iCWP System Requirements-Step1

Document information	
Project title	Integrated Tower Working Position (iCWP) Design, Specification Prototyping and Test/Validation
Project N°	12.05.04
Project Manager	INDRA
Deliverable	iCWP System Requirements-Step1
Deliverable ID	D02
Edition	00.02.00
Template Version	02.00.00

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Abstract

The objective of this document is to produce theiCWP system requirements, specifying completely the behaviour of the system in all its parts: functional and non-functional parts. The content of this document is derived from the outputs come from available 12.x.y, EMMA2 and iTWP projects.

These system requirements will lead the implementation of the P12.5.4 prototypes for Step 1.

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4 Document History

Edition	Date	Status	Author	Justification
00.00.01	31/05/2011	Draft	Selex Sistemi Integrati- [redacted]	Overall structure of the document
00.00.02	14/07/2011	Draft	All	Integration of partners contributions
00.01.01	27/07/2011	Draft	Selex Sistemi Integrati- [redacted]	-Consolidation of received comments and new contributions -New Toolbox
00.01.02	26/08/2011	Draft	All	-New contributions; -New SESAR Template; -Document updated with the P6.9.2 comments; -Executive summer updating
00.01.03	30/08/2011	Draft	Selex Sistemi Integrati- [redacted]	-Updating of Appendix A. -Consolidation of received new contributions -Updating of 2.3 and 2.7
00.01.04	14/09/2011	Draft	Selex Sistemi Integrati- [redacted]	Consolidation of received comments;
00.01.05	15/09/2011	Draft	Selex Sistemi Integrati	- Updating of Appendix A filled; - Consolidation of received

				comments;
00.01.06	16/09/2011	Draft	Selex Sistemi Integrati	Draft version for the approval:
00.01.00	21/09/2011	Final	Selex Sistemi Integrati	Final version
00.02.00	31/01/2012	Final	Selex Sistemi Integrati	Final version after SJU Assessment report

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This deliverable consists of SJU foreground.

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Executive summary

This document defines the Technical Requirements (functional and non functional) which will lead the implementation of the four iCWP prototypes foreseen for step1.

Dedicated sections of the document are reserved for non-functional requirements, focused on System Safety and Security and Performance Characteristics.

Due to the late delivery of a draft document from P6.9.2 (OSED) and the tight schedule of both projects, the technical requirements definition has been derived from Operational requirements coming from the consolidated R&D projects declared in the PIR (EMMA2 and ITWP). In order to minimize the risk of a gap between the operational and technical project, a review has been requested to P6.9.2 members and this document has considered all the comments received. In Appendix A, a Traceability Matrix between Technical Requirements and the draft OSED has been included with the acceptance that Operational requirements not traced to Technical requirements will be covered in the next steps.

For next Steps it is foreseen to take into account the whole operational requirements provided by Project 6.9.2.

The available and stable Technical Requirements defined in P12.x.y has been considered as inputs in order to meet the needs coming from the interfaces with the other functions.

It is assumed that not all the requirements written in this document are essential and each prototype will implement only a set of requirements here defined:

- Each prototype can implement only some of the capabilities.
- Each industry can implement only some of the requirements of each capability

The document includes several tables in order to schematize the requirements traceability at several levels.

A traceability matrix to define the requirements coverage of each prototype will provide in the delivery of Prototype Development Task: Prototype Availability Note.

1 Introduction

1.1 Purpose of the document

The main purpose of this document is to collect and organize the baseline system specification for the integrated controller working position project based on similar European projects.

The project is composed of three phases and strongly linked to the operational project P06.09.02 except for the first phase of the project where only the requirements coming from the European projects EMMA2 and the EUROCONTROL project ITWP, and 12.x.y projects will be taken in account.

This document takes in account the iCWP requirements expressed in the SESAR projects that are available and stable during the writing this document:

- P12.01.07 - Airport System Specification Drafting and Maintenance: Guidelines for specification
- P12.03.01 - Improved surveillance for surface management: System Requirements Specification
- P12.03.03 - Enhanced Surface Routing: System Requirement Specifications
- P12.03.04 - Enhanced Surface Guidance: Surface guidance requirements
- P12.03.05 - Enhanced Surface Tools: System Requirement Specification
- P12.05.02 - Airport Safety Nets and wind-shear detection and alert for Controllers: System specification

At the moment of writing this document only a not stable draft of OSED from the operational project P06.09.02 is available, it is expected that for the phase 2 of the project, the following Figure 1 will be applied for updating this document.

This document describes a generic set of system requirements for the integrated tower working position and not particular industrial prototype solution requirements.

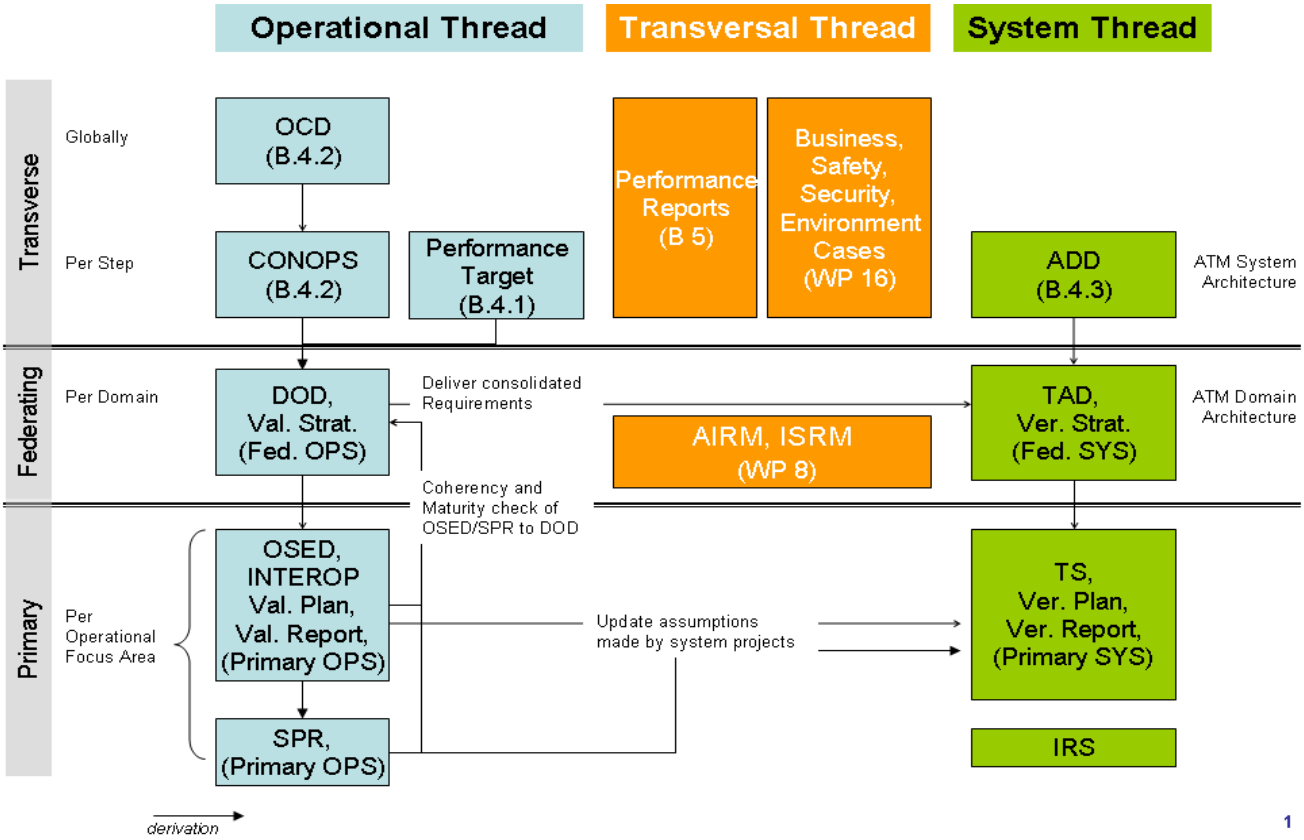

Figure 1: Flow of documentation overview

1.2 Intended readership

This document can be of interest to the majority of WP12 projects which need a controller working position to interact with the controller; in particular, this project is strongly linked with the following projects:

- **P12.1.7 Airport System Specification Drafting and Maintenance** is interested in the document to identify and maintain traceability of the consolidated list of requirements derived from each WP12 projects;
- **P6.9.2 Advanced Integrated CWP (A-iCWP)** which is developing the operational requirements for this project
- **P12.3.x Surface management projects,** which aims at developing advanced Surface Movement Guidance and Control systems and their foreseen functionalities
- **P12.4.x Tower Management and ATC projects,** which is responsible for developing surface movement data processing systems (4D trajectory management) to be utilised within airport surface (namely movement area) and new data-link services at airports in conjunction with WP15 (sensors and non-avionics CNS technologies), in addition to ensuring the seamless integration of sequencing tools that are beyond our scope (i.e. AMAN) into the airport domain ones (DMAN, SMAN, etc), new enhancements to controller tools (except those that are specific of WP12.2 and 12.3) and the provision of technical support for the remote/virtual tower concept.
- **Other P12.5.x** will define and validate the technical iCWP principles and underlying technical enablers to provide integrated user interface and iCWP features to the Controller. It will define and validate ways to integrate the iCWPs defined and validated in the context of individual WP12 topics into a consistent and integrated iCWP

Any other SESAR project interested in technical System Requirements may be interested in this document

1.3 Inputs from other projects

The main operational requirements sources that have been considered for Step 1 are those included in the following documents:

- **EMMA2** A-SMGCS Services, Procedures, and Operational Requirements (SPOR) “A Preliminary Concept and Framework for Validation Activities in EMMA2”. 2-D111_SPOR_V1.0.doc (02/12/2008).
- **ITWP** - Integrated Tower Working Position - iCWP Solution Specifications, Version 3.0, 01/03/2009

Due to the late delivery of a draft document from P6.9.2 (OSED), the technical requirements definition has been derived from Operational requirement coming from the consolidated R&D projects declared in the PIR (EMMA2 and ITWP).

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Also the stable outputs coming from P12.x.y have been considered (please refer to § 1.1).

1.4 Structure of the document

The structure of the document is as follows:

- §1 (this section) introduces the document;
- §2 provides the specification general context, briefly introducing how it fits in the ATMS.
- §3 details the functional and non functional requirements.
- §4 provides assumptions considered in the technical specification for step1.
- §5 provides the list of relevant referenced documents.

1.5 Requirements Definitions–General Guidance

1.5.1 Introduction

According to the IEEE (Institute of Electrical and Electronics Engineers) a User requirement is a capability needed by a user to solve a problem to achieve an objective , on general, a requirement is a capability that must be met or possessed by a product to satisfy a contract, standard, specification, or other formally imposed documentation.

As for other SESAR system projects, System Requirements are produced to describe both functional and non-functional requirements at system level. The purpose of specification is to transform the functional and non-functional, operational requirements, safety recommendations and other requirements that have been identified through requirements analysis into a coherent description of capabilities and conditions that can be used to guide the system designers in the development of system design.

Requirements are structured by Requirement Type as follows:

- Capabilities Requirements
- Adaptability Requirements
- Performance Requirements
- Security Requirements
- Safety Requirements
- Maintainability Requirements
- Reliability Requirements
- Internal Data Requirements
- Interface Requirements

When a Requirements Specification is written, it should be unambiguously understood by all stakeholders, it must be taken into account that the document will serve as a base for the different activities to be carried out during the life cycle of the project.

A requirement contains three key parts: example ***Subject*** shall be able to ***capability*** within ***criterion*** where:

- *Subject*: is the person, place or thing who perform the action
  - User
  - Customer
  - System
- *Capability*: is a single verb that describes an action taken by the subject
  - View

- Select
- Analyse

- *Criterion* is an optional quantitative or qualitative limit, range, or boundary condition

1.5.2 Rules

To write clear requirements, the following rules should be followed:

- Choose the right Focus Word:
  - Shall: indicates a mandatory requirement to be met
  - Should: indicates the preferred possibility of several recommended options
  - May: indicates a permissible course of action
  - Can: used for statements of possibility and capability
- Use active voice: the subject of the sentence does the action of the verb
- Make wording unambiguous:
  - Avoid subjective words like user-friendly, easy, simple, rapid, efficient, several, state of the art, improved, maximize and minimize.
  - Avoid the use of negative phrases. Requirements should be written as affirmative sentences.
  - Avoid imprecise sentences, e.g. with use of and/or in a requirement statement.
  - Avoid imprecise quantifiers, e.g. some, any, close to, about, as far as possible.
  - Avoid imprecise adverbs, e.g. usually, approximately, reasonable
- Check the grammar and spelling: write each requirement in a succinct manner, simple, straightforward language of domain

To summarise the Requirements for Requirements:

- the requirement shall specify a subject
- the requirement shall specify a single capability
- the requirement should specify a criterion
- the requirement shall be written in a standard format
- the requirement should use the appropriate focus word
- the requirement shall be written in active voice
- the requirement shall not use ambiguous wording
- the requirement shall use correct grammar and spelling

See references [1] and [2] for more details.
To have a common guidelines the following paragraph are common with other SESAR WP12 system requirement deliverables

1.5.3 Guidelines

In order to follow a common guideline, the following attributes have been assigned to the requirements:

[REQ]

Identifier	REQ_Id
Requirement	Actual requirement text
Title	Requirement title
Status	<In Progress>
Rationale	Requirement rationale
Category	<Operational>

	<Real Time Simulation>

Table 1: Requirements layout

- **Identifier:** Unique identification

  <Object type>-<Project code>-<Document code>-<Reference number 1>.<Reference number 2> (based on rules defined in IS SESAR Requirements and V&V Guidelines Latest version)

  e.g. REQ-12.05.04-TS-nnnn.uuuu

  - REQ is the <Object type> (i.e. requirement [6]),
  - 12.05.04 is the <Project code> ,
  - TS is the <Document code> (i.e. technical specification),
  - nnnn is the <Reference number 1>, sequence of 4 digits,
  - uuuu is the <Reference number 2>, sequence of 4 digits,
- **Requirement:** Text of the requirement, images and tables can be included in this zone by means of OLE objects.
- **Title:** Requirement Title
- **Status:** Data lifecycle status
  - <In Progress> An object's initial status is "In Progress";
  - <Deleted> The status “Deleted" is used in subsequent versions to indicate that the object is not considered valid anymore
- **Rationale:** An explanation of why the object was written the way it is (it does not justify why the object is there, which is covered by a link). The explanation may include references to other studies**.**
- **Category:** Requirement category type
  - <Operational>
  - <Service>
  - <System>
  - <Functional>
  - <Non-Functional>
  - <Security>
  - <Safety>
  - <Performance>
  - <Interoperability>
- **Validation Method:** It corresponds to the different verification methods for the object and can have the following values:
  - <Dress Rehearsal>
  - <Fast Time Simulation>
  - <Flight Trial>
  - <Live Trial>
  - <Real Time Simulation>
  - <Shadow Mode>
  - <Gaming Technique>

- <Expert Group>
- <Analytical Modelling>
- <Economic Validation>

- **Verification Method:** It corresponds to the different verification methods for the object and can have the following values:
  - <Review of Design>
  - <Analysis>
  - <Inspection>
  - <Test>

1.5.4 Traceability

The following is the traceability matrices as defined by the SJU template in Appendix A (SESAR Technical Specification template, version 2.0, 06/06/2011)

This section presents the traceability matrices, which identify, for every Technical Specification (TS) requirement:

- The key elements of the TS requirement (identifier and title);
- The Enabler that the TS requirement satisfies;
- The functional block that the TS requirement is allocated to;
- The higher level requirement that the TS requirement satisfies (identifier and title).

These traceability matrices enable to check the coverage; they will be provided by SESAR Industrial Support.

Requirement Identifier	Requirement title	Enabler code
One line per requirement		Satisfied Enabler

Table 2: TS requirements / Enabler traceability

Requirement Identifier	Requirement title	Functional block identifier
One line per requirement		Functional block that the requirement is allocated to

Table 3: TS requirements / Functional block traceability

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
TS requirement identifier	TS requirement title	Satisfied INTEROP or SPR requirement identifier	Satisfied INTEROP or SPR requirement title

Table 4: TS requirements traceability

Note:

- The case where a "Functional block identifier" does not match a "TS requirement " indicates an incomplete allocation;

- The case where a "satisfied requirement" does not match a "TS requirement " indicates a possibly unjustified TS requirement;
- It should also be checked that the TS does indeed address all the requirements coming from SPR and INTEROP, but by definition non covered higher level SPR and INTEROP requirements will not be found in the resulting TS, so the analysis should be done at the SPR or INTEROP level.

In addition a table synthesising the Validation / Verification Methods associated to each TS requirement has to be provided.

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
One line per requirement			

Table 5: TS requirements Validation / Verification Methods

1.6 Functional block Purpose

The product developed in the context of this project consists in the Integrated Tower Controller Working Position for the Airport / ATC environment based on SESAR concept.

iCWP and functional aspects produced by projects 12.X.Y will be integrated and verified in this project.

The iCWP plays the key role of interfacing between all the airport systems and the main actors who are the controllers: All the controller's input are transferred to the dedicated sub systems for processing.

1.7 Functional block Overview

See chapter 2

1.8 Acronyms and Terminology

Term	Definition
ADD	Architecture Definition Document
AiCWP	Advanced Integrated Controller Working Position
ATIS	Automatic Terminal Information Service
ATM	Air Traffic Management
ASAT	Actual Start up Approved Time
D-ATIS	Data link Automatic Terminal Information Service
DOD	Detailed Operational Description
DMAN	Departure Manager
E-ATMS	European Air Traffic Management System
iCWP	Integrated Controller Working Position
IRS	Interface Requirements Specification
INTEROP	Interoperability Requirements
Modularity Concept	Capability of the system to be enhanced by the addition of one or more modules to improve its technical or functional performance [ICAO Doc 9830]
NAVAID	Navigational Aid
OSED	Operational Service and Environment Definition
RVR	Runway Visual Range
SBT	Shared Business Trajectory
SESAR	Single European Sky ATM Research Programme
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SJU Work Programme	The programme which addresses all activities of the SESAR Joint Undertaking Agency.
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SPR	Safety and Performance Requirements
TS	Technical Specification
TSAT	Target Start-up Approval Time
TAD	Technical Architecture Description
TOBT	Target Off Block Time
TTA	Target Time of Arrival
TTOT	Target Take-Off Time
UTC	Universal Time Coordinated

2 General Functional block Description

2.1 Context

The integrated Controller Working Position (iCWP) prototype is the product of integrating all Human Machine Interface developed for the different airport systems into just one homogenous set of configurable and customisable Tower iCWP.

The iCWP allows the controller to view or interact with all needed information to fulfil his tasks, the following diagrams taken from EUROCAE ED-87B Minimum Aviation System Performance Specification for A-SMGCS, indicates how the functional elements interact.

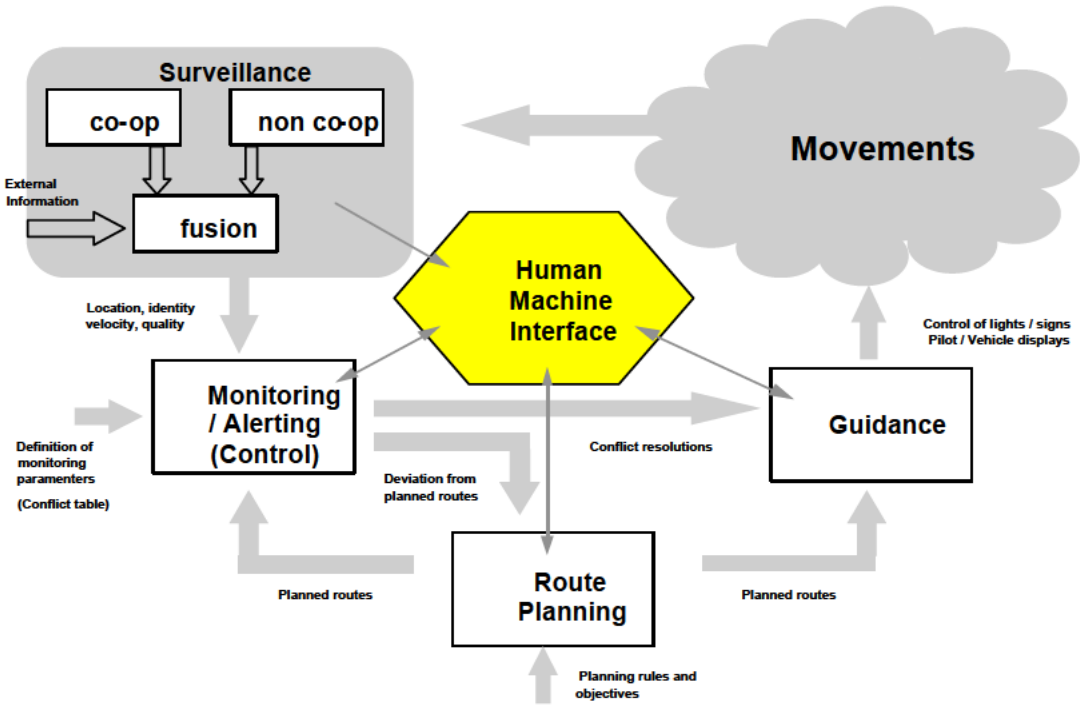

Figure 2: A-SMGCS Functional Elements

In the SESAR context, other information is added to this diagram, the following diagrams shows the additional interaction and places the input for the iCWP from the other SESAR projects.

The project will be organized in three phases, one for each Step defined in the SESAR Concept Storyboard.
Each phase will address V2 and V3 maturity phases of the E-OCVM cycle for the addressed ATM Services.
Each phase will benefit from the results achieved in the previous one

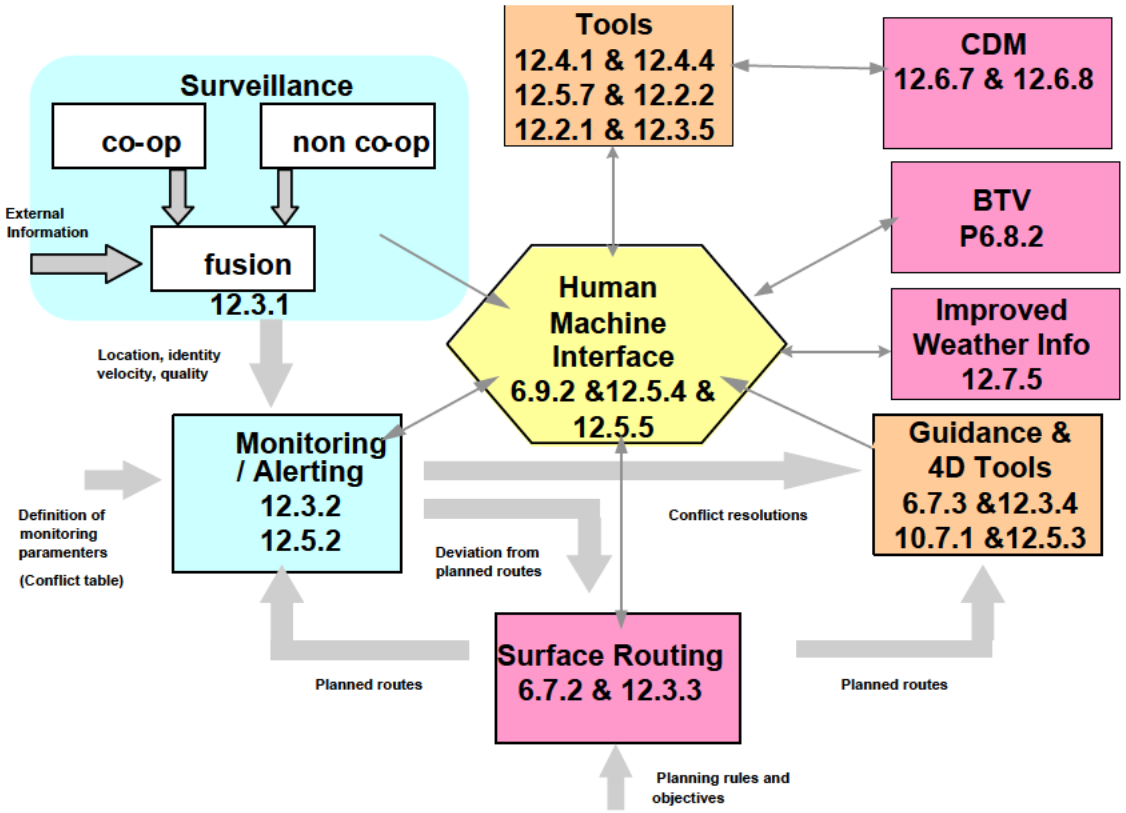

Figure 3: iCWP interactions

The diagrams shows all possible interactions with all the other airport subsystems, for the phase 1 of the development of this project only the blue square and partially the orange are in the scope of phase 1.

iCWP is part of three Operational Focus Area (OFA) :

1. Brake To Vacate, under the sub package: Enhanced Runway Throughput which is part of the operational package PAC01 Increased Runway and Airport Throughput

In this OFA, iCWP is linked with the following projects:

- 06.08.02 - Brake to vacate : iCWP requirements are expected from this project
- 09.31 - Aeronautical databases : No iCWP
- 10.07.01 - Enhanced Datalink Features for all phase of flight

2. Surface Planning and Routing, under the sub package: Integrated Surface management which is part of the operational package PAC04 End to End Traffic Synchronisation

In this OFA, iCWP is linked with the following projects:

- 06.07.02A-SMGCS Routing and planning functions: iCWP requirement will come from this project
- 06.07.03A-SMGCS Guidance Function: iCWP requirement will come from this project
- 06.08.07Improved weather resilience - re-classify criteria for Low Visibility Procedures (LVP)
- 06.07.01Airport safety support tolls for pilots, vehicle drivers and controllers
- 09.13Airport Surface Taxi Clearances
- 10.07.01Enhanced Datalink Features for all phase of flight
- 12.03.01Improved Surveillance for surface management

- 12.03.02 Enhanced Surface Safety Nets
- 12.03.03 Enhanced Surface Routing
- 12.03.04 Enhanced Surface Guidance
- 12.03.05 Enhanced Sequencing Tools
- 12.04.04 Integration of Departure Management and Surface Management
- 12.05.02 Airport Safety Nets and wind-shear detection and alert for Controllers
- 12.05.03 Enhance Controller Tools to manage all aspects of 4D trajectories
- 06.03.02 Airport ATM performance (execution phase)
- 15.04.05.b Surveillance ground system enhancements for ADS-B (Prototype development)
- 09.31 Aeronautical databases

3. iCWP Airport, under the subpackage iCWP airport which is part of the - Operational Package PAC06 Cooperative Asset Management.

In this OFA, iCWP is linked with the following projects:

- 06.09.02 Advanced integrated iCWP (A-iCWP)
- 12.01.09 ATC Systems Supervision
- 12.03.03 Enhanced Surface Routing
- 12.03.05 Enhanced Sequencing Tools
- 12.04.01 Baseline for airport controller tools
- 12.04.03 Enhanced FDPs at airports
- 12.05.02 Airport Safety Nets and wind-shear detection and alert for Controllers
- 12.05.03 Enhance Controller Tools to manage all aspects of 4D trajectories
- 12.05.05 iCWP Usability and Human Factors Engineering
- 12.05.07 Performance Based, Monitoring and Decision Support within the iCWP of the iCWP
- 14.02.09 SWIM Platform Development and Demonstration Delivery

The iCWP prototype will have direct or indirect links with the different projects of the three different OFA.

2.2 Functional block Modes and States

P6.9.2 OSED defines different iCWP users and their roles. For each role, the iCWP will work in specific mode adapted to the controller role. Section 2.4 describes each iCWP user and what are the expected functions for each user.

2.2.1 Functional block Modes

The iCWP can be in three different modes:

- **Normal mode:** In normal mode, the iCWP provides continuous operational service despite the failure of a function. Under normal circumstances all functions are in use, and actively processing data. This mode is the operational one
- **Degraded mode:** A function can automatically (as a result of failure) or manually be switched off, at any time, leading to a degraded mode of operation. The user can continue working with the iCWP but some functions are missing.
- **Failed mode:** In case a significant set of functions necessary for the continuation of the operational service is not available. The user can not use the system anymore.

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2.2.2 Functional block States

The iCWP can be configured in three different states:

- **Operational** state: the iCWP is running in an operational environment and used for running user daily operational tasks (control, supervise, update the system)
- **Shadow** State: the iCWP is running in an operational environment but it is not used to run user daily operational tasks but to verifies the system and to test it
- **Simulation** state: the iCWP is running in a simulated environment for test or replay purposes.

2.3 Major Functional block Capabilities

The following diagram describes the external functional blocks connected with the iCWP and the internal iCWP functional blocks, as is defined in [22]

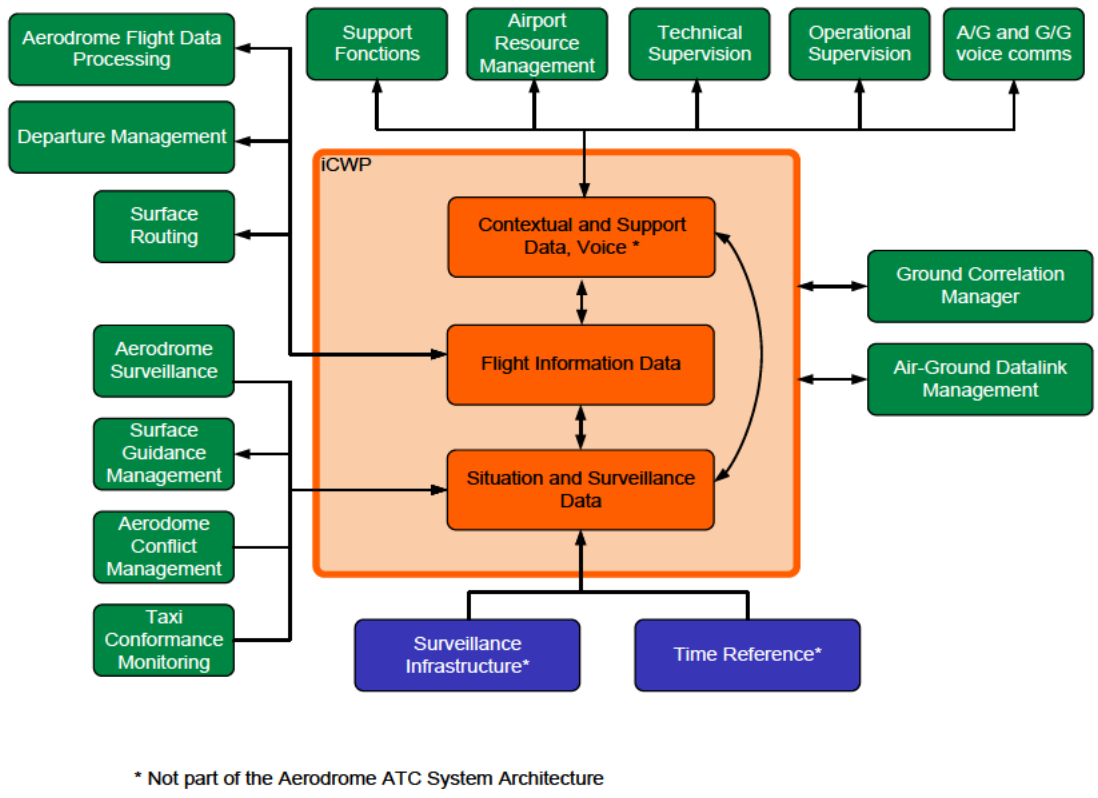

Figure 4: Aerodrome ATC System Architecture - Functional Block Interaction

Please refer to [22] for all the details related to this figure.

The requirements defined in this document are grouped for services (please refer to §3.1) in order to meet the approach followed by Operational requirements.

For the mapping of the functional blocks with the services, please refer to § 2.7

2.4 User Characteristics

Depending on the level of activity at airports, certain procedures to ensure acceptance of airline schedules have been developed to cover various situations.

For the purpose of schedule clearance, there are three broad categories of airports:

- **Level** 1 describes those airports whose capacities are adequate to meet the demands of users. Such airports are referred to as **non-coordinated;**
- **Level 2** describes airports where, due to demand, a more formal level of co-operation and facilitation is required to avoid exceeding scheduling parameters. These airports are referred to as **schedules facilitated;**
- **Level 3** describes those airports where demand exceeds the coordination parameters and voluntary cooperation to resolve the problems is no longer appropriate. In this scenario, formal procedures have been implemented at the airport to allocate capacity and coordinate schedules. Airports with such high levels of congestion are referred to as **coordinated.**[3]

This paragraph describes each iCWP user according to the P6.9.2 OSED [24] and the way in which they will use it.

2.4.1 Tower Runway Controller

The tower Runway Controller roles is to make sure that aircraft take-off or land in a safe manner with respect to the risk of collision with other traffic or obstacles and to maintain safe separation with other aircraft.

Tower Runway controller is mainly responsible for:

- Issuing Line-Up Clearance;
- Issuing Take-Off Clearance;
- Issuing Landing Clearance;
- Issuing crossing clearance
- Issuing go around instructions
- Issuing rejected take off instructions
- Issuing over flight clearance
- Issuing traffic
- Coordinate with Approach controller
- Coordinate with ground controller
- Coordinate with airport services in case of an emergency

To fulfil his role, the iCWP will provide the Tower Runway controller the following functions:

- Surveillance information
- Meteorological information
- Electronic Flight Strip
- Routing function (Planned route for an arrival aircraft or D-TAXI for example)
- Guidance function (stop bars, RWSL or D-TAXI for example)
- Brake to Vacate function (the aircraft preferred runway exit point)
- Safety nets
- Tools: AMAN, DMAN
- CDM information

2.4.2 Tower Ground Controller

The Tower Ground Controller has to ensure the safe and expeditious movement of aircraft and vehicles on the manoeuvring area.

The Tower Ground Controller is mainly responsible for:

- Issuing Push-Back/taxi approval;
- Prevention of collisions between:
    - aircraft on the manoeuvring area;

    - aircraft and vehicles on the manoeuvring area;
    - aircraft and obstacles on the manoeuvring area;
- Communicating to the pilot the assigned parking stand;
- Issuing taxi instructions
- Coordinate with runway controller
- Coordinate with airport services in case of an emergency

To fulfil his role, the iCWP will provide the Tower Ground controller the following functions:

- Surveillance information
- Meteorological information
- Electronic Flight Strip
- Routing function
- Guidance function (AGL for example)
- Safety nets
- Tools: SMAN
- CDM information

2.4.3 Tower Delivery Controller

The Tower Delivery Controller is an optional position where the controller has the responsibility of issuing to departing IFR aircraft,

- ATC Clearance
- Start-Up approval
- coordinates handover of traffic with the Tower Ground Controller.

Note: This role is optional as in some states those responsibilities are allocated to the Tower Ground Controller without making any specific difference between the two roles but it is part of the SESAR WPB4.2 Actors - Roles and Responsibilities - See reference [3])

To fulfil his role, the iCWP will provide the Tower Delivery controller the following functions:

- Surveillance information
- Meteorological information
- Electronic Flight Strip
- Routing function (planned route, D-TAXI for example)
- CDM information

2.4.4 Apron Controller

The Apron Controller is also optional; he/she has the responsibility for all traffic on the aprons. The role varies from airport to airport, but some tasks are general and common to all. Apron controllers will have positive control over aircraft, just like ground control. Push-backs must be requested and approved.

According to the SESAR WPB4.2 Actors - Roles and Responsibilities (see [3]), The Apron main responsibilities are:

- The guidance of aircraft to and from the stands.
- Ensuring the safe and efficient movement of aircraft and vehicles within his/her area of responsibility according to local procedures.
- Maintaining close coordination with Tower Ground Controller, AOC and APOC on planned aircraft movements.

To fulfil his role, the iCWP will provide the Tower Delivery controller the following functions:

- Surveillance information
- Meteorological information
- Electronic Flight Strip
- Routing function (planned route, D-TAXI for example)
- Safety nets

- CDM information

2.4.5 Tower Supervisor

The Tower Supervisor is responsible for the safe and efficient provision of air traffic services by the Tower crew. He decides on staffing and manning of controller working positions in accordance with expected traffic demand. He represents the Tower when coordinating with the Airport Operator on operational issues. (From reference [3])

The Tower Supervisor responsibility is to (in Italic the roles that can be related to iCWP):

- Provide and maintain a duty roster of ATM personnel with regard to the resource management of the Tower.
- *Determine expected Tower Runway and Tower Ground workload by analysing traffic forecast information.*
- *Decide on runway(s) for landing and take-off in co-operation with in cooperation with all concerned partners*.
- *Activate/de-activate TMA subdivisions in relation with runway in use and all other possible airspace structure within CTR / TMA.*
- *Ensure that all available information in ATIS are recorded*
- *Maintain close liaison with the Airport Operator with respect to the daily inspection of the movement area, the aerodrome lighting system, the marking of obstructions, snow clearance etc.*
- *Coordinate with the Airport Operator regarding traffic emergencies/incidents on the movement area.*
- *Coordinate with the ACC/Approach Supervisors and Local Traffic Manager regarding the implementation of traffic smoothing measures (i.e. spacing between same direction departures).*
- *Implement and discontinue limited visibility operations (CAT II or CAT III) after liaison with Airport Operator and ACC/Approach Supervisors.*
- Trigger all relevant alert phases (Incerfa, Alerfa, Detresfa) falling to his responsibility
- *Initiate Airport traffic smoothing procedures (i.e. restricted push backs, perimeter holds, taxi routings, tug movements) in coordination with Airport Operator and the Tower Ground Controller.*

To fulfil his role the iCWP should provide the Tower Supervisor with the follwing functions:

- Surveillance information
- Meteorological information
- Safety nets
- CDM information
- Recording and analysis
- Configuration parameters
- Tower Supervisor Tools

2.4.6 Ground Handling Agent

The Ground Handling Agent**,** has the responsibility for attaining the ground turn-around targets of aircraft turn-around process, including the start-up and push back, and the related ground operations (e.g push-back, fuel, catering, boarding of passengers);
The Ground handling responsibility is to:

- Define ground operations staff plans.
- Manage ground handling resource allocation (including ground staff, service vehicles, buses, etc.).
- Manage ground handling activities (incl. turn-around operations).
- *Agree/update target aircraft ready time (TOBT).*
- Manage the turn-round in accordance with the TOBT.
- *Provide turn-around progress information (milestones) through Airport CDM.*

To fulfil his role the iCWP should provide the Ground Handling agent with the following functions:

- CDM (to update CDM information)

- Ground handling agent tools

2.4.7 AOC Staff Agent

AOC staff has the responsibility of maintaining the integrity of the scheduled Flight Programme and to take in real time the necessary decisions in order to manage all the flights within the airspace user network.

The AOC Staff is mainly involved in the late planning phase and the execution phase of flights. In particular, he/she is in charge of:

- Updating the system with relevant data as soon as deviations from the AOP are detected;
- Managing flight data for provision of flight updates, cancellations, and changes on links between inbound and outbound flights;
- Dispatching flights;
- Prioritising flights: Slot Management;
- Developing and planning trajectories;
- Manage environmental issues;
- CDM Management.

To fulfil his role the iCWP should provide the AOC Staff agent with the following functions:

- CDM (to update CDM information)
- Routing function (to modify planned routes)
- Tools

2.4.8 APOC Staff

APOC Staff has the responsibility of managing the airport resources and updates the AOP according to the airport and traffic situation in the Medium/Short Term Planning phase. He/She is primarily responsible for coordination and arbitration between the different actors in the management of the Airport Operational Plan. In particular he/she is in charge of:

- Managing airport resources;
- *Managing and exchanging, in CDM environment, flight data and other relevant information;*
- *Setting up departure queue;*
- Managing environmental issues;

To fulfil his role the iCWP should provide APOC Staff with the following functions:

- CDM (to update CDM information)
- Routing function (to modify planned routes)
- Tools

2.5 Operational Scenarios

The following paragraph describes how the iCWP will be used based on the operational scenario described in the documents: WPB4.2 - Surface In Operational Scenario, WPB4.2 - Surface Out Operational Scenario and SESAR P6.2 Airport DOD Step 1. Only the Scenario description related to iCWP is kept. The text taken from the DOD is modified to highlight the use of iCWP. According to the DOD, Only Surface-In and Surface-out Scenario are allocated to 6.9.2 project, that's why only those two scenarios are of interest for this document.

The nominal actors included in the scenario are:

- Aircraft Operator Flight Crew (Pilot)
- Tower Ground Controller or Apron Controller
- Tower Runway Controller
- Ground Handling Agent
- Airport Operator

2.5.1 Surface-In Scenario

The Operational Scenario describes the processes and interactions among actors during landing and taxing to stand operations at the airport level.

The Scenario covers all nominal and non-nominal procedures and is applicable for both CAVOK and Low Visibility Conditions (LVC). Description of procedures for solving hazardous situations during taxiing is out of the scope of the present Scenario and will be covered by the specific Scenario “Solve Hazardous Situations during Taxiing”.

The Scenario starts when the intermediate approach phase is completed and the aircraft is ready for final approach, covers landing and taxiing in and ends when the aircraft is in-block.

The surface in scenario encompasses vacate from the runway, taxi in and on block operations. In contrary to the definition available in the A-CDM implementation manual, taxi in this document is the section of a BT (Business Trajectory) where the aircraft is leaving the runway and taxiing between the runway and its stand/gate position (on block procedure with cock on included). The surface in is part of the execution of a BT and takes place right after the final approach and landing of this BT.

Thus the surface in scenario starts when the aircraft is landing, vacates the runway, which means when it leaves a runway exit, and starts taxiing on the surface on own power to a nose-in stand or open stand (milestone: ALDT = wheels touching the runway after final approach). The surface in scenario ends when the aircraft is parked with chocks on (milestone: AIBT = stops moving on parking position).

2.5.1.1 Assumptions

The scenario assumes a generic airport configuration;

The aircraft can be equipped with ADS-B [1](in and out) and is capable of transmitting limited trajectory intent data. The ground systems are capable of receiving and processing the data and integrating it into the air situation displays of the Controllers to provide real-time information in the aircraft’s intent.

System functionality D-TAXI2 will be available with the appropriate iCWP presentation

The aircraft’s TTOT has been aligned with its planned arrival time at destination which has in turn been agreed between the Aircraft Operator and the ATM Service Provider and ensures that the proposed flight is included in the demand/capacity balance calculations. The TTOT is of sufficient latitude to accommodate the potentially conflicting demands from other constrained destinations.

The ATM Service Provider for the destination airport has included the flight in the Network Operations Plan including the demand/capacity balancing equations for the time period indicated by the Estimated Time of Arrival (ETA) in the flight plan from which the TTOT was calculated. The ETA is thus contained within the preliminary Arrival Manager (AMAN) planning as a Target Time of Arrival (TTA) which will be refined when the aircraft is within the planning window (e.g. 30 minutes prior to ETA).3

Communications may be via either Data Link or by voice (R/T): the selection being dependent upon ICAO SARPS and local procedures.

The Tower Ground Controller can use the iCWP to plan the aircraft’s route from the landing runway nominated exit point to the gate. (the planned route is computed by the routing function and available in the iCWP)

ATC is responsible for provision of separation between all aerodrome surface traffic. The vehicle operators (including flight crew) are responsible for responding appropriately to traffic information (deciding on what space is enough)

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[1] Scernario and Requirements consider a mixed equipage environment

[2] D-TAXI is a data link service that provides non-verbal communications between the Tower Ground Controller and the Flight Crew. It may be used for pre-departure information, start-up, push-back approvals and taxi clearances and pre-arrival information as well as during special airport operations such as taxiing to/from a de-icing area.

[3] When used for such planning purposes, the ETA is referred to as a Target Time of Arrival (TTA)

2.5.1.2 Operational Scenario description

The Runway Controller provides via R/T the landing clearance to the Flight Crew including the meteo information provided by the iCWP and enters the information in the EFS.

The Flight Crew lands the aircraft. The Ground System detects touchdown and records the information.

Prior to – or during – the aircraft descent, the Flight Crew has received through the D-TAXI service the planned runway exit and taxi-in route computed by the Arrival airport Ground System and has added this information to the aircraft system, preparing the break-to-vacate system.

The iCWP displays the aircraft to the Tower Runway Controller and the Tower Ground Controller. (the aircraft is grayed for the Ground controller and cannot interact with its label)

The iCWP displays the lighting system information provided by the guidance system.

The Flight Crew advises the Runway Controller that he has vacated the runway. The Tower Runway Controller verifies, enters the information in the iCWP that the aircraft has vacated the runway and instructs the Flight Crew to contact Tower Ground Controller; transferring control of the aircraft. The System records the runway exit taken by the aircraft and that it has vacated the runway; archiving the ICAO-compliant flight information (the flight plan) and terminating ATM alerting services.

The Flight Crew contacts the Tower Ground Controller. The Tower Ground Controller verifies the assigned stand with the Flight Crew and provides the taxi-in route clearance. The Tower Ground Controller is assisted by a Surface Management function that aids in the selection of the most efficient taxi route calculated by minimising the delay according to planning, ground rules, and potential conflicts with other mobiles.

All the provided clearances are entered in the EFS.

Provided that the tactical situation permits, the taxi clearance can be issued either automatically or by the Tower Ground Controller utilizing D-TAXI capability using iCWP

The iCWP informs the Tower Ground Controller of any deviation from route/plan it has detected.

The Flight Crew acknowledges and accepts the route clearance, updating the aircraft system. The Tower Ground Controller, with the assistance of the iCWP monitors the traffic situation for the detection of potential hazardous situations (e.g. converging airport traffic, temporary obstructions, debris)

Instructions with regard to other aircraft or ground vehicles are issued via R/T. The cleared taxi route can be issued by D-TAXI only to the first point at which the Tower Ground Controller requires the aircraft to stop (Taxi Clearance Limit). Subsequent routing information may be provided additionally.

The Flight Crew stops the aircraft at the stop line/stop bars displayed on the moving map after visual confirmation and awaits further clearance/instructions. If the Aircraft proceeds across an illuminated stop bar, the iCWP provides the Tower Controllers with an automated alert.

If the Taxi Clearance Limit is an active runway, the Tower Ground Controller instructs the Flight Crew to contact related responsible Tower Runway Controller who will issue clearance to cross via R/T.

The Tower Runway Controller verifies, either visually or using the ground Surveillance System, that the aircraft is crossing the runway and once vacated, he instructs the Flight Crew to contact the Tower Ground Controller responsible for this ground surface area; transferring control of the aircraft.

The Tower Ground Controller supported by ground automation issues further taxi route clearance(s) to the stand preferably via D-TAXI so as to provide the aircraft iCWP with further routing information.

The ground controller checks visually and uses iCWP to monitor the aircraft movement and track its progress against the issued taxi-in route and its position with respect to other surface traffic;

In case of conflict, in particular if the aircraft proceeds across an illuminated stop bar or potential collision with mobiles / obstacles, the airport safety net alerts the concerned mobile(s) and the ground controller via the iCWP.

The safety nets, via iCWP, inform the ground controller of any deviation from route/plan it has detected. Then the ground controller gives a new taxi route to the flight crew with the assistance of iCWP.

As the Flight Crew approaches the stand the Ground Handlers activate the Automated Visual Docking system. The Flight Crew follows the visual indications given by the docking system.

The System detects “in block”, records the event and disseminates the information to the Aircraft Operator and makes the information available for other users

2.5.2 Surface-Out Scenario

The Surface Out scenario describes the processes and interactions that an aircraft encounters from the time the aircraft is off block (CDM milestone: AOBT) till the aircraft is airborne (CDM milestone: ATOT) as anticipated for SESAR Concept Story Board STEP1, Service Level 2.

2.5.2.1 Assumptions

A stand allocation is done (not part of iCWP)

The routing from the aircraft stand to the departure runway is available for the iCWP

All planning for the events in this scenario has taken place in the Medium / Short Term planning phase. The Airline Operations and Control Centre (AOC) have filed the Flight Plan. Upon receipt and acceptance of the flight plan by the ATM System, the ATM System confirms that the proposed times will not create a demand/capacity imbalance or, if such an imbalance occurs, a time constraint will be generated by the ATM System and proposed to the AOC. The AOC will then determine how to meet this constraint.

The flight is included in the initial departure capacity balancing process that occurs on the day of operation. At airports that operate a runway in mixed mode, the number of approved departures directly influences the arrival flow. A proposed departure sequence is based upon the estimated time of departure as contained in the filed flight plan.

2.5.2.2 Operational Scenario description

The ATM System issues a Target Take-Off Time (TTOT) based on the Shared Business Trajectory (SBT) and on other constraints/parameters. Amongst other parameters, the TTOT takes into consideration the Target Time of Arrival (TTA) at the destination airport (when available) and the departure runway in use. Furthermore with knowledge of the TTA, the elapsed time derived from the trajectory, the departure and arrival demand for the runway(s) and the dependent departure route demand from adjacent airports, the local departure management process will calculate the associated start-up/ push-back time and taxi route.

Based on the last iteration of the SBT, the AOC/WOC produces the Reference Business/Mission Trajectory (RBT/RMT) and provides the aircraft ready time (TOBT) to the ATM System.

The ATM System issues the Target Start-up Approval Time (TSAT) that will match the TTOT, taking into account the TOBT and taxi route from the flight’s stand to the holding point and the associated taxi time.

Once on board, the Flight Crew establishes a data link D-OTIS contact to receive ATIS, weather & NOTAM updates.

When logged on to data link communications (CPDLC) and once the data is available to the ATM System, the Flight Crew automatically receives from the ATM System the TSAT and the planned (computed) taxi-out route information from the stand to the departure runway.

The Flight Crew may transmit through data link his preference/capabilities limitations for his take off. These data are being considered by the ATM System during its optimisation process. Any update of the ground routing and/or TSAT is communicated to the Flight Crew via data link.

The Tower Ground Controller uses iCWP (DMAN function) to determine push-back and taxiing priorities in order to optimise runway throughput.

The Flight Crew requests “Departure Clearance” from the ATM System via data link. The iCWP displays the request.

The Tower Ground Controller uses the iCWP to issue the “Departure Clearance” including updated departure time (i.e. TSAT) via data link. In some cases start-up and Departure clearance can be issued together.

The Flight Crew acknowledges receipt of the clearance using the ATM System and iCWP closes the datalink dialogue

2.5.2.2.1 Start-up and Push-back

General Procedures

At some agreed time at or prior to TOBT, the Flight Crew contacts the Tower Ground Controller (Clearance Delivery Controller) and requests Start-Up via data link.

The Tower Ground Controller (Clearance Delivery Controller) identifies the aircraft and checks the Start-Up request prior to providing via data link the Start-Up clearance to the Flight Crew using the iCWP.

The Flight Crew acknowledges the Start-Up clearance and may start up the engines with the assistance of the Ground Handling Agent according to local procedures. The Flight Crew requests a Push-back approval via data link.

The Tower Ground Controller (or Apron Manager) provides the Push-back approval via data link using the iCWP.

The Ground Handling Agent, after checking the onboard Traffic Situational Awareness and visually verifying that there are no vehicles or other objects in proximity, commences the aircraft push-back. The ATM System recognises the event and AOBT is recorded.

With this information, the ATM System updates the planned departure sequence and TTOT.

The iCWP (Safety Nets) displays an alarm together with a potential resolution advisory to the Flight Crew, Ground Handling Agent and Tower Ground Controller, when the ATM System detects potential conflicts/incursions involving aircraft and vehicles in the apron/stand/gate area.

Procedure Violation (Conflicts)

If for whatever reasons an aircraft deviates from its assigned push back route there may be a number of solutions. The Tower Ground Controller may assign a new push-back route, or clear the aircraft to a position from where it can proceed as previously planned, or assign a new taxi route to other conflicting traffic. The new route is entered in the iCWP. All the time related to the aircraft are updated in the iCWP.

2.5.2.2.2 Taxi-out

General Procedures

The Flight Crew requests the taxi instruction from the Tower Ground Controller by data link.

The iCWP displays a proposed routing the Tower Ground Controller. The Tower Ground Controller assesses the tactical situation and, if needed, may update the taxi routing through the iCWP. This may include holding and / or intermediate stops. The Tower Ground Controller issues a taxi clearance to the Flight Crew, by data link (D-TAXI) whenever possible.

The Flight Crew acknowledges the taxi clearance and the iCWP close this datalink dialogue.

During the taxi-out, the Tower Ground Controller may change the Planned Departure Sequence to take into account a revision in the TTOT for example departures from adjacent airports that are following the same departure route in the. The iCWP may update the TTOT accordingly.

The Tower Ground Controller may alter at any moment the ground routing to prepare for the line-up sequence and, with the support of the iCWP, uplink the new taxi routing instruction to the Flight Crew. Once acknowledged by the Flight Crew, the routing is updated on the iCWP.

The Flight Crew may transmit, at any moment during the taxi routing, through data link his preference/capabilities limitations for their take off. The Tower Ground Controller with the support of the ATM System may consider them and issue an updated ground routing instruction.

The Tower Ground Controller continually monitors visually or from the iCWP the aircraft movement and track its progress against the issued taxi-out route and its position with respect to other surface traffic. Ground signs (stop bars, centreline lights, etc.) are triggered automatically according to the route issued by ATC and the information is available on the iCWP.

The Tower Ground Controller detects and resolves potential hazardous situations for the aircraft (e.g. conflict with fixed and mobile obstructions, incursion into protected areas or movement on a closed taxiway) by giving instructions to Flight Crew.

The iCWP alerts the Tower Ground Controller if the aircraft proceeds across a clearance limit if the clearance limit is an active runway, an illuminated stop bar or deviates from the cleared route.

When the clearance limit is an active runway, the Tower Ground Controller transfers the control of the flight to the Tower Runway Controller who issues the runway crossing clearance by R/T.

With the support of the iCWP, the Tower Runway Controller detects that the aircraft has crossed and cleared the active runway and transfers the control of the flight back to the Tower Ground Controller in charge of related area on the airport.

An aircraft waiting at an intermediate hold must await further taxi instructions.

The aircraft reaches the assigned departure runway holding position (or at a point before the holding position) and the Tower Ground Controller transfers control to the Tower Runway Controller, using R/T.

iCWP provides the Tower Ground Controller with information on Foreign Object Debris (FOD) detected on the movement area.

iCWP raises an alarm together with a potential resolution advisory to the Ground Handling Agent and Tower Ground Controller, when the ATM System detects potential conflicts/incursions involving aircrafts and vehicles on runways, taxiways and in the apron/stand/gate area.

When the aircraft moves from an area of responsibility to another, the Tower Ground Controller will either give an instruction or there will be a silent frequency change according to the instructions in the AIP. In case of a runway crossing the aircraft has to await a clearance from the Tower Runway Controller to cross the runway.

Optional Procedures

Remote de-icing:

Remote de-icing is handled as a holding procedure. The Tower Ground Controllers hands over the aircraft to the De-icing Agent and after de-icing the De-icing Agent hands over the aircraft to the De-icing Agent.

Low visibility procedure:

In conditions of low visibility the Tower Ground and Runway Controller will apply appropriate procedures according to the AIP.

Procedure Violation (Conflicts)

Taxi route deviation:

If for whatever reasons an aircraft deviates from its assigned taxi route, the Tower Ground Controller may assign a new taxi route, or instruct the aircraft to be towed to a position from where it can proceed as previously planned, or assign a new taxi route to other conflicting traffic.

Deadlock:

If for whatever reasons there is a head-on situation between two aircraft on a taxiway, the Tower Ground Controller will instruct one of the aircraft to be towed to a position from where it can proceed. He will give a revised taxi clearance.

Holding position overrun:

If for whatever reasons an aircraft might overrun its assigned holding position, the Tower Ground Controller may instruct the affected aircraft to stop and assign a new taxi route, or the Tower Ground Controller may assign a new taxi route to other aircraft, which is affected by the overrun.

Runway incursion:

If for whatever reasons an aircraft and/or vehicle enters the protected area of an active runway, the Tower Runway Controller must be responsible for resolving the runway incursion and take subsequent action. If no incident or accident has happened, this situation at least implies a delay for surface out and surface in, because the planned traffic has to be re-sequenced.

2.5.2.2.3 Take-off

General Procedures

The Tower Runway Controller may optimize the line-up sequence in case of multiply runway entries.

The Tower Runway Controller verifies that the runway is clear of other aircraft, ground traffic and FOD, the runway approach area is clear and that the aircraft will meet departure separation requirements and that the departing aircraft will comply with its TTOT prior to providing by R/T the line-up instruction to the aircraft.

The Flight Crew confirms the line-up instruction and taxis the aircraft to the line-up position.

In applicable situations, the Tower Runway Controller can use reduced aircraft separations derived from forecasted wake vortex behaviour, the iCWP will provide the controller with a tool to measure this.

The Tower Runway Controller by visual reference and using the iCWP verifies that the runway is free of obstacles for the take-off of the aircraft. The Tower Runway Controller issues the take-off clearance to the Flight Crew using R/T.

The Flight Crew acknowledges the take-off clearance, initiates the take-off roll and lifts-off. The iCWP detects the wheels-off and records the ATOT. When the departing aircraft enters the TMA airspace, the ATM system initiates an automated system hand-over to the Executive Controller (TMA /Departure).

From the time the aircraft enters the runway until lift-off, an automated alert is generated and transmitted to the Tower Runway Controller in the case of a potential or actual runway.

Procedure Violations (Conflicts)

Take-off conflict:

If an aircraft aborts its take off, it blocks the runway longer than expected. The Tower Runway Controller may re-sequence the affected aircraft into the departures.

If an aircraft performs a go-around, the Tower Runway Controller will re-sequence the affected aircraft into the arrivals. The iCWP allows the controller to do this action [9].

2.6 Functional

2.6.1 Functional decomposition

The Functional Decomposition and Analysis is developed according to the Architecture models Guidelines and Templates [19].

The document EA Views for the Architecture of the Technical Systems for Cycle 1 proposes the following decomposition (see reference [10]).

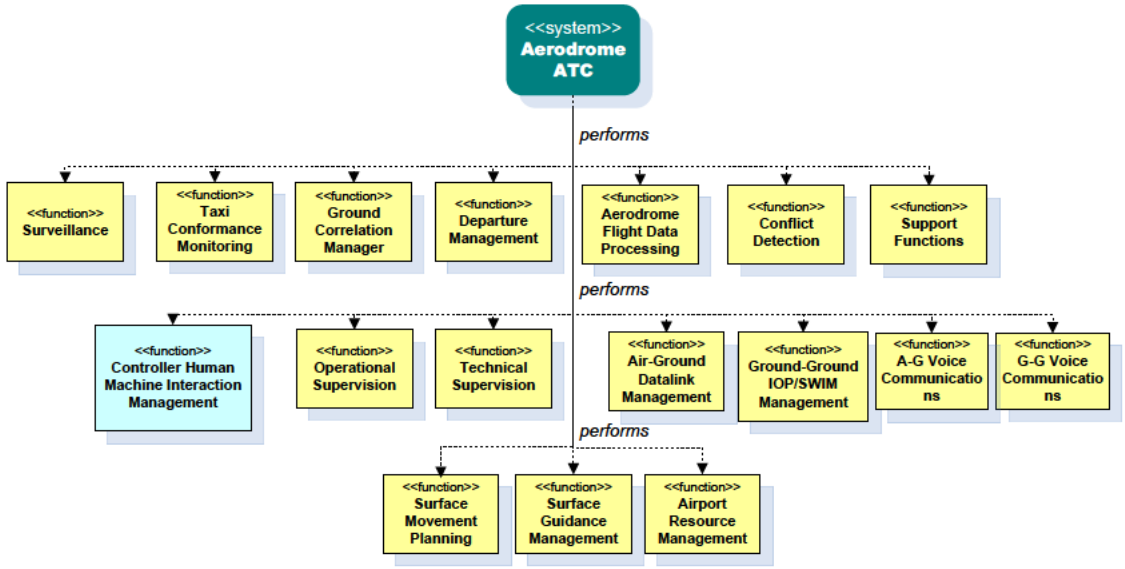

Figure 5: NSV-4 Aerodrome ATC system diagram

This diagram is composed of functions detailed in the functional analysis (§2.6.2) below.

2.6.2 Functional analysis

Aerodrome Flight Data Processing: This function manages the creation, update and modification of system flight plans up to/from the moment the aircraft takes-off/lands. 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). Aerodrome Flight 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 vice-versa for landing aircraft.

Surveillance: This function provides ANSP and other Airport stakeholders with situational awareness on the SID(s), STAR(s), apron(s), taxiway(s), runway(s) and landing/take-off paths by providing position and identification of all surface traffic (aircraft and vehicles). It merges the surveillance information provided by the different surveillance sources providing a unique picture of the actual traffic situation. For each aircraft, vehicle and obstacle a system track is generated.

Surface Movement Planning: This function is aimed to select the most appropriate taxi plan for each departing/arriving flight on the basis of the aerodrome flight information and for vehicles, current operational airport resources conditions (i.e. availability and restrictions for surface traffic on runways, taxiways and aircraft stands) and potential interactions with other mobiles.

Conflict Detection: this function detects within manoeuvring areas (runway/s and taxiways) potential conflicts between two objects (i.e. aircraft or vehicles), or between an object and a restricted area, by processing the actual traffic situation. The potential safety hazards situations on the airport movement area: runway incursion, intrusion in protected areas, aircraft/aircraft and aircraft/vehicle collisions.

Departure Management: This function calculates the optimised departure sequence on each available runway, taking multiple constraints and preferences into account. It aims at improving departure flows at airports.

Surface Guidance Management: this function provides automatic dynamic ground signs switching and onboard 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.

Airport Resource Management: this function is responsible for the creation, identification, modification, deletion and management of all environment and configuration data needed by the Aerodrome ATC system. Its responsibility includes the on-line and off-line environment data management and their distribution.

Controller Human Machine Interaction Management: this function provides controllers with a graphical user interface and with the means to interact with the Aerodrome ATC system.

Ground Correlation Manager: this function has the responsibility of logically associating surveillance data with an aircraft or vehicle. This association is called ground correlation.

Surface Safety Nets: this function is responsible for monitoring and distributing the deviations of an aircraft from its taxi plan (including taxi route, parking-bay, runway, and clearance requested and approved) and/or from planning times. This function checks the actual aircraft position against the predicted trajectory. In case of detected deviation this function triggers warning distribution in order to alert concerned controllers.

Ground-Ground IOP/SWIM Management: this function is responsible for ground-ground communication.

Air Ground D/L Management: this function is responsible for the air-ground communication. Its main role is to handle DLIC and CPDLC communications, while also supporting the delivery of D-ATIS and DCL messages to the aircraft.

Operational Supervision: this function allows the Tower Supervisor to manage the most appropriate operational configuration, according to traffic demand and aerodrome needs, and react in case of system fault, re-assigning and distributing available resources in order to maintain adequate safety levels and quality of service.

Technical Supervision: this function is in charge of:

- monitoring and displaying the status of all the services provided by the Aerodrome ATC system;
- performing the start-up, shutdown and restart of the entire system or part of it; modifying VSPs (Variable System Parameters) that customize the system's technical characteristics;
- monitoring and control capabilities for the elements of the system including sub-systems, LANs, external links, etc.;
- automatic re-configuration of systems to maintain agreed levels of service provision as appropriate; displays supervision information and exports data to external clients (through a dedicated iCWP).

Support Functions: The Support functions do not affect directly the provision of ATM Services at operational time. It contains at least the following:

- Recording - responsible for performing the recording of the ATM System data related to the Aerodrome ATC, and buffering those data on a persistent database.
- Playback - providing support for display and voice recording, display and voice playback, other data recording and reduction, etc.
- Data analysis - providing support for maintenance, investigation etc.
- Automatic Safety Data Gathering Tool - support for safety aspects.

Ground-Ground Voice Communication provides functions performed by Telephone VCS.

Air-Ground Voice Communication provides functions performed by Radio VCS

2.7 Service View

The following table traces the relation between the external functional block defined in § 2.3 and the services at which are allocated the technical requirements (§3.1).

	Support function	Resource Mgt	Technical SPV	Operation SPV	A/G and G/G voice com	Flight data processing	Departure Mgt	Surface routing	Surface Guidance	Conflict Mgt	Taxi conformance monitoring	Ground correlation	A/G Datalink mgt
Supporting iCWP	X				X								
Traffic Situation Mgt						X							
Weather and Advisory Information		X		X									
Airport Layout Set up		X						x	x	x		x	
Traffic Data Update						X		X				X	
iCWP Flight Plan Update						X	X						
System Supported Data Exchange and Co-ordination		X	X	X		X							
Vehicle Mgt								X	X	X	X		
Monitoring and Safety Support				X						X	X		
Mobile Routing Mgt							X	X			X		
Data Link and Guidance									X				X
Brake To Vacate									X				
A-CDM		X											

Table 6: Services / External functional block traceability

The following table trace the relation between the Internal iCWP functional blocks defined in §2.3 and the services at which are allocated the technical requirements (§3.1).

	Contextual and support data, voice	Flight Information data	Situation and Surveillance data
Supporting iCWP	X		
Traffic Situation Mgt		X	X
Weather and Advisory Information	X		
Airport Layout Set up	X		x
Traffic Data Update		X	
iCWP Flight Plan Update		X	X
System Supported Data Exchange and Co-ordination	X	X	
Vehicle Mgt		X	
Monitoring and Safety Support		X	X
Mobile Routing Mgt		X	X
Data Link and Guidance			X
Brake To Vacate			X
A-CDM	X	X	X

Table 7: Services / Internal iCWP functional block traceability

3 Functional block Functional and non-Functional Requirements

3.1 Capabilities

The requirements listed in the following paragraphs are grouped for services in order to meet the approach followed by Operational side and guarantee a simple traceability with Operational needs in the validation activity.

3.1.1 Supporting iCWP services

The requirements in this section are as support to the main iCWP functionalities. These capabilities do not satisfy specific functional improvements; therefore the traceability with Enabler has not been applicable.

Identifier	REQ-12.05.04-TS-0101.0001
Requirement	The iCWP shall display a login window whenever a user want to access the Aerodrome ATC system.

Identifier	REQ-12.05.04-TS-0101.0002
Requirement	The iCWP shall allow log out of users.

Identifier	REQ-12.05.04-TS-0101.0003
Requirement	Upon login, the iCWP shall allow to configure the display according to saved screen settings.

Identifier	REQ-12.05.04-TS-0101.0004
Requirement	The iCWP shall allow to configure the display according to a default screen setting.

Identifier	REQ-12.05.04-TS-0101.0005
Requirement	The iCWP shall allow interaction for right hand and left hand users by means a set of input devices: - Pointing device; - Alphanumeric functional Keyboard.

Identifier	REQ-12.05.04-TS-0101.0006
Requirement	The iCWP shall allow the operator to change the situation display range without changing the size of the situation display.

Identifier	REQ-12.05.04-TS-0101.0007
Requirement	The iCWP shall allow the operator to save a range scale value

Identifier	REQ-12.05.04-TS-0101.0008

Requirement	The iCWP shall allow the operator to enable/disable an automatic anti-overlap function in order to avoid track label conflicts.

Identifier	REQ-12.05.04-TS-0101.0009
Requirement	The iCWP shall allow the operator to change the orientation of the track label with respect the North (magnetic or geographic).

Identifier	REQ-12.05.04-TS-0101.0010
Requirement	The iCWP shall allow the operator to adjust the length of the leader line of the track labels according to the label position.

Identifier	REQ-12.05.04-TS-0101.0011
Requirement	The iCWP shall allow the operator to manually move labels to a defined position taking them off the default setting.

Identifier	REQ-12.05.04-TS-0101.0012
Requirement	The iCWP shall allow the operator to re-establish default position setting for labels manually moved.

Identifier	REQ-12.05.04-TS-0101.0013
Requirement	The iCWP shall provide to Controller textual data in various formats: -Labels; -Lists of data; -Electronic Flight Strips

Identifier	REQ-12.05.04-TS-0101.0014
Requirement	The iCWP shall provide the possibility to store a pre-defined number of zoom settings.

3.1.2 Traffic Situation Management Service

Some of requirements in this section are as support to the main iCWP functionalities. These capabilities do not satisfy specific functional improvements; therefore the traceability with Enabler has not been applicable

Identifier	REQ-12.05.04- TS -0102.0001
Requirement	The iCWP shall be able to display / remove display parking names and associated location on the ground situation display, either permanently or temporarily.

Identifier	REQ-12.05.04- TS -0102.0002
Requirement	The iCWP shall be able to display / remove display taxiway names on the ground situation window, either permanently or temporarily.

Identifier	REQ-12.05.04- TS -0102.0003
Requirement	The iCWP shall be able to remove display or redisplay working areas on the ground situation window.

Identifier	REQ-12.05.04- TS -0102.0004
Requirement	The iCWP shall be able to display / remove display RWY strip boundaries according to LVP or non-LVP conditions.

Identifier	REQ-12.05.04- TS -0102.0005
Requirement	The iCWP shall be able to display air video maps taking following issues into account: •The number of airspace maps and the content of each air map shall be defined at local level. The proposed default display is the following: The area of the sector(s) controlled on the position •The waypoints and waypoint identifications •The airways / airway centre-lines •The military areas •The coastlines •The scale markers •The range-rings.

Identifier	REQ-12.05.04- TS -0102.0006
Requirement	The display of the UTC time shall be always available.

Identifier	REQ-12.05.04- TS -0102.0007
Requirement	The iCWP shall provide access to the Range and Bearing function allowing obtaining precise range and bearing information as measured from one point of the airspace to another.

Identifier	REQ-12.05.04- TS -0102.0008
Requirement	The iCWP shall allow the controller to leave the Range and Bearing function.

Identifier	REQ-12.05.04- TS -0102.0009
Requirement	The iCWP shall provide the controller with feedback when the Range and Bearing function is active or not.

Identifier	REQ-12.05.04- TS -0102.0010
Requirement	The iCWP shall provide with an access to the Tracker link function allowing to monitor over time the change in relative range and bearing over time of two points, one or both of which are dynamic (an aircraft and a fixed point, or two aircraft).

Identifier	REQ-12.05.04- TS -0102.0011
Requirement	The iCWP shall provide with the controller the possibility to leave the Tracker Link function.

Identifier	REQ-12.05.04- TS -0102.0012
Requirement	The iCWP shall provide the controller with feedback when the Tracker link function is active or not.

Identifier	REQ-12.05.04- TS -0102.0013
Requirement	The iCWP shall allow the controller to remove the displayed range and bearing information.

Identifier	REQ-12.05.04- TS -0102.0014
Requirement	The ICWP shall provide the controller the possibility to choose whether to use the automatic radar label anti-overlap function: the function may be activated and de-activated only on controller's request. The access to the activation/deactivation may be immediate, and the controller may be provided with feedback whether the automatic anti-overlap is active or not.

Identifier	REQ-12.05.04- TS -0102.0015
Requirement	At any moment, the iCWP shall allow the controller to manually set the orientation of all the displayed radar labels, within a given frame of reference.

Identifier	REQ-12.05.04- TS -0102.0016
Requirement	At any moment, the iCWP shall allow the controller to manually set the leader line length of all the displayed radar labels. Several lengths of the leader line may be available, allowing changing the position of the labels without modifying their direction with respect to the aircraft track.

Identifier	REQ-12.05.04- TS -0102.0017
Requirement	The iCWP shall allow the controller to move a particular radar label anywhere on the radar image. The leader line shall automatically extend and reposition to maintain the link between the label and the aircraft position symbol.

Identifier	REQ-12.05.04- TS -0102.0018
Requirement	At any moment, the iCWP shall allow the controller to include or not the individually moved labels into the global label position setting.

Identifier	REQ-12.05.04-TS-0102.0019
Requirement	The iCWP shall allow the controller to configure the speed vector length for all the aircraft tracks.

Identifier	REQ-12.05.04-TS-0102.0020
Requirement	The speed vector may not be 'confusable' with the leader line of the air aircraft radar label.

Identifier	REQ-12.05.04-TS-0102.0021
Requirement	Aircraft track symbols may be different so that the controller may clearly distinguish between them.

Identifier	REQ-12.05.04-TS-0102.0022
Requirement	The iCWP shall allow the controller to configure the number of trail dots for all the aircraft tracks.

Identifier	REQ-12.05.04-TS-0102.0023
Requirement	The iCWP shall allow the controller to configure the content of minimum and extended radar labels by adding or removing data fields .

Identifier	REQ-12.05.04-TS-0102.0024
Requirement	The content of radar labels shall be configurable according to operator role.

Identifier	REQ-12.05.04-TS-0102.0025
Requirement	The colours associated to arriving and departing traffic shall be different.

Identifier	REQ-12.05.04-TS-0102.0026
Requirement	The iCWP shall provide the controller with the possibility to set/select groups of aircraft tracks to be displayed.

Identifier	REQ-12.05.04-TS-0102.0027
Requirement	The iCWP shall provide with a function to mark an aircraft by the controller.

Identifier	REQ-12.05.04-TS-0102.0028
Requirement	Selecting an aircraft shall: a) Highlight all the available representations on the traffic situation management iCWP of that traffic wherever such information appears, b) Show the radar label in the highlighted format.

Identifier	REQ-12.05.04-TS-0102.0029
Requirement	De-selecting an aircraft shall: a) Deselect the previously highlighted traffic representation. b) Revert the radar label to no-highlighted form

Identifier	REQ-12.05.04-TS-0102.0030
Requirement	The iCWP shall provide the Aircraft representation in a format helping the controller to locate and identify the traffic and to have direct access to essential information. The relation between traffic representation and information concerning that traffic shall be unambiguous.

Identifier	REQ-12.05.04-TS-0102.0031
Requirement	The iCWP shall display the minimum information needed by the controller as the permanently displayed traffic data in order to avoid screen congestion and minimise overlap of displayed information,

Identifier	REQ-12.05.04-TS-0102.0032
Requirement	The iCWP shall update the traffic representation on the controller's display: a) updates of the surveillance system b) controller updates of traffic data.

Identifier	REQ-12.05.04-TS-0102.0033
Requirement	All Traffic Data Items pertinent to a controller shall be presented in a clear and predefined format(s) that help her/him to prioritise planning and control actions. Depending on operational needs, traffic data shall be configurable with regard to layout, size, shape, fonts, colours and interaction capability.

Identifier	REQ-12.05.04-TS-0102.0034

Requirement	Traffic under the control area responsibility of a controller at a particular working position shall be clearly distinguished from traffic which is not under her/his control responsibility.

Identifier	REQ-12.05.04-TS-0102.0035
Requirement	Extended Traffic Data Item information shall be available on controller request. The presentation format shall be fixed, allowing the controller to find an information.

Identifier	REQ-12.05.04-TS-0102.0036
Requirement	The iCWP shall be able to sort out Traffic Data Items displayed in a Traffic Data List, either manually or according to configurable criteria..

Identifier	REQ-12.05.04-TS-0102.0037
Requirement	The iCWP shall assist the controller to create a new traffic data item

Identifier	REQ-12.05.04-TS-0102.0038
Requirement	Several sets of traffic data shall be provided in order to assist the controller in different types of tasks as. updating of data, planning of actions, surface conflict detection and monitoring.

Identifier	REQ-12.05.04-TS-0102.0039
Requirement	Sets of traffic data shall be presented in either textual or graphical format.

Identifier	REQ-12.05.04-TS-0102.0040
Requirement	The iCWP shall provide the controller with a clear indication that a traffic is: a) Entering her/his area of responsibility; b) Being under her/his responsibility; c) Leaving her/his area of responsibility

Identifier	REQ-12.05.04-TS-0102.0041
Requirement	Traffic under the controller responsibility at a particular working position shall be clearly distinguished from traffic which is not under her/his control responsibility.

Identifier	REQ-12.05.04-TS-0102.0042
Requirement	The iCWP shall allow the controller to expand the format of a displayed Traffic Data Item to access additional data. By default, Traffic Data Items may be presented under normal (minimum) format.

Identifier	REQ-12.05.04-TS-0102.0043
Requirement	The iCWP may allow the controller to sort, move, create new traffic data item in the Traffic Data Lists.

Identifier	REQ-12.05.04-TS-0102.0044
Requirement	The iCWP may display the complete airport traffic situation, allowing a situation assessment.

Identifier	REQ-12.05.04-TS-0102.0045
Requirement	Conflict information may be unambiguously displayed on a traffic situation display or by other appropriate means.

3.1.3 Weather and Advisory Information Service

The requirements in this section are as support to the main iCWP functionalities. These capabilities do not satisfy specific functional improvements; therefore the traceability with Enabler has not been applicable

Identifier	REQ-12.05.04-TS-0103.0001
Requirement	Minimum weather information may always be displayed and available to the controller and includes: surface wind direction and strength.

Identifier	REQ-12.05.04-TS-0103.0002
Requirement	Minimum weather information may always be displayed and available to the controller and includes: QNH (mb).

Identifier	REQ-12.05.04-TS-0103.0003
Requirement	Minimum weather information may always be displayed and available to the controller and includes: ATIS code.

Identifier	REQ-12.05.04-TS-0103.0004
Requirement	Minimum weather information may always be displayed and available to the controller and includes: temperature.

Identifier	REQ-12.05.04-TS-0103.0005
Requirement	Minimum weather information may always be displayed and available to the controller and includes:dew point.

Identifier	REQ-12.05.04-TS-0103.0006
Requirement	Minimum weather information may always be displayed and available to the controller and include: RVR.

Identifier	REQ-12.05.04-TS-0103.0007
Requirement	The iCWP may allow the controller to access to additional weather information that shall include: visiblity

Identifier	REQ-12.05.04-TS-0103.0008
Requirement	The iCWP may allow the controller to access to additional weather information that shall include: current weather

Identifier	REQ-12.05.04-TS-0103.0009
Requirement	The iCWP may allow the controller to access to additional weather information that shall include: cloud ceiling

Identifier	REQ-12.05.04-TS-0103.0010
Requirement	The iCWP may allow the controller to access to additional weather information that shall include: QFE (mb and inches).

Identifier	REQ-12.05.04-TS-0103.0011
Requirement	The iCWP may display the current date. (UTC)

Identifier	REQ-12.05.04-TS-0103.0012
Requirement	The iCWP may display the current time (UTC)

Identifier	REQ-12.05.04-TS-0103.0013
Requirement	The iCWP may display incoming METARs for this airport and other airports.

Identifier	REQ-12.05.04-TS-0103.0014
Requirement	The iCWP may display incoming TAFs for this airport and other airports.

3.1.4 Airport Layout Set up Service

Identifier	REQ-12.05.04-TS-0104.0001
Requirement	The iCWP shall allow define al local level the number of airport 2D maps and the content of each map. The proposed default display is the following: • Taxiways • Runways • Terminals and other airport buildings • Apron and gates • Stop bars.

Identifier	REQ-12.05.04-TS-0104.0002
Requirement	The iCWP shall allow the controller to access/modify the status of the runways and taxiways (active / closed).

Identifier	REQ-12.05.04-TS-0104.0003
Requirement	The iCWP shall display and remove different types of surface information on the ground situation display.

Identifier	REQ-12.05.04-TS-0104.0004
Requirement	The iCWP shall display when a runway is occupied by an aircraft or a vehicle which is under the responsibility of the controller.
Identifier	REQ-12.05.04-TS-0104.0005
Requirement	The iCWP shall provide a composite picture which can zoom in to airport scale and out to APP/en-route scale.
Identifier	REQ-12.05.04-TS-0104.0006
Requirement	The iCWP shall provide the possibility to change the situation display range (APP or Ground situation display). The minimum and maximum zoom values, if any, shall be clearly indicated.

Identifier	REQ-12.05.04-TS-0104.0007
Requirement	The iCWP shall provide the possibility to access a previously stored zoom setting.

Identifier	REQ-12.05.04-TS-0104.0008
Requirement	The iCWP shall provide the possibility to modify a previously stored zoom setting.
Identifier	REQ-12.05.04-TS-0104.0009
Requirement	The iCWP shall provide the possibility to re-centre the situation display on a chosen point.
Identifier	REQ-12.05.04-TS-0104.0010
Requirement	The iCWP shall allow the controller to modify the geographical orientation of airport maps.
Identifier	REQ-12.05.04-TS-0104.0011
Requirement	The iCWP shall provide, at each controller working position, a traffic situation display capable to present labelled target tracks superimposed on an airport and approach map.

3.1.5 Traffic Data Update Service

Identifier	REQ-12.05.04-TS-0105.0001
Requirement	The iCWP shall display only available options for interaction. Such options depend on the flight planning state and previously issued clearances for the

	flight

Identifier	REQ-12.05.04-TS-0105.0002
Requirement	The iCWP may provide a visible indication on a traffic data item when a flight has been cancelled or delayed

Identifier	REQ-12.05.04-TS-0105.0003
Requirement	The iCWP shall display arrival traffic data on the RWY arrival control position at a time parameter before the estimated landing time (ELDT).

Identifier	REQ-12.05.04-TS-0105.0004
Requirement	Based on local decision, the iCWP may display arrival traffic on concerned GND control position(s) either at a time parameter before the estimated landing time (ELDT) or based on an identified runway controller action / clearance for that flight.

Identifier	REQ-12.05.04-TS-0105.0005
Requirement	Based on local decision, the iCWP may display departure traffic data item on concerned GND position(s) either at a time parameter before the estimated or target off block time (EOBT /TOBT) time or based on an identified controller action/clearance for that flight.

Identifier	REQ-12.05.04-TS-0105.0006
Requirement	The iCWP shall provide visible indication of completion of a flight transfer/assume control responsibility on both assuming and transferring operator roles.

Identifier	REQ-12.05.04-TS-0105.0007
Requirement	The iCWP shall update the traffic representation in the following situations: a) Target reports received from the Surveillance function b) Controller-initiated update of data c) Updates of traffic context data d) Flight plan updates from the Routing/Planning functions.

Identifier	REQ-12.05.04-TS-0105.0008
Requirement	The iCWP shall present a clear "picture" of the actual traffic situation in the controller's responsibility area, with all the necessary traffic data to assist in the control task.

3.1.6 iCWP Flight Plan Update

Identifier	REQ-12.05.04-TS-0106.0001
Requirement	The iCWP shall allow to manually create a new flight plan.

Identifier	REQ-12.05.04-TS-0106.0002
Requirement	At any stage of a new flight plan creation, the iCWP may assist the controller with indications of data to be input, data available for input, erroneous data, possible actions, and forbidden actions.

Identifier	REQ-12.05.04-TS-0106.0003
Requirement	The iCWP shall allow to correct or update a previously saved flight plan: the deletion of a saved flight plan shall be confirmed by the controller.

Identifier	REQ-12.05.04-TS-0106.0004
Requirement	The iCWP shall be able to display the flight plan data of any existing flight plan

Identifier	REQ-12.05.04-TS-0106.0005
Requirement	The iCWP shall allow to manually modify flight plan elements

Identifier	REQ-12.05.04-TS-0106.0006
Requirement	The iCWP shall be able to receive and manage any update of movement plan update from a flight data processing system of the ATM at the airport

Identifier	REQ-12.05.04-TS-0106.0007
Requirement	The iCWP may be able to present to controller the list of flight plans for all aircraft present in movement area, according to this classification: - Inbound flight plan - Outbound Flight Plan - Crossing Flight plan - Local Ground aircraft movement

Identifier	REQ-12.05.04-TS-0106.0008
Requirement	The iCWP may be able to update in real time, the information presented within the flight plan list, according to this classification: - Inbound flight plan - Outbound Flight Plan - Crossing Flight plan - Local Ground aircraft movement

Identifier	REQ-12.05.04-TS-0106.0009
Requirement	The iCWP shall allow the controller to manually associate any target to a system track (manual identification procedure): identification data shall be manually inserted by operator, or selected by a predefined set.

Identifier	REQ-12.05.04-TS-0106.0010
Requirement	The iCWP shall allow the controller to manually remove data which were manually associated to a target.

Identifier	REQ-12.05.04-TS-0106.0011
Requirement	The iCWP shall present in real time any update of FPL routing information

Identifier	REQ-12.05.04-TS-0106.0012
Requirement	The iCWP shall allow the controller to enter the following flight data, through EFSS system: - Runway Allocation - SID - ASAT

Identifier	REQ-12.05.04-TS-0106.0013
Requirement	The iCWP shall be able to present to its operator the following flight plan information calculated from the DMAN: • TSAT • TTOT • Allocated Departure Runway

Identifier	REQ-12.05.04-TS-0106.0014
Requirement	The iCWP shall provide, at each controller working position, an EFSS display

	capable of presenting flight strips sorted into bays according to the phase of flight.

Identifier	REQ-12.05.04-TS-0106.0015
Requirement	The layout of the iCWP flight strips may be independently configurable for each bay area.

Identifier	REQ-12.05.04-TS-0106.0016
Requirement	The iCWP flight strip may contain data fields with all flight plan data relevant for the controller role at each position. All traffic data items pertinent to a controller may be presented in clear and pre-defined formats that help to prioritize planning and control actions.

Identifier	REQ-12.05.04-TS-0106.0017
Requirement	The iCWP may allow the controller to view the complete flight plan data.

Identifier	REQ-12.05.04-TS-0106.0018
Requirement	As well as flight plan data fields, the iCWP flight strip may contain special-purpose fields, such as: • Clearance fields for issuing clearances • Handover field for transferring the flight strip to another controller role • Regress field for returning the flight strip to its previous location • Taxi route information field • Request field to indicate pilot requests received via data link. • Data link dialogue fields

Identifier	REQ-12.05.04-TS-0106.0019
Requirement	The iCWP EFS at each iCWP, position shall display the flight strips for flights under control of that position, as well as flights that will become controlled in the near future

Identifier	REQ-12.05.04-TS-0106.0020
Requirement	The iCWP Flight strips may be logically grouped in the bays according to user requirements.

Identifier	REQ-12.05.04-TS-0106.0021
Requirement	The iCWP flight strip bays may contain lists of flight strips that are selected,

	sorted and presented according to configurable criteria.

Identifier	REQ-12.05.04-TS-0106.0022
Requirement	The iCWP may allow the controllers to sort, move, and create new traffic data items in the traffic data lists.

Identifier	REQ-12.05.04-TS-0106.0023
Requirement	If the controller role has the authority to modify certain items of flight plan data, the iCWP EFS- may provide means for the controller with that authority to input missing data and to correct wrong data for a flight.

Identifier	REQ-12.05.04-TS-0106.0024
Requirement	Each flight strip may be placed in the appropriate bay area based on the user selected sorting criteria and the phase of flight.

Identifier	REQ-12.05.04-TS-0106.0025
Requirement	The number of bay areas and the title of each bay may be configurable for each working position according to the controller role.

Identifier	REQ-12.05.04-TS-0106.0026
Requirement	Depending on the controller role, flight strips may appear in the entry (pending) area when generated by the flight data processing system (FDPS) or when transferred from another control position.

Identifier	REQ-12.05.04-TS-0106.0027
Requirement	The EFS iCWP shall provide a means to input clearances into the Aerodrome ATC system, in accordance with the authority allocated to the controller role at each working position.

Identifier	REQ-12.05.04-TS-0106.0028
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘cleared to land’,

Identifier	REQ-12.05.04-TS-0106.0029
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘go-around’.

Identifier	REQ-12.05.04-TS-0106.0030
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘vacate’

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0031		

Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘cross’

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0032		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: taxi		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0033		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘start-up’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0034		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘push-back’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0035		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘hold’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0036		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘lineup’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0037		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘conditional line-up’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0038		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘take-off’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0039		
Requirement	The iCWP may allow the controller to give a set of clearances to an aircraft, such as: ‘abort take-off’		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A
Identifier	REQ-12.05.04-TS-0106.0040		
Requirement	The iCWP EFS may enable the controller to correct a mistaken action, such as a wrongly given clearance.		

<SATISFIES>	<Enabler>	AERODROME-ATC-21	<Full>
<ALLOCATED TO>	<Functional block>		N/A

3.1.7 System Supported Data Exchange and Co-ordination Service

Identifier	REQ-12.05.04-TS-0107.0001
Requirement	The iCWP shall allow to modify the control responsibility for an aircraft, and transfer control responsibility to other operator roles. Transfer of control responsibility shall be possible trough any representation of the aircraft

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0002
Requirement	Transfer of control responsibility shall consist of two actions: transfer (to transfer traffic to default next operator role) and assume (to assume traffic). The iCWP shall provide the controller with a way to indicate that transfer of control responsibility has been initiated on both giving and receiving control positions.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0003
Requirement	The iCWP shall allow to transfer a flight to another controller role than planned in the predefined sequence. The iCWP shall allow to transfer control responsibility of any traffic to a control position different from the pre-defined one

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0004
Requirement	After successful transfer of a flight to another controller role, it shall remain under control of the former controller until the latter assumes it, only after this acknowledgment the transfer will be considered as completed

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0005
Requirement	The iCWP shall allow the operator to interface and coordinate with the approach movement plan processing system of the ATM at the airport.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0006
Requirement	The iCWP EFS shall allow the handover of flight strips between controllers.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0007
Requirement	An electronic handover shall transfer flight strips from one controller role to another and shall normally consist of two actions: transfer and assume

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0008
Requirement	All information on the iCWP flight strip shall be retained during handover.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0009
Requirement	The iCWP shall allow the controller role that has the flight strip to transfer it to another role. After transfer, the flight strip shall remain under control of the former until the latter assumes it, which completes the handover.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0010
Requirement	The iCWP shall allow a controller to take back a flight strip that has been transferred by mistake, as long as it has not been assumed by the controller to whom it was transferred

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0011
Requirement	The iCWP EFS shall support coordination between Clearance Delivery, Ground and Tower controller roles.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

Identifier	REQ-12.05.04-TS-0107.0012
Requirement	The iCWP EFS shall permit controller roles to be combined at any physical working position.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41	<Full>
<ALLOCATED TO>	<Functional block>		N/A

3.1.8 Service Vehicle Management

Identifier	REQ-12.05.04-TS-0108.0001
Requirement	The iCWP may allow the controller to manually put the callsign in the label associated to a vehicle equipped with cooperative and not cooperative equipment.

Identifier	REQ-12.05.04-TS-0108.0002
Requirement	The iCWP may provide at the controller traffic position and trajectory in graphical format with labels in order to locate each vehicle and visualise its progress

Identifier	REQ-12.05.04-TS-0108.0003
Requirement	The selection of an vehicle target may: a) Highlight all the available representations of that target b) Show the label in the appropriate selected format.

Identifier	REQ-12.05.04-TS-0108.0004
Requirement	The iCWP may provide the controller with clear and visible indication of a conflict alert as soon as the alert exists including, at the minimum, the identification of the involved vehicles, wherever present.

Identifier	REQ-12.05.04-TS-0108.0005
Requirement	It may be possible to move a particular radar label anywhere on the radar image. The leader line may automatically extend and reposition to maintain the link between the label and the vehicle position symbol.

Identifier	REQ-12.05.04-TS-0108.0006
Requirement	The colours associated to vehicles may be different from the defined colours of arriving and departing traffic.

Identifier	REQ-12.05.04-TS-0108.0007
Requirement	The controller may be provided with a function to mark an aircraft or vehicle for herself / himself.

Identifier	REQ-12.05.04-TS-0108.0008
Requirement	Vehicle representation may be provided in a format helping the controller to locate and identify the traffic and to have direct access to essential information without unambiguos relation between traffic representation and information concerning that traffic

Identifier	REQ-12.05.04-TS-0108.0009
Requirement	Visible indication of completion of a vehicle transfer/assume control responsibility may be provided on both assuming and transferring operator roles.

Identifier	REQ-12.05.04-TS-0108.0010
Requirement	It may be possible to modify the control responsibility for a vehicle, and transfer control responsibility to other operator roles. The controller may be provided with a means to modify or transfer the control responsibility for a vehicle to other operator roles. Transfer of control responsibility may be possible trough any representation of the vehicle.

Identifier	REQ-12.05.04-TS-0108.0011
Requirement	After successful transfer of a vehicle to another controller role, it may remain under control of the former controller until the latter assumes it, only after this acknowledgement the transfer will be considered as completed.

Identifier	REQ-12.05.04-TS-0108.0012
Requirement	The iCWP may be able to present to controller the list of movement plans for all target present in movement area, according to this classification: - Vehicle list - Tow movement - Unknown movement
	Classification of movement plan data

Identifier	REQ-12.05.04-TS-0108.0013
Requirement	The iCWP may be able to update in real time, the information presented within the movement plan list, according to this classification: - Vehicle list - Tow movement - Unknown movement
	Display of flight plan data: real time update

3.1.9 Monitoring and Safety Support Service

Identifier	REQ-12.05.04-TS-0109.0001
Requirement	The iCWP shall deliver a feedback about the success of the controlling actions.

Identifier	REQ-12.05.04-TS-0109.0002
Requirement	The iCWP shall assign conflict responsibility to each working position depending on conflict type and the area where the conflict happens.

Identifier	REQ-12.05.04-TS-0109.0003
Requirement	TheiCWP shall allow the operator to assign conflict priorities depending on conflict type.

Identifier	REQ-12.05.04-TS-0109.0004
Requirement	After start-up, the iCWP shall automatically acquire the existing alerting situation from Safety Net Server.

Identifier	REQ-12.05.04-TS-0109.0005
Requirement	The ASN iCWP shall display continuously alerts as long as related alert reports will come from SSN Server

Identifier	REQ-12.05.04-TS-0109.0006
Requirement	After start-up, the iCWP shall automatically display the existing alerting situation in conformance with the existing alerting status of the Safety Net Server.

Identifier	REQ-12.05.04-TS-0109.0007
Requirement	The iCWP shall visually notify that an event is not valid any longer on every iCWP where the event was displayed, as soon as the information is provided by the Safety Net Server.

Identifier	REQ-12.05.04-TS-0109.0008
Requirement	The iCWP shall display the alert at least in the controller position responsible of area in which the conflict occur

Identifier	REQ-12.05.04-TS-0109.0009
Requirement	The iCWP shall display the alerts in the track label, in an alert list and around the track symbol

Identifier	REQ-12.05.04-TS-0109.0010
Requirement	The iCWP may display the alerts also on the electronic flight strips

Identifier	REQ-12.05.04-TS-0109.0011
Requirement	The iCWP shall provide with a dedicated list to visualize alerts generated by the SSN server

Identifier	REQ-12.05.04-TS-0109.0012
Requirement	The iCWP shall include in the alert list the identification of the involved traffic, if received in alert reports from SSN Server.

Identifier	REQ-12.05.04-TS-0109.0013
Requirement	The iCWP shall provide two stages of alert, according to SSN alert reports. These two stages are INFORMATION (less important) and ALARM (more important).

Identifier	REQ-12.05.04-TS-0109.0014
Requirement	The iCWP shall present the ALARM alert firstly in the list visualisation.

Identifier	REQ-12.05.04-TS-0109.0015
Requirement	When the display of several alerts overlap, the iCWP shall always display in priority the alerts with the status ALARM.

Identifier	REQ-12.05.04-TS-0109.0016
Requirement	The iCWP may display conflicts involving aircrafts in a different way from conflicts involving vehicle.

Identifier	REQ-12.05.04-TS-0109.0017
Requirement	The iCWP shall trigger an audio signal for the ALARM alerts

Identifier	REQ-12.05.04-TS-0109.0018
Requirement	The iCWP shall stop the audio signal when the related alert situation is not valid any longer or when the alert is acknowledged/muted by the user.

Identifier	REQ-12.05.04-TS-0109.0019
Requirement	The iCWP shall provide with the alerts related to runway conflicts always in foreground and never be hidden by other information

Identifier	REQ-12.05.04-TS-0109.0020
Requirement	The iCWP shall allow the acknowledgment of alerts, hiding them only on the controller position in which the acknowledgment has performed.

Identifier	REQ-12.05.04-TS-0109.0021
Requirement	The controller may be provided to manually activate or de-activate stop bars.

Identifier	REQ-12.05.04-TS-0109.0022
Requirement	The status of stop bars may be clearly and visually indicated to the controller as activated, de-activated, failure.

Identifier	REQ-12.05.04-TS-0109.0023
Requirement	Priorities may be established to ensure that Aerodrome ATC system logic performs. Conflict alerting priorities may be as follows: a) Runway incursions b) Restricted area incursions

3.1.10 Mobile Routing Management Service

Identifier	REQ-12.05.04-TS-0110.0001
Requirement	The iCWP shall allow controller to send requests as: • route • route change • destination update • intermediate waypoints definition • taxi routes clearances.

Identifier	REQ-12.05.04-TS-0110.0002
Requirement	The iCWP shall allow controller to display the planned routes.

Identifier	REQ-12.05.04-TS-0110.0003
Requirement	The iCWP shall present taxi route information graphically on the Traffic Situation Display (or textually on the EFS Display).

Identifier	REQ-12.05.04-TS-0110.0004
Requirement	The iCWP shall inform Tower Delivery controllers about the following situations: - According to current TSAT, it's too early to issue departure clearance; - According to current TSAT, departure clearance can be issued. It's too early to issue start-up clearance; - According to current TSAT, start-up clearance can be issued. The flight is currently removed from the sequence

Identifier	REQ-12.05.04-TS-0110.0005
Requirement	The iCWP shall allow controllers: - To manually remove any flight from the sequence. - To manually re-sequence any flight - To insert a flight manually in the Pre-Departure Sequence by entering a TSAT for the concerned flight. -To sort the flights according to various criteria, e.g.: TSAT, Call signs

Identifier	REQ-12.05.04-TS-0110.0006
Requirement	The iCWP shall present the following data on the same display than the one used by the controller to enter clearances in the Aerodrome ATC system: - TSAT for start-up clearances - TTOT for take-off clearances

Identifier	REQ-12.05.04-TS-0110.0007
Requirement	The iCWP shall indicate specifically when a start-up clearance can be issued

	according to the TSAT, this indication is on the same display than the TSAT.

Identifier	REQ-12.05.04-TS-0110.0008
Requirement	The iCWP shall highlight to the controller any changes performed by the Aerodrome ATC system to the TSAT and TTOT

Identifier	REQ-12.05.04-TS-0110.0009
Requirement	An alert associated with a detected conflict may be provided with an adequate time and brought to the attention of the controller (ALARM coding). An alert associated with a predicted conflict (INFORMATION coding) may also be provided.
	Conflict Detection and Alerting
	<In Progress>
	2-D111 SPOR V1.pdf

3.1.11Data Link and Guidance Service

Identifier	REQ-12.05.04-TS-0111.0001
Requirement	The iCWP shall be able to present to the controller clearance requests from the on-board systems.

Identifier	REQ-12.05.04-TS-0111.0002
Requirement	The iCWP shall allow to acknowledge clearance requests to the on-board systems.

Identifier	REQ-12.05.04-TS-0111.0003
Requirement	The iCWP shall allow to sent clearances to the on-board systems.

Identifier	REQ-12.05.04-TS-0111.0004
Requirement	The iCWP shall be able to display clearances acknowledgements from the on-board systems

Identifier	REQ-12.05.04-TS-0111.0005
Requirement	The iCWP shall allow the controller to provide guidance information to pilots: 1)Start-up (Clearance and Time) 2)Push-Back (Clearance and Time) 3)Taxi (cleared ground route) 4)Taxi revision (updated cleared ground route)

Identifier	REQ-12.05.04-TS-0111.0006
Requirement	The iCWP shall permit to identify uniquely the end-user in a datalink handshake

Identifier	REQ-12.05.04-TS-0111.0007
Requirement	The iCWP shall allow to display guidance messages.

3.1.12 Brake To Vacate Service

[NA]

3.1.13 A-CDM Service

[NA]

3.2 Adaptability

3.2.1 Modularity Requirements

Identifier	REQ-12.05.04-TS-0201.0001
Requirement	The iCWP design shall be modular in the sense that no major design change shall be necessary to meet specific operational requirements of an aerodrome.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30	<Full>

Identifier	REQ-12.05.04-TS-0201.0002
Requirement	The iCWP equipment shall comprise hardware and software modules.

<SATISFIES>	<Enabler>	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30	<Full>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<ALLOCATED TO>	<Project>	P12.05.04	N/A

Identifier	REQ-12.05.04-TS-0201.0003
Requirement	The iCWP shall be based as far as practicable on commercial off-the-shelf (COTS) hardware.

Identifier	REQ-12.05.04-TS-0201.0004
Requirement	Any element design (of the iCWP) shall comply with the "modularity concept

Identifier	REQ-12.05.04-TS-0201.0005
Requirement	The iCWP shall be modular so that the appropriate level of service can be provided to different aerodromes as well as to different areas of an aerodrome.

3.2.2 Scalability Requirements

Identifier	REQ-12.05.04-TS-0202.0001
Requirement	The iCWP shall be such that further components can be added in order to expand the Aerodrome ATC system in terms of functionality and numbers of users

Identifier	REQ-12.05.04-TS-0202.0002
Requirement	the iCWP shall be dimensioned according to the needs of different aerodromes.

Identifier	REQ-12.05.04-TS-0202.0003
Requirement	The iCWP shall be expandable in terms of functionality.

3.2.3 Adaptability Requirements

Identifier	REQ-12.05.04-TS-0203.0001
Requirement	Adaptation of the equipment to different local site configurations, procedures and working methods shall be done through an appropriate database (sensor positions, airport topography/topology, etc.).

Identifier	REQ-12.05.04-TS-0203.0002
Requirement	The iCWP services shall be configurable to adapt to local ATC procedures and working methods.

Identifier	REQ-12.05.04-TS-0203.0003
Requirement	The iCWP design shall take into account the working environment of the user under all operational conditions. Note: As an example, good visibility operations with high traffic throughput will require a different Aerodrome ATC system's set-up than that required for low visibility operations with reduced throughput.

3.2.4 Configurability Requirements

Identifier	REQ-12.05.04-TS-0204.0001
Requirement	The iCWP architecture shall be configurable in order to accommodate any change in the layout of the aerodrome (runways, taxiways and aprons), without modifying the core processing.

3.2.5 Harmonization Requirements

Identifier	REQ-12.05.04-TS-0205.0001
Requirement	The iCWP may be harmonized where possible with existing ATM iCWP. The ATM iCWP may be specific to each local implementation.

3.3 Performance Characteristics

3.3.1 Accuracy and Resolution

Identifier	REQ-12.05.04-TS-0301.0001
Requirement	The accuracy of all map information to be presented on the iCWP display(s) shall be 1m or better.

Identifier	REQ-12.05.04-TS-0301.0002
Requirement	The position registration accuracy of all information presented on the iCWP display(s) shall be one pixel.

3.3.2 Timeless

Identifier	REQ-12.05.04-TS-0302.0001
Requirement	The target Display Latency shall not exceed 500ms.

Identifier	REQ-12.05.04-TS-0302.0002
Requirement	The response time to the operator Input shall not exceed 250ms on average and shall never exceed 500ms.

3.4 Safety & Security

Identifier	REQ-12.05.04-TS-0400.0001
Requirement	The iCWP shall allow the controller to acknowledge the visual and sound alert messages. The acknowledgment of alerts may not impact the safety situation.

Identifier	REQ-12.05.04-TS-0400.0004
Requirement	The use of aural signal may be restricted to highly critical events requiring immediate action.

Identifier	REQ-12.05.04-TS-0400.0005
Requirement	The iCWP shall provide the controller with clear and visible indication of a conflict alert.

Identifier	REQ-12.05.04-TS-0400.0006
Requirement	Alerts may always be associated with a visual signal

3.5 Maintainability

[NA]

3.6 Reliability

[NA]

3.7 Functional block Internal Data Requirements

[NA]

3.8 Design and Construction Constraints

[NA]

3.9 Functional block Interface Requirements

3.9.1 Overall

Identifier	REQ-12.05.04-TS-0901.0001
Requirement	The iCWP shall be able to receive and decode reports from surveillance sensor systems, using ASTERIX data format.

Identifier	REQ-12.05.04-TS-0901.0002
Requirement	In order to fully benefit from an Aerodrome ATC system by all parties concerned, the iCWP may be capable of interfacing with the following: a) air traffic management (ATM); b) aerodrome management systems; c) existing and future ATS systems; d) meteorological systems; e) visual aids; f) aircraft operators; g) emergency authorities.
	Aerodrome ATC subsystems

Identifier	REQ-12.05.04-TS-0901.0003
Requirement	It shall be possible to connect each iCWP to the physical interface used by the other Aerodrome ATC sub-systems: this connection will normally depend on what is available on the airport's existing equipment.

Identifier	REQ-12.05.04-TS-0901.0004
Requirement	The iCWP may use the following OSI protocols to interface external systems: At the Physical Layer, IEEE 802.3/802.3u (Ethernet 10BaseT/100BaseTX) • At the Network Layer, Internet Protocol (IP) • At the Transport Layer, User Datagram Protocol (UDP) for surveillance target reports and other time-critical data, and Transport Control Protocol (TCP) for more secure, but less time-critical, data transmission.

Identifier	REQ-12.05.04-TS-0901.0005
Requirement	The iCWP shall be synchronized to the airport reference clock system

3.9.2 Interface to ATM FDPS system

Identifier	REQ-12.05.04-TS-0902.0001

Requirement	The iCWP shall interface the flight data processing system of the ATM at the airport

Identifier	REQ-12.05.04-TS-0902.0002
Requirement	The iCWP shall interface the ATM FDP system to forward departure / start-up / push-back and taxi clearances

3.9.3 Interface to Aerodrome ATC surveillance system

Identifier	REQ-12.05.04-TS-0903.0001
Requirement	The iCWP shall interface the Aerodrome ATC surveillance system
	Aerodrome ATC

Identifier	REQ-12.05.04-TS-0903.0002
Requirement	The iCWP shall be able to receive and decode the SDF output in the ASTERIX CAT 011 or CAT062/CAT063 data format
	Aerodrome ATC

3.9.4 Interface to approach systems (terminal radars)

Identifier	REQ-12.05.04-TS-0904.0001
Requirement	The iCWP shall interface any approach surveillance system (terminal radars)

Identifier	REQ-12.05.04-TS-0904.0002
Requirement	The iCWP shall be able to receive and decode input target report data from approach in the ASTERIX CAT001, CAT002, CAT 034, CAT 048, CAT 062 and CAT 063 data formats, in accordance with local requirements

3.9.5 Interface to cooperative systems

Identifier	REQ-12.05.04-TS-0905.0001
Requirement	The iCWP shall be able to receive and decode input target report from MLAT in the ASTERIX CAT 10 formats

Identifier	REQ-12.05.04-TS-0905.0002
Requirement	The iCWP shall be able to receive and decode input target report from ADSB in the ASTERIX CAT 21 formats

3.9.6 Interface to non cooperative systems

Identifier	REQ-12.05.04-TS-0906.0001
Requirement	The iCWP shall be able to receive and decode SMR reports and other non-cooperative ground sensor systems using ASTERIX CAT010 data format

3.9.7 Interface to Routing/Planning system

Identifier	REQ-12.05.04-TS-0907.0001
Requirement	The iCWP function shall interface with Routing/Planning function to forward • route for a mobile • route change • destination update • intermediate waypoints definition • taxi routes clearances.

3.9.8 Interface to DMAN system

Identifier	REQ-12.05.04-TS-0908.0001
Requirement	The iCWP shall be able to interface the DMAN function in order to perform the Runway Allocation Management (RAM) capability

Identifier	REQ-12.05.04-TS-0908.0002
Requirement	The iCWP shall be able to interface the DMAN function in order to perform the Sequence Management (SM) capability

3.9.9 Interface to Guidance system

Identifier	REQ-12.05.04-TS-0909.0001
Requirement	The iCWP shall interface the guidance system

Identifier	REQ-12.05.04-TS-0909.0002
Requirement	The iCWP shall interface the guidance function to: • Send request acknowledgements

	• Send clearance acknowledgements

Identifier	REQ-12.05.04-TS-0909.0003
Requirement	The iCWP shall interface the guidance function to: • Receive taxi routes requests • Receive clearance requests

4 Assumptions

- Due to the late delivery of a draft document from P6.9.2 (OSED) and the tight schedule of both projects, the technical requirements definition has been derived from Operational requirements coming from the consolidated R&D projects declared in the PIR (EMMA2 and ITWP). In order to minimize the risk of a gap between the operational and technical project, a review has been requested to P6.9.2 members and this document has considered all the comments received. In Appendix A, a Traceability Matrix between Technical Requirements and the draft OSED has been included with the acceptance that Operational requirements not traced to Technical requirements will be covered in the next steps

- For next Steps it is foreseen to take into account the whole operational requirements provided by Project 6.9.2

- Only stable outputs coming from P12.x.y (TS) have been considered (please refer to § 1.1).

- It is assumed that not all the requirements written in the document are essential and each prototype will implement only a set of requirements here defined:
  - Each prototype can implement only some of the capabilities.
  - Each industry can implement only some of the requirements of each capability

- A traceability matrix to define the requirements coverage of each prototype will provide in the delivery of Prototype Development Task: Prototype Availability Note.

5 References

[1] IEEE Standards Tyle Manual, 2000.

[2] A pocket style Manual, 4th edition, 2004.

[3] WPB4.2 - Surface In Operational Scenario, version 00.01.00, 11.05.2011.

[4] 12.03.04 - D01s1v3 Surface Guidance Requirements, version 00.01.00, 29/03/2011

[5] 12.01.07 - Baseline set of Airport System Requirements and Guideline for Specification, 12.01.07 - D01, Edition 00.01.01, December 2010

[6] 12.03.03 -.D02 -Phase 1-System Requirements Specification, version 00.01.00, 26/11/2010

[7] **WPB4.2 - Surface Out Operational Scenario, Edition** 00.02.00**.Project ID** 12.**0**05**. 10.09.2010**

[8] **P12.05.02 - Airport Safety Nets and wind-shear detection and alert for Controllers: System specification:12.05.02-D01-System Requirements for Phase1**

[9] SESAR P6.2 Airport DOD Step 1 – Dated 2011/03/17

[10] EA Views for the Architecture of the Technical Systems for Cycle 1, version 00.01.03, 17/09/2010

[11] P12.03.01 - Improved surveillance for surface management:

[12] ITWP website (http://www.eurocontrol.int/eec/public/standard_page/proj_ITWP.html) – EUROCONTROL Experimental Centre presentation – January 2009]

[13] EMMA2 website (http://www.dlr.de/emma2)

[14] SESAR SEMP Latest version

[15] SESAR PMP Latest version

[16] SESAR Template Toolbox Latest version

[17] SESAR Requirements and V&V Guidelines Latest version

[18] SESAR Toolbox User Manual Latest version

[19] SESAR EA models Guidelines and Templates_V00.01.05

[20] SESAR Definition Phase – Task 2.4.x Milestone 3 – System Architecture (DLT-0612-244-00-10), September 2007

[21] 12.03.05 - D02 - Phase 1 - System Requirements Specification, version 00.01.00, 27/04/2011

[22] 12.05.04 - D04 - Architecture Assessment – Step 1, version 00.01.02, 01/07/2011

[23] iMap Step1 - IRMP database, v00.01.00, 15/07/2011

[24] 6.9.2 Operational Services and Environment Description (OSED) for the Advanced Integrated Controller Working Position (A-iCWP) , Draft v00.01.00, 08/08/2011

Appendix A Traceability

Next table syntheses the TS requirements / Enabler traceability following the Requirement identification used in this document and the Enabler Identification [23].

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0101.0001	Login	NA[4]
REQ-12.05.04-TS-0101.0002	Logout	NA
REQ-12.05.04-TS-0101.0003	Stored screen settings	NA
REQ-12.05.04-TS-0101.0004	Default settings	NA
REQ-12.05.04-TS-0101.0005	Input Devices	NA
REQ-12.05.04-TS-0101.0006	Zoom setting	NA
REQ-12.05.04-TS-0101.0007	Zoom storage	NA
REQ-12.05.04-TS-0101.0008	Anti-overlap function	NA
REQ-12.05.04-TS-0101.0009	Track Label Orientation	NA
REQ-12.05.04-TS-0101.0010	Leader line	NA
REQ-12.05.04-TS-0101.0011	Label Positioning	NA
REQ-12.05.04-TS-0101.0012	Label Positioning	NA
REQ-12.05.04-TS-0101.0013	Textual Data	NA
REQ-12.05.04-TS-0101.0014	Airport Layout – Zoom – Store Settings	NA
REQ-12.05.04- TS - 0102.0001	Display parking names	AERODROME-ATC-13
REQ-12.05.04- TS -	Display taxiway names	AERODROME-ATC-13

[4] The requirements related to supporting iCWP services are as support to the main iCWP functionalities. These capabilities do not satisfy specific functional improvements, therefore the traceability with Enabler has not been applicable.

Requirement Identifier	Requirement title	Enabler ID
0102.0002		
REQ-12.05.04- TS - 0102.0003	Display working areas	AERODROME-ATC-13
REQ-12.05.04- TS - 0102.0004	Display RWYs restricted areas	AERODROME-ATC-13
REQ-12.05.04- TS - 0102.0005	Display air video map	AERODROME-ATC-13
REQ-12.05.04- TS - 0102.0006	Display time	N/A
REQ-12.05.04- TS - 0102.0007	Obtain Range and Bearing information	N/A
REQ-12.05.04- TS - 0102.0008	Obtain Range and Bearing information	N/A
REQ-12.05.04- TS - 0102.0009	Obtain Range and Bearing information	N/A
REQ-12.05.04- TS - 0102.0010	Create Range and Bearing Tracker Link	N/A
REQ-12.05.04- TS - 0102.0011	Create Range and Bearing Tracker Link	N/A
REQ-12.05.04- TS - 0102.0012	Create Range and Bearing Tracker Link	N/A
REQ-12.05.04- TS - 0102.0013	Cancel Range and Bearing Tracker Link	N/A
REQ-12.05.04- TS - 0102.0014	Deconflict labels automatically | Deconflict labels manually	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04- TS - 0102.0015	Set leader direction	N/A
REQ-12.05.04- TS - 0102.0016	Set leader length	N/A
REQ-12.05.04- TS - 0102.0017	Move radar label	N/A
REQ-12.05.04- TS - 0102.0018	Resume label position	N/A
REQ-12.05.04-TS- 0102.0019	Set speed vectors value	N/A
REQ-12.05.04-TS-	Set speed vectors value	N/A

Requirement Identifier	Requirement title	Enabler ID
0102.0020		
REQ-12.05.04-TS-0102.0021	Display track symbol	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0022	Set track history value	N/A
REQ-12.05.04-TS-0102.0023	Configure radar labels	N/A
REQ-12.05.04-TS-0102.0024	Configure radar labels	N/A
REQ-12.05.04-TS-0102.0025	Configure radar labels	N/A
REQ-12.05.04-TS-0102.0026	Filter tracks	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0027	Marking	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0028	Select an individual aircraft	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0029	Deselect an individual aircraft	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0030	Display aircraft representation	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0031	Display aircraft representation	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0032	Display aircraft representation	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0033	Display Traffic Data List	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0034	Display Traffic Data List	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0035	Expand Traffic data item	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0036	Expand Traffic data item	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0037	Expand Traffic data item	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0038	Traffic Data sets	AERODROME-ATC-13

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0102.0039	Traffic Data sets – Visual Presentation	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0040	Traffic indication	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0041	Traffic indication	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0042	Traffic indication	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0043	Traffic indication	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0044	Airport Traffic Situation	AERODROME-ATC-13
REQ-12.05.04-TS-0102.0045	Conflict Detection and Alerting	AERODROME-ATC-03 AERODROME-ATC-21 AERODROME-ATC-13
REQ-12.05.04-TS-0103.0001	Minimum weather information: surface wind direction and strength	N/A
REQ-12.05.04-TS-0103.0002	Minimum weather information: QNH (mb).	N/A
REQ-12.05.04-TS-0103.0003	Minimum weather information: ATIS code	N/A
REQ-12.05.04-TS-0103.0004	Minimum weather information: temperature	N/A
REQ-12.05.04-TS-0103.0005	Minimum weather information: dew point	N/A
REQ-12.05.04-TS-0103.0006	Minimum weather information: RVR	N/A
REQ-12.05.04-TS-0103.0007	Additional weather information: visiblity	N/A
REQ-12.05.04-TS-0103.0008	Additional weather information: current weather	N/A
REQ-12.05.04-TS-0103.0009	Additional weather information: cloud ceiling	N/A
REQ-12.05.04-TS-0103.0010	Additional weather information: QFE	N/A

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0103.00011	Current Date	N/A
REQ-12.05.04-TS-0103.0012	Current time	N/A
REQ-12.05.04-TS-0103.0013		N/A
REQ-12.05.04-TS-0103.0014		N/A
REQ-12.05.04-TS-0104.0001	Airport Layout – Airport Maps	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0002	Airport Layout – Runways/Taxiways Status	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0003	Airport Layout – Ground Situation Display	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0004	Airport Layout – Runway Occupation	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0005	Airport Layout – Zoom – Airport/APP/En-route Scale	AIRPORT-30
REQ-12.05.04-TS-0104.0006	Airport Layout – Zoom - Situation Display Range	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0007	Airport Layout – Zoom – Retrieve Settings	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0008	Airport Layout – Zoom – Delete Settings	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0009	Airport Layout – Zoom - Center Situation Display	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0010	Airport Layout – Geographical Orientation	AERODROME-ATC-13
REQ-12.05.04-TS-0104.0011	Airport Layout – Labelled target tracks	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0001	Traffic Data – Flight available options	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0002	Traffic Data – Flight cancelled or delayed	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0003	Traffic Data – Arrival Flight RWY Display	AERODROME-ATC-13
REQ-12.05.04-TS-	Traffic Data – Arrival Flight	AERODROME-ATC-13

Requirement Identifier	Requirement title	Enabler ID
0105.0004	GND Display	
REQ-12.05.04-TS-0105.0005	Traffic Data – Departure Flight GND Display	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0006	Traffic Data – Mobile Transfer/Assume Control Responsibility	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0007	Traffic Data – Traffic Update	AERODROME-ATC-13
REQ-12.05.04-TS-0105.0008	Traffic Data – Traffic Situation	AERODROME-ATC-13
REQ-12.05.04-TS-0106.0001	Manual creation of a new flight plan	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0002	System assistance at manual flight plan creation	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0003	Manual flight plan update or delete	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0004	Manual display of flight plan data	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0005	Manual modification of flight plan data	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0006	Update of flight plan data received from FDPS system	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0007	Classification of flight plan data	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0008	Display of flight plan data: real time update	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0009	Display and storing of flight plan data, after manual identification	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0010	Remove of flight plan identification data: manual de-assign function	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0011	Real time display of updated FPL routing data	AERODROME-ATC-13
REQ-12.05.04-TS-	Support to DMAN from	AERODROME-ATC-41

Requirement Identifier	Requirement title	Enabler ID
0106.0012	EFSS system	
REQ-12.05.04-TS-0106.0013	Reception of DMAN data to EFSS system	AERODROME-ATC-41
REQ-12.05.04-TS-0106.0014	EFSS Display	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0015	EFSS Configurability	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0016	EFSS data format	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0017	EFSS Additional Data	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0018	EFSS Special Fields	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0019	EFSS Responsibility	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0020	EFSS grouping	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0021	EFSS Sorting criteria	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0022	EFSS Manual interaction	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0023	EFSS editing	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0024	EFSS Bay Area	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0025	EFSS Bay configurability	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0026	EFSS initialization	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0027	EFSS Clearance Input	AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0106.0028	EFSS Clearance Types: cleared to land	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0029	EFSS Clearance Types: go-around	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0030	EFSS Clearance Types: vacate	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0031	EFSS Clearance Types: cross	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0032	EFSS Clearance Types: taxi	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0033	EFSS Clearance Types: start-up	AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0034	EFSS Clearance Types: push-back	AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0106.0035	EFSS Clearance Types: hold	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0036	EFSS Clearance Types: lineup	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0037	EFSS Clearance Types: conditional line-up'	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0038	EFSS Clearance Types: take-off'	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0039	EFSS Clearance Types: abort take-off	AERODROME-ATC-21
REQ-12.05.04-TS-0106.0040	EFSS Mistake correction	AERODROME-ATC-21
REQ-12.05.04-TS-0107.0001	Modify control responsibility or Transfer control responsibility	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0002	Transfer Traffic | Assume Traffic	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0003	Direct Transfer Traffic	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0107.0004	Transfer Traffic | Assume Traffic 2	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0005	Coordination with ATM FDPS systems	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0006	EFSS Handover 1	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0007	EFSS Handover 3	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0008	EFSS Handover 5	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0009	EFSS Handover 6	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0010	Mistaken transfer	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0011	Coordination support	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0107.0012	Combined roles	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-41
REQ-12.05.04-TS-0108.0001	Manual Label Attribution	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0002	Display Airport Traffic Situation	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0108.0003	Target Selection	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0004		AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0005	Move radar label	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0006	Configure radar labels	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0007	Marking	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0008	Display vehicle representation	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0009	Traffic Data – Mobile Transfer/Assume Control Responsibility	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0010	Modify control responsibility or Transfer control responsibility	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0011	Transfer Traffic | Assume Traffic	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0012	Classification of movement plan data	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0108.0013	Display of movement plan data: real time update	AERODROME-ATC-11 AERODROME-ATC-12 AERODROME-ATC-13

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0109.0001	Feedback of performed action	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0109.0002	Alert Report Acquisition Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.003	Alert Report Acquisition Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0004	Alert Report Acquisition Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0005	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0006	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0007	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0008	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0009	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0010	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0011	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0012	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0013	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0014	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0015	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0016	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0109.0017	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0018	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0019	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0020	Alert notification Requirements	AERODROME-ATC-03 AERODROME-ATC-21
REQ-12.05.04-TS-0109.0021	Activate / Deactivate Stop bars	AERODROME-ATC-13
REQ-12.05.04-TS-0109.0022	Status of the stop bar	AERODROME-ATC-13
REQ-12.05.04-TS-0109.0023	Conflict Alert Priorities	AERODROME-ATC-02 AERODROME-ATC-22
REQ-12.05.04-TS-0110.0001	Routing/Planning requests	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0110.0002	Route display	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0110.0003	Route Presentation	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-0110.0004	DMAN - Tower Delivery Controller iCWP Requirements	AIRPORT-33
REQ-12.05.04-TS-0110.0005	DMAN - Tower Delivery Controller iCWP Requirements	AIRPORT-33
REQ-12.05.04-TS-0110.0006	DMAN Clearance Delivery	AIRPORT-33
REQ-12.05.04-TS-0110.0007	DMAN Clearance Delivery	AIRPORT-33
REQ-12.05.04-TS-0110.0008	DMAN Clearance Delivery	AIRPORT-33
REQ-12.05.04-TS-0110.0009	Conflict Detection and Alerting	AERODROME-ATC-12 AERODROME-ATC-13
REQ-12.05.04-TS-	Clearance Requests from	AERODROME-ATC-40

Requirement Identifier	Requirement title	Enabler ID
0111.0001	on-board system	
REQ-12.05.04-TS-0111.0002	Acknowledgements from ground system	AERODROME-ATC-40
REQ-12.05.04-TS-0111.0003	Clearance to on-board system	AERODROME-ATC-40
REQ-12.05.04-TS-0111.0004	Clearance acknowledgements from the on-board systems	AERODROME-ATC-40
REQ-12.05.04-TS-0111.0005	Provision of guidance information to pilots	AERODROME-ATC-40
REQ-12.05.04-TS-0111.0006	Unique identification Data link	AERODROME-ATC-40
REQ-12.05.04-TS-0111.0007	Message display	AERODROME-ATC-40
REQ-12.05.04-TS-0201.0001	iCWP modularity	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0201.0002	Components	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0201.0003	COTS technology	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0201.0004	Design	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0201.0005	Service levels at different aerodromes	AERODROME-ATC-13 AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
		AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0202.0001	iCWP	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0202.0002	System dimension at different aerodromes	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0202.0003	System dimension according to number of users	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0203.0001	Adaptability to local procedures and working methods	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0203.0002	Adaptability to ATC procedures	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0203.0003	iCWP adaptability	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0204.0001	Layout change	AERODROME-ATC-13 AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
		AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0205.0001	iCWP Harmonization	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0301.0001	Map Accuracy	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0301.0002	Position Registration Accuracy	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0302.0001	Target Display Latency	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0302.0002	Response time to Operator Input	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0400.0001	Acknowledge of alert messages	AERODROME-ATC-03AERODROME-ATC-21
REQ-12.05.04-TS-0400.0004	Conflict Detection and Alerting	AERODROME-ATC-03 AERODROME-ATC-21 AERODROME-ATC-13
REQ-12.05.04-TS-0400.0005	Conflict Detection and Alerting	AERODROME-ATC-03 AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
		AERODROME-ATC-13
REQ-12.05.04-TS-0400.0006	Conflict Detection and Alerting	AERODROME-ATC-03 AERODROME-ATC-21 AERODROME-ATC-13
REQ-12.05.04-TS-0901.0001	Use of ASTERIX format	AERODROME-ATC-21
REQ-12.05.04-TS-0901.0002	Interface with Aerodrome ATC systems	AERODROME-ATC-13 AERODROME-ATC-35 AERODROME-ATC-41
REQ-12.05.04-TS-0901.0003	Physical interfaces	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0901.0004	Protocols and data format	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0901.0005	Reference clock	AERODROME-ATC-13 AERODROME-ATC-21 AERODROME-ATC-35 AERODROME-ATC-41 AIRPORT-30
REQ-12.05.04-TS-0902.0001	Interface to ATM FDPS system	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0902.0002	Interface to ATM FDPS system: forward of clearances for departures	AERODROME-ATC-13 AERODROME-ATC-41
REQ-12.05.04-TS-0903.0001	Interface to Aerodrome ATC surveillance system	AERODROME-ATC-21
REQ-12.05.04-TS-0903.0002	Use of ASTERIX format for Aerodrome ATC systems	AERODROME-ATC-21
REQ-12.05.04-TS-0904.0001	Interface to approach system	AERODROME-ATC-21

Requirement Identifier	Requirement title	Enabler ID
REQ-12.05.04-TS-0904.0002	Use of ASTERIX to interface approach systems	AERODROME-ATC-21
REQ-12.05.04-TS-0905.0001	Use of ASTERIX cat 10 for MLAT	AERODROME-ATC-21
REQ-12.05.04-TS-0905.0002	Use of ASTERIX cat 21 for ADSB	AERODROME-ATC-21
REQ-12.05.04-TS-0906.0001	Use of ASTERIX cat 10 format	AERODROME-ATC-21
REQ-12.05.04-TS-0907.0001	Interface to routing/planning function: data forwarded	AERODROME-ATC-13
REQ-12.05.04-TS-0908.0001	Interface to RAM function	AERODROME-ATC-41
REQ-12.05.04-TS-0908.0002	Interface to DMAN SM function	AERODROME-ATC-41
REQ-12.05.04-TS-0909.0001	Interface with guidance system	AERODROME-ATC-13 AERODROME-ATC-21
REQ-12.05.04-TS-0909.0002	Interface with Guidance system: data forwarded	AERODROME-ATC-13 AERODROME-ATC-21
REQ-12.05.04-TS-0909.0003	Interface with Guidance system: data received	AERODROME-ATC-13 AERODROME-ATC-21

Table 8: TS requirements / Enabler traceability

Next table syntheses the TS requirements / Functional block traceability.

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0101.0001	Login	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0002	Logout	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0003	Stored screen settings	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0004	Default settings	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0005	Input Devices	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0006	Zoom setting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0007	Zoom storage	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0008	Anti-overlap function	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0009	Track Label Orientation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0010	Leader line	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0011	Label Positioning	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0012	Label Positioning	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0013	Textual Data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0101.0014	Airport Layout – Zoom – Store Settings	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0001	Display parking names	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0002	Display taxiway names	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0003	Display working areas	Controller Human Machine Interaction Management
REQ-12.05.04- TS -	Display RWYs restricted	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0102.0004	areas	Interaction Management
REQ-12.05.04- TS - 0102.0005	Display air video map	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0006	Display time	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0007	Obtain Range and Bearing information	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0008	Obtain Range and Bearing information	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0009	Obtain Range and Bearing information	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0010	Create Range and Bearing Tracker Link	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0011	Create Range and Bearing Tracker Link	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0012	Create Range and Bearing Tracker Link	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0013	Cancel Range and Bearing Tracker Link	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0014	Deconflict labels automatically | Deconflict labels manually	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0015	Set leader direction	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0016	Set leader length	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0017	Move radar label	Controller Human Machine Interaction Management
REQ-12.05.04- TS - 0102.0018	Resume label position	Controller Human Machine Interaction Management
REQ-12.05.04-TS- 0102.0019	Set speed vectors value	Controller Human Machine Interaction Management
REQ-12.05.04-TS- 0102.0020	Set speed vectors value	Controller Human Machine Interaction Management
REQ-12.05.04-TS- 0102.0021	Display track symbol	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0102.0022	Set track history value	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0023	Configure radar labels	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0024	Configure radar labels	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0025	Configure radar labels	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0026	Filter tracks	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0027	Marking	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0028	Select an individual aircraft	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0029	Deselect an individual aircraft	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0030	Display aircraft representation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0031	Display aircraft representation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0032	Display aircraft representation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0033	Display Traffic Data List	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0034	Display Traffic Data List	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0035	Expand Traffic data item	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0036	Expand Traffic data item	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0037	Expand Traffic data item	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0038	Traffic Data sets	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0039	Traffic Data sets – Visual Presentation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-	Traffic indication	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0102.0040		Interaction Management
REQ-12.05.04-TS-0102.0041	Traffic indication	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0042	Traffic indication	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0043	Traffic indication	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0044	Airport Traffic Situation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0102.0045	Conflict Detection and Alerting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0001	Minimum weather information: surface wind direction and strength	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0002	Minimum weather information: QNH (mb).	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0003	Minimum weather information: ATIS code	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0004	Minimum weather information: temperature	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0005	Minimum weather information: dew point	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0006	Minimum weather information: RVR	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0007	Additional weather information: visiblity	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0008	Additional weather information: current weather	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0009	Additional weather information: cloud ceiling	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0010	Additional weather information: QFE	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.00011	Current Date	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0012	Current time	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0103.0013		Controller Human Machine Interaction Management
REQ-12.05.04-TS-0103.0014		Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0001	Airport Layout – Airport Maps	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0002	Airport Layout – Runways/Taxiways Status	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0003	Airport Layout – Ground Situation Display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0004	Airport Layout – Runway Occupation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0005	Airport Layout – Zoom – Airport/APP/En-route Scale	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0006	Airport Layout – Zoom - Situation Display Range	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0007	Airport Layout – Zoom – Retrieve Settings	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0008	Airport Layout – Zoom – Delete Settings	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0009	Airport Layout – Zoom - Center Situation Display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0010	Airport Layout – Geographical Orientation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0104.0011	Airport Layout – Labelled target tracks	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0001	Traffic Data – Flight available options	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0002	Traffic Data – Flight cancelled or delayed	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0003	Traffic Data – Arrival Flight RWY Display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0004	Traffic Data – Arrival Flight GND Display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-	Traffic Data – Departure	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0105.0005	Flight GND Display	Interaction Management
REQ-12.05.04-TS-0105.0006	Traffic Data – Mobile Transfer/Assume Control Responsibility	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0007	Traffic Data – Traffic Update	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0105.0008	Traffic Data – Traffic Situation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0001	Manual creation of a new flight plan	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0002	System assistance at manual flight plan creation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0003	Manual flight plan update or delete	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0004	Manual display of flight plan data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0005	Manual modification of flight plan data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0006	Update of flight plan data received from FDPS system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0007	Classification of flight plan data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0008	Display of flight plan data: real time update	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0009	Display and storing of flight plan data, after manual identification	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0010	Remove of flight plan identification data: manual de-assign function	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0011	Real time display of updated FPL routing data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0012	Support to DMAN from EFSS system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0013	Reception of DMAN data to EFSS system	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0106.0014	EFSS Display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0015	EFSS Configurability	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0016	EFSS data format	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0017	EFSS Additional Data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0018	EFSS Special Fields	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0019	EFSS Responsibility	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0020	EFSS grouping	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0021	EFSS Sorting criteria	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0022	EFSS Manual interaction	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0023	EFSS editing	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0024	EFSS Bay Area	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0025	EFSS Bay configurability	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0026	EFSS initialization	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0027	EFSS Clearance Input	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0028	EFSS Clearance Types: cleared to land	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0029	EFSS Clearance Types: go-around	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0030	EFSS Clearance Types: vacate	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0031	EFSS Clearance Types: cross	Controller Human Machine Interaction Management
REQ-12.05.04-TS-	EFSS Clearance	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0106.0032	Types: taxi	Interaction Management
REQ-12.05.04-TS-0106.0033	EFSS Clearance Types: start-up	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0034	EFSS Clearance Types: push-back	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0035	EFSS Clearance Types: hold	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0036	EFSS Clearance Types: lineup	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0037	EFSS Clearance Types: conditional line-up'	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0038	EFSS Clearance Types: take-off'	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0039	EFSS Clearance Types: abort take-off	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0106.0040	EFSS Mistake correction	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0001	Modify control responsibility or Transfer control responsibility	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0002	Transfer Traffic | Assume Traffic	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0003	Direct Transfer Traffic	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0004	Transfer Traffic | Assume Traffic 2	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0005	Coordination with ATM FDPS systems	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0006	EFSS Handover 1	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0007	EFSS Handover 3	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0008	EFSS Handover 5	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0009	EFSS Handover 6	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0107.0010	Mistaken transfer	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0011	Coordination support	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0107.0012	Combined roles	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0001	Manual Label Attribution	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0002	Display Airport Traffic Situation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0003	Target Selection	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0004		Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0005	Move radar label	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0006	Configure radar labels	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0007	Marking	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0008	Display vehicle representation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0009	Traffic Data – Mobile Transfer/Assume Control Responsibility	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0010	Modify control responsibility or Transfer control responsibility	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0011	Transfer Traffic | Assume Traffic	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0012	Classification of movement plan data	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0108.0013	Display of movement plan data: real time update	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0001	Feedback of performed action	Controller Human Machine Interaction Management
REQ-12.05.04-TS-	Alert Report Acquisition	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0109.0002	Requirements	Interaction Management
REQ-12.05.04-TS-0109.0003	Alert Report Acquisition Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0004	Alert Report Acquisition Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0005	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0006	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0007	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0008	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0009	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0010	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0011	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0012	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0013	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0014	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0015	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0016	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0017	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0018	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0019	Alert notification Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0020	Alert notification Requirements	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0109.0021	Activate / Deactivate Stop bars	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0022	Status of the stop bar	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0109.0023	Conflict Alert Priorities	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0001	Routing/Planning requests	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0002	Route display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0003	Route Presentation	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0004	DMAN - Tower Delivery Controller iCWP Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0005	DMAN - Tower Delivery Controller iCWP Requirements	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0006	DMAN Clearance Delivery	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0007	DMAN Clearance Delivery	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0008	DMAN Clearance Delivery	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0110.0009	Conflict Detection and Alerting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0111.0001	Clearance Requests from on-board system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0111.0002	Acknowledgements from ground system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0111.0003	Clearance to on-board system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0111.0004	Clearance acknowledgements from the on-board systems	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0111.0005	Provision of guidance information to pilots	Controller Human Machine Interaction Management
REQ-12.05.04-TS-	Unique identification	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
0111.0006	Data link	Interaction Management
REQ-12.05.04-TS-0111.0007	Message display	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0201.0001	iCWP modularity	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0201.0002	Components	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0201.0003	COTS technology	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0201.0004	Design	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0201.0005	Service levels at different aerodromes	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0202.0001	iCWP	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0202.0002	System dimension at different aerodromes	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0202.0003	System dimension according to number of users	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0203.0001	Adaptability to local procedures and working methods	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0203.0002	Adaptability to ATC procedures	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0203.0003	iCWP adaptability	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0204.0001	Layout change	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0205.0001	iCWP Harmonization	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0301.0001	Map Accuracy	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0301.0002	Position Registration Accuracy	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0302.0001	Target Display Latency	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0302.0002	Response time to	Controller Human Machine

Requirement Identifier	Requirement title	Functional block identifier
	Operator Input	Interaction Management
REQ-12.05.04-TS-0400.0001	Acknowledge of alert messages	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0400.0004	Conflict Detection and Alerting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0400.0005	Conflict Detection and Alerting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0400.0006	Conflict Detection and Alerting	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0901.0001	Use of ASTERIX format	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0901.0002	Interface with Aerodrome ATC systems	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0901.0003	Physical interfaces	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0901.0004	Protocols and data format	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0901.0005	Reference clock	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0902.0001	Interface to ATM FDPS system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0902.0002	Interface to ATM FDPS system: forward of clearances for departures	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0903.0001	Interface to Aerodrome ATC surveillance system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0903.0002	Use of ASTERIX format for Aerodrome ATC systems	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0904.0001	Interface to approach system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0904.0002	Use of ASTERIX to interface approach systems	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0905.0001	Use of ASTERIX cat 10 for MLAT	Controller Human Machine Interaction Management

Requirement Identifier	Requirement title	Functional block identifier
REQ-12.05.04-TS-0905.0002	Use of ASTERIX cat 21 for ADSB	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0906.0001	Use of ASTERIX cat 10 format	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0907.0001	Interface to routing/planning function: data forwarded	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0908.0001	Interface to RAM function	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0908.0002	Interface to DMAN SM function	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0909.0001	Interface with guidance system	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0909.0002	Interface with Guidance system: data forwarded	Controller Human Machine Interaction Management
REQ-12.05.04-TS-0909.0003	Interface with Guidance system: data received	Controller Human Machine Interaction Management

Table 9: TS requirements / Functional block Traceability

The following table syntheses the traceability between TS requirements and the satisfied requirements.

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0101.0001	Login	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BLLOG.1	Log on
REQ-12.05.04-TS-0101.0002	Logout	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BLLOG.3	Log out
REQ-12.05.04-TS-0101.0003	Stored screen settings	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.SET.3	Access configuration set-up
REQ-12.05.04-TS-0101.0004	Default settings	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.SET.4	Access configuration set-up
REQ-12.05.04-TS-0101.0005	Input Devices	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.SET.6	Set mouse hand
REQ-12.05.04-TS-0101.0006	Zoom setting	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.ZOOM.1	Perform zoom
REQ-12.05.04-TS-0101.0007	Zoom storage	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.ZOOM.3	Store zoom
REQ-12.05.04-TS-0101.0008	Anti-overlap function	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.POS.1	Deconflict labels automatically | Deconflict labels manually

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0101.0009	Track Label Orientation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.POS.2	Set leader length | Set leader direction
REQ-12.05.04-TS-0101.0010	Leader line	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.POS.2	Set leader length | Set leader direction
REQ-12.05.04-TS-0101.0011	Label Positioning	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.POS.8	Resume label position
REQ-12.05.04-TS-0101.0012	Label Positioning	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf F.BL.POS.8	Resume label position
REQ-12.05.04-TS-0101.0013	Textual Data	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 2-D112a_ATR-GND_V1.0.pdf Func_HCI-16	Textual Data
REQ-12.05.04-TS-0101.0014	Airport Layout – Zoom – Store Settings	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.ZOOM.3	Store zoom
REQ-12.05.04- TS - 0102.0001	Display parking names	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.POS.06	Move radar label
REQ-12.05.04- TS - 0102.0002	Display taxiway names	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.POS.07	Resume label position
REQ-12.05.04- TS - 0102.0003	Display working areas	EUROCONTROL ITWP functional requirement, Version 3.0,	Set speed vectors value

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		01/03/2009 010_ITWP_functional_spec.pdf H.BL.VECT.01	
REQ-12.05.04- TS - 0102.0004	Display RWYs restricted areas	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.VECT.02	Set speed vectors value
REQ-12.05.04- TS - 0102.0005	Display air video map	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TRCK.01	Display track symbol
REQ-12.05.04- TS - 0102.0006	Display time	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TRCK.04	Set track history value
REQ-12.05.04- TS - 0102.0007	Obtain Range and Bearing information	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.LBL.01	Configure radar labels
REQ-12.05.04- TS - 0102.0008	Obtain Range and Bearing information	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.LBL.02	Configure radar labels
REQ-12.05.04- TS - 0102.0009	Obtain Range and Bearing information	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.LBL.03	Configure radar labels
REQ-12.05.04- TS - 0102.0010	Create Range and Bearing Tracker Link	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.FILT.01	Filter tracks
REQ-12.05.04- TS - 0102.0011	Create Range and Bearing Tracker Link	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf	Input intra cwp warning

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		H.BL.WAR.01	
REQ-12.05.04- TS - 0102.0012	Create Range and Bearing Tracker Link	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SEL.03	Select an individual aircraft or vehicle | Deselect an individual aircraft or vehicle
REQ-12.05.04- TS - 0102.0013	Cancel Range and Bearing Tracker Link	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SEL.04	Select an individual aircraft or vehicle | Deselect an individual aircraft or vehicle
REQ-12.05.04- TS - 0102.0014	Deconflict labels automatically | Deconflict labels manually	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TRAF.01	Display aircraft representation | Display vehicle representation
REQ-12.05.04- TS - 0102.0015	Set leader direction	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TRAF.02	Display aircraft representation | Display vehicle representation
REQ-12.05.04- TS - 0102.0016	Set leader length	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TRAF.05	Display aircraft representation | Display vehicle representation
REQ-12.05.04- TS - 0102.0017	Move radar label	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SIL.01	Display Traffic Data List
REQ-12.05.04- TS - 0102.0018	Resume label position	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SIL.02	Display Traffic Data List
REQ-12.05.04-TS-0102.0019	Set speed vectors value	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SIL.03	Expand Traffic data item
REQ-12.05.04-TS-	Set speed vectors	EUROCONTROL ITWP functional	Sort Traffic Data

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
0102.0020	value	requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SIL.04	Items
REQ-12.05.04-TS-0102.0021	Display track symbol	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.SIL.05	Create New Traffic Data Item
REQ-12.05.04-TS-0102.0022	Set track history value	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-16_Traffic Data Sets	Traffic Data Sets
REQ-12.05.04-TS-0102.0023	Configure radar labels	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-16_Traffic Data Sets	Traffic Data Sets
REQ-12.05.04-TS-0102.0024	Configure radar labels	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-14_Indication of Responsibility	Indication of Responsibility
REQ-12.05.04-TS-0102.0025	Configure radar labels	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf § 2.4.2.1.3	Presenting data for aircraft entering or planning to enter controller area of responsibility
REQ-12.05.04-TS-0102.0026	Filter tracks	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-42_EFS Access to Additional Data	EFS Access to Additional Data
REQ-12.05.04-TS-0102.0027	Marking	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf § 2.4.2.1.3	Presenting data for aircraft entering or planning to enter controller area of responsibility

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0102.0028	Select an individual aircraft	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-12_Traffic Situation Display	Traffic Situation Display
REQ-12.05.04-TS-0102.0029	Deselect an individual aircraft	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-23	Presentation of Conflict Alerts 2
REQ-12.05.04-TS-0102.0030	Display aircraft representation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-0102.0031	Display aircraft representation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-0102.0032	Display aircraft representation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-0102.0033	Display Traffic Data List	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-0102.0034	Display Traffic Data List	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-0102.0035	Expand Traffic data item	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.01	Access weather / advisory information
REQ-12.05.04-TS-	Expand Traffic data	EUROCONTROL ITWP functional	Access weather /

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
0102.0036	item	requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.02	advisory information
REQ-12.05.04-TS-0102.0037	Expand Traffic data item	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.02	Access weather / advisory information
REQ-12.05.04-TS-0102.0038	Traffic Data sets	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.02	Access weather / advisory information
REQ-12.05.04-TS-0102.0039	Traffic Data sets – Visual Presentation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.02	Access weather / advisory information
REQ-12.05.04-TS-0102.0040	Traffic indication	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TIME.01	Display time
REQ-12.05.04-TS-0102.0041	Traffic indication	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.TIME.01	Display time
REQ-12.05.04-TS-0102.0042	Traffic indication	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.1	Access weather / advisory information
REQ-12.05.04-TS-0102.0043	Traffic indication	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.WEA.1	Access weather / advisory information
REQ-12.05.04-TS-0102.0044	Airport Traffic Situation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf	Move radar label

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		H.BL.POS.06	
REQ-12.05.04-TS-0102.0045	Conflict Detection and Alerting	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.POS.07	Resume label position
REQ-12.05.04-TS-0103.0001	Minimum weather information: surface wind direction and strength		Access weather / advisory information
REQ-12.05.04-TS-0103.0002	Minimum weather information: QNH (mb).		Access weather / advisory information
REQ-12.05.04-TS-0103.0003	Minimum weather information: ATIS code		Access weather / advisory information
REQ-12.05.04-TS-0103.0004	Minimum weather information: temperature		Access weather / advisory information
REQ-12.05.04-TS-0103.0005	Minimum weather information: dew point		Access weather / advisory information
REQ-12.05.04-TS-0103.0006	Minimum weather information: RVR		Access weather / advisory information
REQ-12.05.04-TS-0103.0007	Additional weather information: visiblity		Access weather / advisory information
REQ-12.05.04-TS-0103.0008	Additional weather information: current weather		Access weather / advisory information
REQ-12.05.04-TS-0103.0009	Additional weather information: cloud ceiling		Access weather / advisory information
REQ-12.05.04-TS-0103.0010	Additional weather information: QFE		Access weather / advisory information
REQ-12.05.04-TS-0103.0011	Current Date		Display time
REQ-12.05.04-TS-0103.0012	Current time		Display time
REQ-12.05.04-TS-	METAR Information	H.BL.WEA.1	Access weather /

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
0103.0013			advisory information
REQ-12.05.04-TS-0103.0014	TAF Information	H.BL.WEA.1	Access weather / advisory information
REQ-12.05.04-TS-0104.0001	Airport Layout – Airport Maps	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ F.BL.MAP.2	Display airport video map
REQ-12.05.04-TS-0104.0002	Airport Layout – Runways/Taxiways Status	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.APT.1	Runway taxiway status
REQ-12.05.04-TS-0104.0003	Airport Layout – Ground Situation Display	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ F.BL.MAP.1	Display airport video map
REQ-12.05.04-TS-0104.0004	Airport Layout – Runway Occupation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009	Runway occupied
REQ-12.05.04-TS-0104.0005	Airport Layout – Zoom – Airport/APP/En-route Scale	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.ZOOM.1	Pe rform zoom
REQ-12.05.04-TS-0104.0006	Airport Layout – Zoom - Situation Display Range	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.ZOOM.2	Pe rform zoom
REQ-12.05.04-TS-0104.0007	Airport Layout – Zoom – Retrieve Settings	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.ZOOM.5	Retrieve zoom | Zoom back
REQ-12.05.04-TS-0104.0008	Airport Layout – Zoom – Delete Settings	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.ZOOM.5	Delete zoom
REQ-12.05.04-TS-0104.0009	Airport Layout – Zoom - Center Situation Display	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.ZOOM.8	Offs et centre
REQ-12.05.04-TS-0104.0010	Airport Layout – Geographical Orientation	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.MAP.6	Modify map geographical orientation
REQ-12.05.04-TS-	Airport Layout –	EUROCONTROL ITWP functional	Display aircraft

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
0104.0011	Labelled target tracks	requirement, Version 3.0, 01/03/2009 REQ H.BL.TRAF.1	representation | Display vehicle representation
REQ-12.05.04-TS-0105.0001	Traffic Data – Flight available options	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.UPD.2	Flight available options
REQ-12.05.04-TS-0105.0002	Traffic Data – Flight cancelled or delayed	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.BL.UPD.4	Flight cancelled or delayed
REQ-12.05.04-TS-0105.0003	Traffic Data – Arrival Flight RWY Display	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ F.FD.RUL.1	Display Pending Traffic
REQ-12.05.04-TS-0105.0004	Traffic Data – Arrival Flight GND Display	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ F.FD.RUL.2	Display Pending Traffic
REQ-12.05.04-TS-0105.0005	Traffic Data – Departure Flight GND Display	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ F.FD.RUL.3	Display Pending Traffic
REQ-12.05.04-TS-0105.0006	Traffic Data – Mobile Transfer/Assume Control Responsibility	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 REQ H.FD.TRSF.5	Transfer/Assume Control Responsibility
REQ-12.05.04-TS-0105.0007	Traffic Data – Traffic Update	EMMA2 ATR_GND REQ Func_HMI-19	Traffic Update
REQ-12.05.04-TS-0105.0008	Traffic Data – Traffic Situation	EMMA2 ATR_GND REQ Func_HMI-22 Accessible Information	Traffic Situation
REQ-12.05.04-TS-0106.0001	Manual creation of a new flight plan	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.BL.FPL.1	Create new flight plan
REQ-12.05.04-TS-0106.0002	System assistance at manual flight plan creation	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf H.BL.FPL.2	Create new flight plan

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0106.0003	Manual flight plan update or delete	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.BL.FPL.3 H.BL.FPL.5	Delete flight plan
REQ-12.05.04-TS-0106.0004	Manual display of flight plan data	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.BL.FPL.4	Display flight plan data
REQ-12.05.04-TS-0106.0005	Manual modification of flight plan data	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.BL.FPL.5	Modify flight plan data
REQ-12.05.04-TS-0106.0006	Update of flight plan data received from FDPS system	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-01	Call Sign Source
REQ-12.05.04-TS-0106.0007	Classification of flight plan data	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS05-05	Movement plan types and attributes
REQ-12.05.04-TS-0106.0008	Display of flight plan data: real time update	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-01	Call Sign Source
REQ-12.05.04-TS-0106.0009	Display and storing of flight plan data, after manual identification	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS05-07	Manual identification
REQ-12.05.04-TS-0106.0010	Remove of flight plan identification data: manual de-	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification	Manual de-association

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
	assign function	00.01.00.doc REQ-12.03.01-TS05-08	
REQ-12.05.04-TS-0106.0011	Real time display of updated FPL routing data	SESAR Enhanced Surface Routing 12.03.03 D02-System Requirement Specification.doc REQ-12.03.03-TS0030-0010	Reception of flight plan information.
REQ-12.05.04-TS-0106.0012	Support to DMAN from EFSS system	SESAR Enhanced Sequencing Tools 12.03.05 D02-Phase 1-System Requirements Specification.doc REQ-12.03.05-TS0010-0490	DMAN inputs – EFS flight data
REQ-12.05.04-TS-0106.0013	Reception of DMAN data to EFSS system	SESAR Enhanced Sequencing Tools 12.03.05 D02-Phase 1-System Requirements Specification.doc REQ-12.03.05-TS0010-0590	DMAN inputs – DMAN data to EFS
REQ-12.05.04-TS-0106.0014	EFSS Display	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-35	EFS display
REQ-12.05.04-TS-0106.0015	EFSS Configurability	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-37	EFS Configurability
REQ-12.05.04-TS-0106.0016	EFSS data format	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-38 EFS Data Format	EFS Data Format
REQ-12.05.04-TS-0106.0017	EFSS Additional Data	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-40	EFS Additional Data
REQ-12.05.04-TS-0106.0018	EFSS Special Fields	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-41	EFS Special Fields
REQ-12.05.04-TS-0106.0019	EFSS Responsibility	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-42	EFS Responsibility

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0106.0020	EFSS grouping	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-43	EFS Grouping
REQ-12.05.04-TS-0106.0021	EFSS Sorting criteria	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-44	EFS Sorting Criteria
REQ-12.05.04-TS-0106.0022	EFSS Manual interaction	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-46	Manual Interaction
REQ-12.05.04-TS-0106.0023	EFSS editing	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-47	EFSS editing 1
REQ-12.05.04-TS-0106.0024	EFSS Bay Area	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-47	EFSS editing 1
REQ-12.05.04-TS-0106.0025	EFSS Bay configurability	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-53	Bay Area Configurability
REQ-12.05.04-TS-0106.0026	EFSS initialization	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-56	EFS Initialisation
REQ-12.05.04-TS-0106.0027	EFSS Clearance Input	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-61	EFS Clearance Input
REQ-12.05.04-TS-0106.0028	EFSS Clearance Types: cleared to land	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0029	EFSS Clearance Types: go-around	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0106.0030	EFSS Clearance Types: vacate	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0031	EFSS Clearance Types: cross	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0032	EFSS Clearance Types: taxi	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0033	EFSS Clearance Types: start-up	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0034	EFSS Clearance Types: push-back	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0035	EFSS Clearance Types: hold	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0036	EFSS Clearance Types: lineup	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0037	EFSS Clearance Types: conditional line-up'	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0038	EFSS Clearance Types: take-off'	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types
REQ-12.05.04-TS-0106.0039	EFSS Clearance Types: abort take-off	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-62	EFS Clearance Types

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0106.0040	EFSS Mistake correction	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-64	Mistake Correction
REQ-12.05.04-TS-0107.0001	Modify control responsibility or Transfer control responsibility	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.FD.TRSF.1	Modify control responsibility | Transfer control responsibility
REQ-12.05.04-TS-0107.0002	Transfer Traffic | Assume Traffic	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf H.FD.TRSF.2	Transfer Traffic | Assume Traffic
REQ-12.05.04-TS-0107.0003	Direct Transfer Traffic	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.FD.TRSF.3	Direct Transfer Traffic
REQ-12.05.04-TS-0107.0004	Transfer Traffic | Assume Traffic 2	Eurocontrol ITWP functional requirement Version 3.0 01/03/2009 010_ITWP_functional_spec.pdf F.FD.TRSF.4	Transfer Traffic | Assume Traffic
REQ-12.05.04-TS-0107.0005	Coordination with ATM FDPS systems	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-01	Call Sign Source
REQ-12.05.04-TS-0107.0006	EFSS Handover 1	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-671	EFS Handover 1
REQ-12.05.04-TS-0107.0007	EFSS Handover 3	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-69	EFS Handover 3
REQ-12.05.04-TS-0107.0008	EFSS Handover 5	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf	EFS Handover 5

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		Func_HMI-71	
REQ-12.05.04-TS-0107.0009	EFSS Handover 6	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-73	EFS Handover 6
REQ-12.05.04-TS-0107.0010	Mistaken transfer	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-73	Mistaken Transfer
REQ-12.05.04-TS-0107.0011	Coordination support	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-76	EFS Coordination Support
REQ-12.05.04-TS-0107.0012	Combined roles	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_HMI-77	EFS Combined Roles
REQ-12.05.04-TS-0108.0001	Manual Label Attribution	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/142-D112a_ATR-GND_V1.0.pdf Func_HMI-09	Manual Label Attribution
REQ-12.05.04-TS-0108.0002	Display Airport Traffic Situation	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 Func_HMI-17	Display Airport Traffic Situation
REQ-12.05.04-TS-0108.0003	Target Selection	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 Func_HMI-21	Target Selection
REQ-12.05.04-TS-0108.0004		EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 Func_HMI-26	Identification
REQ-12.05.04-TS-0108.0005	Move radar label	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 H.BL.POS.6	Move radar label
REQ-12.05.04-TS-0108.0006	Configure radar labels	010_ITWP_functional_spec.pdf H.BL.LBL.4	Configure radar labels
REQ-12.05.04-TS-0108.0007	Marking	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009	Input intra cwp warning

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		H.BL.WAR.1	
REQ-12.05.04-TS-0108.0008	Display vehicle representation	010_ITWP_functional_spec.pdf H.BL.TRAF.1	Display vehicle representation
REQ-12.05.04-TS-0108.0009	Traffic Data – Mobile Transfer/Assume Control Responsibility	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 H.BL.TRAF.5	Traffic Data – Mobile Transfer/Assume Control Responsibility
REQ-12.05.04-TS-0108.0010	Modify control responsibility or Transfer control responsibility	010_ITWP_functional_spec.pdf F.FD.TRSF.1	Modify control responsibility or Transfer control responsibility
REQ-12.05.04-TS-0108.0011	Transfer Traffic | Assume Traffic	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 F.FD.TRSF.4	Transfer Traffic | Assume Traffic
REQ-12.05.04-TS-0108.0012	Classification of movement plan data	SESAR Improved Surveillance for Surface Management REQ-12.03.01-TS-05-05	Movement plan types and attributes
REQ-12.05.04-TS-0108.0013	Display of movement plan data: real time update	DEL01 - 12.03.01 - Phase1 - System Requirements Specification 00.01.00.doc REQ-12.03.01-TS-11-01	Call Sign Source
REQ-12.05.04-TS-0109.0001	Feedback of performed action	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.BL.HMI.16, X.HF.G10	WIMP Graphical User Management Routine feedback
REQ-12.05.04-TS-0109.0002	Alert Report Acquisition Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0001.0020	Alert responsibilities
REQ-12.05.04-TS-0109.0003	Alert Report Acquisition Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0001.0030	Alert priority configuration
REQ-12.05.04-TS-0109.0004	Alert Report Acquisition Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0001.0050	Restoration of alert after start-up
REQ-12.05.04-TS-0109.0005	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0010	Alert continuity
REQ-12.05.04-TS-0109.0006	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0020	Restoration of alert display after start-up

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0109.0007	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0030	End of alert notification
REQ-12.05.04-TS-0109.0008	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0040	Display alerts 1
REQ-12.05.04-TS-0109.0009	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0060	Display alerts 2
REQ-12.05.04-TS-0109.0010	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0070	Display alerts 3
REQ-12.05.04-TS-0109.0011	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0090	Alert window
REQ-12.05.04-TS-0109.0012	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0100	Identification of traffic
REQ-12.05.04-TS-0109.0013	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0120	Stages of alerts
REQ-12.05.04-TS-0109.0014	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0150	Priority of ALARM 1
REQ-12.05.04-TS-0109..0015	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0190	Priority of ALARM 3
REQ-12.05.04-TS-0109.0016	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0210	Visualisation of different conflicts
REQ-12.05.04-TS-0109.0017	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0220	Audio signal
REQ-12.05.04-TS-0109.0018	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0230	Stop of audio signal
REQ-12.05.04-TS-0109.0019	Alert notification Requirements	12.05.02-D01-System Requirements for Phase 1 TS-0002.0240	Runway conflicts display
REQ-12.05.04-TS-	Alert notification	12.05.02-D01-System	Alert

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
0109.0020	Requirements	Requirements for Phase 1 TS-0003.0010	acknowledgement
REQ-12.05.04-TS-0109.0021	Activate / Deactivate Stop bars	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.SN.PTD.01	Manually switch protection devices
REQ-12.05.04-TS-0109.0022	Status of the stop bar	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.SN.PTD.02	Manually switch protection devices
REQ-12.05.04-TS-0109.0023	Conflict Alert Priorities	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-27	Conflict Alert Priorities
REQ-12.05.04-TS-0110.0001	Routing/Planning requests	12.03.03-D02-System Requirement Specification TS-0030.0040	Routing/Planning requests
REQ-12.05.04-TS-0110.0002	Route display	12.03.03-D02-System Requirement Specification TS-0030.0040	Route display
REQ-12.05.04-TS-0110.0003	Route Presentation	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 2-D112a_ATR-GND_V1.0.pdf Func HCI-79	Route Presentation
REQ-12.05.04-TS-0110.0004	DMAN - Tower Delivery Controller iCWP Requirements	12.03.05-D02-System Requirement Specification TS-0010.0700	DMAN - Tower Delivery Controller iCWP Requirements
REQ-12.05.04-TS-0110.0005	DMAN - Tower Delivery Controller iCWP Requirements	TS-0010.0710	DMAN - Tower Delivery Controller iCWP Requirements
REQ-12.05.04-TS-0110.0006	DMAN Clearance Delivery	12.04.04 -System Requirement Specification REQ-12.04.04-TS-0200.0010	DMAN Clearance Delivery
REQ-12.05.04-TS-0110.0007	DMAN Clearance Delivery	12.04.04 -System Requirement Specification REQ-12.04.04-TS-0200.0020	DMAN Clearance Delivery
REQ-12.05.04-TS-0110.0008	DMAN Clearance Delivery	12.04.04 -System Requirement Specification REQ-12.04.04-TS-0200.0030	DMAN Clearance Delivery
REQ-12.05.04-TS-0110.0009	Conflict Detection and Alerting	EMMA2 A-SMGCS Services, Procedures, and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf	Conflict Detection and Alerting

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		HMI_Serv-26	
REQ-12.05.04-TS-0111.0001	Clearance Requests from on-board system	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0074	Clearance Requests from on-board system
REQ-12.05.04-TS-0111.0002	Acknowledgements from ground system	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0075	Acknowledgements from ground system
REQ-12.05.04-TS-0111.0003	Clearance to on-board system	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0076	Clearance to on-board system
REQ-12.05.04-TS-0111.0004	Clearance acknowledgements from the on-board systems	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0077	Clearance acknowledgements from the on-board systems
REQ-12.05.04-TS-0111.0005	Provision of guidance information to pilots	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0004	Provision of guidance information to pilots
REQ-12.05.04-TS-0111.0006	Unique identification Data link	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0013	Unique identification Data link
REQ-12.05.04-TS-0111.0007	Message display	12.03.04 D02-01s1v3 SurfaceGuidanceRequirements.doc TS-0000.0019	Message display
REQ-12.05.04-TS-0201.0001	iCWP modularity	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS06-01	System Components
REQ-12.05.04-TS-0201.0002	Components	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-06	Modularity 1
REQ-12.05.04-TS-0201.0003	COTS technology	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-07	Modularity 2
REQ-12.05.04-TS-0201.0004	Design	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-06	Modularity 1
REQ-12.05.04-TS-0201.0005	Service levels at different aerodromes	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf	Modularity 2

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		Func_GEN-06	
REQ-12.05.04-TS-0202.0001	iCWP	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS06-01	
REQ-12.05.04-TS-0202.0002	System dimension at different aerodromes	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-08	Scalability 1
REQ-12.05.04-TS-0202.0003	System dimension according to number of users	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-08	Scalability 2
REQ-12.05.04-TS-0203.0001	Adaptability to local procedures and working methods	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS06-04	System Adaptability
REQ-12.05.04-TS-0203.0002	Adaptability to ATC procedures	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-14	Adaptability
REQ-12.05.04-TS-0203.0003	iCWP adaptability	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-14	Adaptability
REQ-12.05.04-TS-0204.0001	Layout change	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Func_GEN-13	Layout Change
REQ-12.05.04-TS-0205.0001	iCWP Harmonization	EMMA2 A-SMGCS Services, Procedures and Operational Requierments 2-D111_SPOR_V1.0.pdf HMI_Serv-08	Harmonisation
REQ-12.05.04-TS-0301.0001	Map Accuracy	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14	Map Accuracy

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		2-D112a_ATR-GND_V1.0.pdf Perf_HMI-01	
REQ-12.05.04-TS-0301.0002	Position Registration Accuracy	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 2-D112a_ATR-GND_V1.0.pdf Perf_HMI-03	Position Registration Accuracy
REQ-12.05.04-TS-0302.0001	Target Display Latency	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 2-D112a_ATR-GND_V1.0.pdf Perf_HMI-04	Target Display Latency
REQ-12.05.04-TS-0302.0002	Response time to Operator Input	EMMA2-A-SMGCS Technical Requirements-Ground, Version 1.0, 2009/07/14 2-D112a_ATR-GND_V1.0.pdf Perf_HMI-05	Response time to Operator Input
REQ-12.05.04-TS-0400.0001	Acknowledge of alert messages	EUROCONTROL ITWP functional requirement, Version 3.0, 01/03/2009 010_ITWP_functional_spec.pdf H.SN.GEN.5	Acknowledgement button
REQ-12.05.04-TS-0400.0004	Conflict Detection and Alerting	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-24	Presentation of Conflict Alerts 3
REQ-12.05.04-TS-0400.0005	Conflict Detection and Alerting	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-22	Presentation of Conflict Alerts 1
REQ-12.05.04-TS-0400.0006	Conflict Detection and Alerting	EMM2 A-SMGCS Services, Procedures and Operational Requirements (SPOR) 2-D111_SPOR_V1.pdf HMI_Serv-24	Presentation of Conflict Alerts 3
REQ-12.05.04-TS-0901.0001	Use of ASTERIX format	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification	Position Report Data format

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
		00.01.00.doc REQ-12.03.01-TS13-04	
REQ-12.05.04-TS-0901.0002	Interface with Aerodrome ATC systems	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf intf_SURV-04 intf_SURV-05 intf_SURV-06	
REQ-12.05.04-TS-0901.0003	Physical interfaces	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf 2.3.3.1 Physical interfaces	Physical interfaces
REQ-12.05.04-TS-0901.0004	Protocols and data format	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf 2.3.3.2 Protocols and Data Formats	Protocols and Data Formats
REQ-12.05.04-TS-0901.0005	Reference clock	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf 2.3.3.2 Protocols and Data Formats	Protocols and Data Formats
REQ-12.05.04-TS-0902.0001	Interface to ATM FDPS system	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-01 REQ-12.03.01-TS05-05	-Call Sign Source -Movement plan types and attributes
REQ-12.05.04-TS-0902.0002	Interface to ATM FDPS system: forward of clearances for departures	EMMA2 A-SMGCS Technical Requirements-Ground 2-D112a_ATR-GND_V1.0.pdf Fn_Serv-1	Pilot requests and ATC clearance responses
REQ-12.05.04-TS-0903.0001	Interface to Aerodrome ATC surveillance system	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-02	Traffic Context Data update
REQ-12.05.04-TS-0903.0002	Use of ASTERIX format for Aerodrome ATC systems	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS13-01	Data Formats - Flight Plans data

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0904.0001	Interface to approach system	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-03	Airborne Information Source
REQ-12.05.04-TS-0904.0002	Use of ASTERIX to interface approach systems	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS13-07	RDPS Data format
REQ-12.05.04-TS-0905.0001	Use of ASTERIX cat 10 for MLAT	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS11-05	Mobiles information Source
REQ-12.05.04-TS-0905.0002	Use of ASTERIX cat 21 for ADSB	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS13-06	MLAT Data format
REQ-12.05.04-TS-0906.0001	Use of ASTERIX cat 10 format	SESAR Improved Surveillance for Surface management DEL01-12.03.01-Phase1-System Requierements Specification 00.01.00.doc REQ-12.03.01-TS13-05	SMR Data format
REQ-12.05.04-TS-0907.0001	Interface to routing/planning function: data forwarded	SESAR Enhanced Surface Routing 12.03.03 D02-System Requirement Specification.doc REQ-12.03.03-TS-0030.0040	Controller HMI inputs.
REQ-12.05.04-TS-0908.0001	Interface to RAM function	SESAR Enhanced Sequencing Tools 12.03.05 D02-Phase 1-System Requirements Specification.doc REQ-12.03.05-TS-0010.0020	Runway allocation management – eligible flight plan
REQ-12.05.04-TS-0908.0002	Interface to DMAN SM function	SESAR Enhanced Sequencing Tools 12.03.05 D02-Phase 1-System Requirements Specification.doc REQ-12.03.05-TS-0010.0140	Sequence management – Basic DMAN planning interval V

TS Requirement		Satisfied requirement	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0909.0001	Interface with guidance system	SESAR Enhanced Surface Guidance 12.03.04 D02-System Requirement Specification.doc REQ-12.03.04-TS-0000.0078	Provision of technical status.
REQ-12.05.04-TS-0909.0002	Interface with Guidance system: data forwarded	SESAR Enhanced Surface Guidance 12.03.04 D02-System Requirement Specification.doc REQ-12.03.04-TS-0000.0085	Controller HMI inputs.
REQ-12.05.04-TS-0909.0003	Interface with Guidance system: data received	SESAR Enhanced Surface Guidance 12.03.04 D02-System Requirement Specification.doc REQ-12.03.04-TS-0000.0085	Controller HMI inputs.

Table 10: TS requirements traceability

The following table syntheses the Validation/Verification Methods associated to each TS requirement.

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0101.0001	Login	The iCWP shall display a login window whenever a user want to access the Aerodrome ATC system	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0002	Logout	The iCWP shall allow log out of users.	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0003	Stored screen settings	Upon login, the iCWP shall allow to configure the display according to saved screen settings	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0004	Default settings	The iCWP shall allow to configure the display according to a default screen setting.	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0005	Input Devices	The iCWP shall allow interaction for right hand and left hand users by means a set of input devices: - Pointing device; - Alphanumeric functional Keyboard.	Real Time Simulation/Inspection
REQ-12.05.04-TS-0101.0006	Zoom setting	The iCWP shall allow the operator to change the situation display range without changing the size of the situation display	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0007	Zoom storage	The iCWP shall allow the operator to save a range scale value	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0008	Anti-overlap function	The iCWP shall allow the operator to enable/disable an automatic anti-overlap function in order to avoid track label conflicts.	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0009	Track Label Orientation	The iCWP shall allow the operator to change the orientation of the track label with respect the North (magnetic or geographic).	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0010	Leader line	The iCWP shall allow the operator to adjust the length of the leader line of the track labels according to the label position.	Real Time Simulation/Test
REQ-12.05.04-TS-	Label Positioning	The iCWP shall allow the	Real Time

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
0101.0011		operator to manually move labels to a defined position taking them off the default setting.	Simulation/Test
REQ-12.05.04-TS-0101.0012	Label Positioning	The iCWP shall allow the operator to re-establish default position setting for labels manually moved	Real Time Simulation/Test
REQ-12.05.04-TS-0101.0013	Textual Data	The iCWP shall provide to Controller textual data in various formats: -Labels; -Lists of data; -Electronic Flight Strips	Real Time Simulation/Inspection
REQ-12.05.04-TS-0101.0014	Airport Layout – Zoom – Store Settings	The iCWP shall provide the possibility to store a pre-defined number of zoom settings	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0001	Display parking names	The iCWP shall be able to display / remove display parking names and associated location on the ground situation display, either permanently or temporarily.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0002	Display taxiway names	The iCWP shall be able to display / remove display taxiway names on the ground situation window, either permanently or temporarily.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0003	Display working areas	The iCWP shall be able to remove display or redisplay working areas on the ground situation window.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0004	Display RWYs restricted areas	The iCWP shall be able to display / remove display RWY strip boundaries according to LVP or non-LVP conditions.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0005	Display air video map	The iCWP shall be able to display air video maps taking following issues into account: •The number of airspace maps and the content of each air map shall be defined at local level. The proposed default display is the following: The area of the sector(s) controlled on the position •The waypoints and	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		waypoint identifications •The airways / airway centre-lines •The military areas •The coastlines •The scale markers The range-rings.	
REQ-12.05.04- TS - 0102.0006	Display time	The display of the UTC time shall be always available.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0007	Obtain Range and Bearing information	The iCWP shall provide access to the Range and Bearing function allowing obtaining precise range and bearing information as measured from one point of the airspace to another	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0008	Obtain Range and Bearing information	The iCWP shall allow the controller to leave the Range and Bearing function.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0009	Obtain Range and Bearing information	The iCWP shall provide the controller with feedback when the Range and Bearing function is active or not.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0010	Create Range and Bearing Tracker Link	The iCWP shall provide with an access to the Tracker link function allowing to monitor over time the change in relative range and bearing over time of two points, one or both of which are dynamic (an aircraft and a fixed point, or two aircraft).	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0011	Create Range and Bearing Tracker Link	The iCWP shall provide with the controller the possibility to leave the Tracker Link function.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0012	Create Range and Bearing Tracker Link	The iCWP shall provide the controller with feedback when the Tracker link function is active or not.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0013	Cancel Range and Bearing Tracker Link	The iCWP shall allow the controller to remove the displayed range and bearing information.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0014	Deconflict labels automatically | Deconflict labels manually	The ICWP shall provide the controller the possibility to choose whether to use the automatic radar label anti-	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		overlap function: the function may be activated and de-activated only on controller's request. The access to the activation/deactivation may be immediate, and the controller may be provided with feedback whether the automatic anti-overlap is active or not.	
REQ-12.05.04- TS - 0102.0015	Set leader direction	At any moment, the iCWP shall allow the controller to manually set the orientation of all the displayed radar labels, within a given frame of reference.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0016	Set leader length	At any moment, the iCWP shall allow the controller to manually set the leader line length of all the displayed radar labels. Several lengths of the leader line may be available, allowing changing the position of the labels without modifying their direction with respect to the aircraft track.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0017	Move radar label	The iCWP shall allow the controller to move a particular radar label anywhere on the radar image. The leader line shall automatically extend and reposition to maintain the link between the label and the aircraft position symbol.	Real Time Simulation/Test
REQ-12.05.04- TS - 0102.0018	Resume label position	At any moment, the iCWP shall allow the controller to include or not the individually moved labels into the global label position setting.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0019	Set speed vectors value	The iCWP shall allow the controller to configure the speed vector length for all the aircraft tracks.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0020	Set speed vectors value	The speed vector may not be 'confusable' with the leader line of the air aircraft radar label.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0021	Display track symbol	Aircraft track symbols may be different so that the controller may clearly distinguish between them.	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0102.0022	Set track history value	The iCWP shall allow the controller to configure the number of trail dots for all the aircraft tracks.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0023	Configure radar labels	The iCWP shall allow the controller to configure the content of minimum and extended radar labels by adding or removing data fields .	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0024	Configure radar labels	The content of radar labels shall be configurable according to operator role.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0025	Configure radar labels	The colours associated to arriving and departing traffic shall be different.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0026	Filter tracks	The iCWP shall provide the controller with the possibility to set/select groups of aircraft tracks to be displayed.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0027	Marking	The iCWP shall provide with a function to mark an aircraft by the controller.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0028	Select an individual aircraft	Selecting an aircraft shall: a) Highlight all the available representations on the traffic situation management iCWP of that traffic wherever such information appears, b) Show the radar label in the highlighted format.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0029	Deselect an individual aircraft	De-selecting an aircraft shall: a) Deselect the previously highlighted traffic representation. b) Revert the radar label to no-highlighted form	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0030	Display aircraft representation	The iCWP shall provide the Aircraft representation in a format helping the controller to locate and identify the traffic and to have direct access to essential information. The relation between traffic representation and information concerning that traffic shall be unambiguous.	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0102.0031	Display aircraft representation	The iCWP shall display the minimum information needed by the controller as the permanently displayed traffic data in order to avoid screen congestion and minimise overlap of displayed information,	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0032	Display aircraft representation	The iCWP shall update the traffic representation on the controller's display: a) updates of the surveillance system b) controller update of traffic data.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0033	Display Traffic Data List	All Traffic Data Items pertinent to a controller shall be presented in a clear and predefined format(s) that help her/him to prioritise planning and control actions. Depending on operational needs, traffic data shall be configurable with regard to layout, size, shape, fonts, colours and interaction capability.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0034	Display Traffic Data List	Traffic under the control area responsibility of a controller at a particular working position shall be clearly distinguished from traffic which is not under her/his control responsibility.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0035	Expand Traffic data item	Extended Traffic Data Item information shall be available on controller request. The presentation format shall be fixed, allowing the controller to find an information.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0036	Expand Traffic data item	The iCWP shall be able to sort out Traffic Data Items displayed in a Traffic Data List, either manually or according to configurable criteria..	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0037	Expand Traffic data item	The iCWP shall assist the controller to create a new traffic data item	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0038	Traffic Data sets	Several sets of traffic data shall be provided in order to assist the controller in different types	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		of tasks as. updating of data, planning of actions, surface conflict detection and monitoring.	
REQ-12.05.04-TS-0102.0039	Traffic Data sets – Visual Presentation	Sets of traffic data shall be presented in either textual or graphical format.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0040	Traffic indication	The iCWP shall provide the controller with a clear indication that a traffic is: a) Entering her/his area of responsibility; b) Being under her/his responsibility; c) Leaving her/his area of responsibility	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0041	Traffic indication	Traffic under the controller responsibility at a particular working position shall be clearly distinguished from traffic which is not under her/his control responsibility.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0042	Traffic indication	The iCWP shall allow the controller to expand the format of a displayed Traffic Data Item to access additional data. By default, Traffic Data Items may be presented under normal (minimum) format.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0043	Traffic indication	The iCWP may allow the controller to sort, move, create new traffic data item in the Traffic Data Lists.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0044	Airport Traffic Situation	The iCWP may display the complete airport traffic situation, allowing a situation assessment.	Real Time Simulation/Test
REQ-12.05.04-TS-0102.0045	Conflict Detection and Alerting	Conflict information may be unambiguously displayed on a traffic situation display or by other appropriate means.	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0001	Minimum weather information: surface wind direction and strength	Minimum weather information may always be displayed and available to the controller and includes: surface wind direction and strength.	Real Time Simulation/Test
REQ-12.05.04-TS-	Minimum weather	Minimum weather information	Real Time

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
0103.0002	information: QNH (mb).	may always be displayed and available to the controller and includes: QNH (mb).	Simulation/Test
REQ-12.05.04-TS-0103.0003	Minimum weather information: ATIS code	Minimum weather information may always be displayed and available to the controller and includes: ATIS code.	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0004	Minimum weather information: temperature	Minimum weather information may always be displayed and available to the controller and includes: temperature.	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0005	Minimum weather information: dew point	Minimum weather information may always be displayed and available to the controller and includes:dew point.	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0006	Minimum weather information: RVR	Minimum weather information may always be displayed and available to the controller and include: RVR.	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0007	Additional weather information: visiblity	The iCWP may allow the controller to access to additional weather information that shall include: visiblity	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0008	Additional weather information: current weather	The iCWP may allow the controller to access to additional weather information that shall include: current weather	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0009	Additional weather information: cloud ceiling	The iCWP may allow the controller to access to additional weather information that shall include: cloud ceiling	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0010	Additional weather information: QFE	The iCWP may allow the controller to access to additional weather information that shall include: QFE (mb and inches).	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0011	Current Date	The iCWP may display the current date. (UTC)	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0012	Current time	The iCWP may display the current time (UTC)	Real Time Simulation/Test
REQ-12.05.04-TS-0103.0013	METAR Information	The iCWP may display incoming METARs for this airport and other airports.	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0103.0014	TAF Information	The iCWP may display incoming TAFs for this airport and other airports.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0001	Airport Layout – Airport Maps	The iCWP shall allow define al local level the number of airport 2D maps and the content of each map. The proposed default display is the following: • Taxiways • Runways • Terminals and other airport buildings • Apron and gates • Stop bars.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0002	Airport Layout – Runways/Taxiways Status	The iCWP shall allow the controller to access/modify the status of the runways and taxiways (active / closed).	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0003	Airport Layout – Ground Situation Display	The iCWP shall display and remove different types of surface information on the ground situation display.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0004	Airport Layout – Runway Occupation	The iCWP shall display when a runway is occupied by an aircraft or a vehicle which is under the responsibility of the controller.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0005	Airport Layout – Zoom – Airport/APP/En-route Scale	The iCWP shall provide a composite picture which can zoom in to airport scale and out to APP/en-route scale.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0006	Airport Layout – Zoom - Situation Display Range	The iCWP shall provide the possibility to change the situation display range (APP or Ground situation display). The minimum and maximum zoom values, if any, shall be clearly indicated.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0007	Airport Layout – Zoom – Retrieve Settings	The iCWP shall provide the possibility to access a previously stored zoom setting.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0008	Airport Layout – Zoom – Delete Settings	The iCWP shall provide the possibility to modify a previously stored zoom setting.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0009	Airport Layout – Zoom - Center Situation Display	The iCWP shall provide the possibility to re-centre the situation display on a chosen	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		point.	
REQ-12.05.04-TS-0104.0010	Airport Layout – Geographical Orientation	The iCWP shall allow the controller to modify the geographical orientation of airport maps.	Real Time Simulation/Test
REQ-12.05.04-TS-0104.0011	Airport Layout – Labelled target tracks	The iCWP shall provide, at each controller working position, a traffic situation display capable to present labelled target tracks superimposed on an airport and approach map.	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0001	Traffic Data – Flight available options	The iCWP shall display only available options for interaction. Such options depend on the flight planning state and previously issued clearances for the flight	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0002	Traffic Data – Flight cancelled or delayed	The iCWP may provide a visible indication on a traffic data item when a flight has been cancelled or delayed	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0003	Traffic Data – Arrival Flight RWY Display	The iCWP shall display arrival traffic data on the RWY arrival control position at a time parameter before the estimated landing time (ELDT).	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0004	Traffic Data – Arrival Flight GND Display	Based on local decision, the iCWP may display arrival traffic on concerned GND control position(s) either at a time parameter before the estimated landing time (ELDT) or based on an identified runway controller action / clearance for that flight.	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0005	Traffic Data – Departure Flight GND Display	Based on local decision, the iCWP may display departure traffic data item on concerned GND position(s) either at a time parameter before the estimated or target off block time (EOBT /TOBT) time or based on an identified controller action/clearance for that flight.	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0006	Traffic Data – Mobile Transfer/Assume	The iCWP shall provide visible indication of completion of a flight transfer/assume control	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
	Control Responsibility	responsibility on both assuming and transferring operator roles.	
REQ-12.05.04-TS-0105.0007	Traffic Data – Traffic Update	The iCWP shall update the traffic representation in the following situations: a) Target reports received from the Surveillance function b) Controller-initiated update of data c) Updates of traffic context data d) Flight plan updates from the Routing/Planning functions.	Real Time Simulation/Test
REQ-12.05.04-TS-0105.0008	Traffic Data – Traffic Situation	The iCWP shall present a clear "picture" of the actual traffic situation in the controller's responsibility area, with all the necessary traffic data to assist in the control and guidance tasks.	Real Time Simulation/Test
REQ-12.05.04-TS-0106.0001	Manual creation of a new flight plan	The iCWP shall allow to manually create a new flight plan.	Real time simulation/Test
REQ-12.05.04-TS-0106.0002	System assistance at manual flight plan creation	At any stage of a new flight plan creation, the iCWP may assist the controller with indications of data to be input, data available for input, erroneous data, possible actions, and forbidden actions.	Real time simulation/Test
REQ-12.05.04-TS-0106.0003	Manual flight plan update or delete	The iCWP shall allow to correct or update a previously saved flight plan: the deletion of a saved flight plan shall be confirmed by the controller.	Real time simulation/Test
REQ-12.05.04-TS-0106.0004	Manual display of flight plan data	The iCWP shall be able to display the flight plan data of any existing flight plan	Real time simulation/Test
REQ-12.05.04-TS-0106.0005	Manual modification of flight plan data	The iCWP shall allow to manually modify flight plan elements	Real time simulation/Test
REQ-12.05.04-TS-0106.0006	Update of flight plan data received from FDPS system	The iCWP shall be able to receive and manage any update of movement plan update from a flight data processing system of the ATM	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		at the airport	
REQ-12.05.04-TS-0106.0007	Classification of flight plan data	The iCWP may be able to present to controller the list of movement plans for all target present in movement area, according to this classification: - Inbound flight plan - Outbound Flight Plan - Crossing Flight plan - Local Ground aircraft movement -	Real time simulation/Test
REQ-12.05.04-TS-0106.0008	Display of flight plan data: real time update	The iCWP may be able to update in real time, the information presented within the movement plan list, according to this classification: - Inbound flight plan - Outbound Flight Plan - Crossing Flight plan - Local Ground aircraft movement	Real time simulation/Test
REQ-12.05.04-TS-0106.0009	Display and storing of flight plan data, after manual identification	The iCWP shall allow the controller to manually associate any target to a system track (manual identification procedure): identification data shall be manually inserted by operator, or selected by a predefined set.	Real time simulation/Test
REQ-12.05.04-TS-0106.0010	Remove of flight plan identification data: manual de-assign function	The iCWP shall allow the controller to manually remove data which were manually associated to a target.	Real time simulation/Test
REQ-12.05.04-TS-0106.0011	Real time display of updated FPL routing data	The iCWP shall present in real time any update of FPL routing information	Real time simulation/Test
REQ-12.05.04-TS-0106.0012	Support to DMAN from EFSS system	The iCWP shall allow the controller to enter the following flight data, through EFSS system: - Runway Allocation - SID - ASAT	Real time simulation/Test
REQ-12.05.04-TS-0106.0013	Reception of DMAN data to EFSS system	The iCWP shall be able to present to its operator the following flight plan information calculated from the DMAN: • TSAT	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		• TTOT • Allocated Departure Runway	
REQ-12.05.04-TS-0106.0014	EFSS Display	The iCWP shall provide, at each controller working position, an EFSS display capable of presenting flight strips sorted into bays according to the phase of flight.	Real time simulation/Test
REQ-12.05.04-TS-0106.0015	EFSS Configurability	The layout of the iCWP flight strips may be independently configurable for each bay area.	Real time simulation/Test
REQ-12.05.04-TS-0106.0016	EFSS data format	The iCWP flight strip may contain data fields with all flight plan data relevant for the controller role at each position. All traffic data items pertinent to a controller may be presented in clear and pre-defined formats that help to prioritise planning and control actions.	Real time simulation/Test
REQ-12.05.04-TS-0106.0017	EFSS Additional Data	The iCWP may allow the controller to view the complete flight plan data	Real time simulation/Test
REQ-12.05.04-TS-0106.0018	EFSS Special Fields	As well as flight plan data fields, the iCWP flight strip may contain special-purpose fields, such as: • Clearance fields for issuing clearances • Handover field for transferring the flight strip to another controller role • Regress field for returning the flight strip to its previous location • Taxi route information field • Request field to indicate pilot requests received via data link. • Data link dialogue fields -	Real time simulation/Test
REQ-12.05.04-TS-0106.0019	EFSS Responsibility	The iCWP EFS, at each iCWP, position shall display the flight strips for flights under control of that position, as well as flights that will become controlled in the near future	Real time simulation/Test
REQ-12.05.04-TS-0106.0020	EFSS grouping	The iCWP Flight strips may be logically grouped in the bays	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		according to user requirements.	
REQ-12.05.04-TS-0106.0021	EFSS Sorting criteria	The iCWP flight strip bays may contain lists of flight strips that are selected, sorted and presented according to configurable criteria..	Real time simulation/Test
REQ-12.05.04-TS-0106.0022	EFSS Manual interaction	The iCWP may allow the controllers to sort, move, and create new traffic data items in the traffic data lists.	Real time simulation/Test
REQ-12.05.04-TS-0106.0023	EFSS editing	If the controller role has the authority to modify certain items of flight plan data, the EFS-iCWP may provide means for the controller with that authority to input missing data and to correct wrong data for a flight	Real time simulation/Test
REQ-12.05.04-TS-0106.0024	EFSS Bay Area	Each flight strip may be placed in the appropriate bay area based on the user selected sorting criteria and the phase of flight.	Real time simulation/Test
REQ-12.05.04-TS-0106.0025	EFSS Bay configurability	The number of bay areas and the title of each bay may be configurable for each working position according to the controller role.	Real time simulation/Test
REQ-12.05.04-TS-0106.0026	EFSS initialization	Depending on the controller role, flight strips may appear in the entry (pending) area when generated by the flight data processing system (FDPS) or when transferred from another control position.	Real time simulation/Test
REQ-12.05.04-TS-0106.0027	EFSS Clearance Input	The EFS iCWP shall provide a means to input clearances into the Aerodrome ATC system,, in accordance with the authority allocated to the controller role at each working position.	Real time simulation/Test
REQ-12.05.04-TS-0106.0028	EFSS Clearance Types: cleared to land	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'cleared to land',	Real time simulation/Test
REQ-12.05.04-TS-0106.0029	EFSS Clearance Types: go-around	Clearances may represent the normal set of clearances a controller gives to an aircraft,	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		such as: 'go-around'.	
REQ-12.05.04-TS-0106.0030	EFSS Clearance Types: vacate	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'vacate'.	Real time simulation/Test
REQ-12.05.04-TS-0106.0031	EFSS Clearance Types: cross	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'cross'	Real time simulation/Test
REQ-12.05.04-TS-0106.0032	EFSS Clearance Types: taxi	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: taxi	Real time simulation/Test
REQ-12.05.04-TS-0106.0033	EFSS Clearance Types: start-up	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'start-up'	Real time simulation/Test
REQ-12.05.04-TS-0106.0034	EFSS Clearance Types: push-back	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'push-back'	Real time simulation/Test
REQ-12.05.04-TS-0106.0035	EFSS Clearance Types: hold	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'hold'	Real time simulation/Test
REQ-12.05.04-TS-0106.0036	EFSS Clearance Types: lineup	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'lineup'	Real time simulation/Test
REQ-12.05.04-TS-0106.0037	EFSS Clearance Types: conditional line-up'	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'conditional line-up'	Real time simulation/Test
REQ-12.05.04-TS-0106.0038	EFSS Clearance Types: take-off'	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'take-off'	Real time simulation/Test
REQ-12.05.04-TS-0106.0039	EFSS Clearance Types: abort take-off	Clearances may represent the normal set of clearances a controller gives to an aircraft, such as: 'abort take-off'	Real time simulation/Test
REQ-12.05.04-TS-0106.0040	EFSS Mistake correction	The iCWP EFS may enable the controller to correct a mistaken action, such as a wrongly given	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		clearance.	
REQ-12.05.04-TS-0107.0001	Modify control responsibility or Transfer control responsibility	The iCWP shall allow to modify the control responsibility for an aircraft, and transfer control responsibility to other operator roles. Transfer of control responsibility shall be possible trough any representation of the aircraft	Real time simulation/Test
REQ-12.05.04-TS-0107.0002	Transfer Traffic | Assume Traffic	Transfer of control responsibility shall consist of two actions: transfer (to transfer traffic to default next operator role) and assume (to assume traffic). The iCWP shall provide the controller with a way to indicate that transfer of control responsibility has been initiated on both giving and receiving control positions.	Real time simulation/Test
REQ-12.05.04-TS-0107.0003	Direct Transfer Traffic	The iCWP shall allow to transfer a flight to another controller role than planned in the predefined sequence. The iCWP shall allow to transfer control responsibility of any traffic to a control position different from the pre-defined one	Real time simulation/Test
REQ-12.05.04-TS-0107.0004	Transfer Traffic | Assume Traffic 2	After successful transfer of a flight to another controller role, it shall remain under control of the former controller until the latter assumes it, only after this acknowledgment the transfer will be considered as completed	Real time simulation/Test
REQ-12.05.04-TS-0107.0005	Coordination with ATM FDPS systems	The iCWP shall allow the operator to interface and coordinate with the approach movement plan processing system of the ATM at the airport	Real time simulation/Test
REQ-12.05.04-TS-0107.0006	EFSS Handover 1	The EFSS-iCWP within iCWP shall allow the handover of flight strips between controllers.	Real time simulation/Test
REQ-12.05.04-TS-0107.0007	EFSS Handover 3	An electronic handover shall transfer flight strips from one controller role to another and shall normally consist of two	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		actions: transfer and assume	
REQ-12.05.04-TS-0107.0008	EFSS Handover 5	All information on the iCWP flight strip shall be retained during handover.	Real time simulation/Test
REQ-12.05.04-TS-0107.0009	EFSS Handover 6	The iCWP shall allow the controller role that has the flight strip to transfer it to another role. After transfer, the flight strip shall remain under control of the former until the latter assumes it, which completes the handover.	Real time simulation/Test
REQ-12.05.04-TS-0107.0010	Mistaken transfer	The iCWP shall allow a controller to take back a flight strip that has been transferred by mistake, as long as it has not been assumed by the controller to whom it was transferred.	Real time simulation/Test
REQ-12.05.04-TS-0107.0011	Coordination support	The iCWP EFS shall support coordination between Clearance Delivery, Ground and Tower controller roles.	Real time simulation/Test
REQ-12.05.04-TS-0107.0012		The iCWP EFS shall permit controller roles to be combined at any physical working position.	Real time simulation/Test
REQ-12.05.04-TS-0108.0001	Manual Label Attribution	The iCWP may allow the controller to manually put the callsign in the label associated to a vehicle equipped with cooperative and not cooperative equipment.	Real time simulation/Test
REQ-12.05.04-TS-0108.0002	Display Airport Traffic Situation	The iCWP may provide at the controller traffic position and trajectory in graphical format with labels in order to locate each vehicle and visualise its progress	Real time simulation/Inspection
REQ-12.05.04-TS-0108.0003	Target Selection	The selection of an vehicle target may: a) Highlight all the available representations of that target b) Show the label in the appropriate selected format.	Real time simulation/Test
REQ-12.05.04-TS-		The iCWP may provide the controller with clear and visible	Real time simulation/

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
0108.0004		indication of a conflict alert as soon as the alert exists including, at the minimum, the identification of the involved vehicles, wherever present.	Inspection
REQ-12.05.04-TS-0108.0005	Move radar label	It may be possible to move a particular radar label anywhere on the radar image. The leader line may automatically extend and reposition to maintain the link between the label and the vehicle position symbol.	Real time simulation/Test
REQ-12.05.04-TS-0108.0006	Configure radar labels	The colours associated to vehicles may be different from the defined colours of arriving and departing traffic	Real time simulation/ Inspection
REQ-12.05.04-TS-0108.0007	Marking	The controller may be provided with a function to mark an aircraft or vehicle for herself / himself	Real time simulation/Test
REQ-12.05.04-TS-0108.0008	Display vehicle representation	Vehicle representation may be provided in a format helping the controller to locate and identify the traffic and to have direct access to essential information without unambiguos relation between traffic representation and information concerning that traffic.	Real time simulation/ Inspection
REQ-12.05.04-TS-0108.0009	Traffic Data – Mobile Transfer/Assume Control Responsibility	Visible indication of completion of a vehicle transfer/assume control responsibility may be provided on both assuming and transferring operator roles.	Real time simulation/Test
REQ-12.05.04-TS-0108.0010	Modify control responsibility or Transfer control responsibility	It may be possible to modify the control responsibility for a vehicle, and transfer control responsibility to other operator roles. The controller may be provided with a means to modify or transfer the control responsibility for a vehicle to other operator roles. Transfer of control responsibility may be possible trough any representation of the vehicle	Real time simulation/Test
REQ-12.05.04-TS-0108.0011	Transfer Traffic | Assume Traffic	After successful transfer of a vehicle to another controller role, it may remain under	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		control of the former controller until the latter assumes it, only after this acknowledgement the transfer will be considered as completed.	
REQ-12.05.04-TS-0108.0012	Classification of movement plan data	The iCWP may be able to present to controller the list of movement plans for all target present in movement area, according to this classification: - Vehicle list - Tow movement - Unknown movement	Real time simulation/Test
REQ-12.05.04-TS-0108.0013	Display of movement plan data: real time update	The iCWP may be able to update in real time, the information presented within the movement plan list, according to this classification: - Vehicle list - Tow movement - Unknown movement	Real time simulation/Test
REQ-12.05.04-TS-0109.0001	Feedback of performed action	The iCWP shall deliver a feedback about the success of the controlling actions.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0002	Alert Report Acquisition Requirements	The iCWP shall assign conflict responsibility to each working position depending on conflict type and the area where the conflict happens.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0003	Alert Report Acquisition Requirements	The iCWP shall allow the operator to assign conflict priorities depending on conflict type.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0004	Alert Report Acquisition Requirements	After start-up, the iCWP shall automatically acquire the existing alerting situation from Safety Net Server.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0005	Alert notification Requirements	The ASN iCWP shall display continuously alerts as long as related alert reports will come from SSN Server	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0006	Alert notification Requirements	After start-up, the iCWP shall automatically display the existing alerting situation in conformance with the existing alerting status of the Safety Net Server.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0007	Alert notification Requirements	The iCWP shall visually notify that an event is not valid any longer on every iCWP where the event was displayed, as soon as the information is provided by the Safety Net Server.	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0109.0008	Alert notification Requirements	The iCWP shall display the alert at least in the controller position responsible of area in which the conflict occur	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0009	Alert notification Requirements	The iCWP shall display the alerts in the track label, in an alert list and around the track symbol	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0010	Alert notification Requirements	The iCWP may display the alerts also on the electronic flight strips	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0011	Alert notification Requirements	The iCWP shall provide with a dedicated list to visualize alerts generated by the SSN server	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0012	Alert notification Requirements	The iCWP shall include in the alert list the identification of the involved traffic, if received in alert reports from SSN Server.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0013	Alert notification Requirements	The iCWP shall provide two stages of alert, according to SSN alert reports. These two stages are INFORMATION (less important) and ALARM (more important).	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0014	Alert notification Requirements	The iCWP shall present the ALARM alert firstly in the list visualisation	Real Time Simulation/Test
REQ-12.05.04-TS-0109..0015	Alert notification Requirements	When the display of several alerts overlap, the iCWP shall always display in priority the alerts with the status ALARM.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0016	Alert notification Requirements	The iCWP may display conflicts involving aircrafts in a different way from conflicts involving vehicle.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0017	Alert notification Requirements	The iCWP shall trigger an audio signal for the ALARM alerts	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0018	Alert notification Requirements	The iCWP shall stop the audio signal when the related alert situation is not valid any longer or when the alert is acknowledged/muted by the user.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0019	Alert notification Requirements	The iCWP shall provide with the alerts related to runway conflicts always in foreground and never be hidden by other information	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0020	Alert notification Requirements	The iCWP shall allow the acknowledgment of alerts, hiding them only on the controller position in which the acknowledgment has performed.	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0109.0021	Activate / Deactivate Stop bars	The controller may be provided to manually activate or de-activate stop bars.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0022	Status of the stop bar	The status of stop bars may be clearly and visually indicated to the controller as activated, de-activated, failure.	Real Time Simulation/Test
REQ-12.05.04-TS-0109.0023	Conflict Alert Priorities	Priorities may be established to ensure that Aerodrome ATC system logic performs. Conflict alerting priorities may be as follows: a) Runway incursions b) Restricted area incursions	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0001	Routing/Planning requests	The iCWP shall allow controller to send requests as: • route • route change • destination update • intermediate waypoints definition taxi routes clearances	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0002	Route display	The iCWP shall allow controller to display the planned routes.	Real Time Simulation/Inspection
REQ-12.05.04-TS-0110.0003	Route Presentation	The iCWP shall present taxi route information graphically on the Traffic Situation Display (or textually on the EFS Display).	Real Time Simulation/ Inspection
REQ-12.05.04-TS-0110.0004	DMAN - Tower Delivery Controller iCWP Requirements	The iCWP shall inform Tower Delivery controllers about the following situations: - According to current TSAT, it's too early to issue departure clearance; - According to current TSAT, departure clearance can be issued. It's too early to issue start-up clearance; - According to current TSAT, start-up clearance can be issued. The flight is currently removed from the sequence	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0005	DMAN - Tower Delivery Controller iCWP Requirements	The iCWP shall allow controllers: - To manually remove any flight from the sequence. - To manually re-sequence any flight - To insert a flight manually in the Pre-Departure Sequence by entering a TSAT for the concerned flight. -To sort the flights according to	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		various criteria, e.g.: TSAT, Call signs	
REQ-12.05.04-TS-0110.0006	DMAN Clearance Delivery	The iCWP shall present the following data on the same display than the one used by the controller to enter clearances in the Aerodrome ATC system: - TSAT for start-up clearances - TTOT for take-off clearances	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0007	DMAN Clearance Delivery	The iCWP shall indicate specifically when a start-up clearance can be issued according to the TSAT, this indication is on the same display than the TSAT.	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0008	DMAN Clearance Delivery	The iCWP shall highlight to the controller any changes performed by the Aerodrome ATC system to the TSAT and TTOT	Real Time Simulation/Test
REQ-12.05.04-TS-0110.0009	Conflict Detection and Alerting	An alert associated with a detected conflict may be provided with an adequate time and brought to the attention of the controller (ALARM coding). An alert associated with a predicted conflict (INFORMATION coding) may also be provided.	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0001	Clearance Requests from on-board system	The iCWP shall be able to present to the controller clearance requests from the on-board systems.	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0002	Acknowledgements from ground system	The iCWP shall allow to acknowledge clearance requests to the on-board systems.	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0003	Clearance to on-board system	The iCWP shall allow to sent clearances to the on-board systems.	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0004	Clearance acknowledgements from the on-board systems	The iCWP shall be able to display clearances acknowledgements from the on-board systems	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0005	Provision of guidance information to pilots	The iCWP shall allow the controller to provide guidance information to pilots: 1)Start-up (Clearance and Time) 2)Push-Back (Clearance and Time) 3)Taxi (cleared ground route) 4)Taxi revision (updated cleared ground route)	Real Time Simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0111.0006	Unique identification Data link	The iCWP shall permit to identify uniquely the end-user in a datalink handshake	Real Time Simulation/Test
REQ-12.05.04-TS-0111.0007	Message display	The iCWP shall allow to display guidance messages.	Real Time Simulation/Test
REQ-12.05.04-TS-0201.0001	iCWP modularity	The iCWP design shall be modular in the sense that no major design change shall be necessary to meet specific operational requirements of an aerodrome.	Real time simulation/Test
REQ-12.05.04-TS-0201.0002	Components	The iCWP equipment shall comprise hardware and software modules.	Real time simulation/Test
REQ-12.05.04-TS-0201.0003	COTS technology	The iCWP shall be based as far as practicable on commercial off-the-shelf (COTS) hardware.	Real time simulation/Test
REQ-12.05.04-TS-0201.0004	Design	Any element design (of the iCWP) shall comply with the "modularity concept	Real time simulation/Test
REQ-12.05.04-TS-0201.0005	Service levels at different aerodromes	The iCWP shall be modular so that the appropriate level of service can be provided to different aerodromes as well as to different areas of an aerodrome.	Real time simulation/Test
REQ-12.05.04-TS-0202.0001	iCWP	The iCWP shall be such that further components can be added in order to expand the Aerodrome ATC system in terms of functionality and numbers of users	Real time simulation/Test
REQ-12.05.04-TS-0202.0002	System dimension at different aerodromes	The iCWP shall be dimensioned according to the needs of different aerodromes	Real time simulation/Test
REQ-12.05.04-TS-0202.0003	System dimension according to number of users	The iCWP shall be expandable in terms of functionality.	Real time simulation/Test
REQ-12.05.04-TS-0203.0001	Adaptability to local procedures and working methods	Adaptation of the equipment to different local site configurations, procedures and working methods shall be done through an appropriate database (sensor positions, airport topography/topology,	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
		etc.).	
REQ-12.05.04-TS-0203.0002	Adaptability to ATC procedures	The iCWP services shall be configurable to adapt to local ATC procedures and working methods.	Real time simulation/Test
REQ-12.05.04-TS-0203.0003	iCWP adaptability	The iCWP design shall take into account the working environment of the user under all operational conditions. Note: As an example, good visibility operations with high traffic throughput will require a different Aerodrome ATC system's set-up than that required for low visibility operations with reduced throughput.	Real time simulation/Test
REQ-12.05.04-TS-0204.0001	Layout change	The iCWP architecture shall be configurable in order to accommodate any change in the layout of the aerodrome (runways, taxiways and aprons), without modifying the core processing.	Real time simulation/Test
REQ-12.05.04-TS-0205.0001	iCWP Harmonization	The iCWP may be harmonized where possible with existing ATM iCWP. Note: ATM iCWP may be specific to each local implementation.	Real time simulation/Test
REQ-12.05.04-TS-0301.0001	Map Accuracy	The accuracy of all map information to be presented on the iCWP display(s) shall be 1m or better.	Real time simulation/Analysis
REQ-12.05.04-TS-0301.0002	Position Registration Accuracy	The position registration accuracy of all information presented on the iCWP display(s) shall be one pixel.	Real time simulation/Analysis
REQ-12.05.04-TS-0302.0001	Target Display Latency	The target Display Latency shall not exceed 500ms	Real time simulation/Analysis
REQ-12.05.04-TS-0302.0002	Response time to Operator Input	The response time to the operator Input shall not exceed 250ms on average and shall never exceed 500ms	Real time simulation/Analysis
REQ-12.05.04-TS-0400.0001	Acknowledge of alert messages	The iCWP shall allow the controller to acknowledge the visual and sound alert messages. The acknowledgment of alerts may not impact the safety situation.	Real Time Simulation/Test
REQ-12.05.04-TS-	Conflict Detection	The use of aural signal may be restricted to highly critical	Real Time

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
0400.0004	and Alerting	events requiring immediate action.	Simulation/Test
REQ-12.05.04-TS-0400.0005	Conflict Detection and Alerting	The iCWP shall provide the controller with clear and visible indication of a conflict alert.	Real Time Simulation/Test
REQ-12.05.04-TS-0400.0006	Conflict Detection and Alerting	Alerts may always be associated with a visual signal	Real Time Simulation/Test
REQ-12.05.04-TS-0901.0001	Use of ASTERIX format	The iCWP shall be able to receive and decode reports from surveillance sensor systems, using ASTERIX data format.	Real time simulation/Test
REQ-12.05.04-TS-0901.0002	Interface with Aerodrome ATC systems	In order to fully benefit from an A-AERODROME ATC SYSTEM by all parties concerned, the iCWP may be capable of interfacing with the following: a) air traffic management (ATM); b) aerodrome management systems; c) existing and future ATS systems; d) meteorological systems; e) visual aids; f) aircraft operators; g) emergency authorities.	Real time simulation/Test
REQ-12.05.04-TS-0901.0003	Physical interfaces	It shall be possible to connect each iCWP to the physical interface used by the other Aerodrome ATC sub-systems: this connection will normally depend on what is available on the airport's existing equipment.	Real time simulation/Test
REQ-12.05.04-TS-0901.0004	Protocols and data format	The iCWP may use the following OSI protocols to interface external systems: At the Physical Layer, IEEE 802.3/802.3u (Ethernet 10BaseT/100BaseTX) • At the Network Layer, Internet Protocol (IP) • At the Transport Layer, User Datagram Protocol (UDP) for surveillance target reports and other time-critical data, and Transport Control Protocol (TCP) for more secure, but less time-critical, data transmission	Real time simulation/Test
REQ-12.05.04-TS-0901.0005	Reference clock	The iCWP shall be synchronized to the airport reference clock system	Real time simulation/Test
REQ-12.05.04-TS-	Interface to ATM	The iCWP shall interface the flight data processing system of	Real time

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
0902.0001	FDPS system	the ATM at the airport	simulation/Test
REQ-12.05.04-TS-0902.0002	Interface to ATM FDPS system: forward of clearances for departures	The iCWP shall interface the ATM FDP system to forward departure / start-up / push-back and taxi clearances	Real time simulation/Test
REQ-12.05.04-TS-0903.0001	Interface to AERODROME ATCsurveillance system	The iCWP shall interface the AERODROME ATCsurveillance system	Real time simulation/Test
REQ-12.05.04-TS-0903.0002	Use of ASTERIX format for AERODROME ATC SYSTEM systems	The iCWP shall be able to receive and decode the SDF output in the ASTERIX CAT 011 or CAT062/CAT063 data format	Real time simulation/Test
REQ-12.05.04-TS-0904.0001	Interface to approach system	The iCWP shall interface any approach surveillance system (terminal radars)	Real time simulation/Test
REQ-12.05.04-TS-0904.0002	Use of ASTERIX to interface approach systems	The iCWP shall be able to receive and decode input target report data from approach in the ASTERIX CAT001, CAT002, CAT 034, CAT 048, CAT 062 and CAT 063 data formats, in accordance with local requirements	Real time simulation/Test
REQ-12.05.04-TS-0905.0001	Use of ASTERIX cat 10 for MLAT	The iCWP shall be able to receive and decode input target report from MLAT in the ASTERIX CAT 10 formats	Real time simulation/Test
REQ-12.05.04-TS-0905.0002	Use of ASTERIX cat 21 for ADSB	The iCWP shall be able to receive and decode input target report from ADSB in the ASTERIX CAT 21 formats	Real time simulation/Test
REQ-12.05.04-TS-0906.0001	Use of ASTERIX cat 10 format	The iCWP shall be able to receive and decode SMR reports and other non-cooperative ground sensor systems using ASTERIX CAT010 data format	Real time simulation/Test
REQ-12.05.04-TS-0907.0001	Interface to routing/planning function: data forwarded	The iCWP function shall interface with Routing/Planning function to forward • route for a mobile • route change • destination update • intermediate waypoints definition • taxi routes clearances.	Real time simulation/Test
REQ-12.05.04-TS-0908.0001	Interface to RAM function	The iCWP shall be able to interface the DMAN function in order to perform the Runway Allocation Management (RAM) capability	Real time simulation/Test

Requirement Identifier	Requirement title	Requirement description	Validation / Verification Method
REQ-12.05.04-TS-0908.0002	Interface to DMAN SM function	The iCWP shall be able to interface the DMAN function in order to perform the Sequence Management (SM) capability	Real time simulation/Test
REQ-12.05.04-TS-0909.0001	Interface with guidance system	The iCWP shall interface the guidance system	Real time simulation/Test
REQ-12.05.04-TS-0909.0002	Interface with Guidance system: data forwarded	The iCWP shall interface the guidance function to: • Send request acknowledgements • Send clearance acknowledgements	Real time simulation/Test
REQ-12.05.04-TS-0909.0003	Interface with Guidance system: data received	The iCWP shall interface the guidance function to: • Receive taxi routes requests • Receive clearance requests	Real time simulation/Test

Table 11: TS requirements / Validation & Verification Methods

The following table syntheses the traceability between TS requirements and the Operational requirements come from the draft OSED [24]. It not assures the full compliance between TS and OSED requirement.

TS Requirement		Operational Requirement from OSED	
Identifier	Title	Identifier	Title
REQ-12.05.04-TS-0101.0001	Login	REQ-06.09.02-OSED- LOG.0001	Logging in the CWP
REQ-12.05.04-TS-0101.0002	Logout	NA	NA
REQ-12.05.04-TS-0101.0003	Stored screen settings	REQ-06.09.02-OSED-SET.0004	Access to stored screen settings
REQ-12.05.04-TS-0101.0004	Default settings	REQ-06.09.02-OSED-SET.0005	Default settings
REQ-12.05.04-TS-0101.0005	Input Devices	REQ-06.09.02-OSED-SET.0007	A-iCWP users
REQ-12.05.04-TS-0101.0006	Zoom setting	REQ-06.09.02-OSED-ZOO.0001	Zoom
REQ-12.05.04-TS-0101.0007	Zoom storage	REQ-06.09.02-OSED-ZOO.0002	Zoom settings
REQ-12.05.04-TS-0101.0008	Anti-overlap function	REQ-06.09.02-OSED-POS-0001	Positioning
REQ-12.05.04-TS-0101.0009	Track Label Orientation	REQ-06.09.02-OSED-POS-0010 REQ-06.09.02-OSED-POS-0012 REQ-06.09.02-OSED-POS-0013	Label Position Label Orientation Label Orientation
REQ-12.05.04-TS-0101.0010	Leader line	REQ-06.09.02-OSED-POS-0011 REQ-06.09.02-OSED-POS-0005	Length of Leader Line Positioning
REQ-12.05.04-TS-0101.0011	Label Positioning	REQ-06.09.02-OSED-POS-0004	Positioning
REQ-12.05.04-TS-0101.0012	Label Positioning	REQ-06.09.02-OSED-POS-0008	Positioning
REQ-12.05.04-TS-0101.0013	Textual Data	REQ-06.09.02-OSED-LIS-0001	Lists - Grouping
REQ-12.05.04-TS-	Airport Layout – Zoom	NA	NA

0101.0014	– Store Settings		
REQ-12.05.04- TS -0102.0001	Display parking names	NA	NA
REQ-12.05.04- TS -0102.0002	Display taxiway names	NA	NA
REQ-12.05.04- TS -0102.0003	Display working areas	NA	NA
REQ-12.05.04- TS -0102.0004	Display RWYs restricted areas	NA	NA
REQ-12.05.04- TS -0102.0005	Display air video map	NA	NA
REQ-12.05.04- TS -0102.0006	Display time	REQ-06.09.02-OSED-TIM-0001	UTC time
REQ-12.05.04- TS -0102.0007	Obtain Range and Bearing information	REQ-06.09.02-OSED-R&B-0001	Range and Bearing
REQ-12.05.04- TS -0102.0008	Obtain Range and Bearing information	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0009	Obtain Range and Bearing information	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0010	Create Range and Bearing Tracker Link	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0011	Create Range and Bearing Tracker Link	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0012	Create Range and Bearing Tracker Link	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0013	Cancel Range and Bearing Tracker Link	REQ-06.09.02-OSED-R&B-0002 REQ-06.09.02-OSED-R&B-0003	Range and Bearing Range and Bearing
REQ-12.05.04- TS -0102.0014	Deconflict labels automatically |	REQ-06.09.02-OSED-POS-0001	Positioning

	Deconflict labels manually		
REQ-12.05.04- TS -0102.0015	Set leader direction	REQ-06.09.02-OSED-POS-0012 REQ-06.09.02-OSED-POS-0004	Label Orientation Positioning
REQ-12.05.04- TS -0102.0016	Set leader length	REQ-06.09.02-OSED-POS-0011 REQ-06.09.02-OSED-POS-0005	Length of Leader Line Positioning
REQ-12.05.04- TS -0102.0017	Move radar label	REQ-06.09.02-OSED-POS-0006	Positioning
REQ-12.05.04- TS -0102.0018	Resume label position	NA	NA
REQ-12.05.04-TS-0102.0019	Set speed vectors value	REQ-06.09.02-OSED-VEC-0001	Speed Vector
REQ-12.05.04-TS-0102.0020	Set speed vectors value	REQ-06.09.02-OSED-VEC-0001	Speed Vector
REQ-12.05.04-TS-0102.0021	Display track symbol	REQ-06.09.02-OSED-TRK.0001	Aircraft vs Vehicle
REQ-12.05.04-TS-0102.0022	Set track history value	REQ-06.09.02-OSED-TRK.0004	Aircraft Trail Dots
REQ-12.05.04-TS-0102.0023	Configure radar labels	REQ-06.09.02-OSED-LBL-0001	Label configuration
REQ-12.05.04-TS-0102.0024	Configure radar labels	REQ-06.09.02-OSED-LBL-0001	Label configuration
REQ-12.05.04-TS-0102.0025	Configure radar labels	REQ-06.09.02-OSED-LBL-0002	Label minimum information
REQ-12.05.04-TS-0102.0026	Filter tracks	REQ-06.09.02-OSED-FIL-0001	Filtering
REQ-12.05.04-TS-0102.0027	Marking	REQ-06.09.02-OSED-HIG-0001	Highlighting
REQ-12.05.04-TS-0102.0028	Select an individual aircraft	REQ-06.09.02-OSED-SEL-0001	Highlighting
REQ-12.05.04-TS-0102.0029	Deselect an individual aircraft	REQ-06.09.02-OSED-SEL-0001	Highlighting
REQ-12.05.04-TS-0102.0030	Display aircraft representation	REQ-06.09.02-OSED-DIS-0001	Representation
REQ-12.05.04-TS-	Display aircraft	REQ-06.09.02-OSED-DIS-0002	Updating of presented data

0102.0031	representation		
REQ-12.05.04-TS-0102.0032	Display aircraft representation	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0102.0033	Display Traffic Data List	NA	NA
REQ-12.05.04-TS-0102.0034	Display Traffic Data List	REQ-06.09.02-OSED-LIS-0001 REQ-06.09.02-OSED-LIS-0002	Lists – Grouping Lists
REQ-12.05.04-TS-0102.0035	Expand Traffic data item	REQ-06.09.02-OSED-LIS-0003 REQ-06.09.02-OSED-LIS-0004 REQ-06.09.02-OSED-LIS-0005 (all partly)	Arrival flight Departing flight Towed aircraft
REQ-12.05.04-TS-0102.0036	Expand Traffic data item	REQ-06.09.02-OSED-LIS-0006 REQ-06.09.02-OSED-LIS-0007	Manual traffic data items sorting Automatic traffic data items sorting
REQ-12.05.04-TS-0102.0037	Expand Traffic data item	REQ-06.09.02-OSED-LIS-0009	Traffic data items creation
REQ-12.05.04-TS-0102.0038	Traffic Data sets	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0102.0039	Traffic Data sets – Visual Presentation	NA	NA
REQ-12.05.04-TS-0102.0040	Traffic indication	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0102.0041	Traffic indication	REQ-06.09.02-OSED-DIS-0003 REQ-06.09.02-OSED-DIS-0004 REQ-06.09.02-OSED-DIS-0005	Traffic indication –Pending Traffic indication – Assumed Traffic indication – Transferred Out
REQ-12.05.04-TS-0102.0042	Traffic indication	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0102.0043	Traffic indication	REQ-06.09.02-OSED-LIS-0008	Traffic data items movement

		REQ-06.09.02-OSED-LIS-0009 REQ-06.09.02-OSED-LIS-0006 REQ-06.09.02-OSED-LIS-0007	Traffic data items creation Manual traffic data items sorting Automatic traffic data items sorting
REQ-12.05.04-TS-0102.0044	Airport Traffic Situation	REQ-06.09.02-OSED-PIC-0001	Air Radar Picture
REQ-12.05.04-TS-0102.0045	Conflict Detection and Alerting	NA	NA
REQ-12.05.04-TS-0103.0001	Minimum weather information: surface wind direction and strength	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0002	Minimum weather information: QNH (mb).	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0003	Minimum weather information: ATIS code	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0004	Minimum weather information: temperature	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0005	Minimum weather information: dew point	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0006	Minimum weather information: RVR	REQ-06.09.02-OSED- WEA.0002 REQ-06.09.02-OSED- WEA.0001	Minimum display of Weather Data Access to Weather and Advisory Information

REQ-12.05.04-TS-0103.0007	Additional weather information: visibility	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0008	Additional weather information: current weather	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0009	Additional weather information: cloud ceiling	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0010	Additional weather information: QFE	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0011	Current Date	NA	NA
REQ-12.05.04-TS-0103.0012	Current time	REQ-06.09.02-OSED-TIM-0001	Current time
REQ-12.05.04-TS-0103.0013	METAR information	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0103.0014	TAF information	REQ-06.09.02-OSED- WEA.0001	Access to Weather and Advisory Information
REQ-12.05.04-TS-0104.0001	Airport Layout – Airport Maps	NA	NA
REQ-12.05.04-TS-0104.0002	Airport Layout – Runways/Taxiways Status	REQ-06.09.02-OSED- APT.0007 REQ-06.09.02-OSED- APT.0006	Activation/deactivation of Taxiways Activation/deactivation of Runways
REQ-12.05.04-TS-0104.0003	Airport Layout – Ground Situation Display	NA	NA
REQ-12.05.04-TS-0104.0004	Airport Layout – Runway Occupation	NA	NA
REQ-12.05.04-TS-0104.0005	Airport Layout – Zoom – Airport/APP/En-route Scale	NA	NA
REQ-12.05.04-TS-0104.0006	Airport Layout – Zoom - Situation Display Range	NA	NA
REQ-12.05.04-TS-0104.0007	Airport Layout – Zoom – Retrieve Settings	NA	NA
REQ-12.05.04-TS-0104.0008	Airport Layout – Zoom – Delete Settings	NA	NA
REQ-12.05.04-TS-0104.0009	Airport Layout – Zoom - Center Situation	NA	NA

	Display		
REQ-12.05.04-TS-0104.0010	Airport Layout – Geographical Orientation	NA	NA
REQ-12.05.04-TS-0104.0011	Airport Layout – Labelled target tracks	NA	NA
REQ-12.05.04-TS-0105.0001	Traffic Data – Flight available options	REQ-06.09.02-OSED-ZOO.0001	Zoom
REQ-12.05.04-TS-0105.0002	Traffic Data – Flight cancelled or delayed	REQ-06.09.02-OSED-ZOO.0001	Zoom
REQ-12.05.04-TS-0105.0003	Traffic Data – Arrival Flight RWY Display	NA	NA
REQ-12.05.04-TS-0105.0004	Traffic Data – Arrival Flight GND Display	NA	NA
REQ-12.05.04-TS-0105.0005	Traffic Data – Departure Flight GND Display	NA	NA
REQ-12.05.04-TS-0105.0006	Traffic Data – Mobile Transfer/Assume Control Responsibility	NA	NA
REQ-12.05.04-TS-0105.0007	Traffic Data – Traffic Update	REQ-06.09.02-OSED-DIS-0001	Representation
REQ-12.05.04-TS-0105.0008	Traffic Data – Traffic Situation	REQ-06.09.02-OSED-DTE.0003	Data Update
REQ-12.05.04-TS-0106.0001	Manual creation of a new flight plan	REQ-06.09.02-OSED-LIS-0009 REQ-06.09.02-OSED- VEH.0008	Traffic data items creation Towed Flight Plan creation
REQ-12.05.04-TS-0106.0002	System assistance at manual flight plan creation	NA	NA
REQ-12.05.04-TS-0106.0003	Manual flight plan update or delete	REQ-06.09.02-OSED- TFC.0015 REQ-06.09.02-OSED- TFC.0022 REQ-06.09.02-OSED- TFC.0023 REQ-06.09.02-OSED-DTE.0002 REQ-06.09.02-OSED-DTE.0003	Update Traffic Data Update Traffic Data Update Traffic Data Data Update Data Update

REQ-12.05.04-TS-0106.0004	Manual display of flight plan data	REQ-06.09.02-OSED-LIS-0003 REQ-06.09.02-OSED-LIS-0004 REQ-06.09.02-OSED-LIS-0005	Arrival flight Departing flight Towed aircraft
REQ-12.05.04-TS-0106.0005	Manual modification of flight plan data	REQ-06.09.02-OSED- TFC.0015 REQ-06.09.02-OSED- TFC.0022 REQ-06.09.02-OSED- TFC.0023 REQ-06.09.02-OSED-DTE.0002 REQ-06.09.02-OSED-DTE.0003	Update Traffic Data Update Traffic Data Update Traffic Data Data Update Data Update
REQ-12.05.04-TS-0106.0006	Update of flight plan data received from FDPS system	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0106.0007	Classification of flight plan data	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0106.0008	Display of flight plan data: real time update	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0106.0009	Display and storing of flight plan data, after manual identification	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0106.0010	Remove of flight plan identification data: manual de-assign function	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0106.0011	Real time display of updated FPL routing data	REQ-06.09.02-OSED-DIS-0002	Updating of presented data
REQ-12.05.04-TS-0106.0012	Support to DMAN from EFSS system	REQ-06.09.02-OSED- TFC.0015	Update Traffic Data
REQ-12.05.04-TS-0106.0013	Reception of DMAN data to EFSS system	REQ-06.09.02-OSED-LIS-0004 REQ-06.09.02-OSED-LIS-0005	Departing flight Towed aircraft
REQ-12.05.04-TS-0106.0014	EFSS Display	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0106.0015	EFSS Configurability	NA	NA

REQ-12.05.04-TS-0106.0016	EFSS data format	NA	NA
REQ-12.05.04-TS-0106.0017	EFSS Additional Data	REQ-06.09.02-OSED- FPL.0002	Display Flight plan data
REQ-12.05.04-TS-0106.0018	EFSS Special Fields	NA	NA
REQ-12.05.04-TS-0106.0019	EFSS Responsibility	REQ-06.09.02-OSED-DIS-0003 REQ-06.09.02-OSED-DIS-0004 REQ-06.09.02-OSED-DIS-0005	Traffic indication –Pending Traffic indication – Assumed Traffic indication – Transferred Out
REQ-12.05.04-TS-0106.0020	EFSS grouping	REQ-06.09.02-OSED-LIS-0001	Lists - Grouping
REQ-12.05.04-TS-0106.0021	EFSS Sorting criteria	REQ-06.09.02-OSED-LIS-0006 REQ-06.09.02-OSED-LIS-0007	Manual traffic data items sorting Automatic traffic data items sorting
REQ-12.05.04-TS-0106.0022	EFSS Manual interaction	REQ-06.09.02-OSED-LIS-0008	Traffic data items movement
REQ-12.05.04-TS-0106.0023	EFSS editing	REQ-06.09.02-OSED- TFC.0015 REQ-06.09.02-OSED- TFC.0022 REQ-06.09.02-OSED- TFC.0023 REQ-06.09.02-OSED-DTE.0002 REQ-06.09.02-OSED-DTE.0003	Update Traffic Data Update Traffic Data Update Traffic Data Data Update Data Update
REQ-12.05.04-TS-0106.0024	EFSS Bay Area	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0106.0025	EFSS Bay configurability	NA	NA
REQ-12.05.04-TS-0106.0026	EFSS initialization	NA	NA
REQ-12.05.04-TS-0106.0027	EFSS Clearance Input	NA	NA

REQ-12.05.04-TS-0106.0028	EFSS Clearance Types: cleared to land	REQ-06.09.02-OSED- TFC.0001	Cleared to Land instruction
REQ-12.05.04-TS-0106.0029	EFSS Clearance Types: go-around	REQ-06.09.02-OSED- TFC.0002	Go-around instruction
REQ-12.05.04-TS-0106.0030	EFSS Clearance Types: vacate	REQ-06.09.02-OSED- TFC.0003	Vacate runway instruction
REQ-12.05.04-TS-0106.0031	EFSS Clearance Types: cross	REQ-06.09.02-OSED- TFC.0017	Cross runway instruction
REQ-12.05.04-TS-0106.0032	EFSS Clearance Types: taxi	REQ-06.09.02-OSED- TFC.0004	Taxi instruction
REQ-12.05.04-TS-0106.0033	EFSS Clearance Types: start-up	REQ-06.09.02-OSED- TFC.0005	Start-up instruction
REQ-12.05.04-TS-0106.0034	EFSS Clearance Types: push-back	REQ-06.09.02-OSED- TFC.0006	Pushback instruction
REQ-12.05.04-TS-0106.0035	EFSS Clearance Types: hold	REQ-06.09.02-OSED- TFC.0007	Hold instruction
REQ-12.05.04-TS-0106.0036	EFSS Clearance Types: lineup	REQ-06.09.02-OSED- TFC.0008	Line-up instruction
REQ-12.05.04-TS-0106.0037	EFSS Clearance Types: conditional line-up’	REQ-06.09.02-OSED- TFC.0008	Line-up instruction
REQ-12.05.04-TS-0106.0038	EFSS Clearance Types: take-off’	REQ-06.09.02-OSED- TFC.0010	Cleared for take-off instruction
REQ-12.05.04-TS-0106.0039	EFSS Clearance Types: abort take-off	REQ-06.09.02-OSED- TFC.0011	Abort take-off instruction
REQ-12.05.04-TS-0106.0040	EFSS Mistake correction	REQ-06.09.02-OSED- TFC.0013	Cancel order/instruction
REQ-12.05.04-TS-0107.0001	Modify control responsibility or Transfer control responsibility	REQ-06.09.02-OSED- C&T.0001	Coordination and Transfer
REQ-12.05.04-TS-0107.0002	Transfer Traffic | Assume Traffic	REQ-06.09.02-OSED- C&T.0010	Coordination and Transfer
REQ-12.05.04-TS-0107.0003	Direct Transfer Traffic	REQ-06.09.02-OSED- C&T.0001	Coordination and Transfer
REQ-12.05.04-TS-0107.0004	Transfer Traffic | Assume Traffic 2	REQ-06.09.02-OSED- C&T.0002	Coordination and Transfer
REQ-12.05.04-TS-0107.0005	Coordination with ATM FDPS systems	REQ-06.09.02-OSED- C&T.0001	Coordination and Transfer

REQ-12.05.04-TS-0107.0006	EFSS Handover 1	REQ-06.09.02-OSED- C&T.0001	Coordination and Transfer
REQ-12.05.04-TS-0107.0007	EFSS Handover 3	REQ-06.09.02-OSED- C&T.0001 REQ-06.09.02-OSED- C&T.0003	Coordination and Transfer
REQ-12.05.04-TS-0107.0008	EFSS Handover 5	REQ-06.09.02-OSED- C&T.0001	Coordination and Transfer
REQ-12.05.04-TS-0107.0009	EFSS Handover 6	REQ-06.09.02-OSED- C&T.0002	Coordination and Transfer
REQ-12.05.04-TS-0107.0010	Mistaken transfer	REQ-06.09.02-OSED- TFC.0013	Cancel order/instruction
REQ-12.05.04-TS-0107.0011	Coordination support	REQ-06.09.02-OSED- C&T.0005 REQ-06.09.02-OSED- C&T.0006 REQ-06.09.02-OSED- C&T.0007	Coordination and Transfer
REQ-12.05.04-TS-0107.0012	Combined roles	NA	NA
REQ-12.05.04-TS-0108.0001	Manual Label Attribution	REQ-06.09.02-OSED-LBL-0007	Label minimum information
REQ-12.05.04-TS-0108.0002	Display Airport Traffic Situation	NA	NA
REQ-12.05.04-TS-0108.0003	Target Selection	REQ-06.09.02-OSED-HIG-0001 REQ-06.09.02-OSED-DIS-0001 REQ-06.09.02-OSED-LBL-0005	Highlighting Representation Label Layout
REQ-12.05.04-TS-0108.0004	Conflict alert- vehicle	NA	NA
REQ-12.05.04-TS-0108.0005	Move radar label	REQ-06.09.02-OSED-POS-0011	Length of Leader Line
REQ-12.05.04-TS-0108.0006	Configure radar labels	REQ-06.09.02-OSED-TRK.0001 REQ-06.09.02-OSED-LBL-0005	Aircraft vs Vehicle Label Layout
REQ-12.05.04-TS-0108.0007	Marking	REQ-06.09.02-OSED-HIG-0001	Highlighting
REQ-12.05.04-TS-0108.0008	Display vehicle representation	REQ-06.09.02-OSED-DIS-0001	Representation

REQ-12.05.04-TS-0108.0009	Traffic Data – Mobile Transfer/Assume Control Responsibility	REQ-06.09.02-OSED-DIS-0005 REQ-06.09.02-OSED- VEH.0003	Traffic indication – Transferred Out Assume a vehicle
REQ-12.05.04-TS-0108.0010	Modify control responsibility or Transfer control responsibility	NA	NA
REQ-12.05.04-TS-0108.0011	Transfer Traffic | Assume Traffic	REQ-06.09.02-OSED-LIS-0002	Lists
REQ-12.05.04-TS-0108.0012	Classification of movement plan data	NA	NA
REQ-12.05.04-TS-0108.0013	Display of movement plan data: real time update	NA	NA
REQ-12.05.04-TS-0109.0001	Feedback of performed action	REQ-06.09.02-OSED- TFC.0021	A-iCWP behaviour
REQ-12.05.04-TS-0109.0002	Alert Report Acquisition Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0003	Alert Report Acquisition Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0004	Alert Report Acquisition Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0005	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0006	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0007	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0008	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0009	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0010	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0011	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0012	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0013	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP

REQ-12.05.04-TS-0109.0014	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109..0015	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0016	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0017	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0018	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0019	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0020	Alert notification Requirements	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0021	Activate / Deactivate Stop bars	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0022	Status of the stop bar	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0109.0023	Conflict Alert Priorities	REQ-06.09.02-OSED- WEA.0004	Parameters for LVP
REQ-12.05.04-TS-0110.0001	Routing/Planning requests	NA	NA
REQ-12.05.04-TS-0110.0002	Route display	NA	NA
REQ-12.05.04-TS-0110.0003	Route Presentation	NA	NA
REQ-12.05.04-TS-0110.0004	DMAN - Tower Delivery Controller iCWP Requirements	NA	NA
REQ-12.05.04-TS-0110.0005	DMAN - Tower Delivery Controller iCWP Requirements	NA	NA
REQ-12.05.04-TS-0110.0006	DMAN Clearance Delivery	NA	NA
REQ-12.05.04-TS-0110.0007	DMAN Clearance Delivery	NA	NA
REQ-12.05.04-TS-0110.0008	DMAN Clearance Delivery	NA	NA
REQ-12.05.04-TS-	Conflict Detection and	NA	NA

0110.0009	Alerting		
REQ-12.05.04-TS-0111.0001	Clearance Requests from on-board system	NA	NA
REQ-12.05.04-TS-0111.0002	Acknowledgements from ground system	NA	NA
REQ-12.05.04-TS-0111.0003	Clearance to on-board system	NA	NA
REQ-12.05.04-TS-0111.0004	Clearance acknowledgements from the on-board systems	NA	NA
REQ-12.05.04-TS-0111.0005	Provision of guidance information to pilots	NA	NA
REQ-12.05.04-TS-0111.0006	Unique identification Data link	NA	NA
REQ-12.05.04-TS-0111.0007	Message display	NA	NA
REQ-12.05.04-TS-0201.0001	iCWP modularity	NA	NA
REQ-12.05.04-TS-0201.0002	Components	NA	NA
REQ-12.05.04-TS-0201.0003	COTS technology	NA	NA
REQ-12.05.04-TS-0201.0004	Design	NA	NA
REQ-12.05.04-TS-0201.0005	Service levels at different aerodromes	NA	NA
REQ-12.05.04-TS-0202.0001	iCWP	NA	NA
REQ-12.05.04-TS-0202.0002	System dimension at different aerodromes	NA	NA
REQ-12.05.04-TS-0202.0003	System dimension according to number of users	NA	NA
REQ-12.05.04-TS-0203.0001	Adaptability to local procedures and working methods	NA	NA
REQ-12.05.04-TS-0203.0002	Adaptability to ATC procedures	NA	NA

REQ-12.05.04-TS-0203.0003	iCWP adaptability	NA	NA
REQ-12.05.04-TS-0204.0001	Layout change	NA	NA
REQ-12.05.04-TS-0205.0001	iCWP Harmonization	NA	NA
REQ-12.05.04-TS-0301.0001	Map Accuracy	NA	NA
REQ-12.05.04-TS-0301.0002	Position Registration Accuracy	NA	NA
REQ-12.05.04-TS-0302.0001	Target Display Latency	NA	NA
REQ-12.05.04-TS-0302.0002	Response time to Operator Input	NA	NA
REQ-12.05.04-TS-0400.0001	Acknowledge of alert messages	NA	NA
REQ-12.05.04-TS-0400.0004	Conflict Detection and Alerting	NA	NA
REQ-12.05.04-TS-0400.0005	Conflict Detection and Alerting	NA	NA
REQ-12.05.04-TS-0400.0006	Conflict Detection and Alerting	NA	NA
REQ-12.05.04-TS-0901.0001	Use of ASTERIX format	NA	NA
REQ-12.05.04-TS-0901.0002	Interface with Aerodrome ATC systems s	NA	NA
REQ-12.05.04-TS-0901.0003	Physical interfaces	NA	NA
REQ-12.05.04-TS-0901.0004	Protocols and data format	NA	NA
REQ-12.05.04-TS-0901.0005	Reference clock	NA	NA
REQ-12.05.04-TS-0902.0001	Interface to ATM FDPS system	NA	NA
REQ-12.05.04-TS-0902.0002	Interface to ATM FDPS system: forward of clearances for departures	NA	NA

REQ-12.05.04-TS-0903.0001	Interface to Aerodrome ATC surveillance system	NA	NA
REQ-12.05.04-TS-0903.0002	Use of ASTERIX format for Aerodrome ATC systems	NA	NA
REQ-12.05.04-TS-0904.0001	Interface to approach system	NA	NA
REQ-12.05.04-TS-0904.0002	Use of ASTERIX to interface approach systems	NA	NA
REQ-12.05.04-TS-0905.0001	Use of ASTERIX cat 10 for MLAT	NA	NA
REQ-12.05.04-TS-0905.0002	Use of ASTERIX cat 21 for ADSB	NA	NA
REQ-12.05.04-TS-0906.0001	Use of ASTERIX cat 10 format	NA	NA
REQ-12.05.04-TS-0907.0001	Interface to routing/planning function: data forwarded	NA	NA
REQ-12.05.04-TS-0908.0001	Interface to RAM function	NA	NA
REQ-12.05.04-TS-0908.0002	Interface to DMAN SM function	NA	NA
REQ-12.05.04-TS-0909.0001	Interface with guidance system	NA	NA
REQ-12.05.04-TS-0909.0002	Interface with Guidance system: data forwarded	NA	NA
REQ-12.05.04-TS-0909.0003	Interface with Guidance system: data received	NA	NA

Table 12: TS requirements / Operational requirements

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