end processing to exchange flight data and environmental data with the other systems, aircraft operators, other civil ATS Units.

10. **Aircraft & Vehicle Datalink Management:** This functional block is responsible for the air-ground communication. Its main role is to handle datalink messages, supporting the exchange of the messages between the TWR and the vehicles and/or the aircraft-aircraft on ground.

Data Flow In/Out	Origin	Destination
SFPL	Aerodrome FDP	Surface Routing
Taxi Route and taxi times	Surface Routing	Aerodrome FDP
SFPL	Aerodrome FDP	Conformance Monitoring
SFPL	Aerodrome FDP	Departure Management
Target flight plan data (e.g.: TSAT, TTOT)	Departure Management	Aerodrome FDP
Configuration commands	Technical Supervision	Aerodrome FDP

Status Information	Aerodrome FDP	Technical Supervision
SFPL	Aerodrome FDP	CHMIM
SFPL Update Orders	CHMIM	Aerodrome FDP
SFPL	Aerodrome FDP	Aerodrome Safety Nets
SFPL	Aerodrome FDP	Runway and Taxiway Usage Management
Runway configuration	Runway and Taxiway Usage Management	Aerodrome FDP
SFPL	Aerodrome FDP	Aerodrome Surveillance
SFPL	Aerodrome FDP	Ground Datalink Management
SFPL	Aerodrome FDP	Surface Guidance Management
Clearances	Aerodrome FDP	Surface Guidance Management
ATC Clearance/Instruction	Aerodrome FDP	Aircraft & Vehicle Datalink Management
ATC Clearance/Instruction request/Ack	Aircraft & Vehicle Datalink Management	Aerodrome FDP

Table 2: Information Flow between Functional Blocks

2.7 Service View

N/A

3 Functional block Functional and non-Functional Requirements

3.1 Capabilities

To ease the document readability, the term "Airport subsystems", sometimes used in the requirements, identifies the typical airport systems:

- DMAN
- Surface Routing
- Surface Guidance
- A-CWP
- Aerodrome Surveillance
- Conformance Monitoring
- Aerodrome Safety Nets
- Runway&Taxiway Usage Management

3.1.1 Flight coordination

[REQ]

Identifier	REQ-12.04.03-TS-0010.0030
Requirement	The aFDPS shall keep track of which A-CWP a flight is currently controlled by.
Title	aFDPS keeping track of which ATCO controls a flight
Status	<Validated>
Rationale	The aFDPS can provide a robust functionality to ensure that flights are never "lost" between the A-CWP.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0019	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0035
Requirement	The aFDPS shall keep track of from which A-CWP a vehicle is currently controlled.
Title	aFDPS keeping track of which ATCO controls a vehicle
Status	<Validated>
Rationale	The aFDPS can provide a robust functionality to ensure that vehicles are never "lost" between the A-CWP.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0019	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0040
Requirement	The aFDPS shall know the next sector according to the normal work flow
Title	aFDPS knowing next role
Status	<Validated>
Rationale	As long as the flight follows the expected work flow, the aFDPS can give the A-CWP a hint of which flights will probably need to be controlled in the near future.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0019	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0050
Requirement	The aFDPS shall allow operators to transfer aircraft control from one A-CWP to another.
Title	aFDPS supporting transfer of flight control
Status	<Validated>
Rationale	The aFDPS can provide the ATCO with system assistance for transferring aircraft control from one to another control position.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0107.0002	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0060
Requirement	The aFDPS shall keep flight data information intact when flights are handed over from one A-CWP to another.
Title	aFDPS ensuring flight data integrity during transfer of control
Status	<Validated>
Rationale	There shall be no loss of information when flights are handed over from one controller working position to another
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0107.0002	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0070
Requirement	The aFDPS shall provide storage of the taxi route and taxi times for each flight and vehicles.
Title	aFDPS storing taxi route
Status	<Validated>
Rationale	The taxi route and taxi time are just as important flight data as the flight route.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0105.0001	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

The following requirements (0010.0080, 0010.0090, and 0010.0100) are considered useful in the document, even though they do not apply to new SESAR methods, and consequently they have not been subject of SESAR validations and they do not have traceability to other ATMS requirement

[REQ]

Identifier	REQ-12.04.03-TS-0010.0080
Requirement	In case a system FP should be updated following the reception of a modification message, the aFDPS shall perform syntactic and semantic checks on the new fields to verify the consistency of the required modification. In case the checks fail, the modification shall be manually processed.
Title	aFDPS updating and checking
Status	<In Progress>
Rationale	FP information coherence to avoid duplicities or not updated information
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0090
Requirement	The aFDPS shall be able to merge a System Flight Plan (SFPL) with an ATC Flight Plan Proposal (AFP) only if the checking at aFDPS input insures that both FP refer to the same mobile. In case of doubt, both FP shall remain separate

Title	aFDPS merging
Status	<In Progress>
Rationale	FP information coherence to avoid duplicities
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0010.0100
Requirement	The aFDPS shall store all ATS messages that have been associated to the system FP, and will be cancelled at the end of SFPL life
Title	aFDPS storing ATS messages
Status	<In Progress>
Rationale	Traceability in order to check the system and for legal purpose.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2010.0010
Requirement	The aFDPS shall provide to the HMI function the Data-link equipment and status available on each flight.
Title	Data-link availability and status
Status	<Validated>
Rationale	In order to share information about DataLink, the system shall be able to manage availability and status for DL equipment.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2020.0010	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2010.0020
Requirement	The aFDPS shall receive from Surface Routing Server (SRS) system the EXPECTED TAXI TIME related to a taxi route.
Title	Expected taxi reception
Status	<Validated>

Rationale	EXPECTED TAXI TIME, issues by pilot/driver, is the reply to Expected taxi request from the Surface Guidance Server (SGS). SRS computes taxi times when there is a FP update, with no action from pilots
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2050.0002	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2010.0030
Requirement	The aFDPS shall provide to the Surface Guidance Management the clearances related to ground operations.
Title	Provision of ground operation clearances
Status	<Validated>
Rationale	Ground operation clearances are required to perform D-TAXI and AGL services.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2300.0020	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2010.0050
Requirement	The aFDPS shall be able to receive and manage the Flight plan creation order by CWP
Title	Flight plan creation order
Status	<Validated>
Rationale	FDP receives and manages the new flight plan creation order issued by controller.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0001	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2010.0060
Requirement	The aFDPS shall provide to the CWP any update for flight plan and vehicle plan

Title	Continuous traffic update
Status	<Validated>
Rationale	FDP shall allow the CWP to present a comprehensive traffic awareness.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0006	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

3.1.2 Data interchange Requirements

[REQ]

Identifier	REQ-12.04.03-TS-0020.0010
Requirement	The aFDPS shall be able to share flight plan data associated to each registered aircraft with other Airport subsystems
Title	aFDPS Flight Plans sharing
Status	<Validated>
Rationale	Different airport subsystems will need flight plan information, and updates to be functional. This includes tower aircrafts.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0020
Requirement	The aFDPS shall send the flight plans to Surface Routing systems.
Title	aFDPS Interface with Routing / Planning
Status	<Validated>
Rationale	Routing / planning functions will need Flight Plan Data information and updates in order to be functional and optimize their algorithms
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0010.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0010.0055	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0030
Requirement	The aFDPS shall receive taxi routes and taxi time from Surface Routing systems.
Title	Integration of Taxi Routes in aFDPS
Status	<Validated>
Rationale	Integration of data from routing / planning functions must be required to maintain accurate flight plan information. The taxi routes and times, both the initials and the updates, are stored by the aFDPS and redistributed to the A-CWP system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0020.0010	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0040
Requirement	The aFDPS shall receive sequence updates (time-based or event-based) from DMAN.
Title	DMAN sequence integration in aFDPS
Status	<Validated>
Rationale	Departure Management is calculating the optimized departure sequence. This data can be modified by different events or recalculations.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0340	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0055
Requirement	The aFDPS shall receive departure and arrival runway updates from Runway and Taxiway Usage Management (RTUM)
Title	Departure runway updates from RTUM
Status	<Validated>
Rationale	To send this information to other systems interested. This requirement has been identified in order to be compliant with the functional blocks and data flow identified and defined in 12.1.7 TAD. Runway updates are stored by the aFDPSS and redistributed to the A-CWP.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0080
Requirement	The aFDPS shall send Expected Taxi Period from Off-Block (including push-back duration) to Runway Holding Point (EXOP) to DMAN.
Title	Provision of taxi times.
Status	<Validated>
Rationale	DMAN shall use the taxi time to calculate TSAT and TTOT
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0370	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0360	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0110
Requirement	The aFDPS shall interface with the A-CWP and receive clearances.
Title	aFDPS Interface with A-CWP for clearances
Status	<Validated>
Rationale	An A-CWP shall have updated whole information included in the flight plans, and managed by aFDPS. Particularly, departure / start-up/ push-back and taxi clearances. Clearance data is stored by the aFDPSS and used for flight/vehicles coordination and redistributed to e.g. the Surface Safety Nets (SSN) system. Related requirements: REQ-12.04.03-TS-0010.0010, REQ-12.04.03-TS-0020.0155.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0902.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0105.0001	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0020.0155
Requirement	The aFDPS shall interface the SSN system to provide the related clearances and cleared routes for each target
Title	aFDPS interface with the SSN system

Status	<Validated>
Rationale	To provide flight plan information in order to allow computing alerts based on discrepancies between flight plan information
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.02-TS-2001.0010	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0010
Requirement	The system shall interface the A-CWP in order to send the plans for all targets in movement area
Title	Provision of flight plan to A-CWP
Status	<Validated>
Rationale	Flight plan is required to present the airport situation.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.03-TS-0130.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0590	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.03-TS-0130.0040	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-2102.0051	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-2102.0051	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0106.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-2102.0072	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0020
Requirement	The aFDPS shall provide the flight plans to Surface Guidance Management.
Title	Provision of flight plan to SGS
Status	<Validated>
Rationale	Flight plan is required to manage AGL and D-TAXI.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2300.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2300.0030	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0040
Requirement	The aFDPS shall receive from SGS system the Virtual Stop Bar (VSB) information and related status.
Title	VSB reception
Status	<In Progress>
Rationale	VSB is an arbitrary/holding position used as limit for taxi clearance. VSB is issued by SGS for data-link equipped aircrafts. Requirement still in progress since there are no validation results available over VSB
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.04-TS-2300.0200	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0060
Requirement	The aFDPS shall provide to the surface routing function the TTOT whenever it changes by more than <parameter_1 TBD>.
Title	Parametric provision of TTOT
Status	<Validated>
Rationale	In order to fit performance and reliability, a parameter handles the TTOT update issuing. The value of the parameter depends on local implementation
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0010.0030	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0070
Requirement	The aFDPS shall provide to the surface routing function the TSAT whenever it changes by more than <parameter_2 TBD>.
Title	Parametric provision of TSAT
Status	<Validated>
Rationale	In order to fit performance and reliability, a parameter handles the TSAT update issuing. The value of the parameter depends on local implementation
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0010.0040	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A

| <APPLIES TO> | <Operational Focus Area> | OFA04.02.01 | N/A |
| <ALLOCATED_TO> | <Project> | 12.04.03 | N/A |

[REQ]

Identifier	REQ-12.04.03-TS-2020.0080
Requirement	The aFDPS shall provide to the DMAN the remaining taxi time.
Title	Provision of remaining taxi time
Status	<In Progress>
Rationale	Remaining taxi time is the gap between flight and assigned runway used to predict TTOT achievement. There is a need that the operation projects detail the need of "remaining taxi time" by the DMAN: which changes could affect the sequence, and how long in advance
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.04.04-TS-0010.0050	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2020.0100
Requirement	The aFDPS shall provide to the A-CWP the information that a flight is cancelled or delayed.
Title	Provision of cancelled/delayed information
Status	<Validated>
Rationale	To allow a clear view of traffic data, both cancelled and delayed flight information have to be shared with the CWP. A flight delay is defined depending on local implementations.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0105.0002	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

3.2 Adaptability

N/A

3.3 Performance Characteristics

N/A

3.4 Safety & Security

N/A

3.5 Maintainability

N/A

3.6 Reliability

N/A

3.7 Internal Data Requirements

[REQ]

Identifier	REQ-12.04.03-TS-0030.0010
Requirement	For each vehicle plan associated to a vehicle the information required may include at least: - Vehicle type - Transponder code - Vehicle fleet identifier - Assigned taxi route - Registration Code - Aircraft Type
Title	Vehicle Flight Plan information
Status	<Validated>
Rationale	This information is necessary to guarantee a correct processing of the flight plan associated to vehicle. The last two fields are required in case of towed aircraft (tugs)
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.01-TS-0080.0030	<Full>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0030.0020
Requirement	The set of flight plan parameters which shall be available in the aFDPS is at least: - Callsign- Registration number of the aircraft - Mode A SSR code - Aircraft type - Start-up given time - Actual in block time - Actual off block time - Departure Airport - Destination Airport - Estimated time of arrival - FPL unique identifier (calculated internally) - ELDT

	- ETOT - ALDT - ATOT - Estimated in block time - Estimated off block time - Slot time (if applicable) - Stand associated to the aircraft - Wake turbulence category - Runway - SID/STAR - Flight Rule - Type of Flight - Flight Date - Start Point - Destination Point
Title	aFDPS data information
Status	<Validated>
Rationale	All these information are necessary to guarantee a correct processing of the flight by the aFDPS and the updates and the sharing of these data are necessary for other subsystems. In case of not CDM airports the (ELDT, ETOT, ALDT, ATOT) might be substituted by scheduled times of departure/arrival and actual time of departure/arrival.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.01-TS-0030.0030	<Full>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0030.0030
Requirement	The aFDPS shall store, update and provide the TSAT, coming from DMAN to the other systems that need this information
Title	TSAT Management
Status	<Validated>
Rationale	Other Aerodrome ATC systems need to have the new TSAT in order to guarantee their functions. See REQ-12.04.03-TS-0010.0080 for further information about checking and updating information
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ–12.03.05-TS.2201.0190	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0030.0040
Requirement	The aFDPS shall store, update and provide the TLDT, coming from AMAN,

	to the other systems that need this information
Title	TLDT Management
Status	<Validated>
Rationale	Other aerodrome ATC systems need to have the new TLDT in order to guarantee their functions. See REQ-12.04.03-TS-0010.0080 for further information about checking and updating information
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ–12.03.05-TS.2201.0190	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0030.0050
Requirement	The aFDPS shall store, update and provide the TTOT, coming from DMAN to the other systems that need this information
Title	TTOT Management
Status	<Validated>
Rationale	Other aerodrome ATC systems need to have the new TTOT in order to guarantee their functions. See REQ-12.04.03-TS-0010.0080 for further information about checking and updating information
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0370	<Full>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0030.0070
Requirement	The aFDPS shall store, update and distribute to the systems requiring it, the following information: - Taxi route - Taxi Time
Title	Taxi Time and Taxi Route Management
Status	<Validated>
Rationale	Other aerodrome ATC systems need to have the Taxi Routes and the taxi times updated in the aFDPS
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Partial>

<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

3.8 Design and Construction Constraints

N/A

3.9 Interface Requirements

This section identifies the interface requirements with the functional blocks defined in 12.1.7 TAD, in order to provide the useful information to the Logical Architecture framework in SESAR programme. More detailed information of the different interfaces may be found along the Capabilities section (3.1) of this document

[REQ]

Identifier	REQ-12.04.03-TS-0040.0025
Requirement	The aFDPS shall interface with the Conformance Monitoring function
Title	Interface with Conformance Monitoring
Status	<Validated>
Rationale	to provide flight plan Information in order to allow compute alerts based on discrepancies between flight plan information
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.02-TS-2009.0040	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0035
Requirement	The aFDPS shall interface with the Aerodrome Safety Nets function
Title	Interface with Safety Nets
Status	<Validated>
Rationale	to provide flight plan Information in order to allow compute alerts based on discrepancies between flight plan information and tracks
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.02-TS-2009.0040	<Partial>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0050
Requirement	The aFDPS shall interface with the Surface Routing function

Title	Interface with Routing function
Status	<Validated>
Rationale	AFDPS receives taxi routes and taxi times, and provides relevant flight plan information. Further detailed in section 3.1
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.03-TS-0010.0020	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0060
Requirement	The aFDPS shall interface with the Departure Management function
Title	Interface with Departure Management system
Status	<Validated>
Rationale	AFDPS provides flight plan information, and receive target times calculated by DMAN. Further detailed in section 3.1
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0340	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.05-TS-0010.0120	<Full>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0065
Requirement	The aFDPS shall interface with the Runway and Taxiway Usage Management function
Title	Interface with RTUM
Status	<Validated>
Rationale	The aFDPS shall interface with the RTUM in order to provide flight plans information. This requirement has been identified in order to be compliant with the functional blocks and data flows identified
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0080
Requirement	The aFDPS shall interface with the CHMIM function

Title	Interface with CHMIM
Status	<Validated>
Rationale	AFDPS provides flight plan information, and receives controller actions from HMI. Further detailed in section 3.1
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0902.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.05.04-TS-0902.0002	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0090
Requirement	The aFDPS shall interface with Surface Guidance Management.
Title	Interface with Surface Guidance Management
Status	<Validated>
Rationale	This requirement has been identified in order to be compliant with the functional blocks and data flows identified. Further details on section 3.1. Surface Guidance Management is covered by Project 12.03.04 - Surface Guidance Server (SGS).
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0100
Requirement	The aFDPS shall interface with an external airport reference clock so all date used is synchronised with the airport reference time (NTP)
Title	Interface with reference clock
Status	<Validated>
Rationale	From phase 1 of 12.4.3. Previous to SESAR requirement This requirement has been identified in order to be compliant with the functional blocks and data flows identified
Category	<Interface>
Validation Method	
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A

[REQ]

Identifier	REQ-12.04.03-TS-0040.0110

Requirement	The aFDPS shall interface with the Technical Supervision function
Title	Interface with Technical Supervision
Status	<Validated>
Rationale	interfaces with Aerodrome Flight Data Processing to allow the users all the different functionalities to use, operate and administrate the systems. This requirement has been identified in order to be compliant with the functional blocks and data flows identified
Category	<Interface>
Validation Method	
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A
<APPLIES TO>	<Operational Focus Area>	OFA04.02.01	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2040.0010
Requirement	The aFDPS shall interface with Aerodrome Surveillance function.
Title	aFDPS Interface with Surveillance
Status	<Validated>
Rationale	Interfaces with Aerodrome Flight Data Processing function to get flight plan Information to perform the correlation between target tracks and flight plans. This requirement also covers REQ-12.04.03-TS-0040.0120 from phase 3 document.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.03.01-TS-0010.0020	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-12.03.01-TS-0200.0010	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2040.0020
Requirement	The aFDPS shall provide flight plan information to the ASDI systems.
Title	Provision of flight plan to ASDI
Status	<In Progress>
Rationale	The CDM process requires the involvement of all stakeholders. The Aircraft Situation Display to Industry (ASDI) systems (included FDP) shall ensure data exchange with AOP/A-CDM environment. The connection to external environment is assured by Ground Data Link functions. The interface needs to be more detailed at operational level
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-12.06.07-TS-FIIR.0020	<Full>
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A

| <ALLOCATED TO> | <Project> | 12.04.03 | N/A |

Identifier	REQ-12.04.03-TS-2040.0030
Requirement	The aFDPS shall interface with Ground Data Link Management to facilitate the interoperability.
Title	Interface with Ground Data Link Management
Status	<In Progress>
Rationale	Ground Datalink Management provides the functionalities required to perform data exchange outward the Aerodrome ATC Domain System. The requirement is not considered validated, as the interface needs to be better detailed. In particular, the use of SWIM and Flight Object standard need to be investigated.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED_TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA 04.02.01	N/A
<ALLOCATED TO>	<Project>	12.04.03	N/A

[REQ]

Identifier	REQ-12.04.03-TS-2040.0040
Requirement	The aFDPS shall interface with the Aircraft & Vehicle Datalink Management
Title	Interface with Aircraft & Vehicle Datalink Management
Status	<Validated>
Rationale	This requirement has been identified in order to be compliant with the functional blocks and data flows identified. Aircraft & Vehicle Datalink Management is covered by project 12.03.04 - Surface Guidance Server (SGS).
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	AERODROME-ATC-13	<Partial>
<ALLOCATED TO>	<Functional block>	Aerodrome Flight Data Processing	N/A
<ALLOCATED_TO>	<Project>	12.04.03	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA04.02.01	N/A

4 Assumptions

Due to the lack of the specific operational requirements coming from the WP6 domain, and the missing of previous European projects addressing the items within the scope of P12.4.3, the partners have provided the Technical Specification using as source the WP12 Primary Projects.

The partners agreed that all the Airport domain systems (12.x.y) that require information sharing among them and data reception/update have to do it through the FDP Airport system.

This assumption, also verified with the projects mentioned, has allowed the P12.4.3 to provide the requirements traced with the interface and data requirements of the technical projects, which are connected to the P12.4.3.

The status of the requirements in section 3 is either "in progress" or "validated". The status "validated" has been set to requirements that the project considers have completed the V3 maturity level by the end of the project. This analysis of maturity has been done mostly over the different Release 5 exercises in which project 12.04.03 has been involved, mentioned along this document. The Release 5 validation report was not available by the time this analysis was made.

5 References

[1] Template Toolbox 03.01.01
https://extranet.sesarju.eu/Programme%20Library/SESAR%20Template%20Toolbox.dot

[2] Requirements and V&V Guidelines 03.01.00
https://extranet.sesarju.eu/Programme%20Library/Requirements%20and%20VV%20Guidelines.doc

[3] Templates and Toolbox User Manual 03.01.01
https://extranet.sesarju.eu/Programme%20Library/Templates%20and%20Toolbox%20User%20Manual.doc

[4] EUROCONTROL ATM Lexicon
https://extranet.eurocontrol.int/http://atmlexicon.eurocontrol.int/en/index.php/SESAR

[5] IEEE / MIL Standards

[6] SESAR Concept of Operations Document Step 1 Edition 2015, v02.02.00, (30 July. 2015)

[7] Step1-3rd Iteration- Airport Technical Architecture Description, D22 Edition 00.03.00, 19/12/2014.

[8] Eurocontrol Specification For On-Line Data Interchange (OLDI), Edition 4.1 Date 12 Jun 2007

[9] Eurocontrol Specification for ATS Data Exchange Presentation (ADEXP)". EUROCONTROL-SPEC-0107, Edition 3.1, Date 20 October 2011.

[10] Procedures for Air Navigation Services - Air Traffic Management, Fifteenth Edition (PANS-ATM, Doc 4444)". ICAO

[11] SESAR Project 12.04.03 D09-Phase 3 Technical Specifications (July 2015)

[12] SESAR Project 12.03.01 D35- Phase 3 – System Specifications

[13] SESAR Project 12.03.04 D32- Phase 2 – Updated Technical Specification

[14] SESAR Project 12.04.04 D11- System requirements definition S2V2

[15] SESAR Project 12.03.02 D35- Phase 3- System Specifications

[16] SESAR Project 12.03.03 D14- Phase 3 – System Requirements Specifications

[17] SESAR Project 12.05.04 D81- Technical Specification- Phase 2- Part 2

[18] SESAR Project 12.06.07 D01- System Requirements for Phase 1

[19] SESAR P06.03.01_Release5 VALP (January 2016)

[20] "Deployment Programme 2015", SESAR Deployment Manager, 26th November 2015

[21]

5.1 Use of copyright / patent material /classified material

N/A

5.1.1 Classified Material

N/A

-END OF DOCUMENT-