Real Time Status Airspace TS

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Abstract

This document contains the Technical Specifications describing the Real Time Status of Airspace (RTSA) update process within Step1 and the interface to exchange such information among national/sub-regional ASM support tools, ATC and regional ATFCM systems, making it available to FOCs and WOCs at a very early stage in the airspace information sharing process.

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Executive summary

This document contains the Technical Specifications (TS) describing the Real Time Status of Airspace (RTSA) update process within Step1 and the interface to exchange such information among systems. It defines system requirements for the different systems involved as national/sub-regional ASM support systems, ATC system and regional, ATFCM systems. It contains both requirements for PCP delivery and specific prototypes' requirements, in a dedicated appendix, corresponding to the temporary solution used for VP710 validation exercise.

It describes the services (B2B) in AIXM [23] format in order to send, receive and process RTSA data between several systems as ASM support systems, NM, FOCs and WOCs. RTSA data will be available and displayed on the Control Working Position (CWP). The TS includes requirements for the data display on a HMI (with the support of 10.10.02) as well as the requirements related to the management of the Airspace Reservation (ARES) by the controllers. This management includes the proposal of activation, deactivation and some types of modification like the modification of the level bands, or the number of bands for ARES.

Furthermore this data will be made available to identified partners (FOC, WOC, AMC) for whom the update of planning data may be relevant and consequently used to support the decision making process between FOC/WOC ([25] AFUA FOC TS), AMC and NM.

This document also contains the technical specifications for interfacing ASM support systems allowing collaboration between arbitrary ASM support systems: it defines the interface as well as the data model to be used for communication.

In the case of connection between an ASM support system and an ATC System, 10.05.01 Technical Specification [10] has been taken as baseline, applicable requirements have been copied from that document and the identifiers of those requirements have been kept as 10.05.01.

This document also describes the ADEXP (which is a European standard used for communications between ATC systems) message used for the exchange of information between the ATC system and the ASM support system. This message exchange is a candidate to go through the standardization process.

1 Introduction

1.1 Purpose of the document

This document is the technical specification produced by the SESAR 07.05.04 project. It specifies the behaviour of the ATC system, ASM support systems and the NM system in relation of the dynamic booking of the airspace structure (ARES) within Step1, its visualisation on the ATC system (CWP) and the opportunity to make available the information to other partners (FOC, WOC, AMC) for whom the update of planning data may be relevant and, consequently, used to support the decision making process between FOC/WOC, AMC and NM actors.

This version takes into account SJU comments after the assessment as well as internal and external review comments.

1.2 Intended readership

The intended readership of this document is:

- SESAR 07.05.04 Project Team
  - To ensure that the systems implementation will fit with the needs of the OSED, INTEROP, SPR and the Validation exercise EXE-07.05.02-VP-710.
  - To describe the modifications needed in the impacted systems (ASM support system, NM and ATC systems)
  - To describe how client systems need to be adapted to be able to interact with NM.
  - To adjust planning of P07.05.04, e.g. especially regarding validation, in function of system deliverables.
- SESAR 07.02 Project Team
  - To review the technical specifications for alignment with the TAD.
- SESAR P08.03.10 Team
  - To review the technical specifications for alignment with ISRM
- SESAR 10.01.07 Project Team
  - To review the technical specifications for alignment with TAD.
- EUROCONTROL DNM Team
  - To have a good understanding of the needs of this particular SESAR project and to ensure that the implementation on NM systems is meeting the needs of the SESAR project.
  - To ensure that by the implementation on NM systems, the objectives of the Validation exercise EXE-07.05.02-VP-710 can be met.
- EUROCONTROL LARA Team
  - To confirm that the approach described is complete and correct for the purposes of a generic interface between disparate systems, including LARA
- SESAR P10.10.02 Team
  - To ensure the consistency of the HMI requirements.
- SESAR P11.01.03 Team
  - To review the technical specifications as users of the B2B services to receive and process RTSA data

1.3 Inputs from other projects

This document is relying on inputs coming from:

- SESAR P07.05.04 D45 OSED Step1 V3 [7]
- SESAR 07.05.04 D46 INTEROP Step1 V3 [8]
- SESAR 07.05.04 D47 SPR Step1 V3 [9]

translating these inputs into Technical Specifications.

This document also takes into account the TAD described in 10.01.07 [12] for the ATC part and the TAD described in 07.02 [11] for the ASM support systems and NM system parts.

For the communication between the ATC system and the ASM support system, both systems exchange ARESACT messages as described in 10.05.01-D05-Final System Requirements Edition 00.03.01 [10].

1.4 Structure of the document

This document has the following structure:

- Chapter 1: Purpose and scope; Requirements structure; Prototype purpose and high level overview
- Chapter 2: General Functional Block Description
- Chapter 3: Functional Block Functional and non-Functional Requirements
- Chapter 4: Assumptions
- Chapter 5: Referenced documents
- Appendix A: ASM-ASM Services definition
- Appendix B: Use Cases
- Appendix C: ARES-ACT ADEXP Message Structure
- Appendix D: 10.05.01 Requirements needed for the Data Pack of EXE-07.05.02-VP-710
- Appendix E: 10.05.01 Deleted System Requirements
- Appendix F: Data Types
- Appendix G: ASM-ASM Error Handling
- Appendix H: Technical Requirements

1.5 Requirements Definitions – General Guidance

The Requirement Identifier is based on the structure proposed by the SJU Requirements and V&V Guidelines [2]:

<Object type>.<Project code>-<Document code>-<Reference code>.<Reference number>

REQ-07.05.04-TS-***abcd.efgh***

Where:

- ***abc*** is the number of the deliverable in 3 digits (002, 003, 004...) where the requirement was created for the first time. For example, in case a requirement is for the first time specified in an initial requirements document and later re-used in a final version, it keeps the deliverable number of the first document to avoid duplication of the requirement.
- ***d*** is the Requirement Category (1, 2, 3, .., 8, 9)
  - 1 for functional/capability requirement
  - 2 for adaptability requirements
  - 3 for performance requirements
  - 4 for safety & security requirements

- 5 for maintainability requirements
- 6 for reliability requirements
- 7 for component internal data requirements
- 8 for design and construction requirements
- 9 for component interface requirements

- ***e*** is the Requirement Subcategory (1, 2, 3, .., 9):
  - 1 for RTSA data reception;
  - 2 for RTSA data processing;
  - 3 for RTSA data sharing;
  - 4 for RTSA data visualisation;
  - 5 for RTSA data content;
  - 6 for Impact assessment;
  - 7 for Post-Ops analysis.
  - 8 ASM-ASM Interface Requirements
  - 9 ATC HMI Requirements
- ***f*** is the system affected by the system requirement:
  - ***1*** for NM system
  - ***2*** for ASM Support tool
  - ***3*** for ATC System
- ***gh*** a Requirement Number. This will be a simple sequence number

- As 10.05.01 requirements should be in the data pack of EXE-07.05.02-VP-710, they have been all copied with 07.05.04 ones and updated the status to “Validated” when required.

1.6 Functional block Purpose

The ASM process has two important phases: the pre-tactical where all reservation requests (ARES) are managed by an authorized agency and the execution phase with updates of the real time activation, deactivation or modification of the airspace allocated in the planning phase.
The output of the first phase is the airspace use plan (AUP), published the day before operations. During the execution phase, several ASM/ATC systems have to be fed with ARES data. This is currently done mainly manually by copy/paste operations.

This TS covers several functional blocks from two different Domains (“Network Management – Airspace Management” and “En-Route/Approach ATC”) in order to specify requirements for enabling an automated data exchange of several systems dealing with ARES within AFUA context.

The high-level functional block “Cooperative Airspace Management” (as described in [11]) will provide all functions related to Airspace Management, at local, sub-regional and regional levels. These functions support the development and co-ordination of planning activities (at local and regional levels) related to the use of the Airspace (ATS Route Network and ATC Sector configuration), in both en-route and terminal airspace:

- The NM system will use RTSA data in order to allow improvement of the flight profile of the eligible flights that could take benefits from the new airspace status. It is especially relevant in case of non-usage of the airspace as initially planned (earlier deactivation or late activations as well as cancellation of the allocated ARES).

- The ASM support system will use these new functions to enable bi-national coordination at pre-tactical ASM level for a common area, called cross border area (CBA). It is planned to implement more CBAs within Europe in the coming years; thus makes it necessary to have a cross-border coordination process and common view on the reservation state.

- Indeed, the ASM support system will be able to upload real time ARES information from the national function to the European centralized ASM function. The benefit is to maximize the availability times of conditional routes and to update the times with regard to the airspace use

plan that is published the day before (ASM level 2). At present, the Network Manager is not able to compute real time changes and limits the updates of ARES/CDR to a minimum of three hours in advance.

Hence, one of the purposes of this functional block is to bring the planning process closer to the operations such that consequently both processes get more congruent to each other.

On the other hand, there are several functional blocks related to “ER/APP” domain applicable within this TS as showed in Figure 1.

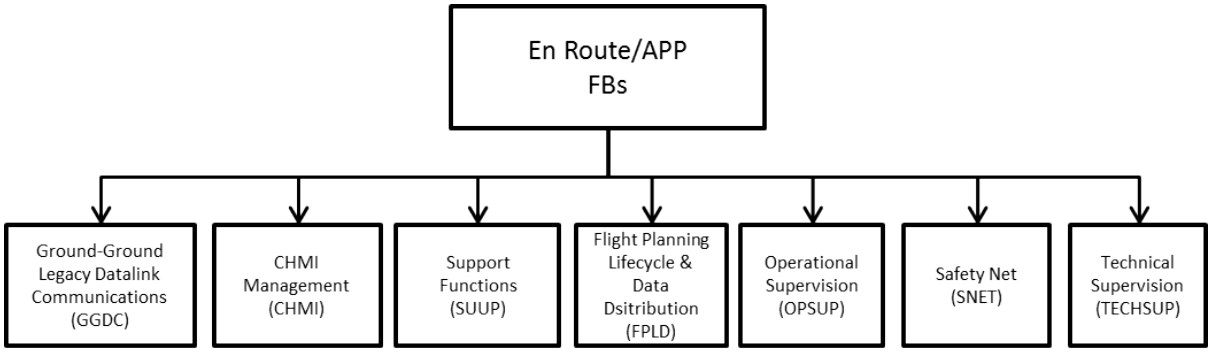


Figure 1: FBs applicable for this TS defined in 10.01.07 TAD

All FBs mentioned in the figure above will provide functions to the ATC system to manage ARES. Then, the ATC system will be able to exchange ARES messages with the ASM support system, and after processing these ARES messages the ATC system will display RTSA data on the CWP. Furthermore, ATCOs will be able to manage the ARES and make some manual actions over these ARES directly from the CWP.

1.7 Functional block Overview

As previously described, this TS covers several FBs:

- **Cooperative Airspace Management [11]**:

  Airspace Management’s objective is to improve capacity optimisation and flexible utilisation of airspace structures through functions such as:

  - Assessment of the impact of the airspace requests;
  - Elaboration of the daily airspace and route usage plan decisions (including non AMC manageable areas);
  - Enable interoperability between local and regional Airspace Management tools (via B2B Web services);
  - Inform users on changes to airspace usage plan (via B2B and B2C);
  - Assessment of the impact of sector configuration changes according to traffic patterns.

  Airspace Management allows the optimal shared use of airspace through enhanced civil/military co-ordination. The application of the Flexible Use of Airspace Concept ensures that any airspace segregation is temporary and based on its real use for a specified time period.

  Airspace Management plans the use of pre-defined flexible airspace structures that are suited to temporary use:

  - Conditional Routes (CDRs) - non-permanent Air Traffic Services (ATS) routes or route portions;

- Temporary Segregated Areas (TSAs) and Temporary Reserved Areas (TRAs) - areas temporarily reserved for the exclusive use of specific users;
- Cross-Border Areas (CBAs) - TSAs or TRAs established over international boundaries;
- Reduced Co-ordination Airspace (RCA) and Prior Co-ordination Airspace (PCA) - procedures enabling General Air Traffic (GAT) to operate outside the ATS route structure.

The scope of these Technical Specifications is related to the Execution Phase at regional level: the Real Time Status of Airspace (RTSA) update process through a B2B connection between national / regional ASM Support Systems and the regional ATFCM system. Please refer to [7] for a detailed description of the CDM process and its actors.

The services to be implemented are those in NM Functional Block[1] FB608 with the aims to interface ASM support systems with NM systems for the Real Time Airspace Status update via an automated B2B connection ensuring interoperability through AIXM 5.1, and to support CDM processes between local ASM and NM system systems as well as between FOC/WOC and NM systems.

On the other hand, ASM support systems are used on local and regional level to plan the usage of special areas like military training areas. The reservation has a major impact on the flight planning and availability of route network to civil users.

Enhancing the interoperations and data exchange between ANSP and NM generates a benefit to speed up the information flow and to use returned reservations by the military.

The data exchange between ASM and ATC systems eliminates media break, enables to activate and de-activate training areas “just in time” upon entry of the mission that is planned to operate within these areas.

The interaction between two ASM support systems on local-local level is deemed necessary for cross border activities such as CBA operations. The task is to setup a service to upload mission / reservation planning from the client to the serving ASM too, enabling a voiceless coordination process in the long and short-term reservation management at international level.

- **CHMI Management (CHMI) [12]**: The Controller Human Machine Interaction Management encompasses all the functions related to data presentation to – and interaction with – the controller (covering planner and tactical [executive] roles in En-Route and TMA). Note that this functional block specifically addresses all the Controller HMI; where an Operator has been represented in other functional blocks (Complexity Management, Technical Supervision, Operational Supervision) it implies that the FB has an HMI sub-function.
- **Ground-Ground Legacy Datalink Communications (GGDC) [12]**: The Ground-Ground Legacy Datalink Communications functional block provides the functionality processing to exchange flight and environment data with the NMOC, aircraft operators, other civil and military ATS Units, Air Defence units and Aerodrome system (Departure Management). The functional block converts data between internal interfaces and the standard protocols in use with the external systems (e.g. ICAO, ADEXP, OLDI).
- **Support Functions (SUUP) [12]**: The Support functions do not affect directly the provision of ATM Services at operational time. They encompass the following functions:
  - Recording: to select the data to be recorded and to record these data.
  - Data Analysis Function: provide a data analysis facility for on-line and recorded data.

[1] NM Functional Block identified by FB + a 3 digit number (FBxxx) is different from a Functional Block in SESAR. It describes the functional scope of an Improvement request for a given release. Once approved to be included in an NM release an NM FB becomes like a project and its implementation is managed by an NM Project Manager.

- Data Playback Function: enable to playback situations from recorded data.
- Configuration Management: providing system version deployment support, the means to assist software and data deployment.
- Managing off-line Environment data: provide tools to create, modify, check consistency, compile from different sources, distribute onto sub-systems all the off-line data (airspace definition, air traffic data…) that are required for the systems. Enable Off-line data to be managed both at a national level and at a local level.
- Managing on-line Environment data: enable On-line management such as data capture from external clients (Note: manual modification of on-line data is addressed in operational supervision function)
- Exchanging environment data with external client: distribute Environment data to external clients.
- Managing system time through interface with an external time reference system.

- **Flight Planning Lifecycle & Data Distribution (FPLD) [12]**: The Flight Plan - Lifecycle Mgt - Data Distribution functional block manages the system flight plans (SFPL) for IFR and VFR flights from creation until their deletion from their life cycle perspective (excluding any trajectory perspective which is within TP&M scope) and encompasses the following aspects:
  - SFPLs are created and updated upon receipt of flight plans (including extended flight plans), air traffic flow and capacity restrictions, revisions from other ATC centres, or on manual input (including tactical control instructions) for flights that traverse the system's Area of Interest (AoI).
  - Distribution of Flight data to sectors, other ATSUs, Air Defence organization, Airport Operations, NMOC.
  - An HMI is provided to allow the management of SFPL data by the Flight Data Operator.

- **Operational Supervision (OPSUP) [12]**: The Operational Supervision functional block allows the Supervisor to manage the operational configuration, according to traffic demand, and react in case of system fault, re-assigning and distributing available resources in order to maintain adequate safety levels and quality of service. The Operational Supervision encompasses the following functions:
  - Managing Sector and controller roles mapping to Controller Working Position: manage immediate or in-advance mapping. Display the current sector/controller mapping (operational configuration)
  - Displaying sector load and complexity of the actual and what-if configurations.
  - Managing airspace maps: airspace maps edition (static maps, dynamic maps, sector maps). Provide airspace map management tools.
  - Managing SFPL data distribution rules: enable to modify on-line SFPL data distribution rules.
  - Providing dynamic environment data modification assistance: enable an operational supervisor to modify manually the environment data (aerodrome group configuration, runway rate, airspace data (holding area, general approval volume), frequency plan, CDR and TSA status, SSR code allotment plan, Holding area).
  - Displaying warnings: display warnings associated to the above functions to the operational supervisor.
- **Safety Net (SNET) [12]**: The Safety Nets functional block alerts the ATC controllers in case of short-term danger for an aircraft to infringe separation criteria with other aircraft or danger areas or in case the aircraft deviates from the nominal approach path. The safety nets functional block encompasses the following sub-functions:
  - Short Term Conflict Alert (STCA) detecting and alerting in case of infringement of separation minima between aircraft.
  - Minimum Safe Altitude Warning (MSAW) detecting and alerting in case of infringement the minimum safe altitude form the ground or from an obstacle.

- Airspace Proximity Warning (APW) detecting and alerting in case an aircraft is going to infringe restricted airspace.
- Approach Path Monitoring (APM) detecting and alerting in case an aircraft deviates from the glide path.

- **Technical Supervision (TECHSUP) [12]**: The Technical Supervision functional block is in charge of the technical supervision of an ER/APP ATC system (e.g. monitoring the services provided by the system, starting, stopping or re-starting the system or part of it).

  The Technical Supervision encompasses the following functions:

  - Presenting technical and functional systems status: monitor system availability. Acquire, synthesize and display technical and functional status on all the system hardware/software resources.
  - Providing failure detection and analysis assistance: generate alarm or warning on failure detection. Provide support for analysis supervision data (enable queries on historic of events).
  - Providing supervision commands and actions: accept supervision commands/actions (e.g. (Re)start/stop/stand-by/reset/switch-over) from eligible operators and gives the capability to perform maintenance activities.

All modifications described within this TS expected for the above FBs should bring the following top-level benefits:

- **Safety** - by ensuring a common situational awareness of planned and real time status of the ARES (TRA, MVPA) among all stakeholders by sharing the info via Network Management Centralized System.
- **Capacity** - sharing the real time status of ARES within ECAC area will optimize use of available airspace by Airspace Users and could generate additional capacity for civil traffic by means of medium/short term planning and execution phase CDR assignment / alignment. This includes the calculation of new traffic volumes (by means of traffic flow management systems) and capacity calculations closer to reality, minimizing the adoption of buffers due to uncertainties.
- **Cost effectiveness**: improved situational awareness should improve controller's workload.
- **Environment Fuel Efficiency** – by reducing fuel consumption, carbon dioxide emissions.
- **Other KPA**: Other cost reduction - reducing direct or indirect ATM-related costs such as airlines operating costs.

1.8 Glossary of terms

Term	Description
Advanced Airspace Management System (AAMS)	System which enables to accommodate real-time functions and dialogues for dynamic airspace allocation and to generate/distribute planned airspace usage information.
Advanced Flexible Use of Airspace (AFUA)	An airspace management concept in which airspace is managed as a single entity and in which there are no fixed structures and airspace reservations for special airspace activity are allocated in real time.
Aeronautical Information Conceptual Model (AICM)	Conceptual/logical model that uses entities, attributes and relationships in order to describe aeronautical features such as airports, runways, navaids, obstacles, routes, terminal procedures, airspace structures, services and related aeronautical data.

Term	Description
Aeronautical Information Exchange Model (AIXM)	Data exchange specification that uses the Extensible Markup Language (XML) technology in order to define features and messages used to exchange information about the aeronautical data contained in AICM. AIXM 5.1 provides an extensible, modular aeronautical information exchange standard that can be used to satisfy information exchange requirements for current and future aeronautical information applications. [23]
Airspace Management Cell (AMC)	Joint civil/military cell responsible for the day-to-day management and temporary allocation of national or sub-regional airspace under the jurisdiction of one or more ECAC State(s) [16].
Airspace Management (ASM)	Planning function with the primary objective of maximising the utilisation of available airspace by dynamic time-sharing and, at times, the segregation of airspace among various categories of users based on short-term needs.
Airspace Reservation (ARES)	A defined volume of airspace temporarily reserved for exclusive or specific use by categories of users [7]
ASM level 3	ASM Level 3 consists of the real time activation, deactivation or reallocation in the execution phase of the airspace allocated at ASM Level 2 (medium/short term planning, day-to-day allocation of airspace carried out in the medium and short term planning phase) and the resolution of specific airspace problems and/or traffic situations between military and civil ATS units and/or controlling military units and/or controllers, as appropriate.
ASM Level 2	ASM Level 2 consists of the day-to-day management and temporary allocation of airspace through national or sub-regional AMCs.
ASM support system	A system supporting the airspace management process and the civil-military coordination by providing real-time exchange of airspace management data between involved actors, enables the collaborative decision making and an enhanced situational awareness throughout the airspace management process and support the collection of statistical ASM data.
Airspace Use Plan (AUP)	ASM message of NOTAM status notifying the daily decision of an Airspace Management Cell on the temporary allocation of the airspace within its jurisdiction for a specific time period, by means of a standard message format [16]. In particular, it consists of: • CDR updates; • RSA Allocations; • Remarks; • NIL_AUP flag (NIL-AUP = Yes meaning that there are no CDR Updates nor RSA Allocations to be published for that day by a given AMC).
AUP Chain	An AUP chain of a day is the list of AUP's made of the Baseline AUP and the ordered list of its subsequent versions also named UUPs. Any AUP with a validity period comprised in the time span [6:00 day D, 6:00 day D+1] is a member of the AUP chain of day D.

Term	Description
B2B communication	Access to a set of services exposed by NOP Portal and NM through an external client system. It means that the services are offered via a programmatic interface; this implies that the customer has to develop software that uses that interface in order to access our services; this is the case of the NOP B2B web services [16].
B2C communication	Access to a set of services exposed by NOP Portal and NM through a User Interface. It means that the services (the business) are offered via client interface that are property of the NM (CHMI, Portal); this implies that the customer does not need to develop any software to access the offered services [16].
Centralised Airspace Data Function (CADF)	ASM function entrusted to the NM by the ECAC States for consolidating national AUPs/UUPs to be published on the NOP Portal as EAUP and EUUP [16].
Conditional Route (CDR)	ATS route that is only available for flight planning and use under specified conditions [16]. A Conditional Route may have more than one category, and those categories may change at specified times: • Category One - Permanently Plannable CDR: CDR1 routes are in general available for flight planning during times published in the relevant national Aeronautical Information Publication (AIP). Updated information on the availability in accordance with conditions published daily in EAUP/EUUPs; • Category Two - Non-Permanently Plannable CDR: CDR2 routes may be available for flight planning. Flights may only be planned on a CDR2 in accordance with conditions published daily in the EAUP/EUUPs; • Category Three - Not Plannable CDR: CDR3 routes are not available for flight planning; however, ATC Units may issue tactical clearances on such route segments.
eAMI message	eAMI contains information on the allocation of airspace (ASM Level 1 and ASM Level 2) and the derived opening/closure of CDR2/CDR1/ATS routes published daily in EAUP/EUUPs. Through consolidated and validated electronic e-AMI messages, users can therefore make full use of the benefits offered by automated data processing.
eASM	An extension to AIXM 5.1 providing additional features and for the information exchange processes of the FUA Concept. This includes airspace activation, conditional route closure/activation and military missions.
eAUP/eUUP	The NM collects, consolidates the AUP and publishes the EAUP on the NOP portal and produces eAMI messages for the B2B service. Consolidated EAUP/EUUP are daily published on the NOP Portal and used via B2B service to provide information to Aircraft Operators (AOs) for flight planning purposes.

Term	Description
ENV System	The ENV system manages the aeronautical information used by the other NTS systems. Its main responsibilities are: • Data Maintenance: the introduction and modification of the aeronautical information. • Data Release Management: the distribution of the aeronautical information to the NTS systems (and EAD - for eRAD). • Remote Querying: the provision of aeronautical information to the (local and) remote users through the CHMI, NOP Portal and B2B Web Services.
Flexible Airspace Management (FAM)	Concept that allows dynamic changes to airspace configurations to meet the changes in the traffic demand, resulting in fewer delays or reroutes away from user-preferred routes and higher throughput.
Network Operations Portal (NOP Portal)	The NOP Portal provides a consolidated view of the different aspects of the Network Operations Plan and gives access to a set of services to support the NOP Portal preparation and dissemination activities.
Network Operation Plan (NOP)	Network Operations Plan (NOP) is a set of information and actions derived and reached collaboratively both relevant to, and serving as a reference for, the management of the Pan-European network in different timeframes for all ATM stakeholders, which includes, but is not limited to, targets, objectives, how to achieve them, anticipated impact. (Definition Source: SESAR NOP Project Team)
NOP B2B Web Services	The NOP B2B Web Services provide access to both data and services via a system-to-system interface, allowing NM customers to exploit and use the information in their own systems, according to their business needs.
Prior Coordination Airspace (PCA)	Portion of airspace of defined dimensions within which individual GAT is permitted to fly "off-route" only after prior coordination initiated by controllers of GAT flights with controllers of OAT flights [16].
Reduced Coordination Airspace (RCA)	Portion of airspace of defined dimensions within which GAT is permitted to fly "off-route" without requiring controllers of GAT flights to initiate coordination with controllers of OAT flights [16].
Real Time Status of Airspace (RTSA)	Real time information related to the pre-activation, activation, de-activation and modification of an ARES [7].
Service	The contractual provision of something (a non-physical object), by one, for the use of one or more others. Services involve interactions between providers and consumers, which may be performed in a digital form (data exchanges) or through voice communication or written processes and procedures.
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SJU Work Programme	The programme which addresses all activities of the SESAR Joint Undertaking Agency.

Term	Description
Temporary Reserved Area (TRA)	Defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for the specific use by another aviation authority and through which other traffic may be allowed to transit, under ATC clearance [16].
Temporary Segregated Area (TSA)	Defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily segregated, by common agreement, for the exclusive use by another aviation authority and through which other traffic will not be allowed to transit [16].
Updated Airspace Use Plan (UUP)	ASM message of NOTAM status issued by an AMC to update and supersede AUP/previous UUP information [16].
Variable Profile Area (VPA)	VPA is a new airspace design principle based on flexible allocation and management of small fixed predefined modules of airspace. These modules are designed to fulfil airspace users' needs individually or as a combination of modules as an ARES, dependant on individual mission profiles [7].
Web Services Description Language (WSDL)	WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information.

556 **Table 1-1: Glossary of terms**

557 1.9 Acronyms and Terminology

Term	Definition
AAMS	Advanced Airspace Management System
A/C	Aircraft
ACC	Area Control Centre
ADD	Architecture Definition Document
ADEP	Aerodrome of Departure
ADES	Aerodrome of Destination
ADEXP	ATS Data Exchange Presentation
ADR	Airspace Data Repository
AFUA	Advanced Flexible Use of Airspace
AICM	Aeronautical Information Conceptual Model
AIM	Aeronautical Information Management
AIS	Aeronautical Information Service

Term	Definition
AIXM	Aeronautical Information Exchange Model
AMC	Airspace Management Cell
ANSP	Air Navigation Service Provider
AO	Aircraft Operator
AOI	Area Of Interest
AOLO	Aircraft Operators Liaison Officer
APM	Approach Path Monitor
APW	Airspace Proximity Warning
ARES	Airspace Reservation
ARESACT	ARES Activation
ASM	Airspace Management
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATFCM	Air Traffic Flow and Capacity Management
ATM	Air Traffic Management
ATS	Air Traffic Services
AUP	Airspace Use Plan
B2B	Business to Business
B2C	Business to Customer
CACD	Central Airspace and Capacity Database
CADF	Centralised Airspace Data Function
CBA	Cross-Border Area
CDM	Collaborative Decision Making
CDR	Conditional Route
CFMU	Central Flow Management Unit
CHMI	Collaboration Human Machine Interface

Term	Definition
CIAM	Collaboration Interface for Airspace Management
CWP	Control Working Position
DFS	Deutsche Flugsicherung GmbH
DNM	Directorate Network Management
DOD	Detailed Operational Description
DS	Data Set
E-ATMS	European Air Traffic Management System
EAD	European AIS Database
EC	European Commission
ECAC	European Civil Aviation Conference
ENV	Environment
eRAD	electronic Route Availability Document
ESSAR	Eurocontrol Safety Regulatory Requirement
ETFMS	Enhanced Tactical Flow Management System
EU	European Union
EUUP	European UUP
FAB	Functional Airspace Block
FAM	Flexible Airspace Management
FB	Functional Block
FDO	Flight Data Operator
FDPS	Flight Data Processing System
FIR	Flight Information Region
FL	Flight level
FMP	Flow Management Position
FO	Flight Object
FOC	Flight Operations Centre

Term	Definition
FTS	Fast Time Simulation
GAT	General Air Traffic
GGDC	Ground-Ground Legacy Datalink Communications
GUI	Graphical User Interface
HMI	Human Machine Interface
HTTPS	Hyper Text Transfer Protocol Secure
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
INTEROP	Interoperability Requirements
IRS	Interface Requirements Specification
KPI	Key Performance Indicator
LAM	Logical Acknowledge Message
LARA	Local And sub-Regional Airspace Management
MILO	Military Liaison Officer
MVPA	Military Variable Profile Area
MSAW	Minimum Safe Altitude Warning
MTA	Military Training Area
NM	Network Manager
NMOC	Network Manager Operations Center
NMVP	Network Management Validation Platform
NOP	Network Operations Plan
NTS	Network Technical Systems
OAT	Operational Air Traffic
OLDI	On-Line Data Interchange
OSED	Operational Service and Environment Definition
PCA	Prior Co-ordination Airspace

Term	Definition
RCA	Reduced Co-ordination Airspace
RMK	Remark
RTS	Real Time Simulation
RTSA	Real Time Status of Airspace
SAML	Security Assertion Mark-Up Language
SESAR	Single European Sky ATM Research Programme
SFPL	System Flight Plan
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SLA	Service Level Agreement
SPR	Safety and Performance Requirements
SSL	Secure Sockets Layer
SSR	Secondary Surveillance Radar
STAM	Short Term ATFCM Measures
STCA	Short-Term Conflict Alert
SUUP	Special Updated Airspace Use Plan
TAD	Technical Architecture Description
TP&M	Trajectory Prediction & Management [Functional Block]
TRA	Temporary Restricted Area
TS	Technical Specifications
TSA	Temporary Segregated Area
UAC	Upper Area Control
UUP	Updated Airspace Use Plan
VFR	Visual Flight Rules
VPA	Variable Profile Area
WFS	Web Feature Service
WOC	Wing Operations Centre

Term	Definition
WSDL	Web Services Description Language
XML	Extensible Markup Language
XSD	XML Schema Definition

558 **Table 1-2: Acronyms and Terminology**

2 General Functional block Description

2.1 Context

The concept of AFUA provides more flexibility to all users by allowing dynamic airspace management in all phases of the operations - from initial planning, the execution phase and post-operational analysis phase. AFUA concept in SESAR time based environment (Step 1) implements structures that are designed to optimally fulfil military needs and better share the resources with other airspace users.

The dynamic management of airspace will allow the planning and management of military operations much closer to the time of operation if required. In order to ensure optimum use of available airspace, the need for direct co-ordination and a collaborative dialogue between civil and military Local Network Management agencies (AMC, ACC…) and the Network Manager will require system support and communications to allow for real-time updating of the airspace database (in planning and execution phase). This will provide improved coordination between military and civilian airspace users and an enhanced mutual awareness of airspace activity of both civil and military operations.

Changes to the Network Operations Plan will be coordinated amongst the relevant network actors. Such short notice requests for route activation and updates of military requests, significant weather phenomena, unexpected ground or space infrastructure opportunities/limitations, critical events, etc. should be coordinated through integrated and user-friendly systems permitting a shared situational awareness and a pertinent decision making process, thus exploiting the airspace in a dynamic manner, minimising the impact of any disruptions and taking benefit of any opportunity.

The following operational improvements are relevant within the scope of AFUA/ASM OFA:

- Provide static and dynamic Airspace data in a standardised AIXM format as a common basis for Airspace Management and AIM operations.
- Improve the ASM/NM interoperability by developing and validating the interface between ASM support systems and NM systems allowing sharing information on airspace planning and real time airspace status.
- Moving Airspace Management into day of operation

Allocation of airspace reservation (ARES) through more dynamic airspace management enables dynamic responses to short notice military airspace requirements or very short term changes (e.g. bad weather). This relies in particular on increased collaboration between ASM/ATFCM partners and scenarios providing flexibility with regard to daily airspace and route requirements, and adequate highly reactive system support. Real-time coordination is further enhanced through “what-if” functionalities and automated support to airspace booking and airspace management.

Enhanced civil-military coordination, including real time airspace status update, for ASM using B2B services between local ASM support system and NM systems and integration of Airspace status from ASM system into ATC system.

ASM, NM, FOC/WOC and ATC systems shall be able to process real time airspace status data. ATC actors (e.g. ATCO) automatically receive real time airspace status information update from the local ASM system and / or input such real time airspace status information actively via their individual CWP into the ATC system that processes it further into an ASM support system.

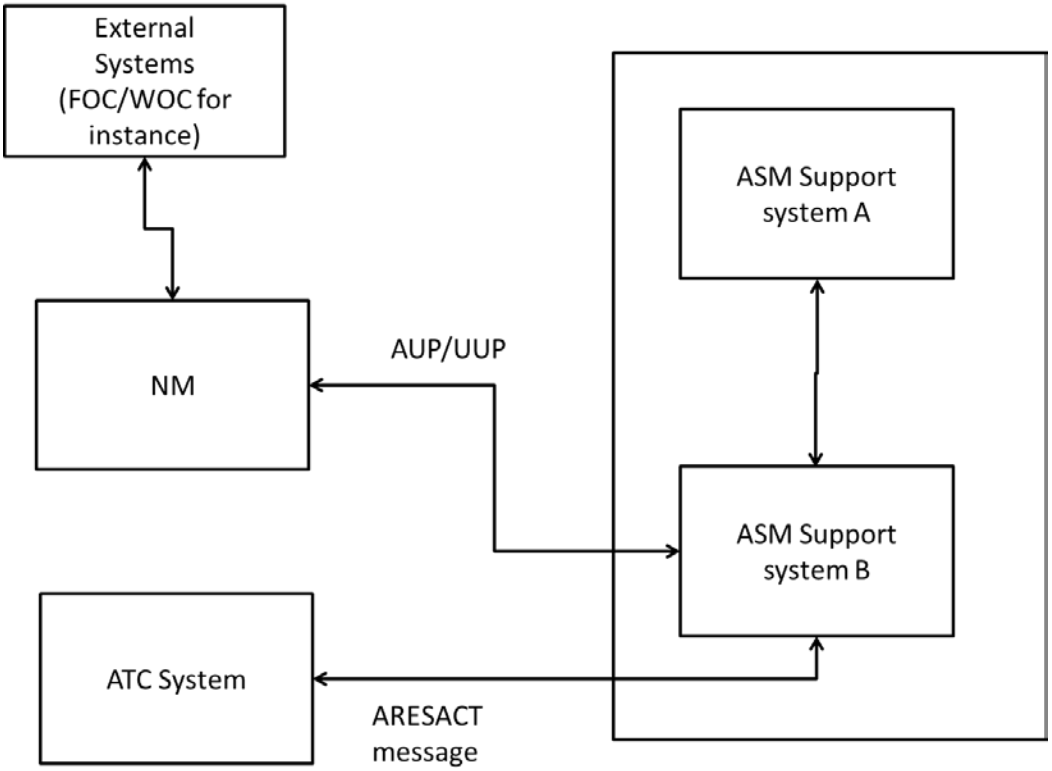
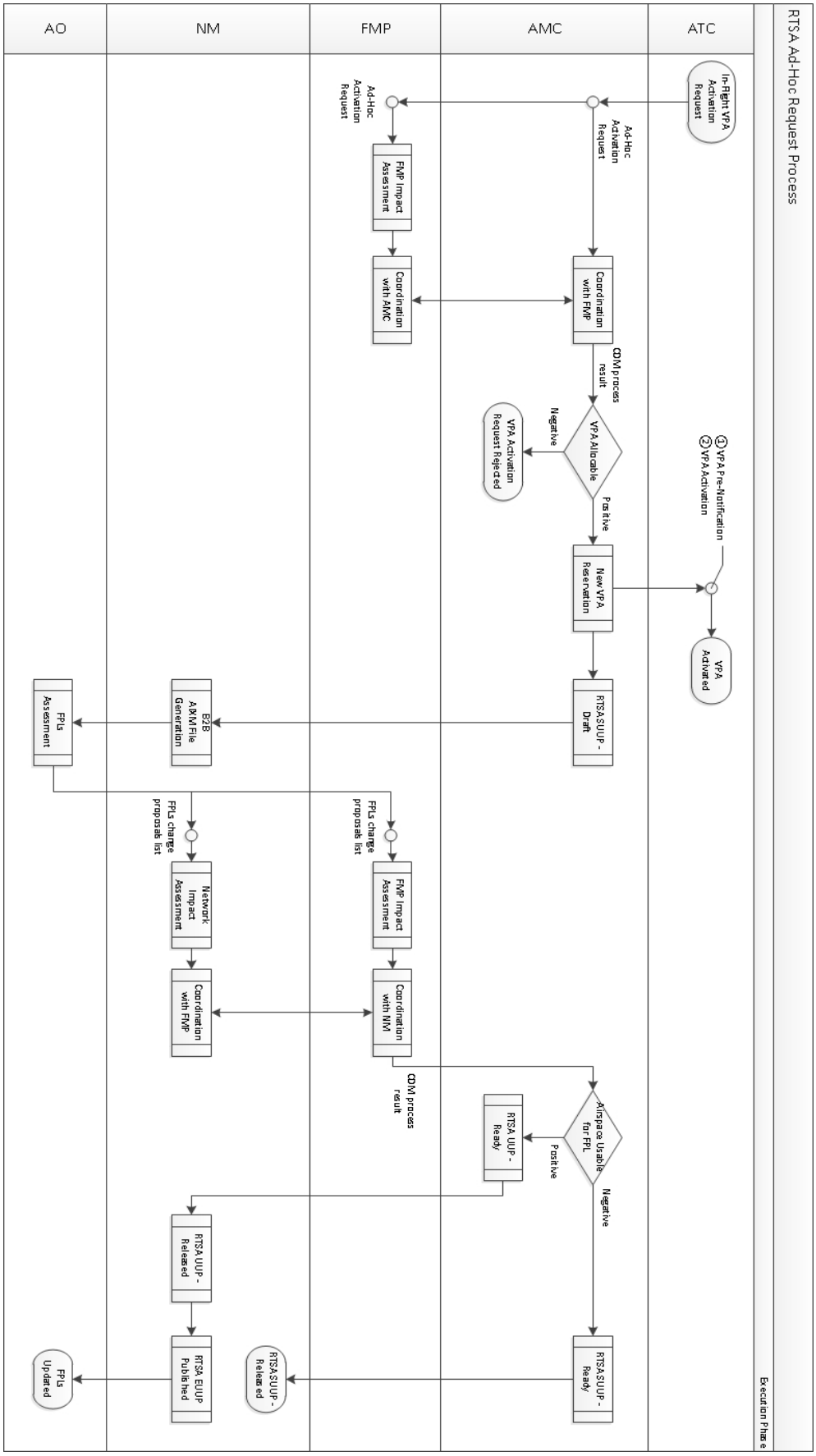


Figure 2: Global overview

2.2 Functional block modes and states

There are several processes related to RTSA for managing ARES, depending on the action made over the VPA. Here follows the global diagrams depicting the stages involved in performing the:

1. RTSA Ad-Hoc Activation process;
2. RTSA De-Activation process;
3. RTSA Cancellation process;
4. ASM L3 New Reservation process.



611

612 **Figure 3: RTSA ad-hoc activation process**
613

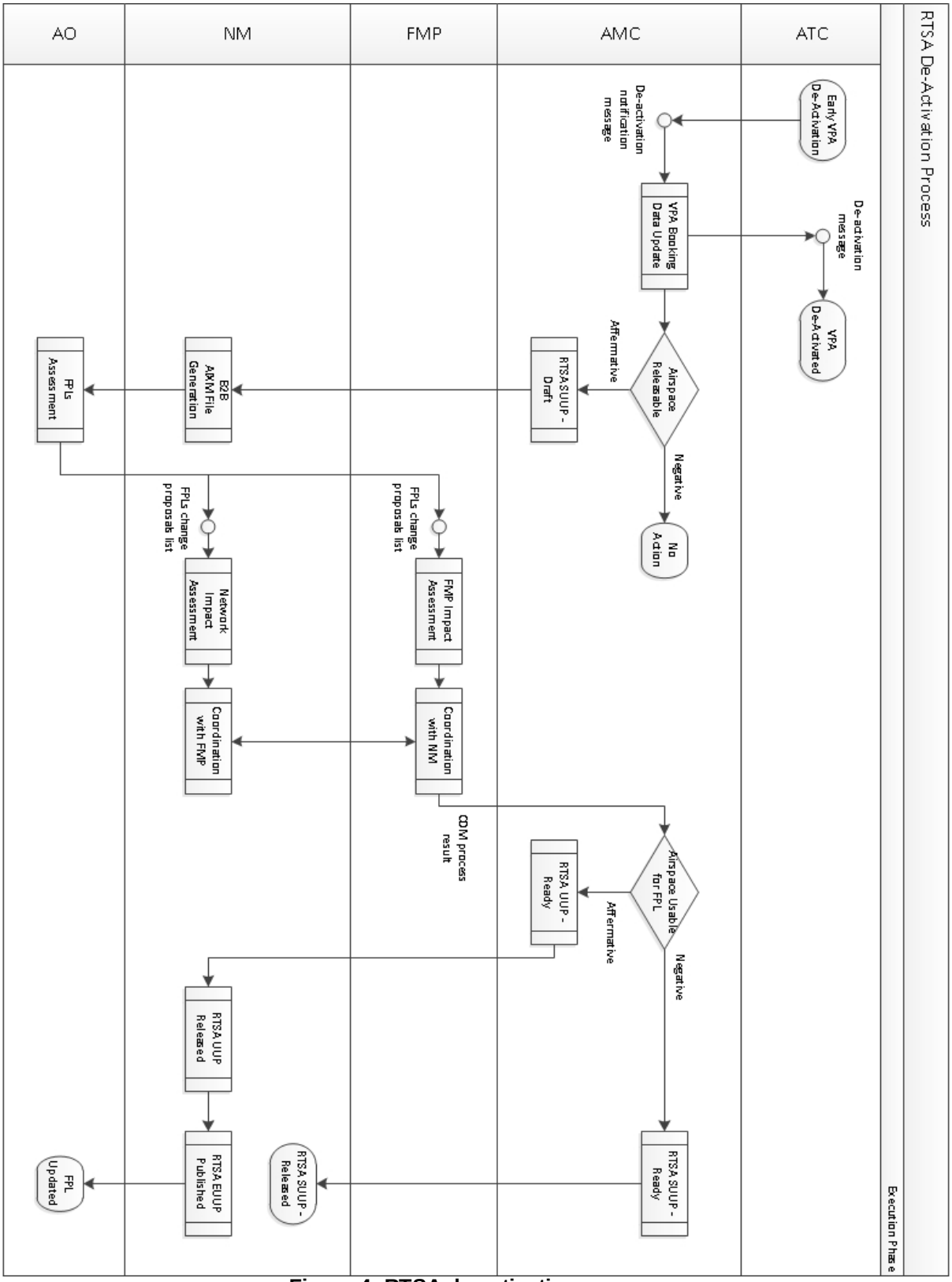


Figure 4: RTSA de-activation process

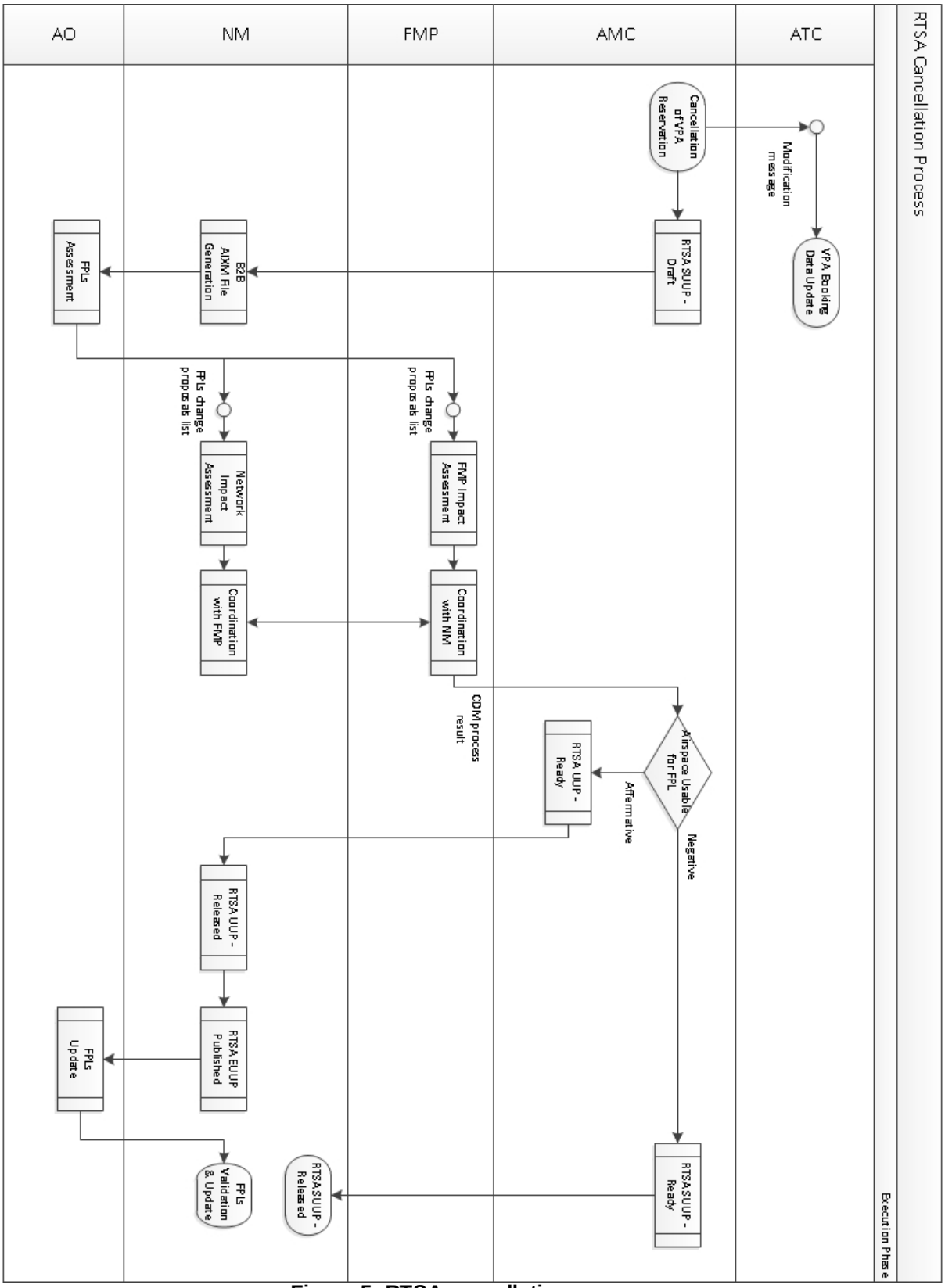
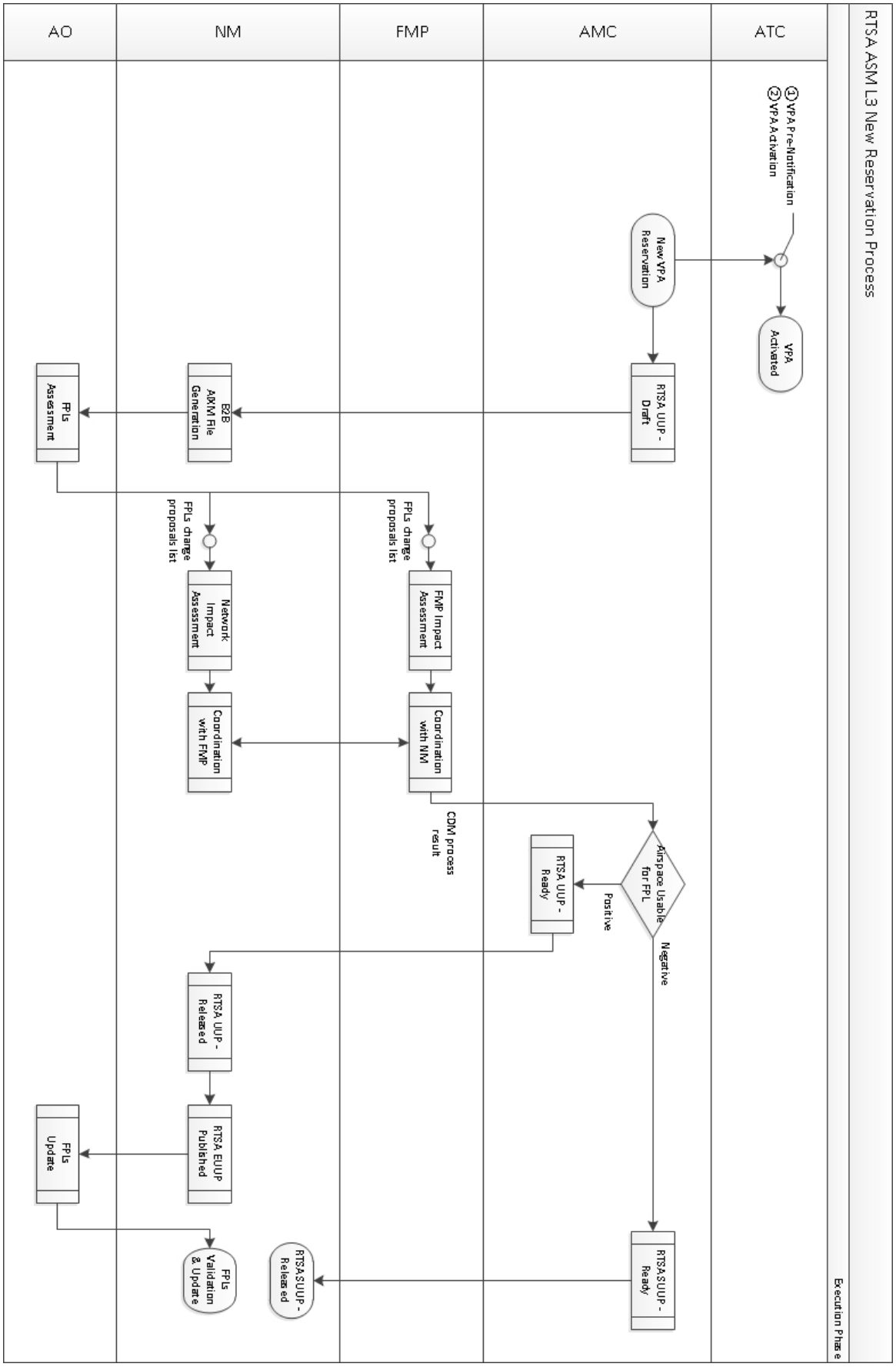


Figure 5: RTSA cancellation process



621

622 **Figure 6: ASM L3 New Reservation process**

623

624

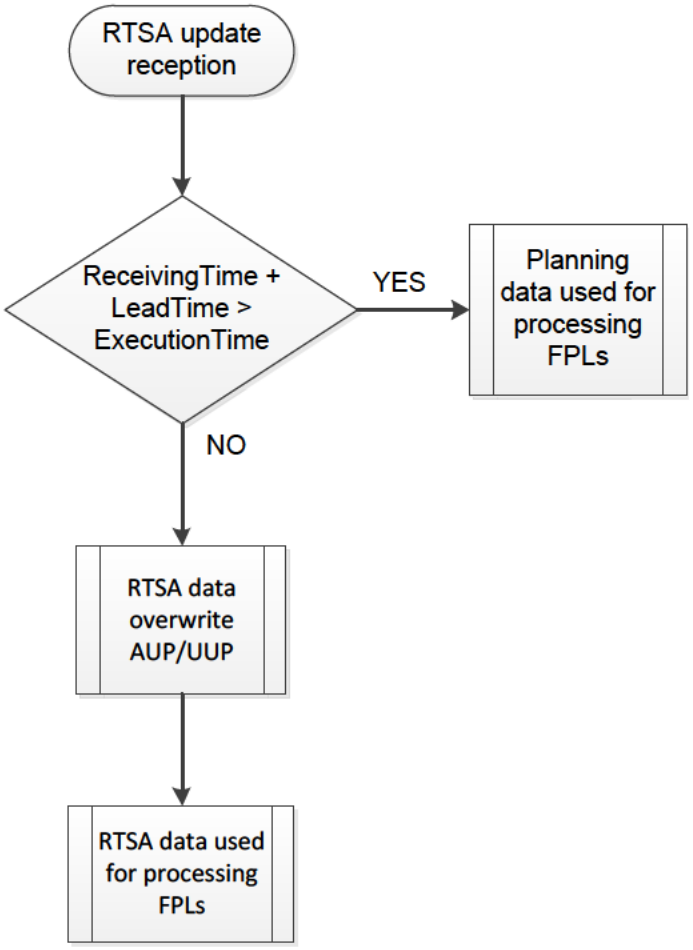
625 ## 2.2.1 Cooperative Airspace Management

626 The behaviour of the global ASM system depends on the receiving time of RTSA updates and the
627 possibility to take advantage of them in the short term for flight planning processing purposes:

628 • Either RTSA data can be taken into account by the airspace managers, ATCOs, FMPs, NM
629 and FOC/WOCs to improve their operations leading to potential flight plans updates and
630 processing. In such case, real time airspace status data are used to complement airspace
631 planning data (AUP, UUP).

632 • Or, RTSA data cannot be taken into account for processing (and updating) flight plans and
633 flight plans associated messages. In such case, only airspace planning data (coming from
634 AUP, UUP and consolidated in eAUP/eUUP) shall be taken into account.

635



636

637 **Figure 7: RTSA update process state diagram**

638 Given a sufficient notice, if considered feasible (positive local and network impact assessments), the
639 system shall take into account real time data in order to take advantage of the extra airspace.

640 In order to process and update flight plans, real time data has to replace planning data and to be
641 published as a RTSA data message.

642 UUPs are the instruments to capture the information and to be used for enhancing the planning
643 process through an adequate notification stream. Hence, RTSA data messages will be exchanged
644 using a similar data set of UUP messages[2].

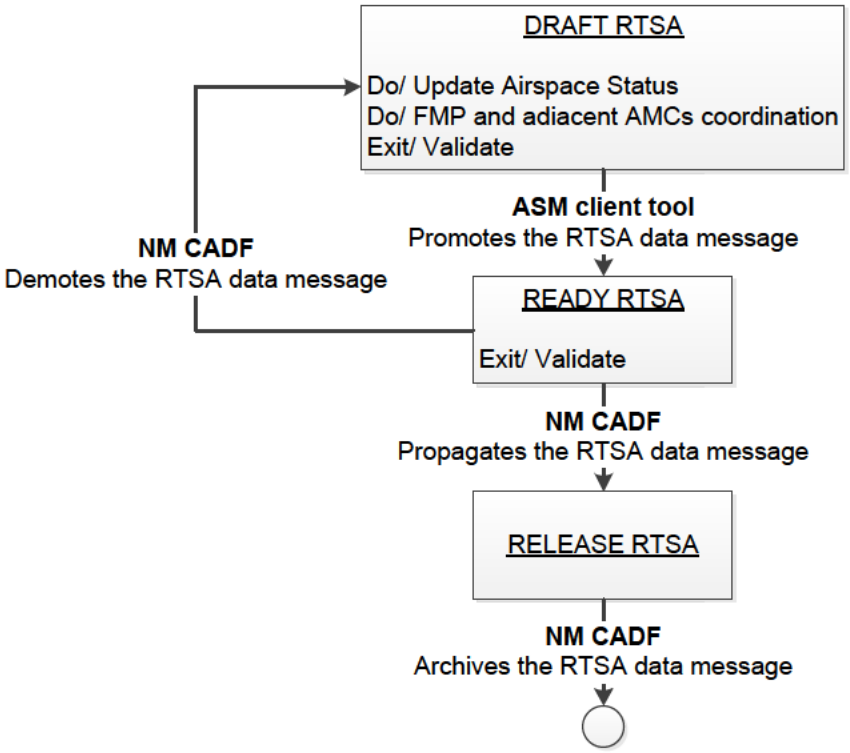
645 Therefore, the RTSA message state transitions will be the same as for UUP messages (see Figure 8:
646 RTSA message state transition diagram):

647 • DRAFT: RTSA message is published as DRAFT for local coordination and is visible to all but
648 only modifiable by originator AMC.

649 • READY: RTSA message is visible to all but no more modifications are allowed.

650 • RELEASE: RTSA message is consolidated and propagated to NM system.

651



652
653 **Figure 8: RTSA message state transition diagram**

654

655 2.2.2 En-route / APP functional blocks

656 The ER/APP ATC system shall support the following location:

657 • Civil Air Traffic Control Mission (GAT traffic) located in a Civil centre.

658 • Military Air Traffic Control Mission (OAT traffic) located in a Military centre.

659 • Co-located Civil and Military Air Traffic Control mission (Civil and Military traffic controlled by
660 different staff and different systems but located in the same ATC centre).

661 • Integrated Civil and Military Air Traffic Control mission (Civil and Military traffic controlled by
662 the same staff with the same systems in the same ATC centre).

[2] For the purpose of the validation exercise, special UUP messages (so called SUUP), similar to UUP messages, will be used but marked as RTSA UUP messages setting a specific keyword (RTSA) in the UUP Remark field.

Comment: The behaviour of the system is not affected by the configured mission and the component behaviour will not change depending on the state of the ATC system.

2.2.3 ARES status

ARESACT message is exchanged between Cooperative Airspace Management Functional Block and Ground-Ground Legacy Data Communication Functional Block to identify the Airspace Reservation for the VPAs.

There is a field within this message ("LACSTAT") that indicates the status of the VPA. The initial value indicates the VPA is "inactive", so the usage of the VPA is purely civil. In the following figure the possible status of this field is shown depending on the ARESACT message received.

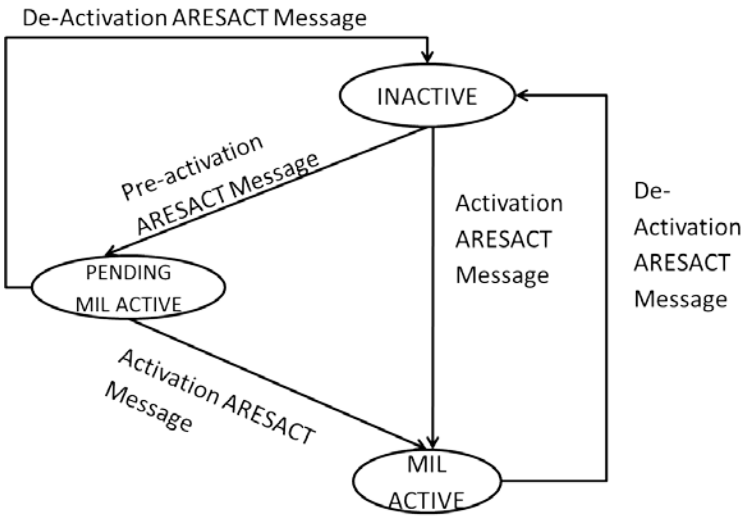


Figure 9: ARES State Transition Diagram

2.3 Major Functional block capabilities

2.3.1 Cooperative Airspace Management Functional Block

The requirements relative to the Cooperative Airspace Management functional block (described in 7.2 TAD [11]) can be grouped as following:

- Exchange of static data airspace usage data,
- Edition of ARES reservation & status,
- Exchange of ARES status & bookings,
- Display of ARES status & bookings,
- Exchange & process of RTSA data message.

This Functional Block within the scope of these Technical Specifications is linked to the following enablers based on Data Set 14 (DS14) [22]:

1. **AAMS-11**: ASM support systems enhanced to exchange real-time airspace status updates. ASM support systems are upgraded to provide to NM systems real time airspace status updates (i.e. tactical, ASM level 3).
2. **NIMS-42**: NM systems enhanced to receive, process and display real-time tactical (ASM level III) airspace usage information: NM systems should be enhanced to receive and process real

692 time airspace activation, de-activation and modification of ARES and include this information
693 in the NOP.

694 3. **SWIM-APS-03a** (Provision of ATFCM Information Services for Step 1): Provision of ATFCM
695 Information Services for Step 1 (in line with AIRM and ISRM) covering: - Flight Plan Services -
696 Flight Plan Preparation, Flight Plan Filing, Flight Management, Flight Update (for the Airports)
697 - Airspace Services - Management & Publication of Airspace Information - General
698 Information Services - Flow Services - Flow & Capacity Management Information.

699 4. **AAMS-09a:** NM systems enhanced to exchange static data and airspace usage data with
700 ASM support systems in AIXM format. NM systems are upgraded to provide new B2B
701 services, in order to exchange AUP/UUP and static data with local ASM support systems in
702 an AIXM format. This data is collected, validated, saved, processed and made available by
703 the NM.

704 5. **AAMS-06b** (ASM support systems enhanced to exchange static data and airspace usage
705 data with NM systems in AIXM format): Moving from existing CIAM specific interface towards
706 SWIM. Local ASM support systems are upgraded to exchange with NM systems Airspace
707 Use Plans, Updated Use Plans and static data through B2B services in AIXM format.

708 6. **AAMS-06c** (Local ASM Tools to be updated to support Transmission of VPA-related data
709 from local ASM tool to the NM): The data related to the Variable profile Area concept element
710 is to be exchanged between local ASM tools (e.g. LARA) and the NM systems

711

712 2.3.2 En Route/APP Functional Blocks

713 As the AFUA management implementation impacts different functional blocks in the ER/APP ATC
714 domain, P10.05.01 performed an analysis on the impact of the AFUA on each of the functional blocks
715 [10]. This study has been updated taking into account the last version of the 10.01.07 TAD [12]

716

Functions	Objective
Safety nets	This function is impacted by AFUA, in the sense that the system will have to make the information available to the Safety Nets functional block, but the processing of this information by the APW function will be analysed by WP4.8.1. (and associated system WP) in Step 2.
Support Functions	This function manages the ARES status and the CDR status
Ground-Ground Legacy Datalink Communications (GGDC)	This function is in interface with external systems (NM system, ASM support system) which provide ARES status, CDR status (and FP not in the scope of this document). This function processes external messages related to ARES status and CDR status and transmits the information to other functional blocks for its further processing
CHMI Mgt (CHMI)	This function displays the ARES and CDR status to the ATC controller This function displays to the ATC controller the alerts, warnings and notifications generated by the interaction between Flight plans and the ARES and CDR status and could display what-if flight plans containing alternate route
Operational supervision	This function displays to the ACC supervisor the ARES status and the CDR status, and allows displaying them. This function allows the tuning of the system parameters that control the behaviour of the system.

Functions	Objective
Technical Supervision	This function displays and controls the status of the link to ASM support system.
Ground-Ground IOP Management (GGIOP)	The Ground-Ground IOP Management functional block provides the management, dissemination and synchronisation of flight objects with other ATSU's in the IOP area (this corresponds to the "IOP Application Layer" as defined in 10.02.05-D02). Although this Functional Block has been identified within the last version of the 10.01.07 TAD [12] under scope of 10.05.01, it's not applicable to this TS due to Flight Object (FO) is not under scope of this TS.

Table 2-1: FBs and its objectives

These ER/APP ATC Systems Functional Blocks group within the scope of these Technical Specifications are linked to the following enabler based on Data Set 14 (DS14) [22]:

1. **ER APP ATC 77:** ATC systems enhanced to exchange real-time (tactical) airspace status data with ASM support system. ATC systems are enhanced to exchange ARES messages containing real time (tactical) activation status of predefined airspace structures with local ASM support systems and to display airspace status data at the CWP.

2.4 User Characteristics

See chapter 4.2 "Roles & Responsibilities" of the SESAR 07.05.04 Advanced Flexible Use of Airspace OSED Step1 V3 D45 [7].

2.5 Operational Scenarios

The operational scenarios are described in chapter 5 "Use Cases" of the SESAR 07.05.04 Advanced Flexible Use of Airspace OSED Step1 V3 D45 [7].

Additional information is included in Appendix B

2.6 Functional

2.6.1 Functional decomposition

2.6.1.1 Cooperative Airspace Management

The Cooperative Airspace Management FB belongs to the higher-level NM-AM domain system architecture and relate to functions of the other FBs as shown in**Error! Reference source not found.** Figure 10: Functional relationships (coming from 7.2 TAD [11]).

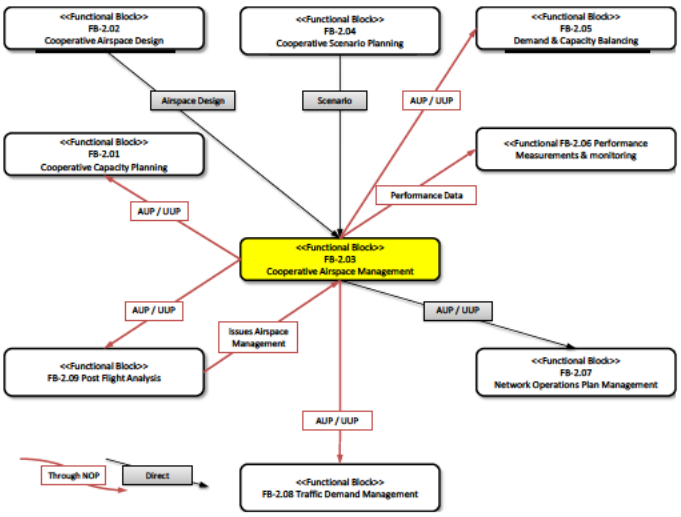


Figure 10: Functional relationships

Here follow the Cooperative Airspace Management main sets of functionalities:

1- Capability to receive, process, store and send RTSA data provided by local ASM support system on any change produced on an ARES to balance demand and capacity in real time.

2- Capability to differentiate RTSA data from airspace planning data and airspace planning updates (AUP, and UUP respectively).

3- Capability to interface between ASM Support system and other systems like NM system, ATC System and a slave ASM system. (See Figure 11: ASM System Interfaces)

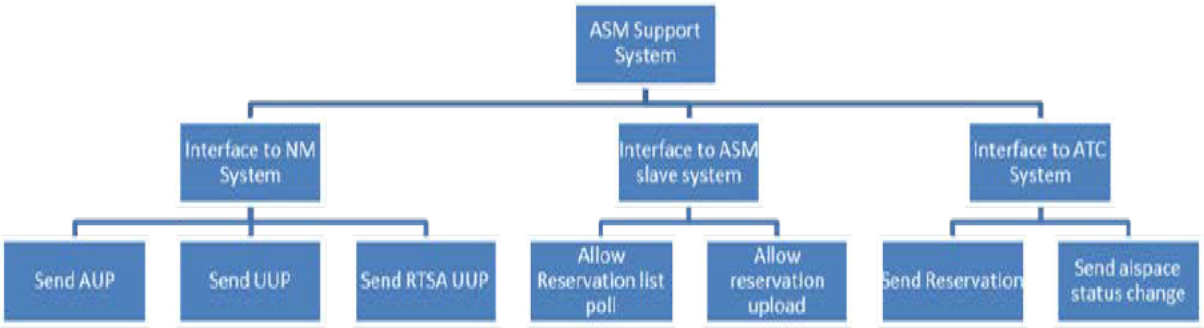


Figure 11: ASM System Interfaces

4- The functional elements and associated responsibilities of each component/service are described in the diagram below.

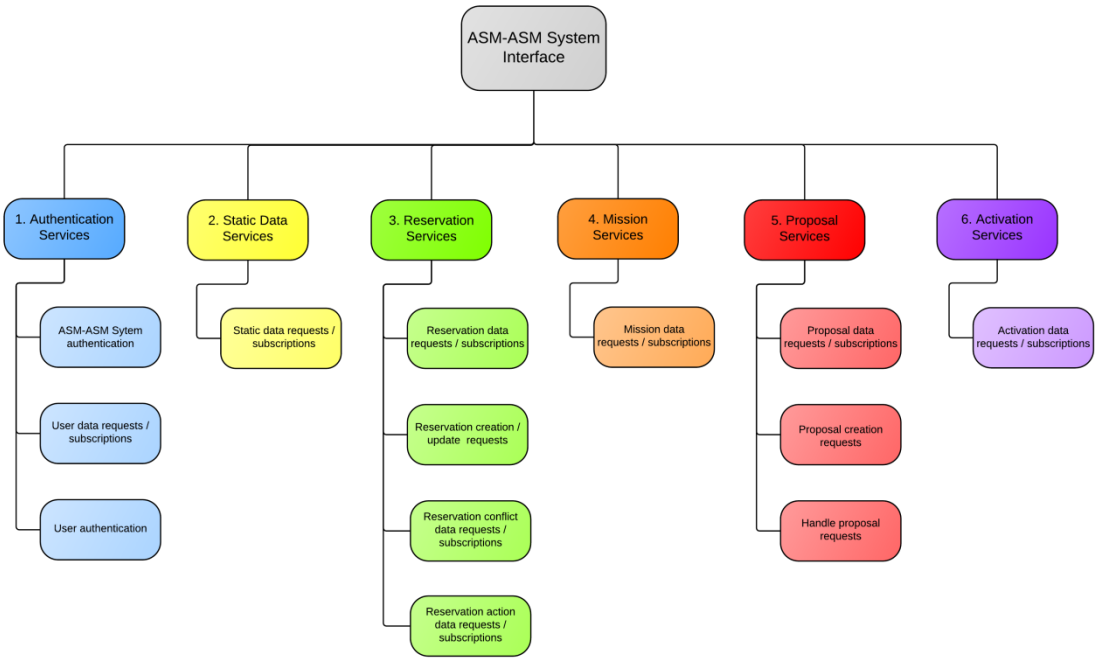


Figure 12: Functional elements of each service

2.6.1.2 En-Route / APP Functional blocks

In addition to the chapter 2.2, the functional breakdown applicable for En Route/APP domain has been extracted from 10.01.07 TAD [12] and it's presented below.

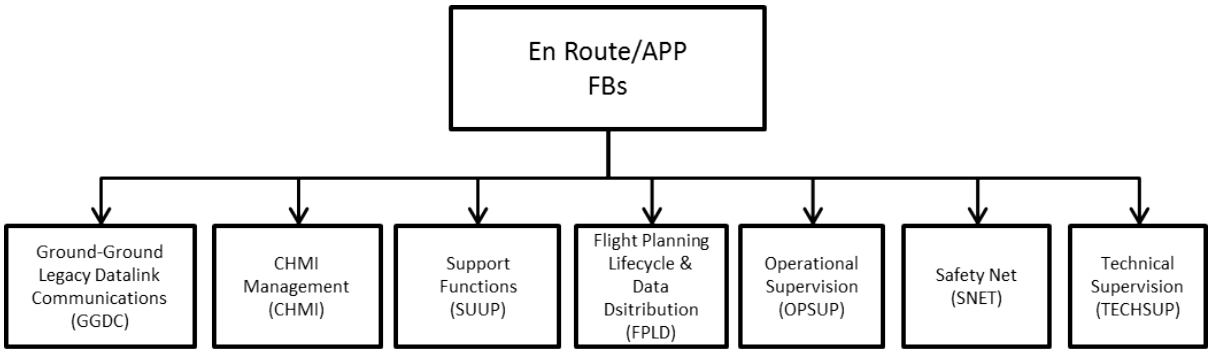
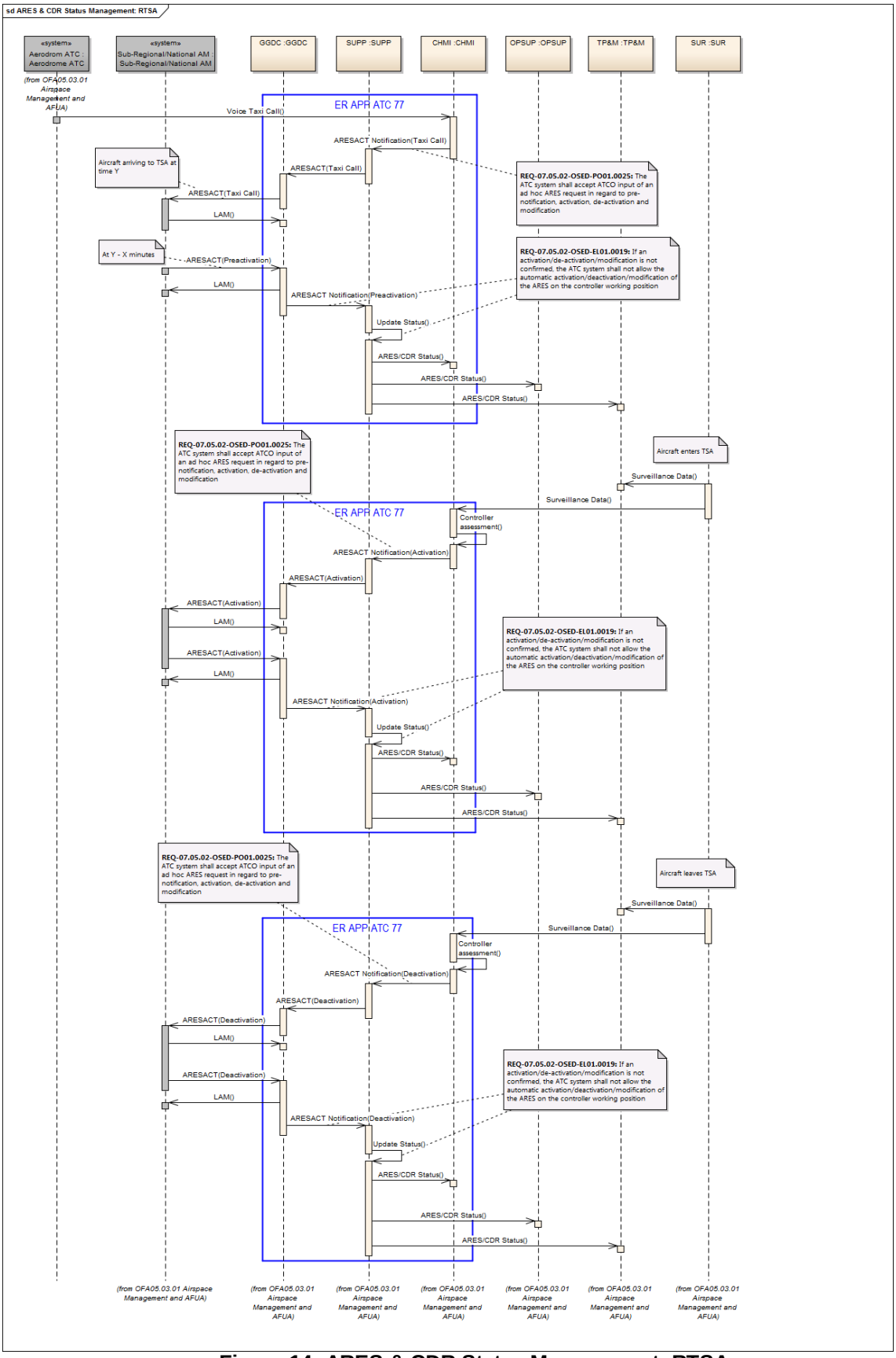


Figure 13: Functional Blocks defined in P10.01.07 TAD



765
766 **Figure 14: ARES & CDR Status Management: RTSA**

2.6.2 Functional analysis

2.6.2.1 Cooperative Airspace Management

The connection to the NM reference environmental database will enable the local and regional systems to be kept updated with the latest information on airspace status. The exchange of information will be based on AIXM 5.1 standard data model supported by B2B services.

The ASM support system is capable of managing airspace reservations and – if a reservation is acknowledged – the status of the airspace itself. All changes in the system are logged by means of time, user and content.

The management of ARES is conducted by several ASM support systems users:

1. The airspace user – e.g. Military Wing Operations,
2. The airspace manager – in general the military and civil part of the airspace management cell,
3. The reservation coordinator – dedicated military units responsible for the de-confliction of overlapping reservation requests,
4. The ACC/UAC supervisor and data specialist (flow managers) – to obtain an operational view on the current airspace usage, updated in real time.

Provision of interoperability between two independent local ASM support systems shall enhance collaborative decision making for the various actors involved in that process; this can be of great benefit particularly when managing cross-border airspace and allowing visibility of adjoining airspace when preparing an AUP/UUP.

The ASM-ASM support systems interface shall allow the equivalent model of communication between two arbitrary ASM support systems as follows:

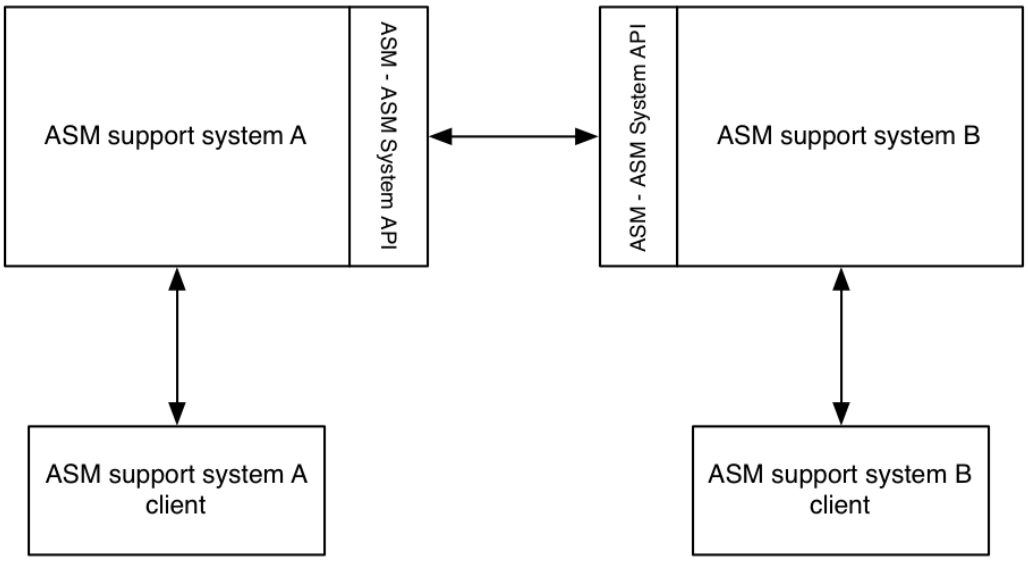


Figure 15: The ASM-ASM support systems interface

When exchanging foreign data (ARES data managed by a foreign ASM support system(s)), the local ASM support system acts purely as a relay. For example, data is requested by ASM support system A client about ASM support system B, this request is passed directly to ASM support system A which then forwards the request to ASM support system B.

Depending upon the type of request being made, ASM support system B may require the provision of some credentials and may also need to be configured to allow certain actions to be performed.

To meet particular operational procedures, for instance, if the request is for an airspace booking, ASM support system B may enforce a rule that only a certain subset of users from ASM support system A have privileges to create reservations. To support this type of user/role based feature, the systems must exchange some details of their users at the time that the initial connection is established.

Operators of ASM support system B may then configure which users of ASM support system A may create a reservation. When a user of ASM support system A then attempts to create a reservation on ASM support system B, they must also provide credentials recognised by ASM support system B, and this allows ASM support system B to determine whether or not they have permission to create the requested reservation.

NM system will be fed by ASM support systems with consolidated information on airspace user's preferences and airspace status to ensure an efficient management of network operations, disseminating them to other subscriber/polling systems.

VPAs and CDRs activation, modification and deactivation information will be provided to NM system in AIXM 5.1 format taking into account inputs made by the responsible ASM support system user.

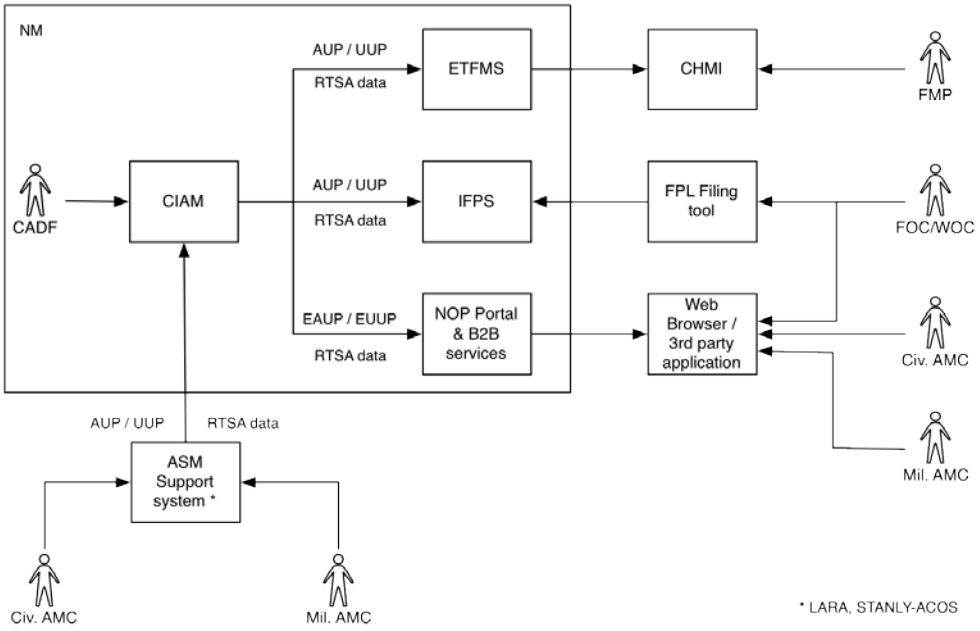


Figure 16: Airspace planning & RTSA update data flow-oriented view

The following combinations of the CDR category and the type of CDR updates are allowed in the NM Environment system:

CDR category	CDR update type
CDR1	Close
	Re-open
CDR2	Open
	Re-close

Table 2-2: Route closures in AUP/UUP

ASM support systems shall interface with the NM system in order to automatically provide RTSA data to the NM and the FMPs, facilitating the CDM process in ASM.

The capability to receive, process, store and send RTSA data allows the system to automatically manage and exchange data in AIXM format via an automated B2B connection in order to support the CDM process and consistency between local / regional ASM support systems and NM system, and to balance demand and capacity in real time.

The NM system shall ensure the validity and the consistency of the RTSA data received and sent. Given the implicit risk related to sharing RTSA data among different users, safety aspect is a critical requirement for NM AFUA implementation.

Network Impact Assessment is performed to better use airspace opportunities (alteration of airspace restrictions, increase route availability) providing additional route options to aircraft operators by means of the following key tasks:

- Identification of the flights which are candidates to take advantage of eventual airspace opportunities (so called “eligible flights”);
- Coordination with the responsible FMP in case the new situation has capacity impact resulting in monitoring and evaluating capacity updates in NM system;
- Assessment of the impact of the request at network level (e.g. on-loading sector, sector reconfiguration, complexity, workload, etc.);
- Investigation and evaluation of all possible ATFCM solutions (e.g. STAM) in order to minimise Network disruptions;

Nevertheless, Network Impact Assessment capabilities are out of the scope of this Technical Specification document. The same kind of Network Impact Assessment has to be performed as well when a new reservation is made (in this case, it won’t provide “airspace opportunities” or “additional route options” but the principle is the similar).

2.6.2.2 En-route / APP functional blocks

The reservation plus airspace state related to the ATC system are transferred from ASM support system to ATC system via ADEX-P message if a certain condition is met. This condition to transfer data from ASM support system to ATS system is met:

a) when the delta time is less than X minutes (120 minutes to be used for validation exercise) before the start of the reservation. This keeps the CWP reservation list slim and reduces the shown items to the minimum that is required for operational use.

b) When reservation data or airspace status has been changed in the ASM support system referring to reservations that have been already sent to ASM support systems.

Then, the ATC system will display on all CWPs that list of bookings for the next Y minutes (120 minutes to be used for validation exercise). If there are modifications on those bookings or new ad-hoc activations, the ASM support system will communicate the changes to the ATC system and those changes will be displayed on all CWPs accordingly.

On the other hand, the ATC controller could make some actions over the ARES from the CWP such as: pre-activate, activate, modify (level bands and levels affected of the booking) and de-activate those bookings. These actions will be sent from the ATC System to the ASM support system as proposals, so, those proposals will not have any effect on the CWPs screen. Only if the ASM support system sends back an acknowledgment message to the ATC system (as an answer to that notification), the result will be updated and displayed on all the CWPs.

It has to be noted that the ATC system will display ARES information if a message is received from the ASM support system, acting the ASM support system as a master and the ATC system as a slave. All the actions made by the ATC controller will be considered as proposals.

For the Civil En-Route and Approach ATC FB, the figure below is only showing the interfaces related to AFUA between ASM support system and the ATC system.

The interfaces are:

- From a technical point of view: exchange with the ASM support system of an ARESACT message.
- From a user's point of view: involved actors are ACC supervisor, ATCO, FDO, Technical Supervisor.

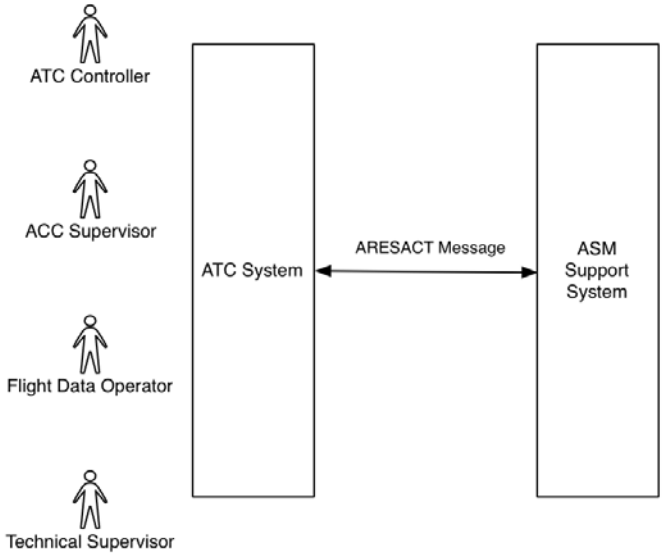


Figure 17: ATC-ASM system interfaces

See section 2.2.2.9.3 from 10.01.07 TAD [12],

These exchanges can be illustrated as follows:

When the military aircraft starts taxiing, the TWR controller informs a military controller in the ATC centre, providing the expected arrival time at the TSA (Y).

The military controller inputs uses the taxi call function in his CWP to provide this information, and the ATC system sends this information to the ASM support system.

When the time is Y minus a configurable time X, the ASM support system triggers the pre-activation of the TSA, which is shown in all CWPs.

When the aircraft is entering to the TSA, the military controller requests the activation of the TSA. This request is sent to the ASM support system, which confirms the activation of the TSA and sends back the TSA activation to the ATC system.

When the aircraft is leaving the TSA, or when the aircraft decides to stop its mission, the military controller uses its CWP to request a deactivation of the TSA. This request is sent to the ASM support system, which confirms the deactivation of the TSA and sends back the TSA deactivation to the ATC system.

2.7 Service View

2.7.1 ARES Collaboration services

The service definition process in AFUA was following several activities, also known as FT09 (B.4.3 AFUA Service Allocation FT09 B.4.3 AFUA Service Allocation FT09) and recently in SVA08, defining set of services candidates for validation activities:

- Query Airspace Reservation Service
- Submit Airspace Reservation Service
- Negotiate Airspace Reservation Service
- Query Regional AUP
- Submit local AUP
- Negotiate local AUP
- AUP simulation service
- Activate Airspace Reservation service
- Deactivate Airspace Reservation service
- Query Airspace Activations service

From service designer's point of view, 5 services were defined as possible candidates to be recorded in ISRM as others were not mature enough. Therefore, only these 5 logical services are recorded in ISRM and considered as part of the ATM architecture and listed below:

- ARESPreActivation Service: negotiation of the pre-activation of a planned ARES;
- ARESActivation Service: notification of the activation of a pre-activated ARES;
- ARESDeActivation Service: negotiation of the de-activation of a planned ARES;
- ARESRelease Service: notification of the release of a de-activated ARES.
- ARESQuery: provides information on an ARES

2.7.2 ASM – ASM services

ASM support system is providing B2B services for a second ASM support system to exchange ASM data (Reference: CBA Land Booking Exchange Service V1.0, OTSD, Bremen, July 2014):

- 1. Authentication Services – These services enable each ASM support system to initially authenticate each other, establishing a connection. They enable the exchange of user information allowing each ASM support system to know of the authenticated users of the other. Finally, they allow a user of the other ASM support system to authenticate and continue to use the other services.
- 2. Static Data Services – Once each ASM support system has established a connection this service enables access to the static data managed by each ASM support system.
- 3. Reservation Services – These services enable an ASM support system to request and subscribe to the reservation data and reservation conflict data from another ASM support system. It also enables an authenticated user to request their action data and create or update a reservation.
- 4. Mission Services – These services enable an exchange of limited mission data between two authenticated ASM support systems.
- 5. Proposal Services – A reservation may, before being given full approval to go ahead, be the subject of a proposed change. These services enable the retrieval and subscription to the proposal data from an ASM support system. They also enable an authenticated and privileged user to create a proposal on a reservation or handle a reservation by either accepting or rejecting it.

- 6. Activation Services – These services enable an authenticated ASM support system to request and subscribe for real time updates to the current activation state of all of the airspace managed by the tool.

See [13] EUROCONTROL, LARA-ACT – Interface LARA-ATC system Edition 1.0 10/01/2011 for more details.

2.7.2.1 Authentication Services

This section of the document describes options for providing authorization and authentication for data exchange between producers and consumers.

The first section (2.7.2.1.1) defines a scenario where an external access manager is implemented and available. However, if there are policies or restrictions which determine that an external manager is not an option, a brief description of the authentication features that the system must implement is provided (2.7.2.1.2).

2.7.2.1.1 Making Use of an External Access Manager

In a corporate topology where multiple systems are running concurrently, with legacy software regularly being retired and replaced with new or updated systems, it might be considered an unnecessary burden that all systems implement their own bespoke authentication mechanisms. The following concerns should be taken into account when considering the approach:

- Development effort – effort is duplicated for every system that is installed, where an authentication mechanism is required
- Support effort – each authentication mechanisms needs to be documented, maintained and supported in isolation
- Inconsistent approach – it is highly probable that different individual solutions will use different technologies and use them in different ways, introducing an unnecessary profusion of techniques, documentation and technical support
- Bespoke solutions – each individual solution would be bespoke for its particular needs. It would seem preferable that solutions should be based on open standards, ensuring a common level of interoperability between different systems

Rather than accepting all these limitations, an alternative approach would be to implement a single authentication and authorization manager which is responsible for all systems within a single network or “authentication domain”. If such an implementation was achieved in a standards compliant manner, this could allow for:

- More effective use of development effort
- Elimination of additional effort required when new services are added
- Single point of maintenance and support
- Adherence to common standards, interoperability with other standard compliant implementations

2.7.2.1.1.1 Security Assertion Mark-Up Language (SAML)

Industry standards already exist which would allow the implementation of a single authentication domain in a manner which is extensible and maintainable according to the detail of those standards. One example is Security Assertion Mark-Up Language (SAML) which provides a syntax and structure for such a mechanism. It is beyond the scope of this document to provide a full description of SAML, but the publicly available definition is available here: http://en.wikipedia.org/wiki/Security_Assertion_Markup_Language.

SAML is compliant with other commonly used data exchange web service technologies, such as SOAP.

2.7.2.1.2 Logging of Authentication Related Details

If a central authentication domain is implemented, the administrators of local systems should have access to some specific information regarding authentication and authorization information which is pertinent to an individual system.

For example, the local system should be able to request or set information regarding some, or all of, the following authentication related features:

- Setting of logging thresholds (log detail level, log rotation size, max number of log to maintain and so on)
- Retrieval of logging information
- Failed authentication attempts
- Suspended accounts
- Current users
- Retired users
- Users currently logged in

2.7.2.1.2 Explicit Definition of Authentication as a Service

If a central authentication domain is not available, services shall be provided to allow an external ASM support system to retrieve the user data from within the service. This exchange is intended to be symmetric between two ASM support systems, with each knowing the other's users and providing credentials for each external to login.

2.7.2.2 Static Data Services

Services shall be provided to enable the retrieval of static data from within the ASM support system.

2.7.2.3 Reservation Services

Services shall be provided to enable the creation, modification and retrieval of reservations within the ASM support system by external users. Details of conflicts between different reservations shall also be made accessible through the service.

The creation and modification of reservations shall be supported through the provision of 'actions' by the service. The actions shall describe the allowed modifications that a user may take on a specific reservation. Actions are subject to change based on the state of a reservation and the current time.

2.7.2.4 Mission Services

Services shall be provided to enable the retrieval of missions held within the ASM support system by external users. Privileges related to which external users may view the mission data should be configured between the two ASM support systems.

2.7.2.5 Proposal Services

Services shall be provided to enable the retrieval of proposals held within the ASM support system by external users.

A proposal refers to a specific reservation and effectively re-defines a subset of the reservation data. A proposal can then be accepted or rejected as per the actions accessible through the service.

2.7.2.6 Activation Services

Services shall be provided to enable the retrieval of activation data held within the ASM support system by external users.

An activation refers to the specific state of an airspace at the current time and until a specified end time. The end time of an activation is subject to change, it may be shortened or extended.

2.7.2.7 Error Handling

Error handling between the two systems shall exchange comprehensive and unambiguous descriptions of problems, providing a complete description of the cause and consequence of issues. This approach will facilitate effective troubleshooting and problem resolution.

An “error” entity shall contain more than just the text which describes the issue which has occurred; a number of other features shall be available which will support effective management of, and reporting on, errors. Some considerations for what features an error entity might support such a strategy are described in Appendix G

3 Functional block Functional and non-Functional Requirements

3.1 Capabilities

3.1.1 Cooperative Airspace Management

3.1.1.1 RTSA data reception

[REQ]

Identifier	REQ-07.05.04-TS-0491.1101
Requirement	The NM system shall allow authorised ASM support systems to upload RTSA data messages.
Title	RTSA_DATA_UPLOAD
Status	<Validated>
Rationale	NM shall be able to collect real-time airspace data from AMCs.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0001	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0002	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0136	<Partial>
<SATISFIES>	<Enabler>	AAMS-06c	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1102
Requirement	The NM system shall automatically validate RTSA data received by authorised ASM client tools
Title	RTSA_DATA_VALIDATION
Status	<Validated>
Rationale	RTSA data need to be validated to ensure all relevant fields are available and consistent with the ENV AIRAC data, based on the RTSA data validity period.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A

<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	AAMS-06c	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1103
Requirement	The NM system shall allow authorised ASM support systems to update RTSA data messages.
Title	RTSA_DATA_UPDATE
Status	<Validated>
Rationale	Allowing AMCs to refine RTSA data according to the result of the CDM process.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0001	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0136	<Partial>
<SATISFIES>	<Enabler>	AAMS-06c	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1104
Requirement	The NM system shall generate and return an acknowledgement message to ASM support system once the processing of the corresponding RTSA data message is completed.
Title	SUBMISSION_ACK_MSG
Status	<Validated>
Rationale	Acknowledge messages provide ASM client tools with an indication whether a RTSA data message has been successfully received, validated and stored.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	AAMS-06c	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>

<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1105
Requirement	The NM system shall return an error message to the ASM support system if the processing of a RTSA data message caused any error.
Title	SUBMISSION_NACK_MSG
Status	<Validated>
Rationale	Allowing AMCs to modify and re-submit RTSA data messages in case of any processing error returned by NM systems.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	AAMS-06c	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1202
Requirement	ASM support system shall manage the reservation status
Title	Extend the VPA with new attribute “status”
Status	<Validated>
Rationale	Activated by ASM support system user or external trigger (ATC System Message), the reservation and VPA has a different status colour for active, inactive and pre-active.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1203
Requirement	ASM support system shall provide the user with a HMI to create and change reservations
Title	Reservation Management in ASM support system
Status	<Validated>
Rationale	The ASM support system user shall be able to create and change a reservation in the ASM support system HMI. The GUI shall offer a divided screen containing a frame for editing reservations and a frame that shows

	all reservations within a specific time frame (today(D), tomorrow(D+1), future (D+2…28)). User shall be able to define the time frame to be displayed. The reservation display shall be available as list, Gantt and map views. Sorting and filtering function in the display shall be available. A sorting option for the reservation list by all listed attributes (begin, end, vertical limit, VPA) shall be possible. A filtering option by dropdown list shall be possible for the attribute VPA and their subparts A dual-date picker / time slider shall be used for the attributes Date and time start – end.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1204
Requirement	The ASM support system HMI shall allow to create and change reservations.
Title	Create and manage reservation
Status	<Validated>
Rationale	The ASM support system user shall be able to manage VPA reservations in the ASM support system HMI. The reservation management contains the actions create, delete, manage and change. New, managed and changed reservations are forwarded to ATC System via the modification message.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1205
Requirement	The ASM support system HMI shall offer an option to insert a pre-activation notification
Title	Enter Pre-activation notification
Status	<Validated>
Rationale	Human input of pre-activation notification (e.g. taxi call) in ASM support system changes the state of the VPA in the ASM support system and on the ATC System map.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1206
Requirement	The ASM support system HMI shall offer an option to insert an VPA activation
Title	Enter an activation message
Status	<Validated>
Rationale	ASM support system user shall be able to activate a VPA in the ASM support system HMI directly. The ASM support system VPA state indication changes to active in the list, map and Gantt views. The activation is sent to ATC System where the VPA state in the map display changes to active. A message to the NM System will be triggered indicating the VPA activation. If ASM support system user creates an ad hoc mission (=opportunity flight), a new reservation is created in ASM support system with the VPA state active (no inactive or pre-active state).
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1207
Requirement	The ASM support system HMI shall offer an option to insert a VPA deactivation
Title	Enter a deactivation message
Status	<Validated>
Rationale	It shall be possible to deactivate a VPA in the ASM support system HMI. The user selects a reservation and selects the button “deactivate VPA”. The reaction is to set the VPA to inactive if it was active before and to send the deactivation message to ATC System. The time at which the “deactivate VPA” button was pressed shall be stored in the reservation database as the end time.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A

<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1095
1096 [REQ]

Identifier	REQ-07.05.04-TS-0491.1208
Requirement	The ASM support system shall be able to receive and process a pre-activation message.
Title	Compute pre-activation message
Status	<Validated>
Rationale	The competent ATCO receives a call from Air Force squadron (Tower). The flight will arrive at the VPA in x minutes. So the airspace is planned to become active in x minutes. Then that ATCO inserts value for x [MM] and ATC System sends the pre-activation notification (e.g. taxi call) notification. The ATCO selects the relevant mission from a list in ATC System and pushes a button “taxi call” on the ATC CWP. ASM support system shall compute the pre-activation time out of the incoming notification by following rule: Calculation: C = a + b – 10min. Special case: if a <11min then send pre-activation message immediately.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1097
1098 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESPreActivation	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1099
1100 [REQ]

Identifier	REQ-07.05.04-TS-0491.1235
Requirement	Pre-activation message shall be distributed using the ARESPreActivation Service.
Title	Pre-activation data dissemination
Status	<In Progress>
Rationale	To disseminate pre-activation data.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1101
1102 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0760	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0750	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-AcAS.0001	<Full>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1236
Requirement	The information provided by the ARESPreActivation service shall be expressed using the AIXM 5.1 format.
Title	Pre-activation data format
Status	<In Progress>
Rationale	Format to distribute ARESPreActivation information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0491-1235. The validation exercise is based on OLDI/ADEXP. The choice of the OLDI format was driven by the timeframe for deployment of the concept, without availability of the SWIM infrastructure. It is foreseen that future evolutions of this interface in Step 2 and 3 will be supported by SWIM, and the exchange format will evolve towards an AIXM 5.1 based one.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1235	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1209
Requirement	The ASM support system shall be able to receive and process an activation message
Title	Compute activation message
Status	<Validated>
Rationale	Upon an Airspace is activated, ATC System sends a notification to ASM support system. The activation is written in the ASM support system DB. ASM support system sends an activation message to ATC System that shall change the status in the RADAR display from pre-active to active.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESActivation	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1111

1112 [REQ]

Identifier	REQ-07.05.04-TS-0491.1237
Requirement	Activation message shall be distributed using the ARESActivation Service.
Title	Activation data dissemination
Status	<In Progress>
Rationale	To disseminate Activation data.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1113

1114 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0750	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0770	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NOP1.0050	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-AcAS.0002	<Full>

1115

1116 [REQ]

Identifier	REQ-07.05.04-TS-0491.1238
Requirement	The information provided by the ARESActivation service shall be expressed using the AIXM 5.1 format.
Title	Activation data format
Status	<In Progress>
Rationale	Format to distribute ARESActivation information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0491-1237. The validation exercise is based on OLDI/ADEXP. The choice of the OLDI format was driven by the timeframe for deployment of the concept, without availability of the SWIM infrastructure. It is foreseen that future evolutions of this interface in Step 2 and 3 will be supported by SWIM, and the exchange format will evolve towards an AIXM 5.1 based one.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1117

1118 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1237	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1210
Requirement	The ASM support system shall be able to receive and process a deactivation message
Title	Compute deactivation message
Status	<Validated>
Rationale	ATC System issues a notification if an area use is finished and the flight left the area. The message shall be computed in ASM support system: reservation database has to be updated by the time the deactivation was entered. ASM support system shall send a deactivation message to ATC System and the NM System thereafter.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESDeactivation	<Full>
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1239
Requirement	Deactivation message shall be distributed using the ARESDeactivation Service.
Title	Deactivation data dissemination
Status	<In Progress>
Rationale	To disseminate Deactivation data.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0770	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0750	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NOP1.0050	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-AcAS.0004	<Full>

1127
1128 [REQ]

Identifier	REQ-07.05.04-TS-0491.1240
Requirement	The information provided by the ARESDeactivation service shall be expressed using the AIXM 5.1 format.
Title	Deactivation data format
Status	<In Progress>
Rationale	Format to distribute ARESDeactivation information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0491-1239. The validation exercise is based on OLDI/ADEXP. The choice of the OLDI format was driven by the timeframe for deployment of the concept, without availability of the SWIM infrastructure. It is foreseen that future evolutions of this interface in Step 2 and 3 will be supported by SWIM, and the exchange format will evolve towards an AIXM 5.1 based one.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1129
1130 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1239	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

1131
1132 [REQ]

Identifier	REQ-07.05.04-TS-0491.1241
Requirement	ARESRelease message shall be distributed using the ARESRelease Service.
Title	ARESRelease data dissemination
Status	<In Progress>
Rationale	To disseminate ARESRelease data.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1133
1134 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0750	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0021	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NOP1.0050	<Partial>

<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-AcAS.0005	<Full>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-nAUP.0002	<Full>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1242
Requirement	The information provided by the ARESRelease service shall be expressed using the AIXM 5.1 format.
Title	ARESRelease data format
Status	<In Progress>
Rationale	Format to distribute ARESRelease information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0491-1241. The validation exercise is based on OLDI/ADEXP. The choice of the OLDI format was driven by the timeframe for deployment of the concept, without availability of the SWIM infrastructure. It is foreseen that future evolutions of this interface in Step 2 and 3 will be supported by SWIM, and the exchange format will evolve towards an AIXM 5.1 based one.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1241	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.1243
Requirement	The ASM Support System shall send to ATC and NM System an ARES release message once the confirmation-acknowledgement process for deactivation is completed and the current time reaches the end time of the ARES.
Title	ARES Release
Status	<In Progress>
Rationale	Once the confirmation-acknowledgement process is completed and the current time reaches the end time of the ARES, the ASM support system displays the ARES as inactive, i.e. the status of the ARES is changed to “Inactive” and sends a message to the ATC to update the status of the ARES on the CWP to “Inactive” and to the NM System for RTSA.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0021	<Partial>
<SATISFIES>	<Service>	ARESRelease	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1211
Requirement	The ASM support system shall be able to receive and process a modification message.
Title	Compute modification message
Status	<Validated>
Rationale	In the ATC CWP, the competent ATCO shall be able to change specific reservation attributes related to the VPA Geometry: 1. Vertical limits: extension or reduction 2. Deactivation or additional activation of VPA parts Other attributes shall be changeable in ASM support system only. The changed attributes in ATC System shall be forwarded to ASM support system as a modification notification. A modification shall be possible only when the VPA state is set to “active”.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1212
Requirement	The ASM support system shall be able to receive and process a pre-activation message.
Title	Send VPA pre-activation message
Status	<Validated>
Rationale	When the airspace pre-activation time is reached (refer to CR13a calculation), ASM support system shall send a pre-activation message to ATC System that changes the status on the RADAR display from inactive to pre-active.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESPreActivation	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1213
Requirement	The ASM support shall be able to send an activation message to the ATC System.

Title	Send VPA activation message
Status	<Validated>
Rationale	ASM support system has received an activation notification from ATC System or an ad hoc reservation is entered in ASM support system by the supervisor. ASM support system sends an activation message to ATC System. This changes the VPA status in the RADAR display from inactive to active.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESActivation	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1214
Requirement	The ASM support shall be able to send a deactivation message to the ATC System.
Title	Send VPA deactivation message
Status	<Validated>
Rationale	A mission has ended and the flight leaves the VPA. The reservation will change from acknowledged to finish. The VPA changes from active to inactive. A cancellation by the pilot during an active mission and VPA is treated like a normal end of the mission, the VPA will be deactivated.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<SATISFIES>	<Service>	ARESDeactivation	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1215
Requirement	The ASM support shall be able to send a modification message to the ATC system.
Title	Send VPA modification message
Status	<Validated>
Rationale	All updates in ATC System will be saved in ASM support system data base and displayed in the HMI reservation list, All updates of time, level, mission, area, call sign and ADEP/ADES in the ASM support system database are forwarded to ATC System (these are all attributes that are to be displayed on the ATC CWP)
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1216
Requirement	The ASM support system shall confirm the reception of a correct message through a confirmation message.
Title	Confirmation message (LAM)
Status	<Validated>
Rationale	Each notification sent from ATC System that is valid has to be answered by a confirmation message from ASM support system. This message is called “LAM message”.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1217
Requirement	The ASM support system HMI shall display the current VPA status.
Title	Display VPA status in ASM support system HMI
Status	<Validated>
Rationale	VPA status shall be displayed in ASM support system in real time. The status shall be shown in a booking list.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1222
Requirement	ASM support system’s Authentication shall be done using the ASM support system’s Authentication Service.
Title	ASM Authentication Service
Status	<Validated>
Rationale	The ASM support system shall offer an authentication service to other ASM support systems. See 7.2.1 Authentication Services.
Category	<Functional>
Validation Method	

Verification Method	<Test>

1173
1174 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED TO>	<Project>	07.05.04	N/A

1175

1176 [REQ]

Identifier	REQ-07.05.04-TS-0491.1223
Requirement	A web service Definition file (WSDL) defining services between ASM support systems shall be available to the service client
Title	web service Definition file (WSDL)
Status	<Validated>
Rationale	The Web Services Description Language is an XML-based interface definition language that is used for describing the functionality offered by a web service. This is required for the correct interface setup on client side. Format to distribute ASM-ASM information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0491.1222, REQ-14.01.04-TS-0491.1230, REQ-14.01.04-TS-0491.1231, REQ-14.01.04-TS-0491.1232, REQ-14.01.04-TS-0491.1233, REQ-14.01.04-TS-0491.1234.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1177
1178 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1222	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1230	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1231	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1232	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1233	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.1234	<Full>
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1179

1180
1181 [REQ]

Identifier	REQ-07.05.04-TS-0491.1224
Requirement	The ASM support system shall monitor incoming and outgoing data
Title	Data flow monitoring
Status	<Validated>
Rationale	To monitor the incoming and sent ASM data, an application shall be implemented.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1182
1183 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1230
Requirement	The ASM support system shall offer a static data service.
Title	ASM Static data Service
Status	<Validated>
Rationale	The ASM support system shall provide a static data service to enable the retrieval of static data from within the ASM support system.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-PuAS.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<SATISFIES>	<Service>	ARESQuery	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1231
Requirement	The ASM support system shall offer a reservation service
Title	ASM Reservation Service
Status	<Validated>
Rationale	The ASM support system shall provide a Reservation service to enable the creation, modification and retrieval of reservations within the ASM support system by external users. See 2.7.2.3 Reservation Services.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1232
Requirement	The ASM support system shall offer a Mission service
Title	ASM Mission Service
Status	<Validated>
Rationale	The ASM support system shall provide a Mission service to enable the retrieval of missions held within the ASM support system by external users See 2.7.2.4 Mission Services.

Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

Remark: this service is not part of ISRM and neither from SID document.

[REQ]

Identifier	REQ-07.05.04-TS-0491.1233
Requirement	The ASM support system shall offer a Proposal service
Title	ASM Proposal Service
Status	<Validated>
Rationale	The ASM support system shall provide a Proposal service to enable the retrieval of proposals held within the ASM support system by external users See 2.7.2.5 Proposal Services.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1234
Requirement	The ASM support system shall offer a Activation service
Title	ASM Activation Service
Status	<Validated>
Rationale	The ASM support system shall provide an Activation service to enable the retrieval of activation data held within the ASM support system by external users. See 2.7.2.6 Activation Services.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-AcAS.0002	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

<ALLOCATED_TO>	<Project>	07.05.04	N/A

1207
1208 [REQ]

Identifier	REQ-07.05.04-TS-0491.1225
Requirement	The ASM support system's Reservation service shall be able to create dummy reservations
Title	Dummy reservation
Status	<Validated>
Rationale	To enable the query of reservations through the Web service, it is necessary to create dummy reservations within the web service application.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1209
1210 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1211
1212 [REQ]

Identifier	REQ-07.05.04-TS-0491.1226
Requirement	The Authentication web service client shall be able to connect to the web service server via internet.
Title	Connect to the web service
Status	<Validated>
Rationale	Before the ASM data can be exchanged, a session must be started by the client containing a login request. The web service approves the request if the login data is valid.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1213
1214 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1215
1216 [REQ]

Identifier	REQ-07.05.04-TS-0491.1227
Requirement	The web service client shall be able to poll ASM data
Title	Polling of ASM data
Status	<Validated>
Rationale	The ASM support system on client side data base is updated with ASM data by polling the web service. Associated operation is booking list request or booking id request.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1217
1218 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1228
Requirement	The ASM support system client shall be able to upload ASM data
Title	Upload of ASM data
Status	<Validated>
Rationale	New, changed or managed bookings on the client ASM support system shall be uploaded by the client by using the web service function create booking or update booking.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1229
Requirement	The Authentication web service client shall be able to terminate the session
Title	Terminate the session
Status	<Validated>
Rationale	At any given time, the web service client shall end the session by sending the logout request function.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-ARES.0001	<Full>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.1.1.2 RTSA data processing

[REQ]

Identifier	REQ-07.05.04-TS-0491.2103
Requirement	The NM system shall store consolidated RTSA data as structured, persistent data into environmental database.
Title	RTSA_DATABASE
Status	<Validated>

Rationale	The NM system shall provide a central and permanently updated view of the real time status of airspaces.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0011	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.1.1.3 RTSA data sharing

[REQ]

Identifier	REQ-07.05.04-TS-0491.3101
Requirement	The NM system shall make RTSA data available to external client systems via B2B connection.
Title	RTSA_DATA_SHARING
Status	<Validated>
Rationale	Making RTSA data accessible by FOCs/WOCs for pre-calculation of trajectories and re-processing of FPLs at a very early point in the airspace information sharing process.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0007	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.3102
Requirement	The NM system shall retrieve RTSA data without interfering with existing AUP/UUP data chain.
Title	RTSA_DATA_RETRIEVAL
Status	<Validated>

Rationale	AUP/UUP chain shall not be affected by RTSA data in order to perform network impact assessments, what-if and post-ops analyses.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.3103
Requirement	The NM system shall make all data concerning FUA/EU restrictions, including Off Load routes, Excluded routes, SID/STAR, DCT, Nearby routes and related routes, available to external client systems via B2B connection.
Title	FUA_RESTRICTION_RETRIEVAL
Status	<In Progress>
Rationale	Making FUA (AMA and NAM as published in AIP) and EU (Special or temporary areas) restrictions information accessible for assessing their impact on FPLs at local and network level.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0007	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.3104
Requirement	RTSA data shall be distributed using the ARESQuery Service.
Title	RTSA data dissemination
Status	<Validated>
Rationale	To disseminate RTSA data.
Category	<Interface>
Validation Method	

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0007	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>
<SATISFIES>	<Information Exchange Requirement>	IER-07.05.02-OSED-EAUP.0001	<Full>

[REQ]

Identifier	REQ-07.05.04-TS-0491.3105
Requirement	The information provided by the ARESQuery service shall be expressed using the AIXM 5.1 format.
Title	RTSA data format
Status	<Validated>
Rationale	Format to distribute ARESQuery information, using the Yellow Profile. SWIM-TI binding: REQ-14.01.04-TS-0901-0304.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.04-TS-0491.3104	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.1.1.4 RTSA data visualisation

[REQ]

Identifier	REQ-07.05.04-TS-0491.4101
Requirement	The NM system shall allow the user to visualize the RTSA data via NOP Portal in both textual and graphical views for a selectable user list of AMCs or FMPs over a query period.
Title	DATA_VISUALISATION_MODE
Status	<In Progress>
Rationale	An easily interpretable visual display shall allow pertinent actors to understand fully the impact of airspace allocation decisions and provide the ability to fine tune airspace allocation in order to make best use of available airspace.
Category	<Functional>

Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0420	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.4102
Requirement	The NM system shall allow client systems to choose for each individual area which airspace status to plot: planning (AUP, UUP), actual RTSA, or both.
Title	DATA_VISUALISATION_OPTIONS
Status	<In Progress>
Rationale	Allowing pertinent actors to compare planning and actual ASM data for tactical and post-ops analyses.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0420	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.4103
Requirement	The NM system shall allow the user to visualize via NOP Portal the list of all FUA/EU restrictions selected by relevant AMCs according to the consolidated EAUP/EUUP.
Title	FUA_RESTRICTION_VISUALIZATION
Status	<In Progress>
Rationale	An easily interpretable visual display shall allow pertinent actors to understand fully the impact of airspace allocation decisions and provide the ability to fine tune airspace allocation in order to make best use of available airspace.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0420	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.1.1.5 RTSA data content

[REQ]

Identifier	REQ-07.05.04-TS-0491.5101
Requirement	RTSA RSA real time allocations shall include an additional Boolean attribute (enable/disable) representing the application (or not) of each FUA/EU restriction. In the RSA availability list, a dedicated column allowing to enable/disable the “FUA restriction” attribute shall be available with the header "FUA restriction".
Title	FUA_RESTRICTION_RTSA
Status	<In Progress>
Rationale	Once consolidated, FUA/EU restrictions information shall be issued via RTSA data message in order to update NM systems and be available for external client systems.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.5102
Requirement	RTSA real time availability statements shall include two additional Boolean attributes for FUA level 1 (NAM) and FUA level 2 (AMA), representing the application of each FUA/EU restriction. In the corresponding HMI two dedicated columns indicating the corresponding value of the attributes shall be available with the header "FUA Restriction".
Title	FUA_RESTRICTION_RTSA
Status	<In Progress>

Rationale	Once aggregated at ECAC level, FUA/EU restrictions information shall be published via RTSA in order to reflect the overall airspace allocation.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.5103
Requirement	The NM system shall allow the user to compare and visualize the changes made between different versions of a released RTSA data message, belonging to the same AUP chain.
Title	RTSA_DATA_COMPARISON
Status	<Validated>
Rationale	Comparing the CDRs/RSAs status of two RTSA data message versions.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0015	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.1.1.6 Impact Assessment

[REQ]

Identifier	REQ-07.05.04-TS-0491.6101
Requirement	The NM system shall allow an operator to use RTSA data to perform network impact assessments.
Title	NETWORK_IMPACT_ASSESSMENT
Status	<Validated>

Rationale	Making better use of airspace opportunities (alteration of airspace restrictions, increase route availability) in order to provide additional route options to aircraft operators.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0016	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0470	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-SAFE.0006	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.6102
Requirement	The NM system shall consider FPL change proposals for fine tuning traffic distribution for the network impact assessment.
Title	FPL_CHANGE_PROPOSALS
Status	<Validated>
Rationale	Taking into account Airspace User's intentions in order to perform more accurate assessments.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0016	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0460	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.1.1.7 Post-operation analysis

[REQ]

Identifier	REQ-07.05.04-TS-0491.7101

Requirement	The NM system shall record all the B2B data exchanges in a log file.
Title	B2B_EXCHANGES_LOG
Status	<Validated>
Rationale	It shall be possible to access B2B data exchange logs for post-ops analysis purposes.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1293
1294 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0302.0003	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0019	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0270	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

1295
1296 [REQ]

Identifier	REQ-07.05.04-TS-0491.7102
Requirement	The NM system shall store network impact assessment simulation data based on RTSA information for the flights affected by relevant area activation/deactivation/modification.
Title	SIMULATION_DATA_COLLECTION
Status	<Validated>
Rationale	It shall be possible to access simulation data for post-ops analysis purposes.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1297
1298 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0302.0003	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0019	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

1299 #### 3.1.1.8 ASM-ASM Interface Requirements

1300 [REQ]

Identifier	REQ-07.05.04-TS-0491.8101
Requirement	The ASM support system shall provide a service which will allow the secure

	exchange of user and role information in order that data exchange is restricted only to the appropriate actors in the systems.
Title	Authenticate users and roles
Status	<In Progress>
Rationale	Specific roles shall have specific access privileges within each local system. Each system needs to be aware of these privileges in order that permissible requests are made, and that appropriate denial is issued when a non-permissible request is made
Category	<Functional>
Validation Method	
Verification Method	<Test>

1301

1302 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0007	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-SAFE.0001	<Partial>
<SATISFIES>	<Enabler>	AAMS-06b	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1303

1304 [REQ]

Identifier	REQ-07.05.04-TS-0491.8201
Requirement	The ASM support system shall provide a service that allows the static data he manages to be retrieved in AIXM 5.1 format.
Title	Retrieve Static Data
Status	<Validated>
Rationale	Reservation data from the ASM support system will reference booked airspace. Retrieval of this data will allow for the resolution of these references as well being able to present the data to a user.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1305

1306 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1307

1308 [REQ]

Identifier	REQ-07.05.04-TS-0491.8301
Requirement	The ASM support system shall provide a service that allows to retrieve all reservations within a configurable time interval.
Title	Retrieve Reservation Data
Status	<Validated>
Rationale	The client ASM support system requires access to existing reservation data, including any they have themselves created. The request is required to support a time based filter to allow the client to control the amount of data to be returned to it.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1309

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0006	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-AOM1.0009	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0011	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0014	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8302
Requirement	The ASM support system shall provide a service that allows reservations to be created by an authenticated and privileged user of the client ASM support system.
Title	Create Reservations
Status	<Validated>
Rationale	The client ASM support system shall be allowed to forward reservation requests for airspace managed by the service from authenticated users.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8303
Requirement	The ASM support system shall provide a service that allows reservations to be updated by an authenticated and privileged user of the client ASM support system.
Title	Update Reservations
Status	<Validated>
Rationale	The client ASM support system shall be allowed to forward reservation update requests for airspace managed by the service from authenticated users.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8304

Requirement	The ASM support system shall provide a service that allows an update request to cancel a reservation.
Title	Cancel Reservations
Status	<Validated>
Rationale	The client ASM support system shall be allowed to forward reservation update requests to cancel previously created reservations
Category	<Functional>
Validation Method	
Verification Method	<Test>

1321

1322 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1323

1324 [REQ]

Identifier	REQ-07.05.04-TS-0491.8305
Requirement	The ASM support system shall provide a service that allows for reservation updates to be subscribed for by an authenticated ASM support system.
Title	Subscribe for Reservations
Status	<Validated>
Rationale	A subscription for reservation data prevents the need for the client ASM support system to continually poll the service.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1325

1326 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1327

1328 [REQ]

Identifier	REQ-07.05.04-TS-0491.8306
Requirement	The ASM support system shall provide a service that allows for reservation conflict information to be retrieved for a set of reservations by an authenticated ASM support system.
Title	Retrieve Reservation Conflicts
Status	<In Progress>
Rationale	The ASM support system providing the service shall apply its own rules to calculate conflicts and make these available to all clients.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1329

1330 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0450	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

<ALLOCATED_TO>	<Project>	07.05.04	N/A

1331

1332 [REQ]

Identifier	REQ-07.05.04-TS-0491.8307
Requirement	The ASM support system shall provide a service that allows for reservation conflict updates to be subscribed for by an authenticated ASM support system.
Title	Subscribe for Reservation Conflicts
Status	<In Progress>
Rationale	A subscription for reservation conflict data prevents the need for the client ASM support system to continually poll the service.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1333

1334 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0450	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1335

1336 [REQ]

Identifier	REQ-07.05.04-TS-0491.8308
Requirement	The ASM support system shall provide a service that allows for reservation action information to be retrieved for a set of reservations by an authenticated ASM support system.
Title	Retrieve Reservation Actions
Status	<In Progress>
Rationale	The ASM support system providing the service shall control the users able to create, edit and cancel reservations making this information available to client applications to support their UI.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1337

1338 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1339

1340 [REQ]

Identifier	REQ-07.05.04-TS-0491.8309
Requirement	The ASM support system shall provide a service that allows for reservation action updates to be subscribed for by an authenticated ASM support system.
Title	Subscribe for Reservation Actions
Status	<In Progress>
Rationale	A subscription for reservation action data prevents the need for the client ASM support system to continually poll the service.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8401
Requirement	The ASM support system shall provide a service that allows for all missions within a configurable time interval to be retrieved from the ASM support system.
Title	Retrieve Mission Data
Status	<Validated>
Rationale	The client ASM support system requires access to existing mission data, including any they have themselves created. The request is required to support a time based filter to allow the client to control the amount of data to be returned to it.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8402
Requirement	The ASM support system shall provide a service that allows for mission updates to be subscribed for by an authenticated ASM support system.
Title	Subscribe for Missions
Status	<Validated>
Rationale	A subscription for mission data prevents the need for the client ASM support system to continually poll the service.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.8501
Requirement	The ASM support system shall provide a service that allows for all proposals within a configurable time interval to be retrieved from a client ASM support system.

Title	Retrieve Proposal Data
Status	<Validated>
Rationale	The client ASM support system requires access to existing proposal data, including any they have themselves created. The request is required to support a time based filter to allow the client to control the amount of data to be returned to it.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1353

1354 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1355

1356 [REQ]

Identifier	REQ-07.05.04-TS-0491.8502
Requirement	The ASM support system shall provide a service that allows for proposals to be created by an authenticated user of the client ASM support system with an appropriate action.
Title	Create Proposals
Status	<Validated>
Rationale	The client ASM support system shall be allowed to forward proposal requests for airspace managed by the service from authenticated users.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1357

1358 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1359

1360 [REQ]

Identifier	REQ-07.05.04-TS-0491.8503
Requirement	The ASM support system shall provide a service that allows for proposals to be accepted or rejected by an authenticated and privileged user for the client ASM support system with an appropriate action.
Title	Handle Proposals
Status	<Validated>
Rationale	The client ASM support system users shall be allowed to accept and reject proposals on a reservation managed by the service that they are responsible for.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1361

1362 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0460	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1363

1364 [REQ]

Identifier	REQ-07.05.04-TS-0491.8504
Requirement	The ASM support system shall provide a service that allows for proposals to be subscribed for by an authenticated ASM support system.
Title	Subscribe for Proposals
Status	<Validated>
Rationale	A subscription for proposal data prevents the need for the client ASM support system to continually poll the service.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1365

1366 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1367

1368 3.1.2 Ground-Ground Datalink Management Requirements

1369 3.1.2.1 RTSA data reception

1370 [REQ]

Identifier	REQ-07.05.04-TS-0491.1310
Requirement	The ATC System shall be able to receive ARES Messages from the ASM support system
Title	RTSA Data Reception
Status	<Validated>
Rationale	ATC System shall be able to receive ARES Messages from the ASM support system
Category	<Interface>
Validation Method	
Verification Method	<Test>

1371

1372 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1373 [REQ]

Identifier	REQ-07.05.04-TS-0491.1311
Requirement	The ATC System shall be able to receive ARES Messages from the ASM support system in ADEXP format
Title	RTSA Data Reception Format
Status	<Validated>
Rationale	To ensure data correctness exchange between the ATC system and the

	ASM support system
Category	<Interoperability>
Validation Method	
Verification Method	<Test>

1374
1375 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A

1376
1377 [REQ]

Identifier	REQ-10.05.01-TS-3110.0050
Requirement	The ATC system shall inform the operational supervisor when any ARESACT message has not been processed and, consequently, no LAM has been sent.
Title	Inform Operational Supervisor of not processed and acknowledged ARESACT
Status	<Validated>
Rationale	The Operational supervisor should be aware of areas booking messages that were not correctly processed.
Category	<Functional>
Validation Method	
Verification Method	<Test>

1378
1379 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A

1380
1381 [REQ]

Identifier	REQ-10.05.01-TS-3110.0060
Requirement	The ATC system shall store the sequence number of the last received ARESACT message from each of the different sources of these messages
Title	ARESACT sequence number storage
Status	<Validated>
Rationale	The system needs to be aware of the latest received ARESACT message storing the sequence number for each of the sources in order to verify that there are no missing messages
Category	<Functional>
Validation Method	
Verification Method	<Test>

1382
1383 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A

<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1384

1385 [REQ]

Identifier	REQ-10.05.01-TS-3110.0070
Requirement	The ATC system shall check the sequence number present in each ARESACT message against the one stored as the last sent by the source, and report an error on the processing if it is not the next one in the sequence
Title	ARESACT sequence number validation
Status	<Validated>
Rationale	This is a mechanism to ensure that no messages have been missed inadvertently
Category	<Functional>
Validation Method	
Verification Method	<Test>

1386

1387 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1388

1389 [REQ]

Identifier	REQ-10.05.01-TS-3110.0080
Requirement	In case that an error in the sequence number for a certain ARESACT message is received, the ATC system shall send a request to the Technical Supervision in order to consider that the link with the source of such message is broken
Title	ARESACT link disconnection upon wrong sequence number
Status	<In Progress>
Rationale	The system should consider that the link is broken if a message has been missed, thus causing a reset of the database
Category	<Functional>
Validation Method	
Verification Method	<Test>

1390

1391 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1392

1393 [REQ]

Identifier	REQ-10.05.01-TS-3110.0090
Requirement	The ATC system shall store the sequence number of the last LAM message sent to each of the different sources of ARESACT messages
Title	LAM sequence number storage
Status	<Validated>

Rationale	The system needs to be aware of the latest sent sequence number for each of the sources in order to include the right one in the next message
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3110.0100
Requirement	The ATC system shall fill the sequence number of each LAM message with the next number after the last one stored as “sent” for that specific source of ARESACT
Title	LAM sequence number filling
Status	<Validated>
Rationale	Correct filling of the sequence number for a specific source to validate it against ATC system internal data
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.1.2.2 RTSA data dissemination

[REQ]

Identifier	REQ-07.05.04-TS-0491.3310
Requirement	The ATC system shall send an ARES message per module involved in the booking to the ASM support system every time the ATC controller makes a manual action over a booking.
Title	Booking Dissemination Process
Status	<Validated>
Rationale	The ATC Controller shall make manual actions (activate, de-activate, modify and pre-activate) to one booking composed by at least one ARES. So the ATC system shall send at least one ARES Message to the ASM support system once the ATC Controller makes the manual action
Category	<Functional>
Validation Method	

Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.3311
Requirement	The ATC system shall send an ARESACT Message to the ASM support system indicating the notification of the pre-activation issued by the ATC Controller.
Title	Send notification of the pre-activation Message to the ASM support system
Status	<Validated>
Rationale	FDPS shall send a notification of the pre-activation (e.g. Taxi Call) message to the ASM support system. There will not be any change on the CWP until an answer is received from the ASM support system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.3312
Requirement	The ATC system shall send an ARESACT message to the ASM support system indicating the Activation over an ARES issued by the ATC controller
Title	Send Activation Message to the ASM support system
Status	<Validated>
Rationale	FDPS shall send an Activation Message to the ASM support system. There will not be any change on the CWP until an answer is received from the ASM support system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.3313
Requirement	The ATC system shall send an ARESACT Message to the ASM support system indicating the modification over an ARES issued by the ATC controller
Title	Send Modification Message to the ASM support system
Status	<Validated>
Rationale	FDPS shall send a Modification Message to the ASM support system. There will not be any change on the CWP until an answer is received from the ASM support system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.3314
Requirement	The ATC system shall send an ARESACT Message to the ASM support system indicating a de-activation over an ARES issued by the ATC controller
Title	Send a De-activation Message to the ASM support system
Status	<Validated>
Rationale	FDPS shall send a De-activation Message to the ASM support system. There will not be any change on the CWP until an answer is received from the ASM support system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

3.1.3 Support Functions

3.1.3.1 RTSA data processing

[REQ]

Identifier	REQ-07.05.04-TS-0491.2312
Requirement	The ATC System shall activate an ARES after receiving and process an activation message from the ASM Support system
Title	ARES activation
Status	<Validated>
Rationale	The ATC System shall activate an ARES only if the ASM support system sends an activation message. This implies that the ATC System shall not de-activate an ARES in case the activation time reaches.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0019	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.2313
Requirement	The ATC System shall de-activate an ARES after receiving and process a de-activation message from the ASM Support system
Title	ARES de-activation
Status	<Validated>
Rationale	The ATC System shall de-activate an ARES only if the ASM support system sends a de-activation message. This implies that the ATC System shall not de-activate an ARES in case the de-activation time reaches.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0019	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.2314
Requirement	The ATC System shall pre-notify an ARES after receiving and process a pre-notification message from the ASM Support system
Title	ARES Pre-Notification
Status	<Validated>
Rationale	The ATC System shall pre-notify an ARES only if the ASM support system sends a pre-notification message.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.2315
Requirement	The ATC System shall apply the modifications over an ARES after receiving a modification message from the ASM Support system
Title	ARES Modification
Status	<Validated>
Rationale	The ATC System shall apply the modifications (on the booking list and on the status of the ARES) when the ASM support system sends a modification message. The modifications are related to the flight levels (only reduce altitude) and the modules available within a booking (only reduce the number of modules).
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.2316
Requirement	On reception of an ARESACT message notifying an ARES change status, the ATC System shall overwrite the ARES status in the ARES database with the information present in the new incoming message
Title	Overwrite ARES status in the ATC System ARES database
Status	<Validated>
Rationale	The ARESACT database should be updated on receiving new information about ARES status
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.1.4 CHMI Management

3.1.4.1 RTSA data processing

[REQ]

Identifier	REQ-07.05.04-TS-0491.2310
Requirement	The ATC system shall manage bookings over a VPA
Title	Booking Managing
Status	<Validated>
Rationale	The ATC Controller shall make manual actions over VPA's bookings
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>

<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.2311
Requirement	The ATC System shall wait for an ADEX-P confirmation message from the ASM support system to apply the appropriate changes on the CWP after any manual action (pre-activation, activation, de-activation and modification) made by the ATC Controller on the CWP
Title	Booking update
Status	<Validated>
Rationale	The ATC System shall send the needed ARES Messages to the ASM support system per manual action and per booking made by the ATC Controller on the CWP but there will not be changes on the CWP display.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0019	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.1.4.2 RTSA visualisation

[REQ]

Identifier	REQ-07.05.04-TS-0491.4310
Requirement	The ATC system shall display bookings on all CWPs with the ARES sent by the ASM support system.
Title	Booking Displayed
Status	<Validated>
Rationale	The ASM support system shall send the bookings list to the ATC System and the list will be displayed on all iCWPs.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4311
Requirement	The ATC system shall update ARES's information on all the CWPs with the information received from the ASM support system
Title	ARES Status Displayed
Status	<Validated>
Rationale	All CWPs shall update ARES' info displayed with the ARESACT messages received from the ASM support system
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4312
Requirement	The ATC system shall wait for the confirmation of the ASM support system to update the display of all the CWPs every time the ATC controller makes a manual input.
Title	Manual Inputs Displayed
Status	<Validated>
Rationale	The ATC system shall not display the result of the modifications made by the ATC controller until receives the confirmation from the ASM support system
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4313
Requirement	The ATC system shall allow to fill the time remaining to activate a booking in the CWP.
Title	Fill Pre-Activation Time
Status	<Validated>
Rationale	The ATC controller shall fill the time (10 minutes by default for this prototype) remains to activate a booking on the CWP. The ATC controller shall select the booking to pre-activate from the booking list and will push the 'Pre-Activate' button and will fill in the box with the time remaining. The time is inserted in minutes. If the time is less than the default time (10 minutes), the ASM support system shall send a Pre-activation Message automatically. If the time is more than the default time (10 minutes), the ASM support system shall send a Pre-Activation Message 10 minutes before the Activation Time.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4314
Requirement	The ATC system shall allow to notify the activation of a booking from the CWP.
Title	Notify the Activation of a booking
Status	<Validated>
Rationale	The ATC controller shall notify the activation of a booking from the CWP selecting the booking from the booking list and push 'Activate' button. But there will not be any change on the CWP until the ASM support system sends an ARES confirming the action requested by the ATC controller
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A

<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1477
1478 [REQ]

Identifier	REQ-07.05.04-TS-0491.4315
Requirement	The ATC system shall allow to notify the reduction of the vertical dimensions of the ARES from the CWP.
Title	Reduce vertical dimensions of ARES
Status	<Validated>
Rationale	The ATC controller shall reduce the vertical dimensions of one ARES from the CWP. The ATC controller shall select a booking from the booking list and push the 'Modify' button. In this window, the ATC controller can choose to modify the vertical dimensions of at least one module part of the booking. The booking could have different level bands for each module. The result of this modification will not appear on the CWP until an ARES message is received from the ASM support system.
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

1479
1480 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1481
1482 [REQ]

Identifier	REQ-07.05.04-TS-0491.4317
Requirement	The ATC system shall allow to notify the partial de-activation of an ARES from the CWP.
Title	De-activate an ARES partially
Status	<Validated>
Rationale	The ATC controller can de-activate an ARES partially from the CWP. In case the booking is composed by more than one module, the ATC controller can de-activate some modules from the booking but at least one module has to be booked.
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

1483
1484 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4319
Requirement	The ATC system shall allow to notify the de-activation of a booking from the CWP.
Title	De-activate a booking
Status	<Validated>
Rationale	The ATC controller shall de-activate a booking from the CWP. The ATC controller shall select a booking from the booking list and push ‘De-activate’ button. There will not be any change until an ARES message is received from the ASM support system.
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4320
Requirement	The ATC system shall display on all CWPs the VPA pre-activated after receiving a pre-notification from the ASM support system.
Title	Pre-notification ARES outline display
Status	<Validated>
Rationale	The CWP shall display the outline of the ARES with PREACTIVATION COLOUR dots after receiving a pre-notification message from the ASM support system. In case there is an ARES pre-activated for a booking and the same ARES activated for other booking at the same time (implies the level bands for both bookings are different), the CWP shall display the outline as the activated one. PREACTIVATION_COLOUR will be defined taking into account local requirements

Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0020	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4322
Requirement	The ATC system shall display in all the CWPs the VPA activated after an activation message is received from the ASM support system.
Title	Activated ARES outline display
Status	<Validated>
Rationale	The CWP shall display in all the CWPs the outline of the ARES with an ACTIVATION_COLOUR continuous line after an activation message is received from the ASM support system. ACTIVATION_COLOUR will be defined taking into account local requirements
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0020	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4324
Requirement	The ATC system shall update the ARES' information displayed on all the CWPs when the ASM support system sends an update.
Title	Updated information displayed
Status	<Validated>
Rationale	The ATC system shall update the ARES' info displayed in the CWP when the ASM support system sends an update.
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4325
Requirement	The ATC system shall update the booking list on all the CWPs when the ASM support system sends an update.
Title	Booking list update
Status	<Validated>
Rationale	The ATC system shall update the booking list in all the CWPs when the ASM support system sends an update.
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4326
Requirement	The ATC System shall remove the outline of all ARES contained in a booking from all CWPs when the ASM support system sends a de-activation message.
Title	De-activation update
Status	<Validated>
Rationale	The ATC System shall remove the ouline of all the ARES from all CWPs contained in a booking.
Category	<HMI><Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0020	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4327
Requirement	The ATC system shall remove the booking row in the booking list from all CWPs when the ASM support system sends a de-activation message.
Title	De-activation booking list update
Status	<Validated>
Rationale	The ATC system shall remove the booking row from all CWPs when the ASM support system sends a de-activation message
Category	<HMI><Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.1.4.3 ATC HMI Requirements

[REQ]

Identifier	REQ-07.05.04-TS-0491.9301
Requirement	The CWP shall display an alert when any ARESACT message has not been processed and, consequently, no LAM has been sent.
Title	Alert display when ARESACT message not processed
Status	<In Progress>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-10.05.01-TS-3110.0050.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9302
Requirement	The CWP shall allow any manual action over an ARES (pre-activation, activation, de-activation and modification) made by the ATC Controller.
Title	Controller manual actions over an ARES

Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.2311, REQ-07.05.04-TS-0491.3310, REQ-07.05.04-TS-0491.3312, REQ-07.05.04-TS-0491.3314, REQ-07.05.04-TS-0491.4314, REQ-07.05.04-TS-0491.4315, REQ-07.05.04-TS-0491.4317
Category	<HMI>
Validation Method	
Verification Method	<Test>

1522
1523 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Full>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1524
1525 [REQ]

Identifier	REQ-07.05.04-TS-0491.9303
Requirement	The CWP shall display the appropriate changes after receiving an ADEX-P confirmation message from the ASM support system.
Title	Display the appropriate changes after receiving an ADEX-P
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.2311.
Category	<HMI>
Validation Method	
Verification Method	<Test>

1526
1527 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1528
1529 [REQ]

Identifier	REQ-07.05.04-TS-0491.9304
Requirement	The CWP shall allow the controller to issue a pre-activation notification.
Title	Controller pre-activation notification action
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.3311
Category	<HMI>
Validation Method	
Verification Method	<Test>

1530

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9305
Requirement	The CWP shall allow the controller to modify an ARES.
Title	Controller modification over an ARES
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.3313
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9306
Requirement	The CWP shall display a booking list with the ARES.
Title	Display of an ARES booking list
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4310
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9307
Requirement	The CWP shall display the ARES´s information update.
Title	Display of an ARES' information update
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-

	07.05.04-TS-0491.4311
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9308
Requirement	The CWP shall display the appropriate updates after receiving the ASM support system confirmation message.
Title	Display updates after ASM support system message
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4312
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9309
Requirement	The CWP shall allow the controller to fill the time remaining to activate a booking
Title	Controller to fill booking remaining time
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4313
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9310
Requirement	The CWP shall allow the controller to de-activate of a booking.
Title	Controller de-activates a booking
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4319
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0025	<Partial>
<ALLOCATED TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9313
Requirement	The CWP shall display updated ARES' information when receiving an update.
Title	Display updated ARES´info.
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4324
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9314
Requirement	The CWP shall display an updated booking list when receiving an update.
Title	Display updated booking
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4325
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A

<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1566
1567 [REQ]

Identifier	REQ-07.05.04-TS-0491.9315
Requirement	The CWP shall remove the VPA after receiving a de-activation message.
Title	Removing of the ARES outline when received a de-activation message
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4326
Category	<HMI>
Validation Method	
Verification Method	<Test>

1568
1569 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0020	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1570
1571 [REQ]

Identifier	REQ-07.05.04-TS-0491.9316
Requirement	The CWP shall remove the booking row in the booking list when receiving a de-activation message.
Title	Removing a booking row when received a de-activation message
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4327
Category	<HMI>
Validation Method	
Verification Method	<Test>

1572
1573 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Full>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1574
1575 [REQ]

Identifier	REQ-07.05.04-TS-0491.9317
Requirement	The CWP shall display a message when an unrecoverable communications link error appears.
Title	Display a message when a communications failure occurs
Status	<In Progress>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-10.05.01-TS-3600.0050
Category	<HMI>
Validation Method	
Verification Method	<Test>

1576

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9318
Requirement	The CWP shall be designed consistent with the standards.
Title	Designed CWP designed with standards
Status	<Validated>
Rationale	Design should, in all cases, comply with the standardization organizations.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0031	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9319
Requirement	The CWP shall be able of displaying any basic volume of a VPA
Title	Possibility display any basic volume of a VPA
Status	<Validated>
Rationale	All the shapes of a VPA can be proposed to the system.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-AOM1.0004	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9321
Requirement	The CWP shall display levels in FL or Feet.
Title	Display levels in FL or Feet
Status	<Validated>
Rationale	Both measure units should be able to be shown.
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-AOM1.0008	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>

<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

1590

1591 3.2 Adaptability

1592 [REQ]

Identifier	REQ-10.05.01-TS-3200.0010
Requirement	The system shall allow the modification of the message processing logic, so that it is able to support enhancements of the ARESACT message format and contents to include additional information items or support other kinds of restricted areas.
Title	ASM link expandability
Status	<Validated>
Rationale	Further enhancement for the ARESACT should be easily implemented in the system.
Category	<Design>
Validation Method	
Verification Method	<Review of Design>

1593

1594 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1595

1596 [REQ]

Identifier	REQ-10.05.01-TS-3200.0020
Requirement	The component processing the ARESACT message shall be ready to be modified for the replacement of the point to point link by the SWIM communications infrastructure.
Title	ASM link through SWIM
Status	<In Progress>
Rationale	The component processing should not be affected by changes in the communication layer
Category	<Design>
Validation Method	
Verification Method	<Review of Design>

1597

1598 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1599

3.3 Performance Characteristics

N/A

3.4 Safety & Security

3.4.1 Safety

N/A

3.4.2 Security - Authentication

[REQ]

Identifier	REQ-07.05.04-TS-0494.0101
Requirement	The NM system shall ensure that secure communication is established with external client tools by exchanging SSL certificates (HTTPS connection).
Title	CLIENT_AUTHENTICATION
Status	<Validated>
Rationale	Protecting NM web services from unauthorised client tools access.
Category	<Security>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-SAFE.0003	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-SAFE.0002	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.4.3 Security - Authorisation

[REQ]

Identifier	REQ-07.05.04-TS-0494.0102
Requirement	The NM system shall determine possible access restrictions to web services and data in function of the client system profile.
Title	CLIENT_AUTHORISATION
Status	<Validated>
Rationale	NM web services must be protected from unauthorized use and data access must be limited to the authorised level.
Category	<Security>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0494.0103
Requirement	The NM system shall allow only the AMC owning the RTSA data message to delete it via B2B and only if the information is not yet released/published.
Title	RTSA_DATA_DELETION
Status	<Validated>
Rationale	Via NOP/B2B, a RTSA data message can only be created by an AMC, and is thereby owned by the AMC: the RTSA data message can then be deleted by a user associated to that AMC only.
Category	<Security>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.5 Maintainability

[REQ]

Identifier	REQ-07.05.04-TS-0495.0101
Requirement	The NM system shall allow to connect a simulated source of RTSA data messages for verification and validation purposes.
Title	DATA_SOURCE_SIMULATION
Status	<Validated>
Rationale	It shall be possible to run the system in stand-alone mode without necessarily involving any physical local ASM support system.
Category	<Maintainability>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

1623

1624 [REQ]

Identifier	REQ-10.05.01-TS-3500.0010
Requirement	The ATC system shall be able to be connected to a simulated source of ARESACT messages for test and validation purposes outside of the operational environment.
Title	Injection of simulated messages
Status	<Validated>
Rationale	The system should have the possibility of performing a simulation for testing purposes
Category	<Reliability>
Validation Method	
Verification Method	<Review of Design>

1625

1626 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1627

1628 ## 3.6 Reliability

1629 [REQ]

Identifier	REQ-07.05.04-TS-0496.0101
Requirement	The NM system interface shall detect data loss and corruption implementing real-time data error detection schemes.
Title	DATA_INTEGRITY
Status	<Validated>
Rationale	In order to guarantee currency and accuracy of the information provided, the NM system interface shall need to consider the likelihood of data loss and corruption.
Category	<Reliability>
Validation Method	
Verification Method	<Test>

1630

1631 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0271	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-SAFE.0008	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

1632
1633 [REQ]

Identifier	REQ-10.05.01-TS-3600.0010
Requirement	The processing of the ARESACT shall be developed for continuous operational use (24 hours per day, 7 days per week).
Title	Availability of the connection
Status	<Validated>
Rationale	The system has to be operative continuously.
Category	<Reliability>
Validation Method	
Verification Method	<Review of Design>

1634
1635 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1636
1637 [REQ]

Identifier	REQ-10.05.01-TS-3600.0020
Requirement	The link connecting the ASM support system and the ATC system should be replicated, in order to maximize the availability of the connection.
Title	Replication of communications link
Status	<In Progress>
Rationale	The communication layer is replicated to ensure that the system is operative when is requested.
Category	<Reliability>
Validation Method	
Verification Method	<Review of Design>

1638
1639 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1640
1641 [REQ]

Identifier	REQ-10.05.01-TS-3600.0030
Requirement	The ATC system shall detect a failure of the communications link in less than 15 seconds and initiate appropriate corrective actions.
Title	Link failure detection
Status	<In Progress>
Rationale	A link error should be detected as soon as possible to increase the reliability of the system.

Category	<Reliability>
Validation Method	
Verification Method	<Test>

1642
1643 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1644
1645 [REQ]

Identifier	REQ-10.05.01-TS-3600.0040
Requirement	The ATC system should be able to seamlessly switch between the different communication links to ensure continuous operation.
Title	Switch of communication links
Status	<In Progress>
Rationale	Change on the communication link should not affect the continuous of operation of the system
Category	<Reliability>
Validation Method	
Verification Method	<Test>

1646
1647 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1648
1649 [REQ]

Identifier	REQ-10.05.01-TS-3600.0050
Requirement	In case of appearance of an unrecoverable communications link error, the ATC system shall inform the operator of this situation so that the appropriate corrective measures could be taken
Title	Processing of unrecoverable link errors
Status	<Validated>
Rationale	The operator should be aware about fatal communication failure.
Category	<Reliability>
Validation Method	
Verification Method	<Test>

1650
1651 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3.7 Availability

[REQ]

Identifier	REQ-07.05.04-TS-0496.0102
Requirement	The NM system shall be available 15HD/7D.
Title	SYSTEM_AVAILABILITY
Status	<Validated>
Rationale	The RTSA update is a daily process that needs availability and support. Its availability should be the same as for the environmental database.
Category	<Reliability>
Validation Method	
Verification Method	<Review of Design>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.8 Functional block Internal Data Requirements

N/A

3.9 Design and Construction Constraints

3.9.1 Deployment

[REQ]

Identifier	REQ-07.05.04-TS-0498.0101
Requirement	The NM system shall be developed using processes compliant with ESARR-6/EC No 482/2008.
Title	DEVELOPMENT_PROCESS
Status	<In Progress>
Rationale	In order to be deployed into OPS the NM system shall comply with the mandatory provisions of the Eurocontrol Safety Regulatory Requirement - ESARR 6.
Category	<Design>
Validation Method	
Verification Method	<Analysis>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

3.10 Functional block Interface Requirements

[REQ]

Identifier	REQ-07.05.04-TS-0499.0101
Requirement	RTSA data available via the NM system shall conform to the AIXM 5.1 exchange model.
Title	DATA_EXCHANGE_MODEL
Status	<Validated>
Rationale	The AIXM model was especially created to harmonise all usage of ASM data and to make it possible to intercommunicate.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0003	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0009	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0499.0102
Requirement	The services exposed by the NM system shall be described by the WSDL/XSD defined for the NM Airspace Services.
Title	SERVICE_DESCRIPTION
Status	<Validated>
Rationale	Providing a description of the web services, their operations and the static structure of the data being exchanged by services methods.
Category	<Interface>
Validation Method	
Verification Method	<Analysis>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

The detailed description of the interfaces to comply with in order to make use of the B2B functions provided by the DNM are described in the B2B Manuals of the DNM for NM:

- EUROCONTROL NM 19.0 - NOP/B2B Reference Manuals - Common Services [20]
- EUROCONTROL NM 19.0 - NOP/B2B Reference Manuals - Airspace Services [21]

[REQ]

Identifier	REQ-10.05.01-TS-3900.0010
Requirement	The ASM support systems shall communicate with all attached ATC Systems (managing airspace reservation in its Area of Interest) by means of a message represented in ADEXP format, named ARESACT.
Title	ARESACT Definition
Status	<Validated>
Rationale	Standard ADEXP format is used in the communication protocol
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

The amount of requirements that appear from hereafter to the end of the section tries to identify, one by one, the different fields that compose the ARESACT message. If further information is needed in terms of which alphanumeric characters should be written and in which way, please refer to the Appendix C.1

[REQ]

Identifier	REQ-10.05.01-TS-3900.0020
Requirement	The ARESACT message shall start with a TITLE field, with the name of the message “ARESACT” as value
Title	ARESACT Title
Status	<Validated>
Rationale	The system will use this field to distinguish this message from others
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>

<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1694

1695 [REQ]

Identifier	REQ-10.05.01-TS-3900.0030
Requirement	The ARESACT message shall include a standard REFDATA field, with the contents as defined in the ADEXP Standard ([13]) for this field (See rationale for description of contents)
Title	ARESACT REFDATA
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message The REFDATA field is a structured one, containing an identification of the sender, named FAC, and of the receiver, named RECVR, and a sequence number, named SEQNUM, with a numeric value
Category	<Interface>
Validation Method	
Verification Method	<Test>

1696

1697 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1698

1699 [REQ]

Identifier	REQ-10.05.01-TS-3900.0040
Requirement	The ARESACT Message shall include a field named FILTIM indicating the time at which it was filed for transmission, with the contents as defined in [13]for this field (See rationale for description of contents)
Title	ARESACT Transmission Time
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message. The FILTIM field contains a time, in the format of a day a time in numeric value
Category	<Interface>
Validation Method	
Verification Method	<Test>

1700

1701 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1702

1703 [REQ]

Identifier	REQ-10.05.01-TS-3900.0050
Requirement	The ARESACT shall refer to a unique managed ARES or CDR, specified in

	the message header in the field named LAAN.
Title	ARESACT Applicability
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message. See following requirements for a specification of the contents of the field
Category	<Interface>
Validation Method	
Verification Method	<Test>

1704

1705 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1706

1707 [REQ]

Identifier	REQ-10.05.01-TS-3900.0060
Requirement	When referring to an ARES, the LAAN field of the message shall include a single subfield, named “AIRSPDES”, containing the name of the ARES to which the message refers to in alphanumeric format
Title	ARESACT Applicability for ARES
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1708

1709 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1710

1711 [REQ]

Identifier	REQ-10.05.01-TS-3900.0070
Requirement	When referring to a CDR, the LAAN field of the message shall include a single subfield, named “REFATSRTE”, containing the name of the managed CDR to which the message refers to in alphanumeric format
Title	ARESACT Applicability for CDR
Status	<In Progress>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1712

1713 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1714

1715 [REQ]

Identifier	REQ-10.05.01-TS-3900.0080
Requirement	The ARESACT shall include an ADEXP list field named LABANDS, being each of its elements a LABAND subfield
Title	ARESACT level blocks list
Status	<Validated>
Rationale	This allows to submit reservations for different blocks in the same message. Refer to C.1, (4.2.12) to see the format of a list field according to the ADEXP standard.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1716

1717 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1718

1719 [REQ]

Identifier	REQ-10.05.01-TS-3900.0090
Requirement	The LABANDS list field shall always have less than or exactly 20 LABAND subfields
Title	ARESACT level blocks list size
Status	<Validated>
Rationale	Limit on the number of areas is defined
Category	<Interface>
Validation Method	
Verification Method	<Test>

1720

1721 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1722

1723 [REQ]

Identifier	REQ-10.05.01-TS-3900.0110
Requirement	The RESID Subfield shall contain a numeric reference to identify the reservation
Title	ARESACT RESID subfield

Status	<Validated>
Rationale	This field is necessary to identify a reservation
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3900.0120
Requirement	The FLBLOCK Field shall comply the definition specified in [13] (See rationale for contents), specifying the levels in feet or flight levels
Title	ARESACT level block boundaries
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message. The FLBLOCK contains two subfields with a specification of the upper and lower limit
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3900.0130
Requirement	The VALPERIOD field shall comply the definition specified in [13](See rationale for contents)
Title	ARESACT reservation times
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message. VALPERIOD field contains two fields with date and time, indicating the validity period for the message
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink	N/A

		Communications (GGDC)	
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1734

1735 [REQ]

Identifier	REQ-10.05.01-TS-3900.0140
Requirement	The LACTSTAT subfield shall specify a status for each level block of an ARES, being its value one of the following ones: • PENDING_MIL_ACTIVE: Pre warning that the area is going to be activated for military use • MIL_ACTIVE: The area is active for military use • PENDING_CIV_RESERVED: Pre warning that the area is going to be reserved for civil use • CIV_RESERVED: The area is reserved for civil use • INACTIVE: Default status to which the level block is set after the reservation period has finished, implying that the area is freely plannable for civil use
Title	ARESACT reserved area status
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1736

1737 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1738

1739 [REQ]

Identifier	REQ-10.05.01-TS-3900.0150
Requirement	The LACTSTAT subfield shall specify a status for each level block of a CDR, LACTSTAT, being its value one of the following ones: • CIV_RESERVED: The conditional route is reserved for civil use • INACTIVE: The area is not available for civil use
Title	ARESACT conditional route status
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1740

1741 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1742

1743 [REQ]

Identifier	REQ-10.05.01-TS-3900.0160
Requirement	The UNIT subfield shall include the identifier of the serving unit – the unit which is going to occupy the area- in alphanumeric format
Title	ARESACT Area Booking Serving Unit
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1744

1745 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1746

1747 [REQ]

Identifier	REQ-10.05.01-TS-3900.0170
Requirement	The optional subfield MISSIONTYPE shall include information about the Mission type, in alphabetic format
Title	ARESACT Area Booking Mission information
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1748

1749 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1750

1751 [REQ]

Identifier	REQ-10.05.01-TS-3900.0180
Requirement	The optional list subfield CALLSIGNS shall include information about the callsigns of the designated aircraft being each of its elements a CALLSIGN field
Title	ARESACT Area Booking callsigns list
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message Refer to [13], (4.2.12) to see the format of a list field according to the ADEXP standard.
Category	<Interface>
Validation Method	
Verification Method	<Test>

1752

1753 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1754

1755 [REQ]

Identifier	REQ-10.05.01-TS-3900.0190
Requirement	The CALLSIGNS list shall include exactly or less than 10 CALLSIGN subfields
Title	ARESACT Area Booking callsign size limit
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1756

1757 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1758

1759 [REQ]

Identifier	REQ-10.05.01-TS-3900.0200
Requirement	The CALLSIGN subfield shall contain the callsign of an aircraft in alphanumeric format
Title	ARESACT Area Booking callsign information
Status	<Validated>
Rationale	This information is needed to process the new ARESACT message
Category	<Interface>
Validation Method	
Verification Method	<Test>

1760

1761 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

1762

1763 [REQ]

Identifier	REQ-10.05.01-TS-3900.0205
Requirement	For ARES related ARESACT messages, the LABAND subfield should contain a field named PERMEABILITY, whose contents will be one of the two following states • NON_PERMEABLE: No aircraft are able to enter the ARES • PERMEABLE: The controller could, upon certain circumstances, route

	flights through this airspace
Title	PERMEABILITY Field
Status	<Validated>
Rationale	This field is included to cover for a future extension of the message, in which permeability information for a booking would be transmitted by the ASM support system
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3900.0210
Requirement	The ATC system shall maintain a separate communication link with each instance of the ASM support system managing airspace elements included partially or totally in its area of responsibility
Title	ASM support system point to point communication links
Status	<In Progress>
Rationale	A specific communication line is needed between each of the ASM support systems and the ATC system
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3900.0220
Requirement	The ATC system shall use the format of LAM message as described in the ADEXP standard (Reference [13])
Title	LAM message composition
Status	<Validated>
Rationale	The ATC system will have to send a LAM message following the standard
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0499.2310
Requirement	The optional TAXI_CALL_TIME subfield shall contain the time remains to the aircraft to reach the VPA.
Title	ARESACT Pre-activation notification Time Information
Status	<Validated>
Rationale	Taxi Call Time indicates that in the following minutes the VPA will be activated.
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0499.2320
Requirement	The LABAND subfield shall be a structured field, including the subfields RESID, FLBLOCK, VALIDPERIOD, LACTSTAT, UNIT, and optionally, MISSIONTYPE, CALLSIGNS, TAXI_CALL_TIME and PERMEABILITY, in the specified order
Title	ARESACT LABAND subfield contents
Status	<Validated>
Rationale	Contents of information for each level band
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

4 Assumptions

The mechanism of SUUP is a temporary solution only which is used for the sake of this validation exercise only, with as objective to minimise the development work on NM. The SUUP is used to inform the different stakeholders that there has been an update of the Real Time Status of an Airspace. This mechanism has its drawbacks and will not be considered as the final solution. Hence all requirements related to the SUUP have been described as SUT requirements.

4.1 NM Assumptions

The following assumptions were made:

1. AMC is tasked with execution phase ASM level 3 and/or has an integrated ASM/ATFCM function in place.
2. ASM support systems are able to authenticate the identity of system's certificate by SSL handshake.
3. CACD database is aligned with AIXM 5.1.
4. Ad-hoc traffic demand shall be mixed to recorded traffic by the FOC in order to guarantee the realism of the operational scenarios and to have a significant impact on the operations.
5. AMC issues the initial SUUP in Draft state in order to avoid a time-consuming demotion-promotion cycle in case of airspace resulting as not usable for FPL.
6. AMC issues the initial SUUP containing only the OPEN/CLOSED info in the CDRs RMK fields as info related to the possibility of using CDRs for FPL purposes can be included only after the local-regional impact assessments. FPL/NOFPL info is added to the Draft SUUP before promoting it to Ready and only in case of airspace not usable for FPL.
7. Since SUUPs are neither released nor transformed in normal UUPs, in case of airspace usable for FPL purposes, AMC issues a new UUP message in Ready state.
8. Since in SUUPs the WEF is set to the starting time of the CDM process and publishing UUPs with the WEF in the past is not allowed by NM systems, once the CDM between FMP and NM is concluded, and before issuing a new UUP message, AMC updates the WEF of the UUP to current time.
9. Since FUA/EU restrictions apply to all the duration of RSA (WEF to TIL), RSA extensions shall be inserted as a new row to be able to manage FUA restrictions separately.
10. Draft SUUP shall be issued by AMC only when stable (as right before being promoted to Ready state).
11. The interface that allows the AOs Flight Planning tools to inject FPL change proposals into NM systems is not available. In order to process FPL change proposals, AOs shall send an email with the shortlist of the flights they want NM and FMP to assess.
12. NM will keep managing normal UUPs according to the current AUP/UUP process, meaning that the Next UUP Time will be set by CADF manually. For the SUUPs, NM shall ignore Next UUP Time.
13. Remark keywords are added manually for CDRs affected by the RTSA update.
14. Management of AUP/UUP Release (promotion to Released; demotion from Released; and Set next UUP WEF) is and remains accessible via (CIAM) CHMI only and is limited to the CADF user, which basically means that the B2B cannot manipulate next UUP time.

4.2 ATC Assumptions

There are some assumptions made on chapter 4 of P10.05.01 Final System Requirements [10] also applicable to this technical specification. These assumptions are the following:

- **Database consistency**: There are requirements to ensure the consistency of the databases of the different systems. This concept assumes that the ASM support system is the main source for its managed TSAs, and that the LAM based protocol ensures this connectivity. That it is the responsibility of the ASM support system to ensure consistency with the central ADR and not the local Flight Data Processing (FDP) system.

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[26]B.4.3 AFUA Service Allocation FT09

5.1 Use of copyright / patent material /classified material

Copyright or patent material shall not be included in a specification without prior consent of the copyright or patent owner. When such consent is obtainable, a line citing the reference source shall be added in the specification.

5.1.1 Classified Material

Specifications containing classified material shall be appropriately made and handled. If only a limited amount of classified or sensitive information is found it shall be added as an appendix.

Appendix A ASM-ASM Service Definition

A.1 Authentication Services

A.1.1 Requesting Users

The service interface to request all users should accept a BulkUserRequest from an external user and return a BulkUserReply in response. The proposed definition of these can be found in the section Data Types.

```
BulkUserReply requestUsers( BulkUserRequest )
```

The service shall process the request, validating the request itself and then return the user data if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BulkUserReply.

A.1.2 Login

The service interface for an individual user to login should accept a LoginRequest from an external user and return a LoginResult in response. The proposed definition of these can be found in the section Data Types.

```
LoginResult login( LoginRequest )
```

The service shall process the request, validating the request itself and then return the LoginResult if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the LoginResult.

A.1.3 Logout

The service interface for an individual user to logout should accept a LogoutRequest from an external user and return a LogoutResult in response. The proposed definition of these can be found in the section Data Types.

```
LogoutResult logout( LogoutRequest )
```

The service shall process the request, validating the request itself and then return the LogoutResult if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the LogoutResult.

A.2 Static Data Services

A.2.1 Requesting Static Data

The service interface to request static data should accept a AirspaceRetrievalRequest from an external user and return an ADRMessage in response. The proposed definition of these can be found in the section Data Types.

```
ADRMessage retrieveAirspace( AirspaceRetrievalRequest )
```

The service shall process the request, validating the request itself and then returning the static data from the service. If for any reason the request is not valid only an appropriate error shall be returned in the ADRMessage.

A.2.2 Filtering a Request

The request defined in section Requesting Static Data provides a mechanism by which all static data can be retrieved.

It shall also be possible to filter the request in order that a specific tailored subset of information is able to be retrieved based on spatial or non-spatial constraints. The approach taken might be based on that implemented in Open Geospatial Consortium Web Feature Services (WFS). It is beyond the scope of this document to provide a full description of WFS, however a general introduction can be read here: http://en.wikipedia.org/wiki/Web_Feature_Service. The technique allows users to request data sets tailored for specific purposes. Query criteria which might be exposed could include:

- Spatial information
- Geographical criteria
- Responsible Individuals

A.3 Reservation Service

A.3.1 Creating a Reservation

The service interface to create a reservation should accept a BookingRequest from an external user and return a BookingReply in response. The proposed definition of these can be found in the section Data Types.

```
BookingReply createBooking( BookingRequest )
```

The service shall process the request, validating the request itself and then validating the requested reservation. If the reservation is valid it shall be created within the service and returned in the BookingReply. If for any reason the request or the resulting reservation is not valid only an appropriate error shall be returned in the BookingReply.

A.3.2 Updating a Reservation

The service interface to update a reservation should accept a BookingRequest from an external user and return a BookingReply in response. The proposed definition of these can be found in the section Data Types.

```
BookingReply updateBooking( BookingRequest )
```

The service shall process the request, validating the request itself and then validating the requested reservation. If the updated reservation is valid it shall be updated within the service and returned in the BookingReply. If for any reason the request or the resulting reservation is not valid only an appropriate error shall be returned in the BookingReply.

An update should be rejected by the service if the user performing the update does not have the appropriate actions matching their update.

A.3.3 Requesting Reservations

The service interface to request a set of reservations held within the service should accept a BookingListRequest from an external user and return a BookingListReply. The proposed definition of these can be found in the section Data Types.

This service is expected to be called by the external ASM support system as whole, distributing the received reservation data to all of it's users rather than being called by each individual user of the external ASM support system.

```
BookingListReply requestBookings( BookingListRequest )
```

The service shall process the request, validating the request itself and then return the matching reservations if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BookingListReply.

A.3.4 Requesting a Reservation

The service interface to request a single reservation held within the service should accept a BookingIDRequest from an external user and return a BookingReply. The proposed definition of these can be found in the section Data Types.

```
BookingReply requestBooking( BookingIDRequest )
```

The service shall process the request, validating the request itself and then return the matching reservation if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BookingReply.

A.3.5 Subscribing to Reservation Changes

The service interface should allow subscription to changes to reservation data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when any detail of a reservation is changed leading to the proposed lastChanged attribute or equivalent concurrency mechanism being modified.

A subscription/notification mechanism should allow for the user to filter the notifications they receive at subscription time. This should allow for example, an external user of a FAB based ASM support system to subscribe to a specific subset of the reservations based on country/AMC.

A.3.6 Requesting Conflicts

The service interface to request a set of reservation conflicts should accept a BookingConflictRequest from an external user and return a BookingConflictReply. The proposed definition of these can be found in the section Data Types.

This service is expected to be called by the external ASM support system as whole, distributing the received conflict data to all of it's users rather than being called by each individual user of the external ASM support system.

```
BookingConflictReply requestConflicts( BookingConflictRequest )
```

The service shall process the request, validating the request itself and then return the matching reservation conflicts if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BookingConflictReply.

A.3.7 Subscribing to Conflicts

The service interface should allow subscription to changes to reservation conflict data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when any reservation conflicts are created or deleted within the service.

A subscription/notification mechanism should allow for the user to filter the notifications they receive at subscription time. This should allow for example, an external user of a FAB based ASM support systems to subscribe to a specific subset of the reservation conflicts based on country/AMC.

In this case the subscriber is expected to be the external ASM support system as whole, distributing the received conflict data to all of its users rather than being subscribed to by each individual user of the external ASM support system.

A.3.8 Requesting Actions

The service interface to request a set of actions should accept a BookingActionRequest from an external user and return a BookingActionReply. The actions provide the permissions that an individual user has on a reservation. They may, amongst other things, allow or disallow edits,

cancellation and proposal on a specific reservation. Actions may be dynamic, changing over time with the reservation state or time. The proposed definition of these can be found in the section Data Types.

This service is expected to be called by the external ASM support system as whole, distributing the received conflict data to all of it's users rather than being called by each individual user of the external ASM support system.

```
BookingActionReply requestActions( BookingActionRequest )
```

The service shall process the request, validating the request itself and then return the matching actions if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BookingActionReply.

A.3.9 Subscribing to Reservation Actions

The service interface should allow subscription to changes to reservation action data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when any reservation actions applicable to the subscriber are created or deleted. In this case the subscriber is expected to be the external ASM support system as whole, distributing the received action data to the appropriate users rather than being subscribed to by each individual user of the external ASM support system.

A.4 Mission Services

A.4.1 Requesting Missions

The service interface to request a set of missions should accept a MissionListRequest from an external user and return a MissionListReply. The proposed definition of these can be found in the section Data Types.

This service is expected to be called by the external ASM support system as whole, distributing the received mission data to all of it's appropriately privileged users rather than being called by each individual user of the external ASM support system.

```
MissionListReply requestMissions( MissionListRequest )
```

The service shall process the request, validating the request itself and then return the matching missions if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the MissionListReply.

A.4.2 Subscribing to Missions

The service interface should allow subscription to changes to mission data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when any mission data is changed leading to the proposed lastChanged attribute or equivalent concurrency mechanism being modified. In this case the subscriber is expected to be the external ASM support system as whole, distributing the received mission data to the appropriately privileged users rather than being subscribed to by each individual user of the external ASM support system.

A.5 Proposal Services

A.5.1 Creating a Proposal

The service interface to create a proposal should accept a ProposalRequest from an external user and return a ProposalReply. The proposed definition of these can be found in the section Data Types.

```
ProposalReply createProposal( ProposalRequest )
```

The service shall process the request, validating the request itself and then validating the requested proposal. If the proposal is valid it shall be created within the service and returned in the ProposalReply. If for any reason the request or the resulting proposal is not valid only an appropriate error shall be returned in the ProposalReply.

A.5.2 Requesting Proposals

The service interface to request a set of all proposals held within the service should accept a ProposalListRequest from an external user and return a ProposalListReply. The proposed definition of these can be found in the section Data Types.

```
ProposalListReply requestProposals( ProposalListRequest )
```

The service shall process the request, validating the request itself and then return the matching proposals if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the ProposalListReply.

A.5.3 Filtered Proposal Request

The service interface to request a set proposals held within the service should accept a BookingProposalRequest from an external user and return a BookingProposalReply. The proposed definition of these can be found in the section Data Types.

```
BookingProposalReply requestProposal( BookingProposalRequest )
```

The service shall process the request, validating the request itseld and then return the matching proposal if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the BookingProposalReply.

A.5.4 Handling Proposals

The service interface to allow a user to act on a proposal should accept a HandleProposalRequest from an external user and return a HandleProposalReply. The proposed definition of these can be found in the section Data Types.

```
HandleProposalReply handleProposal( HandleProposalRequest )
```

The service shall process the request, validating the request itself and then perform the requested action. If for any reason the request is not valid only an appropriate error shall be returned in the HandleProposalReply.

A request to this interface should be rejected by the service if the user performing the update does not have the appropriate actions matching their update.

A.5.5 Subscribing to Proposals

The service interface should allow subscription to changes to proposal data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when a proposal is created or deleted. In this case the subscriber is expected to be the external ASM support system as whole, distributing the received proposal data to the appropriate users rather than being subscribed to by each individual user of the external ASM support system.

A subscription/notification mechanism should allow for the user to filter the notifications they receive when the subscription is created. This should allow for example, an external user of a FAB based ASM support systems to subscribe to a specific subset of the proposals based on country/AMC.

A.6 Activation Services

A.6.1 Requesting Activations

The service interface to allow a user to act on a proposal should accept an ActivationListRequest from an external user and return an ActivationListReply. The proposed defition of these can be found in the section Data Types.

```
ActivationListReply requestActivation( ActivationListRequest )
```

The service shall process the request, validating the request itself and then return the matching activation data if the request is valid. If for any reason the request is not valid only an appropriate error shall be returned in the ActivationListReply.

This service is expected to be called by the external ASM support system as whole, distributing the received activation data to all of its users rather than being called by each individual user of the external ASM support system.

A.6.2 Subscribing to Activations

The service interface should allow subscription to changes to activation data. The exact implementation of this mechanism is dependent on the technology chosen to implement this interface.

A subscription/notification mechanism shall notify a subscriber when the activation state of an airspace is changed. In this case the subscriber is expected to be the external ASM support system as whole, distributing the received activation data to the appropriate users rather than being subscribed to by each individual user of the external ASM support system.

A subscription/notification mechanism should allow for the user to filter the notifications they receive when the subscription is created. This should allow for example, an external user of a FAB based ASM support systems to subscribe to a specific subset of the activation data based on country/AMC.

Appendix B Use Cases

B.1 Use cases from NM point of view

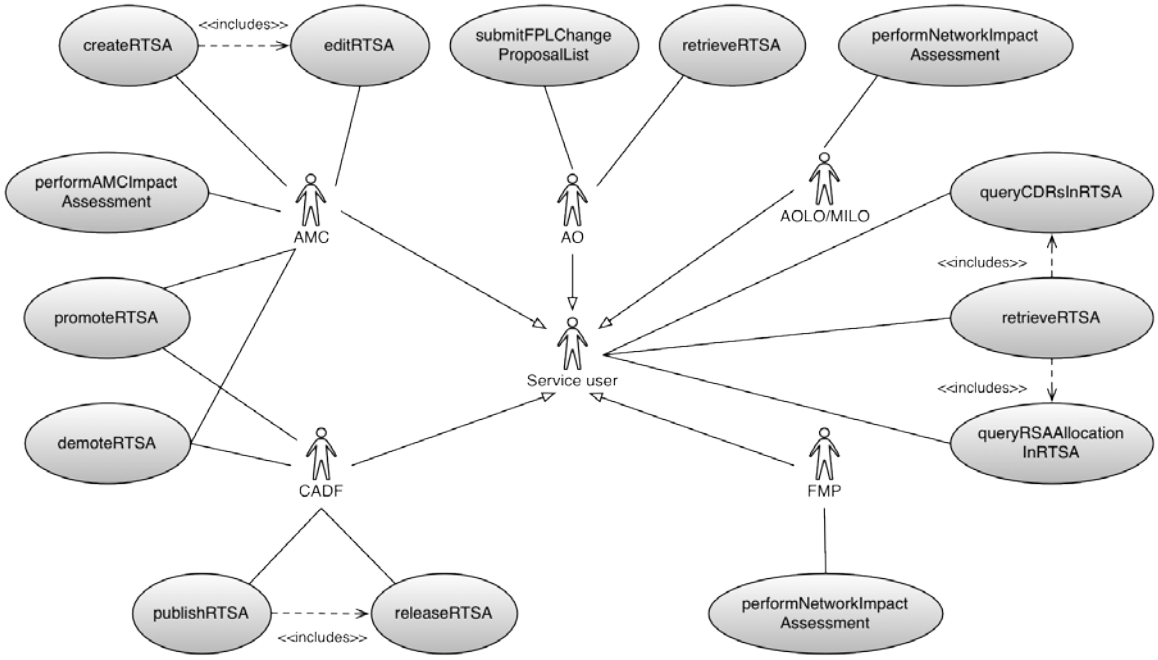


Figure 18: RTSA Use cases

B.2 Use cases from ASM support system point of view

The ASM support system is the ASM data (for instance, ARES data) master. The data is shared with other ASM support systems, ATC and NM systems. Data can be updated by ASM support systems and ATC system. NM system is only receiving data from the ASM support systems.

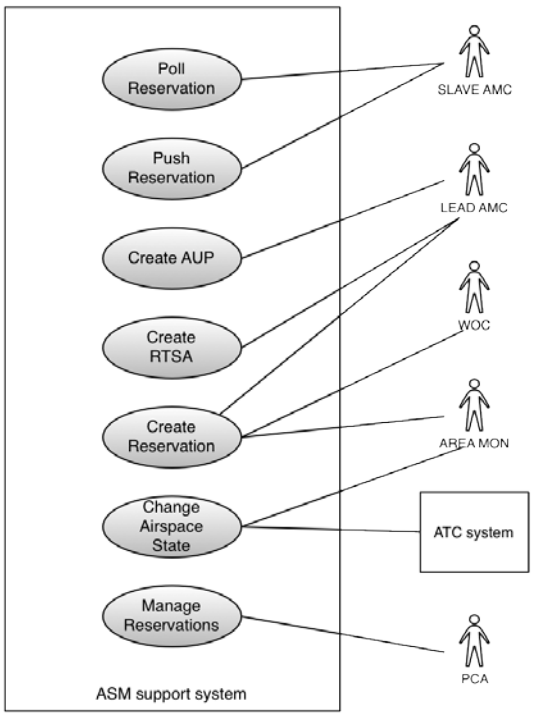


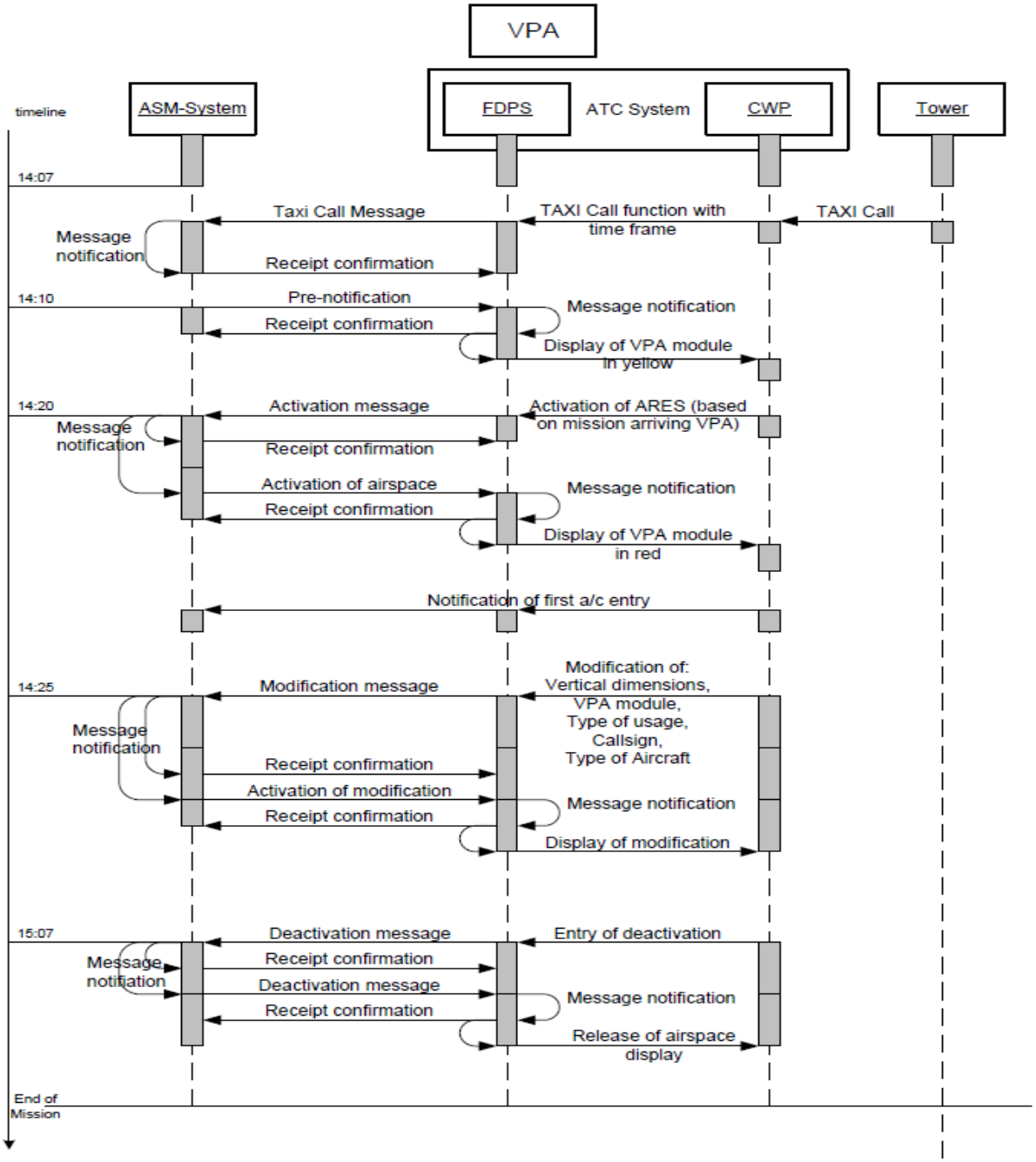
Figure 19: ASM Use Cases

B.3 Use cases from ATC system point of view

This operational scenario is based on the operational scenario developed by 7.5.4 in the latest available version upon release of this document (See [7])

The following scenario is based on the one dealing with the execution phase as defined in the OSED, as it is only during this phase where the ATC is involved.

The diagram below shows the interaction between the main actors of the execution phase with a focus on the exchanges between systems.



2152 In this case it's assumed that the ATC system received the booking two hours in advance (default
2153 time).

2154 When the aircraft plan to take off, it communicates with the tower and confirms the time the aircraft
2155 needs to be at the VPA. This time is filled on the ATC system via CWP, the ATC system sends an
2156 ARESACT message to the ASM support system and the ASM support system sends back an
2157 acknowledgement message (ACK Message).

2158 Ten minutes prior to the activation time (default time) the ASM support system sends a pre-
2159 notification message to the ATC system. The result of the processing of this message is the display

2160 the VPA with a blue[3] dotted line on the CWP(s). The ATCO is now aware of that VPA will become
2161 activated in a few minutes.

2162 Once the aircraft is approaching the VPA, the ATCO activates the VPA on the ATC system via CWP
2163 and as a result, the ATC system sends an activation message to the ASM support system.
2164 Automatically the ASM support system sends an activation message to the ATC system and as a
2165 result the VPA is now displayed as blue[4] continuous line on all the CWPs.

2166 If a modification of the booking is needed, the ATCO proposes that modification to the ASM support
2167 system, via ATC system, for instance, a reduction of the levels of the VPA. If the modification is
2168 accepted, the ASM support system will send a modification message to the ATC system and then the
2169 modification is displayed on all the CWPs.

2170 To finalize, once the mission is going out from the VPA, the ATCO selects de-activate function on the
2171 CWP and a deactivation message is sent from the ATC system to the ASM support system.
2172 Automatically the ASM support system sends a deactivation message to the ATC system and all
2173 CWPs will display the deactivation of the VPA accordingly.

2174 After every message exchanged between the ATC system and the ASM support system an ACK
2175 Message is exchanged between both systems in order to ensure that the information has been
2176 received.

2177 B.4 ASM-ASM Use Cases

2178 The following use cases describe the scenarios to be supported by the ASM-ASM support systems
2179 interface. In them the ASM support system making use of the interface is referred to as the 'external
2180 ASM support system' with it being external to the interface. The interface itself is referred to as a
2181 'service' provided by the other ASM support system.

2182 B.4.1 Authentication Services

2183

Use Case #	AUTHENTICATION_1
Name	Exchange of authentication data from the service
Summary	The authenticated external ASM support system requests all authentication data from the service to allow the service users access.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully established a connection to the service.
Process description	

Step	Description
1.	The external ASM support system creates a BulkUserRequest.
2.	The external ASM support system sends the BulkUserRequest to the service.
3.	The service receives the request and validates it.
4.	The service returns the response containing all user data to the external ASM support system.
5.	The external ASM support system receives the response and records the data, allocating passwords for authentication and notifying the user of their password via email.

[3] Blue colour is an example, due the colour is dependent on the local requirements
[4] Blue colour is an example, due the colour is dependent on the local requirements

Results	User data has been retrieved from the service by the external ASM support system. The external ASM support system has setup user accounts allowing 'foreign' users to access the external ASM support system through the service. At the same time the service has request user data from the external ASM support system and has setup user accounts allowing users of the external ASM support system to authenticate with the service.
Exceptions / Error Conditions	If the created BulkUserRequest is not valid, error details will be returned by the service to the external ASM support system.

2184

Use Case #	AUTHENTICATION_2
Name	User login to the service.
Summary	An individual user of the external ASM support system authenticates with the service.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	

Step	Description
1.	The external ASM support system prompts the user for their password to access the service.
2.	The external ASM support system creates a LoginRequest containing the authentication details.
3.	The external ASM support system sends the LoginRequest to the service.
4.	The service receives the request and validates it.
5.	The service authenticates the User and returns the response containing a SessionID.
6.	The external ASM support system receives the response and distributes the data to the user logging in.

Results	An individual user has authenticated with the service and has a session id token to be used with future requests.
Exceptions / Error Conditions	If the created LoginRequest is not valid, error details will be returned by the service to the external ASM support system.

2185

Use Case #	AUTHENTICATION_3
Name	User logout from the service.
Summary	An individual user of the external ASM support system terminates their session with the service.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	

Step	Description
1.	A user of the external ASM support system decides to logout from the service.
2.	The external ASM support system creates a

	LogoutRequest containing the session id. 3. The external ASM support system sends the LogoutRequest to the service. 4. The service receives the request and validates it. 5. The service terminates the session with the corresponding id. 6. The external ASM support system receives the response and distributes the data to the user logging out.
Results	An individual user has terminated their session with the service future requests with the session id will be rejected.
Exceptions / Error Conditions	If the created LogoutRequest is not valid, error details will be returned by the service to the external ASM support system.

2186

2187 B.4.2 Static Data Services

2188

Use Case #	STATIC_DATA_1
Name	Retrieval of static data from the service
Summary	The authenticated external ASM support system requests all static data from the service to provide the information to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a AirspaceRetrievalRequest. 2. The external ASM support system sends the AirspaceRetrievalRequest to the service. 3. The service receives the request and validates it. 4. The service returns the response containing all static data to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	Static data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created AirspaceRetrievalRequest is not valid, error details will be returned by the service to the external ASM support system.

2189

2190 B.4.3 Reservation Services

2191

Use Case #	RESERVATION_1
Name	Retrieval of reservations from the service
Summary	The authenticated external ASM support system requests all reservation data from the service to provide the information to its

	users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a BookingListRequest specifying a time period filter from the current date until the end of the current month. 2. The external ASM support system sends the BookingListRequest to the service. 3. The service receives the request and validates it. Ensuring that the request defines a valid filter interval. 4. The service applies the filter to its current data set and returns the response to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	Reservation data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created BookingListRequest is not valid, error details will be returned by the service to the external ASM support system. If the contents of the BookingListRequest are not valid, i.e. the filter attributes are not correct, an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2192

Use Case #	RESERVATION_2
Name	Creation of a reservation through the service
Summary	The authenticated external ASM support system allows one of its users to create a reservation through the service.
Actors	External ASM support system user / External ASM support system / ASM to ASM service
Trigger	User input through the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself, the user wanting to create a reservation has also logged in to the service.
Process description	**Step** / **Description** 1. The external ASM support system user prepares a reservation to be created through the service and submits it to the external ASM support system. 2. The external ASM support system creates a BookingRequest based on the request from its user. 3. The external ASM support system sends the BookingRequest to the service on behalf of its user. 4. The service receives the request and validates it. Ensuring that the request defines a valid reservation and that the external ASM support system user that the request is from has an active session. 5. The service creates the reservation, allocating a unique identifier and lastChange time.

	6. The service generates the actions applicable to the new reservation. 7. The created reservation is returned to the external ASM support system. 8. The external ASM distributes the new reservation to the user creating the reservation and all other appropriate users.
Results	An external ASM support system has used the service to create a reservation on the airspace managed by the service. The reservation has been returned to all interested users of the external ASM support system.
Exceptions / Error Conditions	If the created BookingRequest is not valid error details will be returned by the service to the external ASM support system. If the contents of the BookingRequest are not valid, i.e. the bookingID is set, one of the following errors may be returned depending upon the exact problem: • INVALID_DATA_TYPE • INVALID_DATA_VALUE • INVALID_COLLECTION_SIZE • CANNOT_BE_NULL • MUST_BE_NULL If the external ASM support system user requesting the reservation is not currently logged in a SESSION_EXPIRED error shall be returned.

2193

Use Case #	RESERVATION_3
Name	Updating a reservation through the service
Summary	The authenticated external ASM support system allows one of its users to update a reservation through the service.
Actors	External ASM support system user / External ASM support system / ASM to ASM service
Trigger	User input through the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself, the user wanting to create a reservation has also logged in to the service.
Process description	**Step** / **Description** 1. The external ASM support system user prepares an update to an existing reservation defined by the service and submits it to the external ASM support system. 2. The external ASM support system creates a BookingRequest based on the request from its user. 3. The external ASM support system sends the BookingRequest to the service on behalf of its user. 4. The service receives the request and validates it. Ensuring that the request defines a valid reservation including the service defined id and the lastChange time matches that held by the service. The service also verifies that the external ASM support system

	<table><tr><td></td><td>user that the request is from has an active session and finally that the user has an action permitting the identified reservation to be updated.</td></tr><tr><td>5.</td><td>The service updates the reservation, updating the lastChange time in the process.</td></tr><tr><td>6.</td><td>The service updates the actions associated with the reservation.</td></tr><tr><td>7.</td><td>The updated reservation is returned to the external ASM support system.</td></tr><tr><td>8.</td><td>The external ASM distributes the updated reservation to the user updating the reservation and all other appropriate users.</td></tr></table>
Results	An external ASM support system has used the service to update an existing reservation on the airspace managed by the service. The reservation has been returned to all interested users of the external ASM support system.
Exceptions / Error Conditions	If the created BookingRequest is not valid error details will be returned by the service to the external ASM support system. If the contents of the BookingRequest are not valid, i.e. the bookingID is not set or the lastChange time does not match, one of the following errors may be returned depending upon the exact problem: • INVALID_DATA_TYPE • INVALID_DATA_VALUE • INVALID_COLLECTION_SIZE • VERSION_CONFLICT • CANNOT_BE_NULL • MUST_BE_NULL If the external ASM support system user requesting the reservation is not currently logged in a SESSION_EXPIRED error shall be returned.

2194

Use Case #	RESERVATION_4
Name	Cancellation of a reservation through the service
Summary	The authenticated external ASM support system allows one of its users to cancel a reservation through the service.
Actors	External ASM support system user / External ASM support system / ASM to ASM service
Trigger	User input through the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself, the user wanting to cancel a reservation has also logged in to the service.
Process description	<table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>The external ASM support system user identifies a reservation to be cancelled through the service and submits a request to the external ASM support system.</td></tr><tr><td>2.</td><td>The external ASM support system creates a BookingRequest based on the request from its user.</td></tr></table>

	3. The external ASM support system sends the BookingRequest to the service on behalf of its user. 4. The service receives the request and validates it. Ensuring that the request defines a valid reservation including the service defined id and the lastChange time matches that held by the service. The service also verifies that the external ASM support system user that the request is from has an active session and finally that the user has an action permitting the identified reservation to be cancelled. 5. The service cancels the reservation, updating the lastChange time in the process. 6. The service updates the actions associated with the reservation. 7. The cancelled reservation is returned to the external ASM support system. 8. The external ASM distributes the cancelled reservation to the user cancelling the reservation and all other appropriate users.
Results	An external ASM support system has used the service to cancel a reservation on the airspace managed by the service. The cancelled reservation has been returned to all interested users of the external ASM support system.
Exceptions / Error Conditions	If the created BookingRequest is not valid error details will be returned by the service to the external ASM support system. If the contents of the BookingRequest are not valid, i.e. the bookingID is not set or the lastChange time does not match, one of the following errors may be returned depending upon the exact problem: • INVALID_DATA_TYPE • INVALID_DATA_VALUE • INVALID_COLLECTION_SIZE • VERSION_CONFLICT • CANNOT_BE_NULL • MUST_BE_NULL If the external ASM support system user requesting the reservation is not currently logged in a SESSION_EXPIRED error shall be returned.

2195

Use Case #	RESERVATION_5
Name	Retrieval of a single specific reservation from the service
Summary	The authenticated external ASM support system retrieves the current definition of a specific reservation from the service.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system but generally when a VERSION_CONFLICT error is returned by the service.
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** | **Description**

	1. The external ASM support system creates a BookingIDRequest specifying the identifier of the reservation to be returned. 2. The external ASM support system sends the BookingIDRequest to the service. 3. The service receives the request and validates it, ensuring the request defines a valid reservation id. 4. The service returns the response containing the single reservation to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	An external ASM support system has used the service to retrieve the definition of a single reservation from the service.
Exceptions / Error Conditions	If the created BookingIDRequest is not valid error details will be returned by the service to the external ASM support system. If the reservation identifier in the BookingIDRequest is not valid or does not identify a reservation then an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2196

Use Case #	RESERVATION_6
Name	Subscription to reservation changes.
Summary	The authenticated external ASM support system subscribes to all changes in reservation data.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system but generally on start-up before requesting the current data set.
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a subscription with the service for changes to reservations, specifying a notification listener. 2. A user of the service creates/modifies a reservation. 3. The service identifies all subscribers interested in reservations and notifies them of the new definition of the reservation. 4. The external ASM support system receives the notification that the reservation has changed and notifies its users.
Results	An external ASM support system has used the service to be notified of changes to the reservation data.
Exceptions / Error Conditions	

2197

Use Case #	RESERVATION_CONFLICT_1
Name	Retrieval of reservation conflicts from the service
Summary	The authenticated external ASM support system requests all reservation conflict data from the service to provide the information

	to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself and has retrieved the reservation data of interest from the service.
Process description	

Step	Description
1.	The external ASM support system creates a BookingConflictRequest specifying the identifiers of the reservations that have been retrieved from the service.
2.	The external ASM support system sends the BookingConflictRequest to the service.
3.	The service receives the request and validates it.
4.	The service identifies the conflicts relevant to the reservation identifiers included in the request and returns the response to the external ASM support system.
5.	The external ASM support system receives the response and distributes the data to its users. Any conflicts which were previously retrieved from the service but have not been received this time are treated as having been resolved.

Results	Reservation conflict data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created BookingConflictRequest is not valid, error details will be returned by the service to the external ASM support system. If the bookings field of the BookingConflictRequest is null an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2198

Use Case #	RESERVATION_ACTION_1
Name	Retrieval of reservation actions from the service
Summary	The authenticated external ASM support system requests all reservation action data from the service to provide the information to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself and has retrieved the reservation data of interest from the service.
Process description	

Step	Description
1.	The external ASM support system creates a BookingActionRequest specifying the identifiers of the reservations that have been retrieved from the service.
2.	The external ASM support system sends the BookingActionRequest to the service.
3.	The service receives the request and validates it.

	4. The service identifies the actions relevant to the reservation identifiers included in the request and applicable for the external ASM support system. The service then returns the response to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users. Any actions which were previously retrieved from the service but have not been received this time are treated as having been removed.
Results	Reservation action data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created BookingActionRequest is not valid, error details will be returned by the service to the external ASM support system. If the bookings field of the BookingActionRequest is null an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2199

2200 ## B.4.4 Mission Services

2201

Use Case #	MISSIONS_1
Name	Retrieval of mission data from the service
Summary	The authenticated external ASM support system requests all mission data from the service to provide the information to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a MissionListRequest specifying a time period filter from the current date until the end of the current month. 2. The external ASM support system sends the MissionListRequest to the service. 3. The service receives the request and validates it. Ensuring that the request defines a valid filter interval. 4. The service applies the filter to its current data set and returns the response to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	Mission data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created MissionListRequest is not valid, error details will be returned by the service to the external ASM support system.

	If the contents of the MissionListRequest are not valid, i.e. the filter attributes are not correct, an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2202

Use Case #	MISSIONS_2
Name	Subscription to mission changes.
Summary	The authenticated external ASM support system subscribes to all changes in mission data.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system but generally on start-up before requesting the current data set.
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a subscription with the service for changes to missions, specifying a notification listener. 2. A user of the service creates/modifies a mission. 3. The service identifies all subscribers interested in missions and notifies them of the new definition of the mission. 4. The external ASM support system receives the notification that the mission has changed and notifies its users.
Results	An external ASM support system has used the service to be notified of changes to the reservation data.
Exceptions / Error Conditions	

2203

2204 B.4.5 Proposal Services

2205

Use Case #	PROPOSAL_1
Name	Retrieval of proposals from the service
Summary	The authenticated external ASM support system requests all proposal data from the service to provide the information to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a ProposalListRequest specifying a time period filter from the current date until the end of the current month. 2. The external ASM support system sends the ProposalListRequest to the service. 3. The service receives the request and validates it. Ensuring that the request defines a valid filter interval.

	4. The service applies the filter to its current data set and returns the response to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	Proposal data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created ProposalListRequest is not valid, error details will be returned by the service to the external ASM support system. If the contents of the ProposalListRequest are not valid, i.e. the filter attributes are not correct, an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2206

Use Case #	PROPOSAL_2
Name	Creation of a proposal through the service
Summary	The authenticated external ASM support system allows one of its users to create a proposal through the service.
Actors	External ASM support system user / External ASM support system / ASM to ASM service
Trigger	User input through the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself, the user wanting to create a proposal has also logged in to the service and has an action to propose on a specific reservation.
Process description	**Step** / **Description** 1. The external ASM support system user prepares a proposal to be created through the service and submits it to the external ASM support system. 2. The external ASM support system creates a ProposalRequest based on the request from its user. 3. The external ASM support system sends the ProposalRequest to the service on behalf of its user. 4. The service receives the request and validates it. Ensuring that the request defines a valid proposal and that the external ASM support system user that the request is from has an active session and has the propose action. 5. The service creates the proposal, allocating a unique identifier and lastChange time. 6. The service generates the appropriate 'HANDLE_PROPOSAL' actions. 7. The created proposal is returned to the external ASM support system. 8. The external ASM distributes the new proposal to the user creating the proposal and all other appropriate users.
Results	An external ASM support system has used the service to create a proposal on a reservation managed by the service. The proposal has been returned to all interested users of the external ASM support system.

Exceptions / Error Conditions	If the created ProposalRequest is not valid error details will be returned by the service to the external ASM support system. If the contents of the ProposalRequest are not valid, i.e. the proposalID is set, one of the following errors may be returned depending upon the exact problem: • INVALID_DATA_TYPE • INVALID_DATA_VALUE • INVALID_COLLECTION_SIZE • CANNOT_BE_NULL • MUST_BE_NULL If the external ASM support system user requesting the proposal is not currently logged in a SESSION_EXPIRED error shall be returned.

2207

Use Case #	PROPOSAL_3
Name	Handling a proposal through the service
Summary	The authenticated external ASM support system allows one of its users to handle a proposal through the service.
Actors	External ASM support system user / External ASM support system / ASM to ASM service
Trigger	User input through the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself, the user wanting to handle the proposal has also logged in to the service.
Process description	

Step	Description
1.	The external ASM support system user identifies a proposal to be accepted through the service and submits a request to the external ASM support system.
2.	The external ASM support system creates a HandleProposalRequest based on the request from its user.
3.	The external ASM support system sends the HandleProposalRequest to the service on behalf of its user.
4.	The service receives the request and validates it. The service verifies that the external ASM support system user that the request is from has an active session and that the user has an action to handle the specified reservation.
5.	The service updates the reservation according to the accepted proposal, updating the lastChange time in the process.
6.	The service updates the actions associated with the reservation.
7.	The success or failure of the request is returned to the external ASM support system.
8.	The external ASM requests the updated reservation and distributes the reservation to the user accepting the proposal and all other appropriate users.

Results	An external ASM support system has used the service to accept a proposal on a reservation managed by the service. The updated reservation has been returned to all interested users of the external ASM support system.
Exceptions / Error Conditions	If the created HandleProposalRequest is not valid error details will be returned by the service to the external ASM support system. If the contents of the HandleProposalRequest are not valid, i.e. the proposalID is not se, one of the following errors may be returned depending upon the exact problem: • INVALID_DATA_TYPE • INVALID_DATA_VALUE • INVALID_COLLECTION_SIZE • VERSION_CONFLICT • CANNOT_BE_NULL • MUST_BE_NULL If the external ASM support system user handling the proposal is not currently logged in a SESSION_EXPIRED error shall be returned.

2208

Use Case #	PROPOSAL_4
Name	Subscription to proposal changes.
Summary	The authenticated external ASM support system subscribes to all changes in proposal data.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system but generally on start-up before requesting the current data set.
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a subscription with the service for changes to proposals, specifying a notification listener. 2. A user of the service creates/handles a proposal. 3. The service identifies all subscribers interested in proposals and notifies them of the new definition of the proposal. 4. The external ASM support system receives the notification that the proposal has changed and notifies its users.
Results	An external ASM support system has used the service to be notified of changes to the reservation data.
Exceptions / Error Conditions	

2209

2210 B.4.6 Activation Services

2211

Use Case #	ACTIVATION_1
Name	Retrieval of activations from the service
Summary	The authenticated external ASM support system requests all activation data from the service to provide the information to its users.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a ActivationListRequest specifying the airspace ids to request the activation state for. 2. The external ASM support system sends the ActivationListRequest to the service. 3. The service receives the request and validates it. Ensuring that the request defines a valid filter interval. 4. The service identifies the required activation data and returns the response to the external ASM support system. 5. The external ASM support system receives the response and distributes the data to its users.
Results	Activation data has been retrieved from the service by the external ASM support system and distributed to the appropriate users.
Exceptions / Error Conditions	If the created ActivationListRequest is not valid, error details will be returned by the service to the external ASM support system. If the contents of the ActionListRequest are not valid, i.e. the filter attributes are not correct, an INVALID_DATA_VALUE error shall be returned to the external ASM support system.

2212

Use Case #	ACTIVATION_2
Name	Subscription to activation changes.
Summary	The authenticated external ASM support system subscribes to all changes in activation data.
Actors	External ASM support system / ASM to ASM service
Trigger	Determined by the external ASM support system but generally on start-up before requesting the current data set.
Pre-conditions	The external ASM support system has successfully authenticated itself.
Process description	**Step** / **Description** 1. The external ASM support system creates a subscription with the service for changes to proposals, specifying a notification listener. 2. An airspace activation state changes. 3. The service identifies all subscribers interested in activations and notifies them of the new definition of the activation. 4. The external ASM support system receives the notification that the activation has changed and notifies its users.

Results	An external ASM support system has used the service to be notified of changes to the activation data.
Exceptions / Error Conditions	

2213

2214

2215

Appendix C ARES-ACT ADEXP Message Structure

C.1 ADEXP content description

As said in Chapter 1.3, the structure of the ARES-ACT messages was defined in the document [13]. For a complete understanding and in order to produce a Technical Specification mature enough, this Appendix tries to replicate the information given in [13]. It helps to make a step further than what is said in section Functional block Interface Requirements where it is only provided the fields and the content of them in the way of what should be given inside, but no structure of each field has been provided. With the following tables this gap should be closed.

The ARES-ACT message consists of the following 5 ADEXP primary fields and in the following order:

ADEXP 3.0 Primary Field		Rationale
title	'-' "TITLE" titleid	Message title.
refdata	'-' "REFDATA" [sender] [recvr] seqnum	Reference data for message being transmitted.
filtim	'-' "FILTIM" day ! timehhmm	Day-time group specifying when the message was filed for transmission.
laan*	'-' "LAAN" (airspdes | refatsrte)	ARES Airspace Name field.
labands*	'-' "BEGIN" "LABANDS" 1{laband}20 '-' "END" "LABANDS"	List of ARES activation bands.

Table 5-1: ADEXP message primary fields

In the ARES-ACT message we can find also the definition of the ADEXP Subfields

ADEXP 3.0 Subfield		Rationale
aircraftid	*1{ALPHANUM}7*	Aircraft Identification.
airspdes	*'-' "AIRSPDES" 3{ALPHANUM}12*	Designates airspace other than an ATS route.
atsroute	*2{ALPHANUM}7*	The designator of an ATS route.
callsign*	'-' *"CALLSIGN" aircraftid*	Callsign field holding valid aircraft identification. Default value: "callsign" is an empty string of max length of "aircraftid".
callsigns*	*'-' "BEGIN" "CALLSIGNS"*	ARES callsigns.

	1{callsign}10 '-' "END" "CALLSIGNS"	Default value: “callsigns” is a list with only one callsign.
century	*2{DIGIT}2*	Two first digits of a century.
country	*2{ALPHA}2*	The two letter ICAO designator of a country.
day	*('0' | '1' | '2' | '3') ! DIGIT*	A two digit number which may contain the digits from 00 to 31.
fac	*'-' "FAC" 1{ LIM_CHAR }30*	Address data.
fl	*'-' "FL" ('F' | 'A') ! 3{DIGIT}3 | ('S' | 'M') ! 4{DIGIT}4*	A generic flight level field. A flight level expressed either as; "F" or "A" followed by three digits or, "S" or "M" followed by four digits.
flblock	*'-' "FLBLOCK" fl fl*	A flight level block defining an airspace vertically, inclusive of the flight levels given. A block defined as below or above a flight level shall be expressed respectively as from flight level 000 to the specified level or as from the specified level to flight level 999.
fulldatetime	*century ! year ! month ! day ! timehhmm*	A date, and immediately followed by the time in the format HHMM e.g. 199708010930 = 0930 hours on 1st. Aug. 1997.
laband*	*'-' "LABAND" resid flblock validperiod lactstat unit [missiontype] [callsigns] [permeability][taxicalltime]*	ARES activation band. Contains a reservation identification, a flight level block, validity information, activation status, a serving ATC unit and optionally; - a mission type, - a list of callsigns, - permeability information for a booking. - taxicalltime
lactstat*	*'-' "LACTSTAT" (“MIL_ACTIVE” | “PENDING_MIL_ACTIVE” | “CIV_RESERVED” |*	ARES activation status.

	"PENDING_CIV_RESERVED" | "INACTIVE")	
missiontype*	*'-' "MISSIONTYPE" 1{ALPHANUM}20*	Free text information about type of military mission. Default value: Empty string of max length.
month	*('0' | '1') ! DIGIT*	Month, expressed as a two digit number.
permeability*	*'-' "PERMEABILITY" ("NON_PERMEABLE" | "PERMEABLE")*	ARES permeability information for a booking. Default value: NON_PERMEABLE.
point	*2{ALPHANUM}5*	The designator of a significant point. May be a published point, a geographical point, a reference point or a point given artificially such as a 're-named' point (RENxx).
recvr	*'-' "RECVR" fac*	The receiver of the referenced message.
refatsrte	*'-' "REFATSRTE" atsroute point [country] point [country]*	ATS route designator and identifiers of first and last points. The points listed may be ICAO identifiers or artificially given GEOxx, RENxx or REFxx points. The identifier of the country within which the point is located may optionally be included. The end points must be consistent with the route information.
resid*	*'-' "RESID" 1{NUM}19*	ARES reservation ID.
sender	*'-' "SENDER" fac*	The sender of the referenced message.
seqnum	*'-' "SEQNUM" 3{DIGIT}3*	The serial number of the message being sent (a 3 digit number unique to the sender/receiver combination).
taxicalltime	*'-' "TAXICALLTIME" fulldatetime*	Time when the aircraft is expected to reach the VPA
timehhmm	*('0' | '1' | '2') ! DIGIT ! ('0' | '1' | '2' | '3' | '4' | '5') ! DIGIT*	Time, expressed in hours (2 digits 00-23) and minutes (2 digits 00-59). May be the time of day or duration.
titleid	*1{ALPHA}10*	An ADEXP message title.

unit*	*'-' "UNIT" 1{ALPHANUM}10*	ARES responsible unit.
validperiod*	*'-' "VALIDPERIOD" fulldatetime (fulldatetime | 'UFN')*	Validity period (from/to) of TSA booking in year, month, day, hours and minutes.
year	*2{DIGIT}2*	Two last digits of a year.

Table 5-2: ARES-ACT message subfields

The symbol code to achieve a correct understanding of the different rows in the previous tables is the following:

*	Not existing in ADEXP 3.0 specification.
{X}	Indicates list of fields X.
[Y]	Indicates Field Y is Optional.
|	OR
A!B	Indicates strict concatenation of A and B.

C.2 Example of ARES-ACT message

This section shows an example of an ARES-ACT message with its structure and the possible information content to make previous section more understandable.

ARES-ACT Example:

-TITLE ARESACT
-REFDATA –SENDER -FAC R –RECVR –FAC MC –SEQNUM 001
-FILTIM 260940
-LAAN -AIRSPDES TRA305A
-BEGIN LABANDS
    -LABAND
        -RESID 1234567
        -FLBLOCK -FL F100 -FL F250
        -VALIDPERIOD 201010261000 201010261300
        -LACTSTAT PENDING_MIL_ACTIVE
        -UNIT BELGARADAR
        -MISSIONTYPE AIRDEFENCE
        -BEGIN CALLSIGNS
            -CALLSIGN BEAR1
            -CALLSIGN BEAR2
        -END CALLSIGNS
        -PERMEABILITY NON_PERMEABLE
-END LABANDS

Appendix D 10.05.01 Requirements needed for the DataPack of EXE-07.05.02-VP-710

These requirements have been copied from 10.05.01 with the same estructure and division. For each requirement the status have been updated, if required, and the trace has been updated accordingly (the main action has been done is to remove those link to the SPR and OSED outdated).

D.1 Capabilities

D.1.1 Ground-Ground Datalink Management Requirements

[REQ]

Identifier	REQ-10.05.01-TS-3110.0010
Requirement	The ATC system shall return in a defined timeout interval (given by the ARESACT_TIMEOUT parameter) a LAM message to the sender of the ARESACT when the ATC system has successfully processed the new ARES.
Title	ARESACT acknowledgement
Status	<Validated>
Rationale	The sender shall know if an ARESACT message has been successfully processed by the ATC system by receiving an acknowledge message sent by the ATC system.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3110.0020
Requirement	The ATC system shall NOT return a LAM message to the sender of the ARESACT if the processing of the message caused any error avoiding the correct and complete processing of it.
Title	ARESACT non acknowledgement
Status	<Validated>
Rationale	If there is an error during the ARESACT message process in the ATC system, no acknowledge should be sent to the sender of the message.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2280

2281 [REQ]

Identifier	REQ-10.05.01-TS-3110.0030
Requirement	The ATC system should check received ARESACT messages in order to ensure that no new bookings are created with less anticipation than the one given by the PRE-WARNING-ANTICIPATION parameter.
Title	PRE-WARNING-ANTICIPATION parameter checking
Status	<In Progress>
Rationale	A new airspace structure should be booked with a given anticipation, defined by the mentioned parameter. The system will ensure that bookings that don't respect this time rule are detected and signalled as anomalous situation.
Category	<Functional>
Validation Method	
Verification Method	<Test>

2282

2283 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2284

2285 [REQ]

Identifier	REQ-10.05.01-TS-3110.0040
Requirement	When an ARESACT message is received by the ATC system and the check against the PRE-WARNING-ANTICIPATION parameter is not valid, the ATC system should report an error on the processing of the message
Title	ARESACT late reception
Status	<In Progress>
Rationale	A new airspace structure should be booked with a given anticipation, defined by the mentioned parameter. The system will ensure that bookings that don't respect this rule are detected and signalled as anomalous situation. Note that this implies the non acknowledgement of the message, so that the sender is aware of the situation.
Category	<Functional>
Validation Method	
Verification Method	<Test>

2286

2287 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2288

D.1.2 Flight Data processing requirements

D.1.2.1 Update of environment data

[REQ]

Identifier	REQ-10.05.01-TS-3121.0010
Requirement	On reception of an ARESACT message notifying a CDR change status, the Flight Planning, Lifecycle & Distribution function shall overwrite the CDR status in the database with the information present in the message.
Title	Overwrite CDR status in the CDR database due to a new incoming message
Status	<In Progress>
Rationale	The CDR database should be updated on reception new information about CDR status
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3121.0020
Requirement	On reception of an ARESACT message notifying an ARES change status, the Flight Planning, Lifecycle & Distribution function of the ATC System shall overwrite the ARES status in the ARES database with the information present in the new incoming message
Title	Overwrite ARES status in the ATC System ARES database
Status	<Validated>
Rationale	The ARESACT database should be updated on receiving new information about ARES status
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3121.0025
Requirement	On reception of an ARESACT including information regarding the permeability of an ARES (PERMEABILITY field of ARESACT message), the ATC system should store this information on the ARES database

Title	ARES permeability information storage in database
Status	<In Progress>
Rationale	If permeability information is received, it should be stored in the database
Category	<Functional>
Validation Method	
Verification Method	<Test>

2300
2301 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2302
2303 [REQ]

Identifier	REQ-10.05.01-TS-3121.0030
Requirement	In case of CDR database change, the Flight Planning, Lifecycle & Distribution function should generate a notification (“Civil Reserved CDR traverses active ARES”) if an active civil reserved CDR traverses an active ARES
Title	Generation of notification “Civil Reserved CDR traverses active ARES” due to CDR database update
Status	<In Progress>
Rationale	A notification should be generated in case of inconsistency between CDR status and ARES status. Only a notification because this case could be a nominal case (corridor in an active ARES)
Category	<Functional>
Validation Method	
Verification Method	<Test>

2304
2305 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2306
2307 [REQ]

Identifier	REQ-10.05.01-TS-3121.0040
Requirement	In case of ARES database change, the Flight Planning, Lifecycle & Distribution function should generate a notification (“Civil Reserved CDR traverses active ARES”) if an inactive CDR traverses an active ARES
Title	Generation of notification “Civil Reserved CDR traverses active ARES” due to ARES database update
Status	<In Progress>
Rationale	Notification should be generated in case of inconsistency between CDR status and ARES status. Only a notification because this case could be a nominal case (corridor in an active ARES)
Category	<Functional>
Validation Method	
Verification Method	<Test>

2308

2309 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2310

2311 [REQ]

Identifier	REQ-10.05.01-TS-3121.0050
Requirement	In case of CDR database change, the Flight Planning, Lifecycle & Distribution function shall generate an alarm “Flight Plan uses an inactive CDR” if a Flight Plan uses an inactive CDR, including a reference to the specific flight plan
Title	Generation of alarm “Flight Plan uses an inactive CDR” in case of inactive CDR
Status	<In Progress>
Rationale	The ATC system should generate alarms when this situation is detected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

2312

2313 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2314

2315 [REQ]

Identifier	REQ-10.05.01-TS-3121.0060
Requirement	In case of CDR database change, the Flight Planning, Lifecycle & Distribution function should generate a notification “Available CDR not used” if a route does not use a civil reserved CDR when having the opportunity to do so
Title	Generation of a notification if the route does not use an available CDR
Status	<In Progress>
Rationale	Notification should be generated when an Civil Reserved CDR is not used
Category	<Functional>
Validation Method	
Verification Method	<Test>

2316

2317 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2318

2319 [REQ]

Identifier	REQ-10.05.01-TS-3121.0070
Requirement	The ATC system shall consider that a Flight Plan is authorized to traverse certain ARES if its name has been included in the route field of its Flight Plan (Field 15c)

Title	Autorization of Flight Plans to traverse an ARES
Status	<In Progress>
Rationale	In particular situations, certain Flight Plans are authorized to traverse a specific ARES. Normally, the pilot or airliner operator informs this to ATC by including the TSA identifier in the F15c of the FP. For example, F15c of the FP contains: A (route point) EDR33A (TSA Identifier) B (route point). This requirement specifies the criteria for the ATC system to determine which flights are in this situation
Category	<Functional>
Validation Method	
Verification Method	<Test>

2320
2321 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2322
2323 [REQ]

Identifier	REQ-10.05.01-TS-3121.0080
Requirement	In case of an ARES database change, the Flight Planning, Lifecycle & Distribution function shall generate an alarm “Unauthorized Flight Plan traverses an active ARES” if a non authorized Flight Plan traverses an active ARES, including a reference to the specific flight plan
Title	Generation of alarm “Unauthorized Flight Plan traverses an active ARES” due to ARES database update
Status	<Validated>
Rationale	The ATC system should generate alarms when conflicts are detected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

2324
2325 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2326
2327 [REQ]

Identifier	REQ-10.05.01-TS-3121.0090
Requirement	In case of an ARES database change, the Flight Planning, Lifecycle & Distribution function shall generate a warning “Authorized Flight Plan traverses an active ARES” if an authorized Flight Plan traverses an active ARES, including a reference to the specific flight plan
Title	Generation of alarm “Authorized Flight Plan traverses an active ARES” due to ARES database update
Status	<Validated>
Rationale	Even though this is an allowed situation, the ATC system should warn the controller for safety reasons
Category	<Functional>

Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.1.2.2 Reception of an Flight Plan change or creation (from external system or HMI)

[REQ]

Identifier	REQ-10.05.01-TS-3122.0010
Requirement	On reception of a new FP or a change to an existing FP, the Flight Planning, Lifecycle & Distribution function shall generate an alarm “Flight Plan uses an inactive CDR” if the FP route uses an inactive CDR , including a reference to the specific flight plan
Title	Generation of an alarm if the FP does not respect CDR
Status	<In Progress>
Rationale	Alarm should be generated when an inactive CDR is used
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3122.0020
Requirement	On reception of a new FP or a change to an existing FP, the Flight Planning, Lifecycle & Distribution function should generate a notification “Available CDR not used” if a route does not use a civil reserved CDR when having the opportunity to do so
Title	Generation of a notification if the FP does not use an available CDR upon FP update
Status	<In Progress>
Rationale	Notification should be generated when an inactive CDR is not used
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Parti

			al>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2340

2341 [REQ]

Identifier	REQ-10.05.01-TS-3122.0030
Requirement	On reception of a new FP or a change to an existing FP, the Flight Planning, Lifecycle & Distribution function shall generate an alarm “Unauthorized Flight Plan uses an active ARES” if the Flight Plan traverses an active ARES without any authorization to proceed, including a reference to the specific flight plan
Title	Generation of alarm “inconsistency ARES-FP” due to new FP or a change to an existing FP through an active ARES
Status	<Validated>
Rationale	The ATC system should generate alarms when this situation is detected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

2342

2343 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2344

2345 [REQ]

Identifier	REQ-10.05.01-TS-3122.0040
Requirement	On reception of a new FP or a change to an existing FP, the Flight Planning, Lifecycle & Distribution function should generate a warning “Authorized Flight Plan traverses an active ARES” if an authorized Flight Plan traverses an active ARES, including a reference to the specific flight plan
Title	Generation of alarm “inconsistency ARES-FP” due to new FP or a change to an existing FP through an active ARES
Status	<Validated>
Rationale	Even though this is an allowed situation, the ATC system should warn the controller for safety reasons
Category	<Functional>
Validation Method	
Verification Method	<Test>

2346

2347 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2348

2349 D.1.2.3 Generation of alternate route(s)

2350 [REQ]

Identifier	REQ-10.05.01-TS-3122.0050

Requirement	In case of generation of “Flight Plan uses an inactive CDR” alarm, the Flight Planning, Lifecycle & Distribution function shall generate a what-if flight plan containing an alternate route for that Flight Plan, if existing.
Title	Generation of alternate route in case of CDR-FP inconsistency
Status	<In Progress>
Rationale	The ATC system should provide a what-if flight plan containing alternative routes when an inconsistency is detected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3122.0060
Requirement	In case of generation of “Unauthorized Flight Plan uses an active ARES” alarm, the Flight Planning, Lifecycle & Distribution function shall generate a what-if flight plan containing an alternative route for that Flight Plan, if existing.
Title	Generation of alarm “Authorized Flight Plan traverses an active ARES” due to FP update or creation
Status	<Validated>
Rationale	The ATC system should provide a what-if flight plan containing alternate routes when an inconsistency is detected.
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.1.3 Recording Requirements

[REQ]

Identifier	REQ-10.05.01-TS-3130.0010
Requirement	The recording function shall record the reception of all ARESACT messages
Title	Recording the update of an ARES
Status	<Validated>
Rationale	ATC system should record updated ARES information for post-analysis
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0400	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0470	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0480	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0500	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0520	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0530	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2362

2363 [REQ]

Identifier	REQ-10.05.01-TS-3130.0020
Requirement	The recording function shall record the update of a FP due to an update of an ARES
Title	Recording of the update of FP due to an update of an ARES
Status	<Validated>
Rationale	ATC system should record updated FP information for post-analysis
Category	<Functional>
Validation Method	
Verification Method	<Test>

2364

2365 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0500	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0520	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2366

2367 [REQ]

Identifier	REQ-10.05.01-TS-3130.0030
Requirement	The recording function shall record any generated alarm related to the interaction between Flight Plans and ARES
Title	Recording of the alarm due to FP infringement in an ARES
Status	<Validated>
Rationale	ATC system should record alarms information for post-analysis
Category	<Functional>
Validation Method	
Verification Method	<Test>

2368

2369 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0500	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0520	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2370

2371 [REQ]

Identifier	REQ-10.05.01-TS-3130.0040
Requirement	The recording function shall record any generated alarm due to FP infringement in a CDR
Title	Recording of the alarm due to FP infringement in a CDR
Status	<In Progress>
Rationale	ATC system should record alarms information for post-analysis
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0500	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0520	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3130.0050
Requirement	The recording function shall record the sending of all LAM messages sent to acknowledge ARESACT messages
Title	Recording the acknowledgement of an ARESACT message
Status	<Validated>
Rationale	ATC system should record LAM information for post-analysis
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0480	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0500	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0520	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0530	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.1.4 Safety nets requirements

[REQ]

Identifier	REQ-10.05.01-TS-3140.0010
Requirement	In case of change of the ARES status, the Safety Nets will be able to access to this information in order to analyze possible alarms regarding this new status
Title	Safety nets alarm regarding ARES status
Status	<Validated>
Rationale	The ATC system, through the Safety Nets should check the ARES status in order to generate alarms, if any. This requirement could have implications on the requirement set of 10.4.3 project (Safety nets adaptation)
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Safety nets (SNET)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.1.5 Controller HMI requirements

D.1.5.1 Display of airspace data

[REQ]

Identifier	REQ-10.05.01-TS-3151.0010
Requirement	The Controller HMI management function shall display a specific and different representation for each ARES possible status
Title	Display the status of an ARES
Status	<Validated>
Rationale	The controller should be aware of the ARES different status
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3151.0020
Requirement	The Controller HMI management function shall display a specific and different representation for each CDR possible status
Title	Display the status of a CDR
Status	<Validated>
Rationale	The controller should be aware of the CDRs different status
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3151.0030
Requirement	The Controller HMI management function should display information about the permeability of an ARES if it is available in the environment database
Title	Display the permeability of an ARES
Status	<In Progress>
Rationale	If available, permeability information should be displayed to the controller
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.1.5.2 Display of FP related notifications and alarms

[REQ]

Identifier	REQ-10.05.01-TS-3152.0010
Requirement	The Controller HMI management function shall display any generated alarm related to the interaction between FP and CDR
Title	Display CDR related alarms
Status	<Validated>
Rationale	The controller should be aware of the alarms generated by inconsistency of CDR-FP
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3152.0020
Requirement	The Controller HMI management function shall be able to display any what-if FP generated as a consequence of an alarm related to the interaction between FP and CDR
Title	Display of CDR related rerouting proposals
Status	<In Progress>
Rationale	The rerouting proposal must be displayed to the controller This requirement could have implications on the requirement set of the 10.2.1 project (Trajectory management)
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>

<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2406

2407 [REQ]

Identifier	REQ-10.05.01-TS-3152.0030
Requirement	The Controller HMI management function shall display any generated alarm related to the interaction between FP and ARES
Title	Display ARES related alarms
Status	<Validated>
Rationale	The controller should be aware of the alarms generated by inconsistency of FP-ARES
Category	<Functional>
Validation Method	
Verification Method	<Test>

2408

2409 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2410

2411 [REQ]

Identifier	REQ-10.05.01-TS-3152.0040
Requirement	The Controller HMI management function shall be able to display any what-if FP generated as a consequence of an alarm related to the interaction between FP and ARES
Title	Display ARES related rerouting proposals
Status	<Validated>
Rationale	The rerouting proposal must be displayed to the controller This requirement could have implications on the requirement set of the 10.2.1 project (Trajectory management)
Category	<Functional>
Validation Method	
Verification Method	<Test>

2412

2413 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction	N/A

		Management	
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2414

2415 [REQ]

Identifier	REQ-10.05.01-TS-3152.0050
Requirement	The Controller HMI management function shall display any generated warning related to the interaction between FP and ARES
Title	Display ARES related warnings
Status	<Validated>
Rationale	The controller should be aware of the alarms generated by inconsistency of FP-ARES
Category	<Functional>
Validation Method	
Verification Method	<Test>

2416

2417 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2418

2419 D.1.6 Operational Supervision requirements

2420 [REQ]

Identifier	REQ-10.05.01-TS-3160.0010
Requirement	The operational supervision management function shall display the current schedule of all ARES managed by the ATC system
Title	Display the schedule of an ARES
Status	<Validated>
Rationale	The operational supervisor should be aware of the ARES schedule
Category	<Functional>
Validation Method	
Verification Method	<Test>

2421

2422 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational Supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2423

2424 [REQ]

Identifier	REQ-10.05.01-TS-3160.0020
Requirement	The operational supervision management function shall display the current schedule of all CDRs managed by the ATC system

Title	Display the schedule of a CDR
Status	<In Progress>
Rationale	The operational supervisor should be aware of the CDR schedule
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational Supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3160.0030
Requirement	The operational supervision management function should display any alarm or notification related to the interactions between FP and ARES
Title	Display the notification related to FP and ARES to operational supervisor
Status	<In Progress>
Rationale	The operational supervisor should be aware of all alarms if this notification is generated
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational Supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-10.05.01-TS-3160.0040
Requirement	The operational supervision management function should display any alarm or notification related to the interactions between FP and CDR
Title	Display the notification related to FP and CDR to operational supervisor
Status	<In Progress>
Rationale	The operational supervisor should be aware of all alarms if this notification is generated
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>

<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational Supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2435
2436 [REQ]

Identifier	REQ-10.05.01-TS-3160.0050
Requirement	The Operational Supervision management function should display any generated notification regarding the inconsistency between an ARES and a CDR
Title	Display the notification “inconsistency ARES-CDR”
Status	<In Progress>
Rationale	The controller should be aware of the inconsistency ARES-CDR if this notification is calculated
Category	<Functional>
Validation Method	
Verification Method	<Test>

2437
2438 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0580	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0590	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Controller Human Machine Interaction Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2439
2440 [REQ]

Identifier	REQ-10.05.01-TS-3160.0060
Requirement	The current ARES status shall be manually modifiable by an operational supervisor
Title	Manual change of the ARES status
Status	<In Progress>
Rationale	For safety reasons, and upon exceptional conditions, an operational supervisor could modify the ARES status manually in case of system inconsistency or any sudden event that makes it necessary. Note: Using this functionality implies a temporary miscoordination between the database of the ATC system and the one of the ASM tool, as the normal way to do it would be to update the status using the ASM tool, what would cause ATC to receive the associated notification. In this exceptional situation, an operational protocol will have to be defined in this situation in order to recover normality
Category	<Functional>
Validation Method	
Verification Method	<Test>

2441
2442 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0570	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2443

2444 [REQ]

Identifier	REQ-10.05.01-TS-3160.0070
Requirement	The ARES schedule shall be manually modifiable by an operational supervisor
Title	Manual change of the ARES schedule
Status	<In Progress>
Rationale	For safety reasons, an operational supervisor could modify the ARES schedule in case of system inconsistency Note: Using this functionality implies a temporary miscoordination between the database of the ATC system and the one of the ASM tool, as the normal way to do it would be to update the status using the ASM tool, what would cause ATC to receive the associated notification. In this exceptional situation, an operational protocol will have to be defined in this situation in order to recover normality
Category	<Functional>
Validation Method	
Verification Method	<Test>

2445

2446 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0570	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2447

2448 [REQ]

Identifier	REQ-10.05.01-TS-3160.0080
Requirement	The current CDR status shall be manually modifiable by an operational supervisor
Title	Manual change of the current CDR status
Status	<In Progress>
Rationale	For safety reasons, an operational supervisor could modify the CDR status in case of system inconsistency Note: Using this functionality implies a temporary miscoordination between the database of the ATC system and the one of the ASM tool, as the normal way to do it would be to update the status using the ASM tool, what would cause ATC to receive the associated notification. In this exceptional situation, an operational protocol will have to be defined in this situation in order to recover normality
Category	<Functional>
Validation Method	
Verification Method	<Test>

2449

2450 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0570	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2451

2452 [REQ]

Identifier	REQ-10.05.01-TS-3160.0090
Requirement	The CDR schedule shall be manually modifiable by an operational supervisor
Title	Manual change of the CDR schedule
Status	<In Progress>
Rationale	For safety reasons, an operational supervisor could modify the CDR schedule in case of system inconsistency Note: Using this functionality implies a temporary miscoordination between the database of the ATC system and the one of the ASM tool, as the normal way to do it would be to update the status using the ASM tool, what would cause ATC to receive the associated notification. In this exceptional situation, an operational protocol will have to be defined in this situation in order to recover normality
Category	<Functional>
Validation Method	
Verification Method	<Test>

2453

2454 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0570	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0600	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0610	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2455

2456 [REQ]

Identifier	REQ-10.05.01-TS-3160.0100
Requirement	The ATC system shall define the ARESACT_TIMEOUT parameter value with a default value of 10 seconds
Title	ARESACT_TIMEOUT parameter initial value
Status	<In Progress>
Rationale	The ATC system needs a configurable time interval to process the ARESACT message prior to send an acknowledgement
Category	<Functional>
Validation Method	
Verification Method	<Test>

2457

2458 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2459

2460 [REQ]

Identifier	REQ-10.05.01-TS-3160.0110
Requirement	The ARESACT_TIMEOUT parameter value shall be modifiable by an operational supervisor, being this modification applicable from the next system restart
Title	Manual change of the ARESACT_TIMEOUT parameter value
Status	<In Progress>
Rationale	The operational supervisor should modify the initial value depending on the foreseen situation, but not online during system operation, for safety reasons
Category	<Functional>

Validation Method	
Verification Method	<Test>

2461
2462 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2463

2464 [REQ]

Identifier	REQ-10.05.01-TS-3160.0120
Requirement	The ATC system should define the PRE-WARNING-ANTICIPATION parameter value with a default value of three hours
Title	PRE-WARNING-ANTICIPATION parameter initial value
Status	<In Progress>
Rationale	The ATC system needs a configurable time interval to process the new areas booking. The value is taken from 7.5.2 OSED and 7.2 DoD
Category	<Functional>
Validation Method	
Verification Method	<Test>

2465
2466 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2467

2468 [REQ]

Identifier	REQ-10.05.01-TS-3160.0130
Requirement	The PRE-WARNING-ANTICIPATION parameter value should be manually modifiable by an operational supervisor, being this modification applicable from the next system restart
Title	Manual change of the PRE-WARNING-ANTICIPATION parameter value
Status	<In Progress>
Rationale	The operational supervisor should modify the initial value depending on the foreseen situation, but not online during system operation, for safety reasons
Category	<Functional>
Validation Method	
Verification Method	<Test>

2469
2470 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0550	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0560	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-SPR-PERF.0045	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Operational supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

2471

D.1.7 Technical Supervision requirements

[REQ]

Identifier	REQ-10.05.01-TS-3170.0010
Requirement	The ATC system shall notify the technical supervisor the change of the status of the ASM tool link
Title	ASM link status change notification
Status	<In Progress>
Rationale	The technical supervisor should be aware of the changes and availability of the ASM tool link
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Technical Supervision	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.2 Adaptability

See 3.2

D.3 Performance Characteristics

N/A

D.4 Safety & Security

N/A

D.5 Maintainability

[REQ]

Identifier	REQ-10.05.01-TS-3500.0020
Requirement	The ATC system shall record all data received or sent using the link with the ASM tool for further data exploitation purposes
Title	Recording of messages
Status	<Validated>
Rationale	Information recording is needed for post- analysis
Category	<Reliability>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0016	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>

<ALLOCATED_TO>	<Functional block>	Flight Planning, Lifecycle & Distribution	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

D.6 Reliability

See 3.6

Appendix E 10.05.01 Deleted System Requirements

Some requirements included in this Technical Specification are coming from P10.05.01 [10] but some of them are not applicable for this TS, so the following 10.01.05 system requirements are no longer applicable due to the creation on a new one within this TS (REQ-07.05.04-TS-0499.2320):

[REQ]

Identifier	REQ-10.05.01-TS-3900.0100
Requirement	The LABAND subfield shall be a structured field, including the subfields RESID, FLBLOCK, VALIDPERIOD, LACTSTAT, UNIT, and optionally, MISSIONTYPE, CALLSIGNS and PERMEABILITY, in the specified order
Title	ARESACT LABAND subfield contents
Status	<Deleted>
Rationale	Contents of information for each level band
Category	<Interface>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0014	<Partial>
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<ALLOCATED_TO>	<Functional block>	Ground-Ground Legacy Datalink Communications (GGDC)	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

Appendix F Data Types

F.1 Abstract Messages

F.1.1 <<abstract>> AuthenticatedRequest

Abstract ancestor of all requests that will be performed by a specific authenticate user. Those requests that are performed automatically by the client system will not extend from here.

Attributes:

a. UserID userID (Mandatory)

The system identifier of the user making the request

b. SessionID sessionID (Mandatory)

The sessionID of their currently active session

F.1.2 <<abstract>> Reply

Abstract ancestor of all replies that will be returned by the service.

No XML reply is sent if the request is such that the system returned an HTTP error instead

Attributes:

a. ReplyStatus status (Mandatory)

Defines the success of the request.

b. Error[] errors (Optional)

Describes any specific error conditions that have been encounter while processing a request. Shall only be set if the status is not 'OK'.

F.1.3 <<abstract>> ServiceRequest

Abstract ancestor of all requests that will be performed by the client system as opposed to an individual user.

No attributes are required.

F.2 Interface Messages

F.2.1 AirspaceRetrievalRequest

Request to retrieve all airspace definitions in AIXM 5.1 format in line with the data provided by NM.

Can be performed at any time.

Inherits from ServiceRequest.

Requires no attributes to be set.

F.2.2 ADRMessage

Reply returned in response to AirspaceRetrievalRequest

See NMs Service Manual: NOP/B2B Reference Manuals – AirspaceServices.

F.2.3 BulkUserRequest

Request to retrieve all of the defined individual User accounts from the service.

Can be performed at any time.

Inherits from ServiceRequest.

Required no attributes to be set.

F.2.4 BulkUserReply

Reply returned in response to BulkUserRequest.

Attributes:

a. User[] users (Mandatory)

F.2.5 LoginRequest

Request to authenticate an individual user to make use of ACOS services.

Can be performed at any time.

Attributes:

a. LoginID id (Mandatory)

Identifies the client/service user to be logged in.

b. String password (Mandatory)

The password provided by the user and hashed before being put in this request.

F.2.6 LoginReply

Reply returned in response to LoginRequest.

Inherits from Reply.

Attributes:

a. boolean success (Mandatory)

The result of the login attempt indicating success or failure.

b. SessionID sessionID (Optional)

A unique session identifier for this login. Must be provided if the login is successful, null otherwise. The SessionID has to be passed with any subsequent request to other functions of the service.

c. User user (Optional)

The full definition of this user. Must be provided if the login is successful, null otherwise.

F.2.7 LogoutRequest

Request to terminate an open session for a specific user.

Can be performed any time after a session has been established.

Attributes:

a. SessionIDSessionID sessionID (Mandatory)

The unique identifier of the currently open session to terminate.

F.2.8 LogoutReply

Reply returned in response to LogoutRequest

Inherits from Reply

Attributes:

a. boolean success (Mandatory)

Indicates a successful termination of the session

F.2.9 BookingRequest

Request to validate a new Booking and, on success, to create or update it.

This service may be constrained in terms of timing/process.

Updating can also be used to Cancel a booking by updating the bookingStatus attribute to CANCELLED providing the user performing the update has the appropriate privilege.

Booking.lastChange serves as the concurrency control mechanism, in order to perform the update to the booking the supplied Booking.lastChange must match the Booking.lastChange held by the service.

Inherits from AuthenticatedRequest

Attributes:

a. Booking booking (Mandatory)

The booking to be validated and created by the service.

Request to validate a Booking update and on success perform the update.

This service may be constrained in terms of timing/process.

This update can also be used to Cancel a booking by updating the bookingStatus attribute to CANCELLED providing the user performing the update has the appropriate privilege.

Booking.lastChange serves as the concurrency control mechanism, in order to perform the update to the booking the supplied Booking.lastChange must match the Booking.lastChange held by the service.

F.2.10 BookingIDRequest

Request of the Booking definition that exists within the service given the identifier.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. ActivityID bookingID (Mandatory)

The unique ID of the Booking being requested.

F.2.11 BookingReply

Reply returned in response to BookingRequest

Inherits from Reply

Attributes:

a. Booking booking(Optional)

The created booking if the request was deemed valid.

F.2.12 BookingListRequest

Request of Booking definitions that exist within the service given optional filter parameters. Minimally one time interval filter must be specified.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. AirspaceID[] airspaces (Optional)

When set, only bookings on the identified airspace will be returned.

b. DateTime changePeriodStart (Optional)

When set, bookings that were changed before the specified date and time (inclusive) will be excluded.

c. DateTime changePeriodEnd (Optional)

When set, only bookings that have changed since the specified date and time (exclusive) will be excluded.

d. DateTime timePeriodStart (Optional)

When set, only bookings that had completed before the specified date and time (inclusive) will be excluded.

e. DateTime timePeriodEnd (Optional)

When set, only bookings that start after the specified date and time (exclusive) will be excluded.

F.2.13 BookingListReply

Reply returned in response to BookingListRequest.

Inherits from Reply.

Attributes:

a. Booking[] bookings (Mandatory)

The Bookings that fulfil the constraints of the BookingListRequest. The array can be empty.

F.2.14 BookingConflictRequest

Request of conflicts that exist between two Bookings.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. ActivityID[] bookings (Mandatory)

An array of the unique IDs of the Bookings to request the associated conflicts.

F.2.15 BookingConflictReply

Reply returned in response to ReservationConflictRequest.

Inherits from Reply.

Attributes:

a. BookingConflict[] conflicts (Mandatory)

The conflicts involving the Bookings identified in the request. The array may be empty.

F.2.16 BookingActionRequest

Request of the actions that can be performed by the authenticated user for specified Bookings.

This service can be called at any time.

Inherits from ServiceRequest.

Attributes:

a. ActivityID[] ids (Mandatory)

An array of the unique IDs of the bookings the requested actions are applicable for.

F.2.17 BookingActionRetrievalReply

Reply returned in response to BookingActionRequest.

Inherits from Reply.

Attributes:

a. BookingAction[] actions (Mandatory)

The retrieved actions. The array can be empty.

F.2.18 MissionListRequest

Request of Mission definitions that exist within the service given optional filter parameters. Minimally one time interval filter must be specified.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. DateTime changePeriodStart (Optional)

When set, bookings that were changed before the specified date and time (inclusive) will be excluded.

b. DateTime changePeriodEnd (Optional)

When set, only bookings that have changed since the specified date and time (exclusive) will be excluded.

c. DateTime timePeriodStart (Optional)

When set, only bookings that had completed before the specified date and time (inclusive) will be excluded.

d. DateTime timePeriodEnd (Optional)

When set, only bookings that start after the specified date and time (exclusive) will be excluded.

F.2.19 MissionListReply

Reply returned in response to MissionListRequest.

Inherits from Reply.

Attributes:

a. Mission[] missions (Mandatory)

The Missions that fulfil the constraints of the MissionListRequest. The array can be empty.

F.2.20 ProposalRequest

Request to validate a new Proposal and, on success, to create it.

Can be performed at any time.

Inherits from AuthenticatedRequest

Attributes:

a. Proposal proposal (Mandatory)

The proposal to be validated and created by the service.

F.2.21 ProposalReply

Reply returned in response to ProposalRequest

Inherits from Reply

Attributes:

a. Proposal proposal (Optional)

The created proposal if the request was deemed valid.

F.2.22 ProposalListRequest

Request of Proposal definitions that exist within the service given optional filter parameters. Minimally one time interval filter must be specified.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. DateTime changePeriodStart (Optional)

When set, bookings that were changed before the specified date and time (inclusive) will be excluded.

b. DateTime changePeriodEnd (Optional)

When set, only bookings that have changed since the specified date and time (exclusive) will be excluded.

c. DateTime timePeriodStart (Optional)

When set, only bookings that had completed before the specified date and time (inclusive) will be excluded.

d. DateTime timePeriodEnd (Optional)

When set, only bookings that start after the specified date and time (exclusive) will be excluded.

F.2.23 ProposalListReply

Reply returned in response to ProposalListRequest.

Inherits from Reply.

Attributes:

a. Proposal [] proposals (Mandatory)

The retrieved Proposals. The array can be empty.

F.2.24 BookingProposalRequest

Request of detailed proposal definitions that exist within the service given a specific set of Booking identifiers.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. ActivityIDActivityID[] ids (Mandatory)

An array of the unique IDs of the Bookings to get the associated proposals.

F.2.25 BookingProposalReply

Reply returned in response to BookingProposalRequest.

Inherits from Reply.

Attributes:

a. Proposal[] proposals (Mandatory)

The retrieved Proposal definitions.

F.2.26 HandleProposalRequest

Request to handle a proposal, either accepting or rejecting it.

This service is constrained in terms of timing/process.

Inherits from AuthenticatedRequest

Attributes:

a. ActivityIDActivityID proposalID (Mandatory)

The ID of the proposal being ‘handled’

b. ProposalActionType acceptReject (Mandatory)

How the user wants to ‘handle’ the proposal

F.2.27 HandleProposalReply

Reply returned in response to HandleProposalReply.

Inherits from Reply.

Attributes:

a. boolean success (Mandatory)

Whether the action was successful.

F.2.28 ActivationListRequest

Request of the current activation state of a set of airspace defined in line with the AUP services provided by NM. This request returns the current activation state along with the time interval for which the activation is anticipated to exist.

This service can be called at any time.

Inherits from ServiceRequest

Attributes:

a. AirspaceIDAirspaceID[] ids (Mandatory)

An array of the unique IDs of the airspace to request the activation state for.

F.2.29 ActivationListReply

Reply returned in response to ActivationRetrievalRequest.

Inherits from Reply.

Attributes:

a. AbstractAIXMFeature[] activations (Mandatory)

The activations of the identified airspace contained within AIXM5.1 timeslices as per the NM AUP availability definitions.

F.3 Complex Data Types

F.3.1 AirspaceBooking

Represents the booking of a specific volume of airspace at a given time interval.

Attributes:

a. AirspaceID[] airspaces (Mandatory)

b. DateTime timeStart (Mandatory)

c. DateTime timeEnd (Mandatory)

d. int lowerLimitAltitude (Optional)

Must not be set if lowerLimitFL is set.

e. int lowerLimitFL (Optional)

Must not be set if lowerLimitAltitude is set.

f. int upperLimitAltitude (Optional)

Must not be set if upperLimitFL is set.

g. int upperLimitFL (Optional)

Must not be set if upperLimitAltitude is set.

h. ActivityID[] activities (Optional)

F.3.2 Booking

Represents a Reservation.

Attributes:

a. ActivityID bookingID (Mandatory)

Uniquely identifies the Booking

I. Must be NULL when creating the Booking

II. Cannot be NULL any time after creation

b. BookingStatus bookingStatus (Optional)

Contains the state information for the booking

I. Must be NULL when creating the Booking

II. Cannot be NULL any time after creation

c. CancellationType cancellationType (Optional)

The type of cancellation this Booking was given.

I. Must be NULL while the status is not CANCELLED

II. Cannot be NULL while the status is CANCELLED

d. DateTime availableUntil (Optional)

I. The date and time until which this Booking was available to be taken before cancellation.

e. AirspaceBooking[] airspaceBookings (Mandatory)

Contains the information about the airspace involved in the reservation. The array must not be empty.

f. UserID requestor (Mandatory)

The creator of the reservation.

g. CountryCode countryCode (Optional)

The ICAO country code of the country that the requestor of this booking belongs to.

h. MissionID mission (Optional)

A reference to an associated mission.

i. BookingType bookingType (Mandatory)

The type of booking this reservation is.

j. String comment (Optional)

Free text remarks about the reservation.

k. UserID controllingUnit (Optional)

Identifies the ATC unit responsible for this Booking.

l. UserID pointOfContact (Mandatory)

The UserID of the point of contact for this Booking.

m. String pointOfContactTelephone (Mandatory)

The String representation of the telephone number of the point of contact.

n. UserID[] acknowledgers (Optional)

Contains the UserIDs of the users that have acknowledged this booking to go ahead.

o. Boolean readyForLocalAcknowledgment (Mandatory)

Identifies whether all of the acknowledgements required by the client of this service have been performed. Once the client of this service has performed all appropriate acknowledgements then this flag MUST be set to true. The service may then perform its own acknowledgement and eventually update the booking state.

p. DateTime lastChanged (Optional)

Provides a concurrency mechanism.

I. Must be NULL on creation

II. Must match the value held by the service when updating otherwise a versioning error will be returned.

F.3.3 BookingAction

Represents an action that a specific User can perform on a specific booking.

Attributes:

a. UserID userID (Mandatory)

The system identifier of the user this action is for.

b. ActivityIDActivityID bookingID (Mandatory)

The system identifier of the Booking this action is for.

c. BookingActionType action (Mandatory)

The type of action that is allowed by this BookingAction.

F.3.4 BookingConflict

Represents a conflict existing between two Bookings

Values:

a. ActivityIDActivityID bookingA (Mandatory)

The unique identifier of the first booking in the conflict.

b. ActivityIDActivityID bookingB (Mandatory)

The unique identifier of the second booking in the conflict.

F.3.5 FlightFormation

Represents a Flight Formation of a Mission.

Attributes:

a. MilitaryFleet[] militaryFleets (Mandatory)

b. AirportCode departureAirport (Mandatory)

c. DateTime departureTime (Mandatory)

d. AirportCode arrivalAirport (Mandatory)

e. DateTime arrivalTime (Mandatory)

F.3.6 Proposal

Represents a Proposal.

Attributes:

a. ActivityID proposalID (Mandatory)

Contains the information uniquely identifying the proposal

b. ActvityID bookingID (Mandatory)

Unique ID of the booking this proposal is for.

c. AirspaceBooking[] bookings (Mandatory)

Contains the proposed airspace usage. The array must not be empty.

d. UserID creator (Mandatory)

The creator of this proposal.

e. String remarks (Optional)

Free text remarks about the proposal.

F.3.7 Mission

Represents a mission

Attributes:

a. MissionID missionID (Optional)

I. Must be NULL while creating.

II. Cannot be NULL once the Mission has been created.

b. FlightFormation[] flightFormations (Mandatory)

c. DateTime lastChanged (Optional)

Provides a concurrency mechanism.

I. Must be NULL on creation.

II. Must match the value held by the service when updating otherwise a versioning error will be returned.

F.3.8 MilitaryFleet

Represents a Military Fleet from a Flight Formation.

Attributes:

a. String[] aircraftIdentifications (Mandatory)

b. int numberOfAircraft (Mandatory)

c. String aircraftType (Mandatory)

F.3.9 User

Represents a User and their privileges within ACOS

Attributes:

a. UserID id (Mandatory)

The system identifier for the user.

b. LoginIDLoginID username (Mandatory)

The displayable login name for the user.

c. AirspaceIDAirspaceID[] reservableAirspace (Mandatory)

The array can be empty.

d. String email (Optional)

Contact email address for this user.

e. String phoneNumber (Optional)

Contact phone number for this user.

F.4 Simple Data Types

F.4.1 <string> ActivityID

Unique ID of a Reservation or Proposal, allocated by the service.

F.4.2 <string> AirportCode

Unique 4-letter airport code provided by ICAO.

F.4.3 <string> AirspaceID

Unique ID of an Airspace, allocated by the service.

F.4.4 <<enumeration>> BookingActionType

Enumerates the possible BookingActionTypes available.

Values:

a. MAJOR_EDIT

b. MINOR_EDIT

c. ACTIVE_EDIT

d. HANDLE_PROPOSAL

e. EDIT_REMARKS

f. CANCEL

F.4.5 <<enumeration>> BookingStatus

Enumerates the possible states of a Booking

Values:

a. PENDING

Initial state for a Booking while awaiting full Acknowledgment.

b. ACKNOWLEDGED

The state reached by a Booking after approval by both the client of the service and the service.

c. ALLOCATED

The state reached when a Booking is included in a ‘RELEASED’ AUP.

d. CANCELLED

The state a Booking is in once it has been cancelled.

F.4.6 <<enumeration>> BookingType

Enumerates the possible types of Booking

Values:

a. CIVIL

b. MILITARY

F.4.7 <<enumeration>> CancellationType

Enumerates the possible types of cancellation.

Values:

a. USER

Indicates the requestor cancelled the Booking.

b. REFUSED

Indicates the Booking was cancelled because of civil matters.

c. REJECTED

Indicates the Booking was cancelled because of military matters.

F.4.8 <string> CountryCode

Unique three letter country code defined in ISO 3166-1 alpha-3.

F.4.9 <long> DateTime

Date and time defined as the number of milliseconds since January 1st, 1970, 00:00:00 GMT. The fidelity of this field shall extend to the millisecond value.

F.4.10 <<enumeration>> Error

See section Appendix G

F.4.11 <string> LoginID

Unique ID known by a Human user to login to the service.

7.4.12 <<enumeration>> ProposalActionType

Enumerates the possible ProposalActions.

Values:

a. ACCEPT

b. REJECT

F.4.12 <string> SessionID

Unique ID used by the system to track the actions of a logged in user.

F.4.13 <string> UserID

Unique ID used by the system to refer to a specific user account.

Appendix G ASM-ASM Error Handling

G.1 Category

An error shall be associated with a “category” field. The category field will allow for easy classification for the interested party, and also allow for effective filtering and reporting on recorded errors. The available categories shall be subject to customisation, but a non-exhaustive proposed basic set is described here.

- Authorisation
- Connectivity
- Versioning
- Static Data
- Reservation
- Event
- Mission
- Conflict
- Proposal
- AUP/UUP
- Other

A more refined, or a hierarchical structure, may be an option if more granularity is required – for example, it may be useful to sub-divide “Static Data” into “Area” and “CDR”, or it may be preferable to simply have a greater number of categories available in a single flat structure.

G.2 Type

An error shall be associated with a “type” field. The type field will allow for ease of identification of a general cause of the error, and also allow for effective filtering and reporting.

The available categories shall be subject to customisation, but a non-exhaustive proposed basic set is described here.

- INVALID_DATA_TYPE
- INVALID_DATA_VALUE
- INVALID_COLLECTION_SIZE
- CANNOT_BE_NULL
- MUST_BE_NULL
- VERSION_CONFLICT
- SESSION_EXPIRED
- OTHER

G.3 Relevant Data

If the error is data related, and the data size is below a configurable threshold, then the data shall be incorporated into the message.

If the error is caused by an invalid choice being submitted, then the list of possible values for the choice shall be included in the error message.

G.4 Platform Specification

A description of the platform on which the system reporting the error may optionally be provided. This may provide additional information to assist in troubleshooting activities. Such information might include some of the following:

- Build identifier
- Operating System name and version number
- Names and version numbers of dependencies

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Appendix H Technical Requirements

H.1 Cooperative Airspace Management SUT Requirements

[REQ]

Identifier	REQ-07.05.04-TS-0491.1200
Requirement	ASM support system shall send RTSA UUP to NM system
Title	Send RTSA UUP
Status	<In Progress>
Rationale	The ASM support system shall send a RTSA UUP (state ready) to NM B2B server if a change to the reservation database occurs regarding the current AUP timeframe. The trigger for sending is the finished coordination and user input into ASM support system to release the current RTSA UUP. The UUP contains all relevant reservations from the time of publication until end of current AUP time frame. Also the state of CDR and VPA is listed - useable for civil traffic – YES/NO. TECHNICAL requirement
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0002	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0010	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.1218
Requirement	The ASM support system HMI shall display the message exchange history between ASM support system and ATC system.
Title	Message display in ASM support system HMI
Status	<Validated>
Rationale	All messages sent by ATC System and ASM support system shall be monitored, listed and able to be displayed in the ASM support system HMI TECHNICAL requirement
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-NL01.0010	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

H.1.1 RTSA data processing

[REQ]

Identifier	REQ-07.05.04-TS-0491.2101
Requirement	The NM system shall allow authorised ASM support tools to promote RTSA data messages from Draft state to Ready.
Title	RTSA_DATA_PROMOTION
Status	<Validated>
Rationale	Allowing the AMCs to promote validated RTSA data messages as Ready when coordination is completed. TECHNICAL requirement
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0001	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0491.2102
Requirement	The NM system shall allow authorised ASM support tools to demote RTSA data messages from Ready state to Draft.
Title	RTSA_DATA_DEMOTION
Status	<Validated>
Rationale	Allowing the AMCs to demote the RTSA data message from state Ready to Draft before being able to make further changes. TECHNICAL requirement
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0001	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<Enabler>	NIMS-42	<Partial>
<SATISFIES>	<Enabler>	SWIM-APS-03a	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2101
Requirement	For prototype: The NM system shall allow the CADF to release a RTSA SUUP message once its information is consolidated as not usable for FPL.
Title	SUUP_RELEASE

Status	<Validated>
Rationale	In case the RTSA data is not usable for FPL purposes, since only UUPs in Released state are stored, the AMC shall update the Draft SUUP with such info (keyword NOFPL) and promote it to Ready making it available to CADF for releasing and storage. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2102
Requirement	For prototype: The NM system shall prevent the propagation of RTSA SUUP messages to Environment (ENV) system.
Title	SUUP_PROPAGATION
Status	<Validated>
Rationale	Preventing ENV ATFCM/FLIGHT client systems to be affected by unconsolidated data. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2103
Requirement	For prototype: The NM system shall differentiate RTSA data (SUUP) from airspace planning data updates (UUP).
Title	SUUP_DIFFERENTIATION
Status	<Validated>
Rationale	A keyword (RTSA) in the Remark field of the UUP message shall allow the NM system to recognise a RTSA data message. - TECHNICAL requirement

Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2104
Requirement	For prototype: The NM system shall be able to manage FUA/EU restrictions applied to RSA extensions separately.
Title	RSA_EXTENSION_RESTRICTION
Status	<DELETED>
Rationale	RSA extensions shall be inserted as new rows in the RSA allocation list in order to manage different FUA/EU restrictions separately as they apply to all the duration of RSAs (WEF to TIL). - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2105
Requirement	For prototype: The NM system shall ignore Next UUP Time to allow immediate publication of RTSA UUPs.
Title	RTSA_UUP_PUBLICATION
Status	<Validated>
Rationale	The NM System will keep managing normal UUPs according to the current AUP/UUP process, meaning that the Next UUP Time will be set by CADF manually. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2106
Requirement	For prototype: The NM system shall translate Airspace and Route Portion allocations into AIXM TEMPDELTAs of AirspaceTimeSlice and RouteSegmentTimeSlice.
Title	AIXM_TRANSLATION
Status	<Validated>
Rationale	The AIXM model was especially created to harmonise all usage of ASM data and to make it possible to intercommunicate. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2107
Requirement	For prototype: The NM system shall consider FPL change proposals for fine tuning the traffic distribution for the network impact assessment.
Title	FPL_CHANGE_PROPOSALS
Status	<Validated>
Rationale	Assessing the impact of the requests at network level (e.g. on-loading sector, sector reconfiguration, complexity, work load, etc.). - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.2108
Requirement	For prototype: The NM system shall prevent either the deletion or the modification of the content of the Remark fields of a SUUP.
Title	RMK_CHANGE_PREVENTION
Status	<Validated>
Rationale	Ensuring consistency of the RTSA data. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

H.1.2 RTSA data dissemination

[REQ]

Identifier	REQ-07.05.04-TS-0431.3101
Requirement	For prototype: The NM system shall give full access to RTSA SUUPs (all State UUPs, not only the EUUP) to external client systems via B2B connection.
Title	RTSA_DATA_ACCESS
Status	<Validated>
Rationale	Making RTSA data accessible by AOs for pre-calculation of trajectories and re-processing of FPLs at a very early point in the airspace information sharing process. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>

<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.3102
Requirement	For prototype: The NM system shall allow the CADF to change Next UUP Time for releasing a UUP only if there are no other pending UUPs.
Title	NEXT_UUP_TIME_CONSTRAINT
Status	<Validated>
Rationale	Avoiding inconsistencies in existent AUP/UUP chains. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0431.7101
Requirement	For prototype: The NM system shall allow the user to retrieve both the lists of released SUUPs and UUPs for post-ops analysis purposes.
Title	RTSA_LOG
Status	<Validated>
Rationale	As a UUP is issued every time the airspace can be used for FPL purposes without updating/promoting the Draft SUUP from which it has been originated, the list of released SUUPs will include the following two combinations of CDRs Remark keywords only: OPEN/NOFPL; CLOSED/NOFPL. In order to provide a complete RTSA information both SUUPs and UUPs lists have to be available. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0439.5101
Requirement	For prototype: RTSA SUUP messages shall be exchanged using the same data set of UUP messages and be marked by means of a specific keyword (RTSA) in the UUP Remark field.
Title	SUUP_REMARK
Status	<Validated>
Rationale	RTSA data shall be differentiated from planning data and follow a different process in order not to be used for flight planning purposes. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0022	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-PO01.0023	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0439.5102
Requirement	For prototype: The following combinations of two keywords in the CDRs Remark fields shall indicate the real time status of each of them: 1. OPEN/FPL 2. OPEN/NOPFL 3. CLOSED/FPL 4. CLOSED/NOFPL
Title	SUUP_CDR_RMK
Status	<Validated>
Rationale	OPEN/CLOSED represents the actual status of the CDR; FPL/NOFPL expresses the possibility to use CDR real time information for FPL purposes. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0439.5103
Requirement	For prototype: In case of cancellation/reduction of an ARES the following keywords in the Remark field of the RSA allocation lists (L1 and L2) shall indicate the real time status of each of them: FPL/NOFPL.
Title	SUUP_RSA_RMK
Status	<Validated>
Rationale	FPL/NOFPL expresses the possibility to use RSA real time information for FPL purposes. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0439.5104
Requirement	For prototype: The NM system shall use the AIXM tag <note> to exchange CDR/RSA remark field information.
Title	AIXM_TAG_RMK
Status	<Validated>
Rationale	The <annotation> tag is a free text feature in AIXM 5.1 suitable for containing CDRs/RSAs Remark information. - TECHNICAL requirement
Category	<Functional>
Validation Method	<Live Trial>
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0018	<Partial>
<SATISFIES>	<Enabler>	AAMS-09a	<Partial>
<SATISFIES>	<Enabler>	AAMS-11	<Partial>

[REQ]

Identifier	REQ-07.05.04-TS-0391.1201
Requirement	For prototype: ASM support system shall send RTSA SUUP to NM system
Title	Send RTSA SUUP
Status	<In Progress>
Rationale	The ASM support system shall send automatically a RTSA SUUP (state ready) to NM B2B server if a change to the reservation database occurs

	regarding the current AUP timeframe. The UUP contains all relevant reservations plus the state of CDR and VPA state (useable for civil – YES/NO) In contrast to the UUP, the SUUP has no impact on the NM systems and is meant only for information purposes. -TECHNICAL requirement
Category	<Functional>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-EL01.0017	<Partial>
<ALLOCATED_TO>	<Functional block>	Cooperative Airspace Management	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<SATISFIES>	<Enabler>	AAMS-11	<Partial>
<ALLOCATED_TO>	<Project>	07.05.04	N/A

H.2 CHMI Management

[REQ]

Identifier	REQ-07.05.04-TS-0491.4321
Requirement	The ATC system shall display in all CWPs a label over the ARES indicating the name of the ARES and the level booked after a pre-notification is received from the ASM support system.
Title	ARES labels displayed over a pre-activated ARES
Status	<Validated>
Rationale	The CWP shall display in a label the name of the ARES and the levels booked. In case there are more than one booking for the same ARES, the CWP shall display the level bands with the more demanding upper and lower level. In case there is an ARES pre-activated for a booking and the same ARES activated for other booking at the same time (implies the level bands for both bookings are different), the CWP shall display the level bands for the activated one. TECHNICAL requirement
Category	<Functional><HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.4323
Requirement	The ATC system shall display on all the CWPs a label over the ARES indicating the name of the ARES and the level booked after an activation message is received from the ASM support system.

Title	ARES labels over an activated ARES
Status	<Validated>
Rationale	The CWP shall display in a label the name of the ARES and the levels booked. In case there are more than one booking for the same ARES, the CWP shall display the level bands with the more demanding upper and lower level. In case there is an ARES pre-activated for a booking and the same ARES activated for other booking at the same time (implies the level bands for both bookings are different), the CWP shall display the level bands for the activated one. TECHNICAL requirement
Category	<HMI>
Validation Method	
Verification Method	<Test>

3088
3089 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	Support Functions	N/A
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A

3090
3091 [REQ]

Identifier	REQ-07.05.04-TS-0491.9311
Requirement	The CWP shall display a label over the ARES including the name of the ARES and the level booked when receiving a pre-notification.
Title	Fields displayed of the label over an ARES when a pre-notification is received
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4321 TECHNICAL requirement
Category	<HMI>
Validation Method	
Verification Method	<Test>

3092
3093 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED_TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED_TO>	<Project>	07.05.04	N/A

3094
3095 [REQ]

Identifier	REQ-07.05.04-TS-0491.9312
Requirement	The CWP shall display a label over the ARES including the name of the ARES and the level booked when receiving an activation message.
Title	Fields displayed of the label over an ARES when an activation is received
Status	<Validated>
Rationale	This HMI requirement has been proposed by 10.10.02 to 07.05.04 when analysing its TS to fill an HMI GAP, more explicitly it is related to REQ-07.05.04-TS-0491.4323

	TECHNICAL requirement
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-INTEROP-0301.0015	<Partial>
<ALLOCATED TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A

[REQ]

Identifier	REQ-07.05.04-TS-0491.9320
Requirement	The CWP shall display the ARES with their coordinates and their appropriate lower and upper level
Title	ARES coordinates and levels display
Status	<Validated>
Rationale	In order to have a numeric situational awareness by the Controller TECHNICAL requirement
Category	<HMI>
Validation Method	
Verification Method	<Test>

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-07.05.02-OSED-AOM1.0007	<Partial>
<ALLOCATED TO>	<Functional block>	CHMI Mgt (CHMI)	N/A
<SATISFIES>	<Enabler>	ER APP ATC 77	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA05.03.01	N/A
<ALLOCATED TO>	<Project>	07.05.04	N/A

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