

ISRM Service Portfolio

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Abstract

This document is the ISRM Service Portfolio which lists all the services in the Information Services Reference Model (ISRM) version 2.0 with meta data and references to the related Service Description Document (SDD).

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Table of Contents

EXEC	JTIVE SUMMARY	9
1 IN	TRODUCTION	10
1.1	PURPOSE OF THE DOCUMENT	10
1.2	INTENDED READERSHIP	
1.3	INPUTS FROM OTHER PROJECTS	
1.4	GLOSSARY OF TERMS	10
1.5	ACRONYMS AND TERMINOLOGY	11
2 SE	ERVICE TAXONOMY	14
3 SE	ERVICE LISTING	16
3.1	AERODROMEMAPINFORMATION SERVICE	18
3.2	AERONAUTICALINFORMATIONFEATURE SERVICE	19
3.3	AERONAUTICALINFORMATIONMAP SERVICE	21
3.4	AERONAUTICALINFORMATIONNOTIFICATION SERVICE	
3.5	AIRPORTFLIGHTINFORMATIONPUBLICATION SERVICE	
3.6	AIRPORTMETALERT SERVICE	25
3.7	AIRPORTMETFORECAST SERVICE	
3.8	AIRPORTMETINDUCEDCAPACITYREDUCTION SERVICE	
3.9	AIRPORTMETNOWCAST SERVICE	
3.10		
3.11		
3.12		
3.13		
3.14		
3.15		
3.16 3.17		
3.18		
3.19		
3.19		
3.21		
3.22		
3.23		
3.24		
3.25		
3.26		
3.27		
3.28		
3.29	NETWORKOPERATIONPLAN SERVICE	53
3.30	OATFLIGHTDATADISTRIBUTION SERVICE	54
3.31		
3.32	PreDepartureSequenceSetting service	56
3.33		57
3.34		
3.35		
3.36		
3.37		
3.38		
3.39		
3.40		
4 RE	EFERENCES	68



APPE	INDIX A SERVICES PER CATEGORY	69
A.1	ALPHABETICAL	69
A.2		
A.3	,	
A.4		
A.5		
A.6		80
A.7		81
A.8		83
A.9	INTENDED CONSUMER	85
APPEI	NDIX B MULTI-FACETTED CLASSIFICATION	SCHEME88
B.1	INTRODUCTION TO TAXONOMY AND THE SER	RVICE PORTFOLIO88
B.2	CLASSIFICATION THEORY	88
B.3	APPLICATION IN SESAR	89
B.4	FACETS OVERVIEW	90



List of tables

Table 1: Glossary of terms	11
Table 1: Glossary of terms	13
Table 3: Terminology	13
Table 4: Taxonomy categories	14
Table 5: Alphabetical list of services	18
List of figures	
Figure 1 Example SKOS taxonomy	89



Executive summary

This ISRM Service Portfolio document presents a summary of the services in the Information Services Reference Model (ISRM) version 2.0. It contains a brief summary of what the services do and provide a taxonomy related to the European ATM Architecture layers. It also gives key metadata and information on where to find more detailed description of the services.

It allows the members of the SESAR programme and ATM stakeholders to understand what kinds of services exist, what they do and what the development (lifecycle) status is.

As defined in the SWIM ConOps [3], the Service Portfolio is intended to be presented as part of the SWIM registry where the entire service lifecycle is managed. In addition, the ISRM is also a part of the European ATM Architecture. This means that a significant portion of the service portfolio is presented in the EATMA portal [4].

ISRM version 2.0 contains 40 designed services.

For version 2.0, one new service (IntegratedDigitalBriefing) was introduced with respect to ISRM 1.4. Furthermore, the ICAOMetLocalReport service was renamed into METREPORT service. All other services existing in ISRM 1.4 were updated to the latest ISRM Foundation 00.07.00 and were generally reworked and improved in quality. The exceptions were the AeronauticalInformationFeature and AeronauticalInformationMap Services which remained in their previous status based on ISRM Foundation 00.03.10.

The complete ISRM 2.0 delivery including all Service Description Documents (SDDs) can be found in the SESAR extranet Reference [6]



1 Introduction

1.1 Purpose of the document

The Information Services Reference Model (ISRM) contains descriptions of the services that are intended to be provided and consumed by ATM stakeholders when conducting Air Traffic Management.

The ISRM Service Portfolio describes the services in term of business value and other key metadata. As such, the ISRM Service Portfolio clarifies or helps to clarify a set of strategic questions on an overarching level:

- Which services should I as an ATM stakeholder provide?
- Which services can I as an ATM stakeholder make use of?
- What services need to be further addressed from an R&D program perspective?

To help answer the above questions, the portfolio contains the following information:

- What kinds of services exists
- What each service does
- · Who is the intended provider/consumer of the service
- What the development status is
- · Where more information about the service can be found

The source of the ISRM is stored in a model from which the Service Description Documents (SDDs) are generated. The SDD contains the complete logical description of a service. The intent of the Service Portfolio is to list and structure the most important data and metadata at a high level for the services in the ISRM. These data and metadata are extracted from the Service Description Document (SDD).

The Service Portfolio in the shape of a document is intended to be replaced by the SWIM Registry web browser presentation. This will cover the same scope as this document but give more opportunities for sorting, filtering and finding relations in the overall taxonomy given by the attributes of the registry data.

1.2 Intended readership

The targeted audience of the ISRM Service Portfolio is the projects which take part in the service engineering process, the SJU partners, WP B and C for roadmap and performance framework activities, federating Ops and Sys projects that are in the SCG and prospective service consumers.

1.3 Inputs from other projects

The document is based on the Service Portfolio description in the Working Method on Services, Reference [1] and in the 08.03.02 SWIM Registry Operational Requirements and Demands, Reference [2]. It uses overarching information from the WP8 Fast Tracks and Service Activities SDD's, SID's, and B4.1 EATMA information.

1.4 Glossary of terms

Term	Definition
R&D status	The status of the service in the Research and Development lifecycle, i.e. if a service is Identified, Designed, Developed or Validated.

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Term	Definition	
Service Category	A taxonomic scheme used for classification of Services provided and used between European ATM stakeholders.	
Service Portfolio	A description of a set of services in term of business value and other key metadata such as:	
	Categorisation of services	
	What each service does	
	Who is the intended provider/consumer of the service	
	What the R&D status is	
	Where more information about the service can be found	
Service Taxonomy	See Service Category.	

Table 1: Glossary of terms

1.5 Acronyms and Terminology

1.5.1 Acronyms

Term	Definition
A-CDM	Airport Collaborative Decision Making
ACI	Airports Council International
ACISP	Airport Collaborative Information Sharing Platform
ACK	Acknowledge
ADS-C	Automatic Dependant Surveillance - Contract
AFIS	ATM Feature Information Service
AFUA	Advanced Flexible Use of Airspace
AIDX	Aviation Information Data Exchange
AINS	Aeronautical Information Notification service
AIXM	Aeronautical Information Exchange Model
AMDB	Airport Map Database
AMIS	Aerodrome Map Information
AOP	Airport Operations Plan
ARES	Area Reservations
ATM	Air Traffic Management
ATN	Aeronautical Telecommunications Network
ATSU	ATS unit
AU	Airspace User
CDM	Collaborative Decision Making



Term	Definition
ConOps	Concept of Operations
CPDLC	Controller-pilot data link communications
СТА	Control Area
DBS	Distance Based Separation
DLA	Delay
EA	Enterprise Architecture
EATMA	European Air Traffic Management Architecture
ECHG	Extended Modification
EDLA	Extended Delay
EFPL	Extended Flight Plan
EPP	Extended Projected Profile
EUROCAE	EURopean Organisation for Civil Aviation Equipment
FAA	Federal Aviation Authority
FIXM	Flight Information Exchange Model
FOC	Full Operational Capability
FOC	Flight Operational Control / Flight Operations Centre
FT	Fast Track
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IER	Information Exchange Requirement
IER	Information Exchange Requirement
IOC	Initial Operational Capability
ISO	International Standard Organisation
ISRM	Information Service Reference Model
MET	METeorological or METeorology
METAR	Aerodrome Meteorological Report
METREPORT	Local Routine Meteorological Report
NFR	Non Functional Requirements
NOP	Network Operations Plan
OFA	Operational Focus Area
OSED	Operation Service and Environment Definition
PDS	Pre-Departure Sequencer
R&D	Research and Development
REJ	REJect
RVR	Runway Visual Range
SCG	Service Coordination Group



Term	Definition
SCG	Service Coordination Group
SDD	Service Description Document
SESAR	Single European Sky ATM Research Programme
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SID	Service Identification Document
SJU	SESAR Joint Undertaking (Agency of the European Commission)
SPECI	Aerodrome SPECIal meteorological report
SPECIAL	Local Special Meteorological Report
SWIM	System Wide Information Management
TAF	Terminal Area Forecast
TBS	Time Based Separation
TC-SA	Trajectory Control by Ground Based Speed Adjustments
TSAT	Target Start Up Approval Time
TSIS	Taxiway Status Information Service
ттот	Target Take Off Time
V&V	Validation and Verification
WP	Work Package
WSDL	Web Services Description Language
XML	eXtended Markup Language
XSD	XML Schema Definition

Table 2: Acronyms

1.5.2 Terminology

Term	Definition	Source
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.	ATM Lexicon
SWIM Registry	The source of references for service-related information in SWIM. It describes the complete set of services enabled by SWIM to discover the services, for example, relating to the weather forecast for a particular aerodrome with qualitative, consolidated and structured information. It contains other service-related information such as standards, policies, SLAs and certifications.	Based on SWIM Registry Operational Requirements and needs regarding ATM information catalogue and registry services. 08.03.02 D19. Ed 00.01.01 June 2013

Table 3: Terminology



2 Service taxonomy

The services in the portfolio are classified according to a set of different categories that correspond to the European ATM Architecture layers described in [5].

The business layer

Categories in this layer relates to the high level business contributions of the service. Categories in this layer are identified with a green background colour.

The operational layer

Categories in this layer relates to the operational characteristics such as what operational activities and information the service deals with. Categories in this layer are identified with a blue background colour.

The technical layer

Categories in this layer classifies the services according to what type of technical systems and technologies are used to implement them. Categories in this layer are identified with an orange background colour.

Category	Description	Link
Alphabetical	Classifies services according to the English alphabetical order.	A.1
ATM Capability	Classifies services based on the ATM capability they aim to provide. The capability model taxonomy is from the European ATM Architecture (EATMA).	A.2
ATM Process	Classifies services based on the operational activities they support. The process taxonomy is taken from the SESAR Concept of Operations.	A.3
Flight Phase	Classifies services based on the flight phase they operate within. The flight phase descriptions are taken from the SESAR Concept of Operations.	A.4
ATM Information	Classifies the services based on the type of content that is provided through them.	A.5
SWIM-TI Profile	Classifies services according to the type of SWIM-Technical Infrastructure Profiles that can be used to implement it.	A.6
Intended system type	Classifies services according to the type of systems that are intended to provide them. The systems are defined by the EATMA Technical Architecture.	A.7
Intended Provider	Classifies services according to the ATM Stakeholder type that is intended to provide the service. The types are defined by the European ATM Master Plan.	A.8
Intended Consumer	Classifies services according to the ATM Stakeholder type that is intended to consumer the service. The types are defined by the European ATM Master Plan.	A.9

Table 4: Taxonomy categories

Within each category, there is a hierarchical breakdown (taxonomy) to which the services are allocated. The categorisation allows creating two types of views:

Categories per Service

This is a table presenting how a service is linked to all available categories. The aim is to link the services to as many categories as possible in order to give the reader an understanding of what the service is about. Such table is presented in each service description in chapter 3.

Services per Category

In this view all services that are linked to a specific category are presented. The benefit of this is that it enables searching and viewing of all services from different perspectives. Tables with this information can be found in Appendix A.

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Detailed information about the multi-facetted classification scheme used in the Service portfolio can be found in Appendix B.



3 Service listing

Below is a cross reference to find services listed in alphabetical order:

Service name	Description	Link
AerodromeMapInformation	The Service aims to publish Aerodrome Map Features and the Maps themselves as described by EUROCAE in standard AMXM, ED99C and ED119B.	3.1
AeronauticalInformationFeature	This service provides aeronautical information features to the stakeholders.	3.2
AeronauticalInformationMap	The AeronauticalInformationMap service provides the CDM for the provision of aeronautical information maps.	3.3
AeronauticalInformationNotification	The AeronauticalInformationNotification service provides the CDM for the provision of aeronautical information alerts about new information being available.	3.4
AirportFlightInformationPublication	The AirportFlightInformationPublication service supports the Airport CDM concept and its implementation by providing the A-CDM partners with Common Situation Awareness about flights at a CDM airport through the publication of flight information to the A-CDM Partners that subscr be to it.	3.5
AirportMETAlert	The AirportMETAlert service covers the dissemination of alerts and warnings to airport stakeholders when MET parameters exceed a certain threshold	3.6
AirportMETForecast	The service covers the dissemination of customized airport meteorological forecasts over SWIM.	3.7
AirportMETInducedCapacityReduction	The AirportMETInducedCapacityReduction service supplies the short term maximum airport capacity as constrained by the predicted weather, to consumers (initially at least) at an airport.	3.8
AirportMETNowcast	The AirportMETNowcast service provides a Meteorological prediction of the weather at the airport concerned, at a small interval in the future	3.9
AirportMetObservation	This service provides a publication/ subscription service to receive meteorological observations of airport runways over SWIM such as the surface contamination, visual range, weather condition, precipitation	3.10
ARESActivation	The ARESActivation service provides the CDM to coordinate the activation of an ARES between the ASM and the concerned ACCs.	3.11
ARESDeActivation	The ARESDeActivation service provides the CDM to coordinate the deactivation of an ARES between the ASM and the concerned ACCs.	3.12
ARESPreActivation	The ARESPreActivation service allows the pre-activation of ARES.	3.13
ARESQuery	ARESQuery is a request/reply service that provides information on a specific Area Reservations (ARES) to sustain Advanced Flexible Use of Airspace (AFUA) operations.	3.14
ARESRelease	The ARESRelease service notifies the release of an ARES to the concerned ACCs.	3.15
ArrivalManagementInformation	The Arrival Information Management service enables exchange of arrival sequence information at one or more destination airports which allows optimizing runway throughput, optimizing ATC workload share and minimizing environmental impact / fuel burn by more efficient flight trajectories.	3.16
ArrivalSeparationIndicator	The operational context for the service derives from the P06.08.01 OSED (see [7]).	3.17
ATCFlightObjectControl	The ATCFlightObjectControl service allows consumers to request a number of changes to a Flight Object which is being managed by the	3.18



	service provider.	
CalculatedPreDepartureSequenceDelivery	The CalculatedPreDepartureSequenceDelivery service supports the Airport CDM concept and its implementation by providing the PreDeparture sequencer the capability to deliver the calculated TSAT and TTOT time values.	
DeparturePlanningInformation	The DeparturePlanningInformation service is a publish/subscr be service to get departure information (Departure and Flight information) at a given aerodrome.	
ExtendedFlightPlanSubmission	The ExtendedFlightPlanSubmission service supports the service consumer to request validation, submission and cancellation of Extended Flight Plans.	3.21
FlightPlanDataDistribution	The FlightPlanDataDistribution Service supports the service provider (Network Manager) to distr bute flight plans copies and changes.	3.22
IntegratedDigitalBriefing	The IntegratedDigitalBriefing service (enabled by the availability of digital aeronautical services and meteorological services) is defined to distribute a Digitally Enhanced Pre-Flight Information Bulletin (ePIB).	3.23
METAR	The METAR service covers the dissemination of standard ICAO METAR bulletins over SWIM.	3.24
METGriddedForecast	METGriddedForecast service provides the Local, sub-regional and regional OUE stakeholders with forecasts of en-route meteorological conditions (upper wind, upper-air temperature, upper-air humidity, geopotential altitude of flight levels, etc.).	3.25
METHazardEnrouteForecast	The METHazardEnrouteForecast service defines an information service for exchanging Forecasts and Nowcasts of significant weather phenomena.	
METHazardEnrouteObservation	The METHazardEnrouteObservation service defines an information service for information exchanges for Observations of significant weather phenomena.	
METREPORT	The METREPORT service covers the dissemination of standard ICAO METREPORT/SPECIAL bulletins over SWIM. The local routine (METREPORT) and special (SPECIAL) reports are routine observations made at an aerodrome throughout the day. Local routine reports shall be transmitted to local air traffic services units and shall be made available to the operators and to other users at the aerodrome. The scope and usage of METREPORT/SPECIAL is the aerodrome.	
NetworkOperationPlan	The NetworkOperationPlan service supplies the data common to the Network Operations Plan (NOP) and the Airport Operations Plan (AOP) to the airport in order to synchronize the data and maintain a common view of the overall network demand.	
OATFlightDataDistribution	OATFlightDataDistribution service: to enable the NM to: distribute OAT Flight Data to a set of users identified from the trajectory of the flight and other users based on internal rules and Letters of Agreement.	
OATFlightPlanSubmission	OATFlightPlanSubmission service: to enable the Military or State Airspace User to: • request the verification of a new OAT Flight Plan before its submission.	3.31
	receive the result related to the Validation of a new OAT Flight Plan.	
	request the submission of a new improved OAT Flight Plan, or of an update to an improved OAT Flight Plan.	
	receive the result related to the submission of a new improved OAT Flight Plan or of an update to an improved OAT Flight Plan.	
	request the delay of an improved OAT Flight Plan.	
	request the cancellation of an acknowledged improved OAT	



	flight plan.	
	notify the NM of a flight's suspension or de-suspension.	
PreDepartureSequenceSetting	The PreDepartureSequenceSetting service supports the Airport CDM concept and its implementation by providing the relevant authority with the capability to set the TSAT and TTOT time values of a given flight at a CDM airport.	3.32
ReportAircraftETAMinMax	The service identified covers the operations dealing with the request and publication of the ETA Min Max Report.	3.33
ReportAircraftTrajectory	The service covers the operations dealing with the request and publication of the Extended Projected Profile (EPP).	
RunwayManagementInformation	This service aims at providing information about the runway status, configuration and capacity (current and planned) at an aerodrome.	3.35
RunwayMixSequence	The service identified covers the operations dealing with the subscription and publication of the runway mix sequence.	3.36
SharedFlightObject	The "SharedFlightObject" service allows the providers and consumers to share information regarding Flight Objects.	3.37
SNOWTAM	The SNOWTAM service covers the dissemination over SWIM of standard ICAO SNOWTAM, which are shared with a wide range of subscr bing ATM users. The SNOWTAM is special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format. It is formatted according to ICAO Annex 15 provisioning.	3.38
TAF	The TAF service covers the dissemination of standard ICAO TAF bulletins over SWIM. The TAF (Terminal Aerodrome Forecast) is a pre-defined ICAO format for reporting weather forecast information with particular reference to aerodromes. TAFs are issued every six hours for major civil airfields and generally apply to a 24 or 30-hour period, and an area within approximately five miles from the centre of an airport runway complex. TAFs are issued every 3 hours for military airfields and some civil airfields and cover a period ranging from 3 hours to 24 hours.	3.39
TargetOffBlockTimeSetting	The TargetOffBlockTimeSetting service supports the Airport CDM concept and its implementation by allowing an A-CDM Partner to set the Target Off-Block Time (TOBT) that indicates the target time for the aircraft to be ready for Off-Block.	3.40

Table 5: Alphabetical list of services

3.1 AerodromeMapInformation service

The Service aims to publish Aerodrome Map Features and the Maps themselves as described by EUROCAE in standard AMXM, ED99C and ED119B.

The service is named AerodromeMapInformation service, abbreviated to AMIS and was modelled with two service interfaces each with several operations. The two service interfaces are:

- AccessAMDBFeatures: This interface provides the user with the requested features from the AMDB (Airport Map Database). The features capable of being requested are a subset of the total set of feature types available from the AFIS (ATM Feature Information Service).
- AccessAMDBMap: Returns to the user the map of the airport in a graphical form with the features rendered according to a pre-set set of styles.

The content consists of 40 FeatureTypes covering geospatial information of an airport layout. An AMDB or parts of it is primarily intended to be used as map layers.

Name	AerodromeMapInformation
ISRM ID	{176E1EB7-35DA-4d47-9F25-91448868B0AC}
Version	3.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.1.1 Service classification

Category	Mapping
ATM Capability	Information Management Aeronautical Information Provision
ATM Process	Execute AU OperationsFly trajectoryAvoid Collision
Flight Phase	Pre-DepartureTaxi-Out and Take-OffLanding
ATM Information	 Operations Air Traffic Operations Aerodrome Operations
SWIM-TI Profile	
Intended system type	Airport Airside Operations
Intended Provider	Airport Operator
Intended Consumer	 Air Navigation Service Provider Airport Operator Commercial data house providers (not included in categorisation list)

3.1.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	04.02 Integrated Surface Management	04.02.01 Surface Planning and Routing

It is necessary to mention that the operational and/or technical requirements identified above are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

3.1.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_AerodromeMapInformation_Service in ISRM 2.0 Reference [6]

3.2 AeronauticalInformationFeature service

This service provides aeronautical information features to the stakeholders.

founding members



This service allows selecting the required aeronautical information by its feature type name and an advanced filter with spatial, temporal and logical operators.

The service is compliant to the ISO 19142:2010 Geographic information - Web feature service standard.

The 5 capabilities of the service are:

- Describe itself
- · Provide store queries
- · Provide entire aeronautical information feature
- Provide attribute values
- · Filtering for the correct information

Name	AeronauticalInformationFeature
ISRM ID	{4C1CABAB-E8AF-45f6-9199-1932F95FC16F}
Version	2.0
Architect(s)	(Thales Air System)
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.2.1 Service classification

Category	Mapping
ATM Capability	
ATM Process	 Execute AU Operations Fly trajectory Execute Network Management Operations Execute Network Management Operations Regional or Local Network Management Monitor Network Capacity Plan ATS Operations Plan AU Operations
Flight Phase	
ATM Information	
SWIM-TI Profile	
Intended system type	• AIM
Intended Provider	
Intended Consumer	

3.2.2 R&D Status

Note that the content in this chapter is copied from the SDD and since this SDD is not updated in this ISRM release it may contain outdated information.

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03 Demand and Capacity Balancing En-Route	05.03.07 Network Operations Planning



This service gets operational requirements from P08.03.03. The traces from the service message types to the physical model defined in standard Aeronautical Information Exchange Model (AIXM) v5.1, is not explicit in any diagram, but is available in the EA model.

The operational context and requirements are not yet available from all operational projects. But some documents already exist like:

- Eurocae ED-151 OPERATIONAL SERVICES AND ENVIRONMENT DEFINITION (OSED)
 FOR AERONAUTICAL INFORMATION SERVICES (AIS) AND METEOROLOGICAL (MET)
 DATA LINK SERVICES
- 13.2.2 D01 OSED for Step 1, Edition 02.00.00
- 08.03.03 D01 Identification of operational requirements for Step 1, Edition 00.02.00

The service is expected to be offered by an Aeronautical Information Service Provider at National, FAB or regional level.

All stakeholders can be potential consumers of this service but it is not yet stated if they will used directly or indirectly through other high level services (e.g. AMIS - Aerodrome Mapping Information Service or TSIS – Taxiway Status Information Service).

The physical interface has not been generated from the ISRM model because it already existed as part of the ISO and the AIXM 5.1 standards.

This service was used in Validation Exercise EXE-13.02.02-VP-461.

3.2.3 More information

Service Description Document

08.03.10 D64, European ATM Service Description for the AeronauticalInformationFeature service in ISRM 2.0 Reference [6]

3.3 AeronauticalInformationMap service

The AeronauticalInformationMap service provides the CDM for the provision of aeronautical information maps.

The purpose of the service is the provision of digital aeronautical information maps resembling the current aeronautical AIP charts but improving its functionalities and usability.

The service builds on top of ISO "IS 19128:2005 Geographic information - Web map server interface." standard extending it to support the specific aeronautical information mapping needs.

The typical use case for the service is a request with input parameters regarding the map configuration needed and an image output provided by the service.

Name	AeronauticalInformationMap
ISRM ID	{0FD5B1BE-93B2-4370-8C88-1953FD857D69}
Version	1.0
Architect(s)	Aena
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.3.1 Service classification

Category Mapping

founding members



ATM Capability	
ATM Process	
Flight Phase	
ATM Information	
SWIM-TI Profile	
Intended system type	
Intended Provider	Network Manager
Intended Consumer	Airspace Users

3.3.2 R&D Status

Note that the content in this chapter is copied from the SDD and since this SDD is not updated in this ISRM release it may contain outdated information.

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic Capacity Balancing	05.03 Demand and Capacity Balancing En-Route	05.03.07 Network Operations Planning

The AeronauticalInformationMap service (AIMS) has been identified by P8.3.10 in the work of Fast Track 13 Digital Briefing.

This service was used in Validation Exercise EXE-13.02.02-VP-462.

3.3.3 More information

Service Description Document

08.03.10 D64, European_ATM_Service_Description_for_AeronauticalInformationMap service in ISRM 2.0 Reference [6]

3.4 AeronauticalInformationNotification service

The AeronauticalInformationNotification service provides the CDM for the provision of aeronautical information alerts about new information being available. The main purpose of the AeronauticalInformationNotification service is to provide notifications (alerts) to consumers providing them with a simple mechanism to maintain their systems updated to the latest information available. The data scope of the service is all aeronautical information currently distributes by means of NOTAM and AIP amendments.

Name	AeronauticalInformationNotification
ISRM ID	{EC2A4C8D-DC16-4de4-AACB-4478CF2E8108}
Version	2.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.4.1 Service classification

Category	Mapping
ATM Capability	Information Management
	Aeronautical Information Provision

founding members



ATM Process	 Execute Airport Operations Manage AOP Manage Airport Resources Facilitate Reference Business Mission Trajectory Manage Flight Manage Flight Manage Alert Monitor and Separate Traffic
Flight Phase	Medium/Short Term Planning
ATM Information	 Operations Air Traffic Operations Aerodrome Operations Infrastructure Base Infrastructure Aerodrome Infrastructure
SWIM-TI Profile	
Intended system type	• AIM
Intended Provider	Airport Operator
Intended Consumer	 Air Navigation Service Provider Airport Operator Airspace Users Network Manager

3.4.2 R&D Status

Note that the content in this chapter is copied from the SDD and since this SDD is not updated in this ISRM release it may contain outdated information.

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic Capacity Balancing	05.03 Demand and Capacity Balancing En-Route	05.03.07 Network Operations Planning

The service AeronauticalInformationNotification service (AINS) has been identified by P8.3.10 in the work of Fast Track 13 Digital Briefing.

Requirements in relation to the operational context are collected from:

- Not very detailed and precise information exchange requirements where explicitly present in the 13.2.2 D10 OSED and 11.1.2 D11 OSED.
- Coordination with the projects let to a better understanding of the needs and common service proposals where formulated and agreed during the service identification phase.

3.4.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_AeronauticalInformationNotification_Service in ISRM 2.0 Reference [6]

3.5 AirportFlightInformationPublication service

The AirportFlightInformationPublication service supports the Airport CDM concept and its implementation by providing the A-CDM partners with Common Situation Awareness about flights at a CDM airport.



This service concerns the publication of flight information to all A-CDM Partners that need it. In particular, this service provides publication under subscription of inbound flights, landing in the airport; outbound flights, taking off from the airport; and their system generated alerts, here called Flight Alerts.

Name	AirportFlightInformationPublication
ISRM ID	{B3EBA95A-AD86-4b52-9E35-DA65F659608E}
Version	Version: 2.0
Architect(s)	(EUROCONTROL)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.5.1 Service classification

Category	Mapping
ATM Capability	 Traffic Synchronisation Sequencing and Merging Departure Sequencing Service Delivery Management Trajectory Management Collaborative Trajectory Planning
ATM Process	 Execute Airport Operations Manage Traffic Flows [AP OPS] Manage Turn Round Process [AP Ops] Manage (Pre-) Departure Sequencing Execute AU Operations Fly trajectory Manage Turn-Round [AU Ops]
Flight Phase	Pre-Departure
ATM Information	Traffic Flight
SWIM-TI Profile	Yellow Profile
Intended system type	 Airport Operations Centre FOC/WOC Aerodrome ATC
Intended Provider	Airport Operator
Intended Consumer	Air Navigation Service ProviderAirspace UsersAirport Operator

3.5.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing Airports	05.01.01 Airport Operations Management



The designed A-CDM services result from a joint service activity between SESAR and ACI. Within ACI (Airport Council International), the ACRIS (Airport Community Recommended Information Services) working group had set up the project AACO (ACRIS Airport CDM Operational project). Within SESAR the Service Coordination Group had set up the FT10 Service Activity.

As AACO and FT10 were quite similar, it was decided to run a joint service activity, with common objective, scope and deliverable. This joint service activity has been run with close and effective collaboration, following the SESAR Method on Services. These A-CDM services are based on IP1- A-CDM.

Both FIXM and AIDX were recognised as valid candidates for encoding the service payload of the A-CDM services implementation instances. However, depending on the nature of the A-CDM partner, e.g. ATC Tower or Ground Handler, FIXM or AIDX might seem more "natural".

The decision taken is to allow for both options, SESAR prototypes will experience the A-CDM services with FIXM, while ACRIS prototypes will do so with AIDX. This would not only provide feedback on both approaches, it also might help learning in bridging them.

As FIXM in its current development status does not support all data elements required for the A-CDM services, the FIXM extension mechanism has been used to close the gap. This has resulted in the "Europe A-CDM FIXM Extension v1.0" for FIXM 2.0 which is publicly available at www.fixm.aero.

3.5.3 More information

Service Description Document

08.03.10 D65, European ATM Service Description for the AirportFlightInformationPublication service in ISRM 2.0 Reference [6].

3.6 AirportMETAlert service

The AirportMETAlert service covers the dissemination of alerts and warnings to airport stakeholders when MET parameters exceed a certain threshold.

The operational requirements for the Alerts/Warnings are mainly gathered around the "6.2 Monitor Airport Performance Service" in the OFA 05.01.01 OSED documentation:

"In the Medium/Short term planning phase the Monitor Airport Performance service mainly focuses on Airport-DCB issues. It will detect the evolution of resources availability and demand, highlighting the situations where the plan will be incompatible with matching the performance target values (Airport Performance Baseline). At the end of medium term planning and during short term planning phase (i.e. up to a few days ahead), as weather data will be more and more reliable, weather forecasts will be provided, as well as MET warnings and alerts with probabilistic parameters. During Medium/Short term planning phase, the Monitor Airport Performance service does not necessarily require the active participation of each stakeholder, but has to be configured to allow the provision of alerts/warnings to the appropriate actor and the APOC (if implemented) in the event of potential deviation from the plan."

Therefore the service is supposed to be provided by the local MET provider and consumed by the AOP, among the other airport partners who are concerned. The service supports this operational service by providing MET alerts over SWIM to subscribed partners. The service was also validated in EXE-06.03.01-VP-669 (SESAR Release 5).

Name	AirportMETAlert
ISRM ID	{F936A2E4-1769-46f0-8181-D13ACD85A9E3}
Version	2.0
Architect(s)	FINMECCANICA

founding members



R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.6.1 Service classification

Category	Mapping
ATM Capability	 Information Management Meteorological Information Provision Aerodrome Operations
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	Stakeholders BusinessService
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC Airport Operations Centre
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service ProviderAirport Operator

3.6.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was implemented, validated and its STDD was assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

3.6.3 More information

Service Description Document

DEL 08.03.10 D65 European ATM Service Description for AirportMETAlert Service in ISRM 2.0 Reference [6]



3.7 AirportMETForecast service

The service covers the dissemination of customized airport meteorological forecasts over SWIM.

Name	AirportMETForecast
ISRM ID	{26FD9FF3-44F2-46ea-BA05-D36393AD1386}
Version	2.0
Architect(s)	/ FINMECCANICA
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.7.1 Service classification

Category	Mapping
ATM Capability	Meteorological Information Provision
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Plan Airport Operations Balance Airport Demand with Resources and Capabilities OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	Meteorology
SWIM-TI Profile	Yellow Profile
Intended system type	4DWxCube Aerodrome ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	 Air Navigation Service Provider Airspace Users Airport Operator

3.7.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

founding members



3.7.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_AirportMETForecast service in ISRM 2.0 Reference [6].

3.8 AirportMETInducedCapacityReduction service

The AirportMETInducedCapacityReduction service supplies the short term maximum airport capacity as constrained by the predicted weather, to consumers at an airport.

The publication consists of the departure and arrival capacity for the specified airport at the specified date and time. The Service uses a Publish/Subscribe pattern.

Name	AirportMETInducedCapacityReduction
ISRM ID	{D8921042-EC05-42a4-A0DC-B1EC4422EA03}
Version	3.0
Architect(s)	(DFS) / (FINMECCANICA)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.8.1 Service classification

Category	Mapping
ATM Capability	 Demand & Capacity Balancing Demand and Capacity Balancing (airport) Airport Capacity Information Provision (incl. Capacity Changes)
ATM Process	 Execute Airport Operations Manage AOP Execute Demand/Capacity Balancing Manage External Constraints Plan Airport Operations Balance Airport Demand with Resources and Capabilities OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	Medium/Short Term PlanningArrivalApproach
ATM Information	Aerodrome Operations
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Airport Operator

3.8.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

founding members



The service was linked to the Operational requirements taken from the latest available OFA OSED. The Service was identified, allocated and designed. The Service was used in the 2012 SWIM DEMO.

3.8.3 More information

Service Description Document

DEL_08.03.10_D64_European_ATM_Service_Description_for_AirportMETInducedCapacityReduction service in ISRM 2.0 Reference [6].

3.9 AirportMETNowcast service

The AirportMetNowcast Service provides a Meteorological prediction of the weather at the airport concerned, at a small interval in the future. This service is essential in achieving situational awareness about dangers related to the current or upcoming degradation of meteorological conditions which could turn into the safe delivery of ATM services. This service is consumed by a number of different actors over SWIM. The nowcast consists of the wind speed and direction, the air temperature, the altimeter pressure setting and the RVR.

Name	AirportMETNowcast	
ISRM ID	{FC81A8A8-F208-4704-9727-907D3A6CC38E}	
Version	3.0	
Architect(s)	(DFS) / (FINMECCANICA)	
R&D Status	Designed	
IOC	Not defined yet.	
FOC	Not defined yet.	

3.9.1 Service classification

Category	Mapping
ATM Capability	Meteorological Information Provision
ATM Process	 OFA05.01.01 Process Breakdown Manage Airport Performance Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Execute Airport Operations Manage AOP Manage External Constraints Plan Airport Operations Balance Airport Demand with Resources and Capabilities
Flight Phase	 Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	Meteorology
SWIM-TI Profile	Yellow Profile
Intended system type	4DWxCube Aerodrome ATC
Intended Provider	Air Navigation Service Provide

founding members



Intended Consumer	•	Air Navigation Service Provider
	•	Airspace Users
	•	Airport Operator

3.9.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was linked to the Operational requirements taken from the latest available OFA OSED. The Service was identified, allocated and designed. The Service was used in the 2012 SWIM DEMO and in EXE-06.09.02-VP-678.

3.9.3 More information

Service Description Document

08.03.10 D64, European_ATM_Service_Description_for_AirportMETNowcast service in ISRM 2.0 Reference [6].

3.10 AirportMETObservation service

This service provides a publication/ subscription service to receive meteorological observations of airport runways over SWIM such as the surface contamination, visual range, weather condition and precipitation.

Name	AirportMETObservation
ISRM ID	{352A01DB-A3C8-4e5f-966D-9D74BE31D946}
Version	2.0
Architect(s)	FINMECCANICA
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.10.1 Service classification

Category	Mapping
ATM Capability	Meteorological Information Provision
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Plan Airport Operations Balance Airport Demand with Resources and Capabilities OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach

founding members



	Final ApproachLanding
ATM Information	Meteorology
SWIM-TI Profile	Yellow Profile
Intended system type	4DWxCube Aerodrome ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	 Air Navigation Service Provider Airspace Users Airport Operator

3.10.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

3.10.3 More information

Service Description Document

08.03.10 D64, European_ATM_Service_Description_for_AirportMETObservation service in ISRM 2.0 Reference [6].

3.11 ARESActivation service

The ARESActivation service provides the CDM to coordinate the activation of an ARES between the ASM and the concerned ACCs in SESAR Step 1.

The ARESActivation service contract allows:

The Airspace User updates the Status of the ARES locally and sends a message to the Appropriate Authority to updates the ARES status for all affected CWP and the NM.

The activation processors update the ARES status to Active on all affected CWP and acknowledge the activation.

Name	ARESActivation
ISRM ID	{16E51BEC-F817-4fc0-8331-8FB834404968}
Version	2.0
Architect(s)	EUROCONTROL
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.11.1 Service classification

Category	Mapping
ATM Capability	Airspace Organisation and Management Airspace Management
ATM Process	Execute Network Management Operations

founding members



	Dynamic Airspace Management
Flight Phase	Pre-Departure
ATM Information	 Operations Air Traffic Operations Airspace Organization and Management
SWIM-TI Profile	SWIM Yellow profile
Intended system type	ASM En-Route / Approach ATC
Intended Provider	ATS Operations
Intended Consumer	Air Navigation Service Provider

3.11.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03Demand and Capacity Balancing En-Route	05.03.01 Airspace Management and AFUA

It is necessary to mention that the operational requirements identified in the OSED and SPR are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

The service was validated "on paper" by the System and Operational team of the OFA.

The validation exercise EXE-07.05.02-VP-017 was a Live Trial on the integration of ASM and ATC processes for automated airspace status update in real time and automated display in the referenced CWP in ADEXP format carried out in 2012. Although this exercise did not include the ARESActivation, it used a similar service.

The service is part of the Commission Pilot Common Project in the SWIM section under the label "Notification of the activation of an Airspace Reservation/Restriction (ARES)" [8]

3.11.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_ARESActivation service in ISRM 2.0 Reference [6]

3.12 ARESDeActivation service

The ARESDeActivation service provides the CDM to coordinate the deactivation of an ARES between the ASM and the concerned ACCs.

Certain minutes before a planned activity ends, the ASM requests either a planned or an unplanned de-activation to the responsible ACC/Approach supervisor(s) impacted by the ARES. Once the confirmation-acknowledgement process is completed and the current time reaches the end time of the ARES, the ASM sets the status of the ARES to "Inactive" and notifies all affected CWP and the NM.

The ARESDeActivation service contract allows:

- The de-activation requestor to request when appropriate, only those controlling units affected by the activation to deactivate the ARES.
- The de-activation requestor to wait for an acknowledgement from all of the de-activation controlling units



- The de-activation requestor to <follow a defined business process> when de-activation is refused by at least one controlling unit
- The de-activation requestor to send a warning message asking for acknowledgment when acknowledgement of de-activation is not received within a given time

Name	ARESDeActivation
ISRM ID	{167E67B5-14FD-49e6-96D9-F9CCE9F9F369}
Version	2.0
Architect(s)	EUROCONTROL
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.12.1 Service classification

Category	Mapping
ATM Capability	 Airspace Organisation and Management Airspace Management
ATM Process	 Execute Network Management Operations Dynamic Airspace Management
Flight Phase	Pre-Departure
ATM Information	 Operations Air Traffic Operations Airspace Organization and Management
SWIM-TI Profile	SWIM Yellow profile
Intended system type	ASMEn-Route / Approach ATC
Intended Provider	ATS Operations
Intended Consumer	Air Navigation Service Provider

3.12.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03Demand and Capacity Balancing En-Route	05.03.01 Airspace Management and AFUA

It is necessary to mention that the operational requirements identified in the OSED and SPR are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

The service was validated "on paper" by the System and Operational team of the OFA.

The validation exercise EXE-07.05.02-VP-017 was a Live Trial on the integration of ASM and ATC processes for automated airspace status update in real time and automated display in the referenced CWP in ADEXP format carried out in 2012. Although this exercise did not include the ARESDeActivation, it used a similar service.

The service is part of the Commission Pilot Common Project in the SWIM section under the label "Notification of the de-activation of an Airspace Reservation/Restriction (ARES)" [8]



3.12.3 More information

Service Description Document

08.03.10 D65 European_ATM_Service_Description_for_ARESDeActivation service in ISRM 2.0 Reference [6]

3.13 ARESPreActivation service

The ARESPreActivation service allows:

- The pre-activation requestor to notify automatically, only those controlling units affected by the activation to pre activates the ARES.
- The pre-activation requestor to wait for an acknowledgement from all of the pre-notified controlling units
- The pre-activation requestor to <follow a defined business process> when pre-notification of activation is refused by at least one controlling unit
- The pre-activation requestor to <follow a defined business process> when acknowledgement
 of pre-notification of activation is not received
- The pre-activation requestor to update the airspace status for the ASM and all affected CWP and the NM

Name	ARESPreActivation
ISRM ID	{2CD68C8C-F87E-47f3-8DD8-13EC5954683D}
Version	2.0
Architect(s)	EUROCONTROL
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.13.1 Service classification

Category	Mapping
ATM Capability	 Airspace Organisation and Management Airspace Management
ATM Process	 Execute Network Management Operations O Dynamic Airspace Management
Flight Phase	Pre-Departure
ATM Information	 Operations Air Traffic Operations Airspace Organization and Management
SWIM-TI Profile	SWIM Yellow profile
Intended system type	ASMEn-Route / Approach ATC
Intended Provider	ATS Operations
Intended Consumer	Air Navigation Service Provider



3.13.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03Demand and Capacity Balancing En-Route	05.03.01 Airspace Management and AFUA

It is necessary to mention that the operational requirements identified in the OSED and SPR are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

The service was validated "on paper" by the System and Operational team of the OFA.

The validation exercise EXE-07.05.02-VP-017 was a Live Trial on the integration of ASM and ATC processes for automated airspace status update in real time and automated display in the referenced CWP in ADEXP format carried out in 2012. Although this exercise did not include the ARESPreactivation, it used a similar service.

The service is part of the Commission Pilot Common Project in the SWIM section under the label "Pre-notification of the activation of an Airspace Reservation/Restriction (ARES)" [8]

3.13.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_ARESPreActivation service in ISRM 2.0 Reference [6]

3.14 ARESQuery service

ARESQuery is a request/reply service that provides information on a specific Area Reservations (ARES) to sustain Advanced Flexible Use of Airspace (AFUA) operations.

Name	ARESQuery
ISRM ID	{631A9C06-5573-4222-A091-27F96BC50E1C}
Version	2.0
Architect(s)	EUROCONTROL
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.14.1 Service classification

Category	Mapping
ATM Capability	Airspace Organisation and Management Airspace Management
ATM Process	 Regional or Local Network Management Dynamically Balance Network Capacity with Demand Plan ATS Operations Balance Local/Sub-Regional Demand with Resources & Capabilities
	 Plan & Implement Airspace Design Plan AU Operations Plan Trajectory at Network Level Agree on Trajectories Collaboratively Refine/Share Trajectory Preferences

founding members





Flight Phase	Long Term Planning Medium/Short Term Planning
ATM Information	Infrastructure Airspace Infrastructure Airspace
SWIM-TI Profile	Yellow Profile
Intended system type	ASM En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Airspace Users Network Manager

R&D Status 3.14.2

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03Demand and Capacity Balancing En-Route	05.03.01 Airspace Management and AFUA

It is necessary to mention that the operational requirements identified in the OSED and SPR are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

The service was validated "on paper" by the System and Operational team of the OFA.

No validation exercise has used this service.

The service is part of the Commission Pilot Common Project in the SWIM section under the label "Query Airspace Reservation/Restriction (ARES) information" [8]

3.14.3 More information

Service Description Document

08.03.10 D65 European ATM Service Description for ARESQuery service in ISRM 2.0 Reference

3.15 ARESRelease service

The ARESRelease service provides the CDM to coordinate the release of an ARES between the ASM and the concerned ACCs.

Certain minutes before a planned activity ends, the ASM requests either a planned or an unplanned de-activation to the responsible ACC/Approach supervisor(s) impacted by the ARES. Once the confirmation-acknowledgement process is completed and the current time reaches the end time of the ARES, the ASM sets the status of the ARES to "Inactive" and notifies all affected CWP and the NM.

The ARESRelease service contract allows:

- The Airspace User updates the Status of the ARES locally and sends a message to the Appropriate Authority to updates the ARES status for all affected CWP and the NM
- The activation processors update the ARES status to Inactive on all affected CWP

Name	ARESRelease
ISRM ID	{C61A8EC9-14DA-4f15-8443-3177EF6AE6EF}
Version	2.0



Architect(s)	EUROCONTROL
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.15.1 Service classification

Category	Mapping
ATM Capability	Airspace Organisation and Management Airspace Management
ATM Process	 Execute Network Management Operations Dynamic Airspace Management
Flight Phase	Pre-Departure
ATM Information	 Operations Air Traffic Operations Airspace Organization and Management
SWIM-TI Profile	SWIM Yellow profile
Intended system type	ASM En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service Provider

3.15.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative Management and Dynamic and Capacity Balancing	05.03Demand and Capacity Balancing En-Route	05.03.01 Airspace Management and AFUA

It is necessary to mention that the operational requirements identified in the OSED and SPR are described in a very high level manner and therefore not directly suitable as the complete set of inputs when it comes to Service Design.

The service was validated "on paper" by the System and Operational team of the OFA.

No validation exercise has used this ervice.

The service is part of the Commission Pilot Common Project in the SWIM section under the label "Notification of the release of an Airspace Reservation/Restriction (ARES)" [8]

3.15.3 More information

Service Description Document

08.03.10 D65 European_ATM_Service_Description_for_ARESRelease_Service in ISRM 2.0 Reference [6]

3.16 ArrivalManagementInformation service

The ArrivalManagementInformation service enables exchange of arrival sequence information at one or more destination airports which allows optimizing runway throughput, optimizing ATC workload share and minimizing environmental impact / fuel burn by more efficient flight trajectories.



The definition of standardised Arrival Management services supports the application of Arrival Management by multiple stakeholders through a common picture of the traffic situation at the congested airport.

In addition this service provides planning information related to the airborne trajectory segment of individual inbound flights for onward (i.e. turnaround and departure) planning purposes.

Name	ArrivalManagementInformation
ISRM ID	B4143932-31FD-41bc-B60D-905F4AD43FBD
Version	2.0
Architect(s)	Service Architect: DFS Information Architect: DFS
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.16.1 Service classification

Category	Mapping
ATM Capability	Traffic Synchronisation Arrival sequencing
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Monitor and Separate Traffic
Flight Phase	Pre-DepartureCruiseArrival
ATM Information	 Operations Air Traffic Operations Air Traffic Control Operations
SWIM-TI Profile	Yellow
Intended system type	En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider ANSP Civil
Intended Consumer	Air Navigation Service ProviderAirport Operator

3.16.2 **R&D Status**

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

More information 3.16.3

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_ArrivalManagementInformation Service in ISRM 2.0 Reference [6]





3.17 ArrivalSeparationIndicator service

The operational context for the service derives from the P06.08.01 OSED (see [7]).

This ArrivalSeparationIndicator service enables the APP ATC system to:

- provide Supervisors and ATC Controllers with the Separation information for Arrival Pairs established on Final Approach, based on current computation mode of the TBS tool, including separation advices, safety mitigation advices, alerts and notifications in case of service failures;
- provide Supervisors with the functionality to manage the current computation mode of the TBS system by enabling the Supervisor to request the automatic switch from one computation mode to another and to receive a confirmation from the system about the outcomes of the above request;
- provide ATC Controllers with the functionality to set a specific computation mode (TBS or DBS)
 for a single pair of aircrafts and to receive as reply either the confirmation that the requested
 mode is used for that pair (or an error message).

Name	ArrivalSeparationIndicator
ISRM ID	{0A5F9FBD-AD80-400a-9D17-C94AD9BAC559}
Version	2.0
Architect(s)	ENAV(IDS)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.17.1 Service classification

Category	Mapping
ATM Capability	 Traffic Synchronisation Spacing Time-based Spacing Provision (Arrival)
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Monitor and Separate Traffic Manage Alert
Flight Phase	Final Approach
ATM Information	 Operation Air Traffic Operations Traffic Synchronization Arrival Management
SWIM-TI Profile	N.A.
Intended system type	En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service Provider

3.17.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Network Collaborative	01.03 Enhanced Runway	01.03.01 Time Based



Management and Dynamic and Capacity Balancing	Throughput	Separation
and Capacity Dalanoing		

3.17.3 More information

Service Description Document:

DEL_08.03.10_D65_European_ATM_Service_Description_for_ArrivalSeparationIndicator_Service in IRSM Reference [6]

3.18 ATCFlightObjectControl service

The ATCFlightObjectControl service allows consumers to request a number of changes to a Flight Object which is being managed by the service provider. It is closely related to the "SharedFlightObject" service, which is used to distribute the Flight Object Clusters to the concerned IOP stakeholders.

The service implements functionality as defined in the EUROCAE ED-133 standard.

Name	ATCFlightObjectControl
ISRM ID	96C4B7A2-18B4-4477-BDC5-F3D79FDB5171
Version	3.0
Architect(s)	EUROCONTROL, THALES, DSNA, DFS.
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.18.1 Service classification

Category	Mapping
ATM Capability	 Service Delivery Management Trajectory Management
ATM Process	 Execute AU Operations Fly trajectory Execute Trajectory Monitor/Adjust Trajectories Re plan Trajectories
Flight Phase	Cruise
ATM Information	 Traffic Flight Operations Air Traffic Operations Traffic Synchronization Coordination
SWIM-TI Profile	Blue Profile
Intended system type	En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service Provider



3.18.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Moving from Airspace to 4D Trajectory Management	03.01 4D Trajectory Management	03.01.08 System Interoperability with air and ground data sharing

There are several exercises in which the SharedFlightObject will be validated.

3.18.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_ATCFlightObjectControl_Service in ISRM 2.0 Reference [6]

3.19 CalculatedPreDepartureSequenceDelivery service

The CalculatedPreDepartureSequenceDelivery service supports the Airport CDM concept and its implementation by providing the Pre-Departure sequencer the capability to deliver the calculated TSAT and TTOT time values. This service addresses the automatic calculation of the TSAT and TTOT by a Pre-Departure Sequencer (PDS). It is not required as a service when the PDS and the Airport Collaborative Information Sharing Platform (ACISP) are collocated.

It is part of a set of services supporting the Airport CDM concept and its implementation by providing the A-CDM partners with Common Situation Awareness about flights at a CDM airport.

Name	CalculatedPreDepartureSequenceDelivery
ISRM ID	{AA9C50F8-74BF-4eaf-877C-1B94C2142BAE}
Version	2.0
Architect(s)	(EUROCONTROL)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.19.1 Service classification

Category	Mapping
ATM Capability	 Traffic Synchronisation Sequencing and Merging Departure Sequencing
ATM Process	 Execute Airport Operations Manage Traffic Flows [AP OPS] Manage (Pre-) Departure Sequencing
Flight Phase	Pre-Departure
ATM Information	Traffic Flight
SWIM-TI Profile	Yellow Profile
Intended system type	Airport Operations CentreAerodrome ATC
Intended Provider	Airport Operator
Intended Consumer	Air Navigation Service Provider





3.19.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing Airports	05.01.01 Airport Operations Management

The designed A-CDM services result from a joint service activity between SESAR and ACI. Within ACI (Airport Council International), the ACRIS (Airport Community Recommended Information Services) working group had set up the project AACO (ACRIS Airport CDM Operational project). Within SESAR the Service Coordination Group had set up the FT10 Service Activity.

As AACO and FT10 were quite similar, it was decided to run a joint service activity, with common objective, scope and deliverable. This joint service activity has been run with close and effective collaboration, following the SESAR Method on Services. These A-CDM services are based on IP1- A-CDM.

Both FIXM and AIDX were recognised as valid candidates for encoding the service payload of the A-CDM services implementation instances. However, depending on the nature of the A-CDM partner, e.g. ATC Tower or Ground Handler, FIXM or AIDX might seem more "natural".

The decision taken is to allow for both options, SESAR prototypes will experience the A-CDM services with FIXM, while ACRIS prototypes will do so with AIDX. This would not only provide feedback on both approaches, it also might help learning in bridging them.

As FIXM in its current development status does not support all data elements required for the A-CDM services, the FIXM extension mechanism has been used to close the gap. This has resulted in the "Europe A-CDM FIXM Extension v1.0" for FIXM 2.0 which is publicly available at www.fixm.aero.

3.19.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_ CalculatedPreDepartureSequenceDelivery service in ISRM 2.0 Reference [6]

3.20 DeparturePlanningInformation service

The DeparturePlanningInformation service is a publish/subscribe service to get departure information (Departure and Flight information), actually a predicted Target Take-Off Times from the satellite airports within an extended horizon of an AMAN controlled airport. DPI (Departure Planning Information) messages, as generated today, give the best available prediction of that take-off time.

Name	DeparturePlanningInformation	
ISRM ID	8964DCE0-A962-4468-95ED-1417CEAF1780	
Version	2.0	
Architect(s)	Service Architect: DFS Information Architect: DFS	
R&D Status	Designed	
IOC	Not defined yet.	
FOC	Not defined yet.	

3.20.1 Service classification

Category Mapping

founding members



ATM Capability	 Traffic Synchronisation Sequencing and Merging Arrival Traffic Merging
ATM Process	 Air Traffic Services Operations Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Synchronise Traffic
Flight Phase	Pre-DepartureMedium/Short Term Planning
ATM Information	 Operations Air Traffic Operations Traffic Synchronisation
SWIM-TI Profile	
Intended system type	
Intended Provider	Airport Operator
Intended Consumer	Air Navigation Service ProviderNetwork Manager

3.20.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

3.20.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_DeparturePlanningInformation Service in ISRM 2.0 Reference [6]

3.21 ExtendedFlightPlanSubmission service

The service supports the Airspace User to:

- · request the validation of an EFPL message before its submission;
- request the submission of EFPL/ECHG/EDLA message;
- request the cancellation of an Extended Flight Plan;
- request the processing outcome of an Extended Flight Plan with a known identifier.

The service supports the Network Manager:

- · send the reply of validation request (ACK, REJ) to the Airspace User;
- send the reply of submission request (ACK, MAN, REJ) to the Airspace User;
- send the processing outcome of an Extended Flight Plan with a known identifier in terms of an Operational Reply Message;
- send the status of a specific flight plan to the Airspace User and ATC units. The status may be "Suspended" or "De-suspended".

Name	ExtendedFlightPlanSubmission
ISRM ID	{677FD8AB-A276-4d00-B43B-89022926846A}
Version	Version: 2.0
Architect(s)	ENAV(IDS)

founding members



R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.21.1 Service classification

Category	Mapping
ATM Capability	 Service Delivery Management Trajectory Management
ATM Process	 Plan Network Management Operations Determine Network Demand
Flight Phase	Medium/Short Term Planning
ATM Information	TrafficFlightTrajectory
SWIM-TI Profile	• Yellow
Intended system type	• ATFCM
Intended Provider	Network Manager
Intended Consumer	Airspace UsersAir Navigation Service Provider

3.21.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Moving from Airspace to	SPC03.01 4D Trajectory	03.01.04 Business and Mission
Trajectory Management	Management	Trajectory

3.21.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_ExtendedFlightPlanSubmission Service in ISRM 2.0 Reference [6]

3.22 FlightPlanDataDistribution service

The FlightPlanDataDistribution Service supports the service provider (Network Manager) to:

- send a copy of a valid Extended Flight Plan (EFPL) message, Extended Modification (ECHG)
 message, Extended Delay (EDLA) message to the service consumers concerned by the flight
 that want to receive extended flight plan messages;
- send to all of other service consumers concerned by the flight only a copy of the ICAO Flight
 Plan included in the EFPL message or a copy of a 'simple' modification (CHG) message or a
 copy of a 'simple' delay (DLA) message;
- notify to the service consumers the cancellation of a specified flight plan;
- send a specific Flight Plan (in Extended or ICAO format) following a specific request from a service consumer (AU or ATC unit).

Name	FlightPlanDataDistribution
ISRM ID	{003BA6E3-D3F5-488d-B920-351BF2ABC666}
Version	2.0
Architect(s)	ENAV(IDS)

founding members



R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.22.1 Service classification

Category	Mapping
ATM Capability	Service Delivery Management Trajectory Management
ATM Process	 Execute Network Management Operations Regional or Local Network Management Manage Network Demand Plan AU Operations Plan Trajectory at Network Level Refine/Share Trajectory Preferences Plan Network Management Operations Determine Network Demand
Flight Phase	Medium/Short Term Planning
ATM Information	TrafficFlightTrajectory
SWIM-TI Profile	Yellow
Intended system type	ATFCM
Intended Provider	Network Manager
Intended Consumer	Airspace UsersAir Navigation Service Provider

3.22.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Moving from Airspace to	SPC03.01 4D Trajectory	03.01.04 Business and Mission
Trajectory Management	Management	Trajectory

3.22.3 More information

Service Description Document

08.03.10 D65, European ATM Service Description for the FlightPlanDataDistribution service in ISRM 2.0 Reference [6]

3.23 IntegratedDigitalBriefing service

The IntegratedDigitalBriefing service is defined to distribute a Digitally Enhanced Pre-Flight Information Bulletin (ePIB). The IntegratedDigitalBriefing service allows consumers to request briefing information based on various filtering criteria as well as to subscribe for being informed about updated in the briefing information (in-flight updates). Briefing information includes meteorological data (e.g., METAR, TAF, SIGMET) as well as aeronautical information (e.g., NOTAM).

The IntegratedDigitalBriefing service is an integrating service, providing added value in combining information that is already available by other services, such as meteorological services (e.g., METAR, TAF services), aeronautical information services (e.g., AeronauticalInformationFeature service), mapping services (e.g., AerodromeMapInformation, AeronauticalInformationMap services).



Name	IntegratedDigitalBriefing
ISRM ID	{31AD7B67-71C0-475c-93D5-6BF6012A0CDD}
Version	1.0
Architect(s)	Frequentis Frequentis
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.23.1 Service classification

Category	Mapping
ATM Capability	Information Management
ATM Process	 Execute AU Operations Fly trajectory Manage Turn-round [AU Ops] Monitor/Adjust Trajectories Manage Flight Information Manage Flight Information in Pre-departure (Step1) Execute AU Operations
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Cruise Arrival Approach Final Approach Landing
ATM Information	 Operations Meteorology Infrastructure Base Infrastructure Aerodrome Infrastructure Airspace Infrastructure
SWIM-TI Profile	Yellow Profile
Intended system type	FOC/WOC
Intended Provider	Pilot Briefing
Intended Consumer	Airspace User OperationsAirspace User Ops SupportFlight Deck

3.23.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Information Management	02.01 SWIM	02.01.02 AIM/MET



3.23.3 More information

Service Description Document

DEL 08.03.10 D65 European ATM Service Description for IntegratedDigitalBriefing Service in ISRM 2.0 Reference [6]

3.24 METAR service

The METAR service covers the dissemination over SWIM of standard ICAO METAR/SPECI bulletins which are disseminated to a wide range of subscribing ATM users.

Name	METAR
ISRM ID	{9E5C7BA4-F83A-4ada-A846-2485840CF380}
Version	3.0
Architect(s)	FINMECCANICA
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.24.1 Service classification

Category	Mapping
ATM Capability	 Information Management Meteorological Information Provision
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Plan Airport Operations Balance Airport Demand with Resources and Capabilities OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	Operations
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC 4DWxCube
Intended Provider	Air Navigation Service Provider
Intended Consumer	 Air Navigation Service Provider Airspace Users Airport Operator Network Manager



3.24.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

3.24.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_METAR_Service in ISRM 2.0 folder [6].

3.25 METGriddedForecast

The nominal Weather Forecasts for MET aloft elements is the scope of this service.

This service will enable the local OUE stakeholders, the sub-regional OUE stakeholders and network OUE stakeholders to be provided with all nominal MET information for an airport or an en-route airspace and approach areas.

The information includes the aloft elements (e.g. wind and temperature). The required elements should be selectable by the stakeholder.

It is also expected that for this service, a user selectable temporal resolution (update rate or time steps for forecast data) is foreseen and for the aloft data also spatial resolution (horizontal grid and vertical steps) is foreseen. In addition it is expected that the user can select multiple airports and that the forecast data will be differentiated into data for deterministic and for probabilistic forecasts.

It is envisaged that the METSP will make the data available with a high resolution and that the MET-SWIM Node (the METGATE) will rescale the data to the desired user output resolution.

Name	METGriddedForecast
ISRM ID	{960F8087-7FA2-446d-B556-BD08A7D8FAF0}
Version	2.0
Architect(s)	Service Architect: (DFS) Information Architect: (DFS)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.25.1 Service classification

Category	Mapping
ATM Capability	Information Management O Meteorological Information Provision
ATM Process	Execute AU Operations

founding members



	 Fly trajectory Execute Trajectory in Cruise (step1)
Flight Phase	Medium/Short Term PlanningCruise
ATM Information	Operations
SWIM-TI Profile	Yellow
Intended system type	4DWxCube
Intended Provider	Weather Provider
Intended Consumer	Air Navigation Service ProviderAirspace UsersNetwork Manager

3.25.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Information Management	02.01 SWIM	02.01.02 AIM/MET

3.25.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_METGriddedForecast_Service in ISRM 2.0 Reference [6]

3.26 METHazardEnrouteForecast service

The METHazardEnrouteForecast service defines an information service for exchanging Forecasts and Nowcasts of significant weather phenomena. The service is realised in the publish/subscribe message exchange pattern and to this end defines subscribe, unsubscribe and publish operations. The subscription mechanism additionally allows for fine-grained filtering.

Name	METHazardEnrouteForecast
ISRM ID	{AC8C4678-3C7B-4a7b-A915-BDC40334D6CE}
Version	2.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.26.1 Service classification

Category	Mapping	
ATM Capability	 Information Management Meteorological Information Provision Weather Hazard Detection (airspace) 	
ATM Process	Plan Network Management Operations Plan Network Resources & Capabilities Balance Network Demand with Resources & Capabilities Execute Network Management Operations Regional or Local Network Management Monitor Network Capacity	

founding members



	 Dynamically Balance Network Capacity with Demand Plan ATS Operations Balance Local/Sub-Regional Demand with Resources & Capabilities Facilitate Reference Business Mission Trajectory Manage Flight Provide Flight Information Plan AU Operations Plan Trajectory at Network Level Refine/Share Trajectory Preferences Agree on Trajectories Collaboratively Execute AU Operations Monitor/Adjust Trajectories Manage Flight Information
Flight Phase	Medium/Short Term PlanningCruise
ATM Information	Operations
SWIM-TI Profile	Yellow Profile
Intended system type	4DWxCube
Intended Provider	Weather Provider
Intended Consumer	 Air Navigation Service Provider Airport Operator Airspace Users Network Manager

3.26.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Information Management	02.01 SWIM	02.01.02 AIM/MET

3.26.3 More information

Service Description Document

08.03.10 D64, European ATM Service Description for the MET Hazard Enroute Forecast service in ISRM 2.0 Reference [6]

3.27 METHazardEnrouteObservation service

The METHazardEnrouteObservation service defines an information service for information exchanges for Observations of significant weather phenomena. The service is realised in the publish/subscribe message exchange pattern and to this end defines subscribe, unsubscribe and publish operations. The subscription mechanism additionally allows for fine-grained filtering.

Name	METHazardEnrouteObservation
ISRM ID	{B24CD8A1-F2E6-4ee7-8C48-A63373B90F8C}
Version	2.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.

founding members



FOC

Not defined yet.

3.27.1 Service classification

Category	Mapping
ATM Capability	 Information Management Meteorological Information Provision Weather Hazard Detection (airspace)
ATM Process	 Plan Network Management Operations Plan Network Resources & Capabilities Balance Network Demand with Resources & Capabilities Execute Network Management Operations Regional or Local Network Management Monitor Network Capacity Dynamically Balance Network Capacity with Demand Plan ATS Operations Balance Local/Sub-Regional Demand with Resources & Capabilities Facilitate Reference Business Mission Trajectory Manage Flight Provide Flight Information Plan AU Operations Plan Trajectory at Network Level Refine/Share Trajectories Collaboratively Execute AU Operations Monitor/Adjust Trajectories Manage Flight Information
Flight Phase	Medium/Short Term PlanningCruise
ATM Information	Operations
SWIM-TI Profile	Yellow Profile
Intended system type	4DWxCube
Intended Provider	Weather Provider
Intended Consumer	 Air Navigation Service Provider Airport Operator Airspace Users Network Manager

3.27.2 **R&D Status**

Priority Business Need	Operational Sub-Package	Operational Focus Area
Information Management	02.01 SWIM	02.01.02 AIM/MET

3.27.3 More information

Service Description Document

08.03.10 D64, European ATM Service Description for the MET Hazard Enroute Observation service in ISRM 2.0 Reference [6]



3.28 METREPORT service

The METREPORT service (formerly known as ICAOMetLocalReport service in ISRM 1.4) covers the dissemination of standard ICAO METREPORT/SPECIAL bulletins over SWIM. The local routine (METREPORT) and special (SPECIAL) reports are routine observations made at an aerodrome throughout the day. Local routine reports shall be transmitted to local air traffic services units and shall be made available to the operators and to other users at the aerodrome. The scope and usage of METREPORT/SPECIAL is the aerodrome.

Name	METREPORT
ISRM ID	{85A9C2D1-46F5-487a-B449-E9DB44F3CE91}
Version	2.0
Architect(s)	FINMECCANICA
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

Service classification 3.28.1

Category	Mapping
ATM Capability	 Information management Meteorological Information Provision
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Plan Airport Operations Balance Airport Demand with Resources and Capabilities in Medium/Short Term Planning (Step1) OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	Operations
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC4DWxCube
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service ProviderAirport OperatorAirspace Users



3.28.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Information Management	02.01 SWIM	02.01.02 AIM/MET

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

3.28.3 More information

Service Description Document

DEL 08.03.10 D64 European ATM Service Description for METREPORT Service in ISRM 2.0 Reference [6].

3.29 NetworkOperationPlan service

The NetworkOperationPlan service supplies the data common to the Network Operations Plan (NOP) and the Airport Operations Plan (AOP) to the airport in order to synchronize the data and maintain a common view of the overall network demand. The publication consists of limited flight data supplied as part of departure and arrival lists.

The NetworkOperationPlan Service provides synchronises the Network Operations Plan with the Airport Operations Plan at a specific airport.

The service uses a Publish/Subscribe pattern.

Name	NetworkOperationPlan
ISRM ID	{4E131369-AE26-4bc3-BC7A-278954F045A8}
Version	2.0
Architect(s)	(DFS) / (Indra)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.29.1 Service classification

Category	Mapping
ATM Capability	Demand & Capacity Balancing Demand & Capacity Balancing (airport)
ATM Process	 Plan Airport Operations Balance Airport Demand with Resources and Capabilities Plan Network Management Operations
Flight Phase	Pre-departure
ATM Information	 Operations Air Traffic Operations Aerodrome Operations
SWIM-TI Profile	Blue Profile
Intended system type	Airport Operations CentreATFCM
Intended Provider	Network Manager
Intended Consumer	Airport Operator



3.29.2 R&D Status

Note that the content in this chapter is copied from the SDD and since this SDD is not updated in this ISRM release it may contain outdated information.

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The operational context and requirements are available from operational project 06.05.01. Also the DOD does supply some high level requirements which have been linked to the requirements from the 06.05.04 D07, OFA 05.01.01 Operational Service and Environment Definition (OSED).

The XSD and WSDL outputs derived from the service are located in DEL08.01.10.D06 I2 - Interface specification, v00.01.01, 2011-02-03.

3.29.3 More information

Service Description Document

DEL_08.03.10_D64_European_ATM_Service_Description_for_NetworkOperationPlan_Service in ISRM 2.0 Reference [6].

3.30 OATFlightDataDistribution service

OATFlightDataDistribution service: to enable the NM to:

 Distribute OAT Flight Data to a set of users identified from the trajectory of the flight and other users based on internal rules and Letters of Agreement.

Name	OATFlightDataDistribution
ISRM ID	{2F626405-4127-4692-BB7A-9C3AA83A6BF4}
Version	3.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.30.1 Service classification

Category	Mapping
ATM Capability	 Service Delivery Management Trajectory Management Collaborative Trajectory Planning
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Provide Flight Information Plan AU Operations Plan Trajectory at Network Level Agree on Trajectories Collaboratively Plan Network Management Operations Determine Network Demand
Flight Phase	Medium/Short Term Planning
ATM Information	Traffic Flight

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	 Trajectory
SWIM-TI Profile	
Intended system type	FOC/WOCATFCM
Intended Provider	 ATS Operations En-Route Approach ATS Aerodrome ATS ATS User Operations
Intended Consumer	Network Manager

3.30.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
BN 03 Moving from Airspace to 4D Trajectory Management	03.01 4D Trajectory Management	03.01.04 Business and Mission Trajectory

3.30.3 More information

Service Description Document

08.03.10 D65, European ATM Service Description for the OATFlightDataDistribution service in ISRM 2.0 Reference [6]

3.31 OATFlightPlanSubmission service

OATFlightPlanSubmission service: to enable the Military or State Airspace User to:

- request the verification of a new OAT Flight Plan before its submission.
- receive the result related to the Validation of a new OAT Flight Plan.
- request the submission of a new improved OAT Flight Plan, or of an update to an improved OAT Flight Plan.
- receive the result related to the submission of a new improved OAT Flight Plan or of an update to an improved OAT Flight Plan.
- · request the delay of an improved OAT Flight Plan.
- request the cancellation of an acknowledged improved OAT flight plan.
- notify the NM of a flight's suspension or de-suspension.

Name	OATFlightPlanSubmission
ISRM ID	{E834F41D-5518-49ca-9D1B-FA9734FD784B}
Version	2.0
Architect(s)	NORACON
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.31.1 Service classification

Category	Mapping
ATM Capability	Service Delivery Management
	o Trajectory Management

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	 Collaborative Trajectory Planning
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Provide Flight Information
Flight Phase	Medium/Short Term Planning
ATM Information	TrafficFlightTrajectory
SWIM-TI Profile	
Intended system type	FOC/WOCATFCM
Intended Provider	Network Manager
Intended Consumer	Airspace Users Operations

3.31.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
BN 03 Moving from Airspace to 4D Trajectory Management	03.01 4D Trajectory Management	03.01.04 Business and Mission Trajectory

3.31.3 More information

Service Description Document

DEL_08_03_10_D65_European_ATM_Service_Description_for_OATFlightPlanSubmission_Service in ISRM 2.0 Reference [6]

3.32 PreDepartureSequenceSetting service

The PreDepartureSequenceSetting service supports the Airport CDM concept and its implementation by providing the relevant authority with the capability to set the TSAT and TTOT time values of a given flight at a CDM airport.

It is part of a set of services supporting the Airport CDM concept and its implementation by providing the A-CDM partners with Common Situation Awareness about flights at a CDM airport.

Name	PreDepartureSequenceSetting
ISRM ID	{786DFF4D-32F9-49fa-BF6D-5914BD69DA6C}
Version	2.0
Architect(s)	(EUROCONTROL)
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.32.1 Service classification

Category	Mapping
ATM Capability	 Traffic Synchronisation Sequencing and Merging Departure Sequencing
ATM Process	Execute Airport Operations

founding members



	 Manage Traffic Flows [AP OPS] Manage (Pre-) Departure Sequencing
Flight Phase	Pre-Departure
ATM Information	Traffic Flight
SWIM-TI Profile	Yellow Profile
Intended system type	Airport Operations CentreAerodrome ATC
Intended Provider	Airport Operator
Intended Consumer	Air Navigation Service ProviderAirport Operator

3.32.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing Airports	05.01.01 Airport Operations Management

The designed A-CDM services result from a joint service activity between SESAR and ACI. Within ACI (Airport Council International), the ACRIS (Airport Community Recommended Information Services) working group had set up the project AACO (ACRIS Airport CDM Operational project). Within SESAR the Service Coordination Group had set up the FT10 Service Activity.

As AACO and FT10 were quite similar, it was decided to run a joint service activity, with common objective, scope and deliverable. This joint service activity has been run with close and effective collaboration, following the SESAR Method on Services. These A-CDM services are based on IP1- A-CDM.

Both FIXM and AIDX were recognised as valid candidates for encoding the service payload of the A-CDM services implementation instances. However, depending on the nature of the A-CDM partner, e.g. ATC Tower or Ground Handler, FIXM or AIDX might seem more "natural".

The decision taken is to allow for both options, SESAR prototypes will experience the A-CDM services with FIXM, while ACRIS prototypes will do so with AIDX. This would not only provide feedback on both approaches, it also might help learning in bridging them.

As FIXM in its current development status does not support all data elements required for the A-CDM services, the FIXM extension mechanism has been used to close the gap. This has resulted in the "Europe A-CDM FIXM Extension v1.0" for FIXM 2.0 which is publicly available at www.fixm.aero.

3.32.3 More information

Service Description Document

08.03.10 D65, European_ATM_Service_Description_for_PreDepartureSequenceSetting service in ISRM 2.0 Reference [6]

3.33 ReportAircraftETAMinMax service

The service identified covers the operations dealing with the request and publication of the ETA Min Max Report.

The service provides a report on the maximum and minimum times the flight can be over a specified point. The report is a specialisation of a demand report which in turn is a specialisation of an ADS-C Report (Air).



This service enables ground based users to determine the limits by which a flight can be time constrained.

This service reflect the standardisation done by EUROCAE WG78 in the production of the ADS-C standard

Name	ReportAircraftETAMinMax
ISRM ID	{069E5385-DCFD-4bce-ACDC-BDA113FEA2DF}
Version	3.0
Architect(s)	DFS
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.33.1 Service classification

Category	Mapping
ATM Capability	Service Delivery Management Trajectory Management
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Monitor and Separate Traffic
Flight Phase	Cruise
ATM Information	 Operations Air Traffic Operations Demand and Capacity Balancing
SWIM-TI Profile	
Intended system type	Aircraft
Intended Provider	Airspace Users
Intended Consumer	Air Navigation Service Provider

3.33.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Traffic Synchronization	04.01Traffic Synchronization	04.01.05 I4D + CTA

The service is justified by Operational Requirements taken from the 05.06.01 D67 Step 1 OSED - Second Iteration and the 04.05 D101, Trajectory Management Framework Initial Step 1 Technical Note, Edition 00.01.00.

The operational context and requirements are under refinement within P05.06.01, where the operational project is being assisted by WP8 Service and Information Architects to improve the completeness and the quality of Operational and Information Exchange Requirements (IERs). A set of requirements has been proposed by project 08.03.07 for incorporation into actual OSED IERs; these are currently under discussion by the WP and will result in IER being available in late 2012. In the meantime the capabilities of the service have been linked to the Operational requirements taken from the latest OSED.

The operational requirements are under refinement within P04.05, where operational projects are being assisted by WP8 Service and Information Architects to improve the completeness and the quality of Operational and Information Exchange Requirements (IERs). In the meantime the capabilities of the service have been linked to the Operational requirements taken from the latest OSED.



The physical interface for the service is defined by EUROCAE WG 78, As the interface is not defined in XML it is unnecessary to define WSDL and XSD definitions for the service payload.

3.33.3 More information

Service Description Document

08.03.10 D65_European_ATM_Service_Description_for_ReportETAMinMax service in ISRM 2.0 Reference [6].

3.34 ReportAircraftTrajectory service

The service identified covers the operations dealing with the request and publication of the Extended Projected Profile (EPP).

The proposed service is called the ReportAircraftTrajectory service, the service provides a report on the EPP (4D trajectory).

This service enables ground based users to ensure consistency between the aircraft system based trajectory and the ground based trajectory being used for deconfliction purposes.

This service reflect the standardisation done by EUROCAE WG78 in the production of the ADS-C standard.

Name	ReportAircraftTrajectory
ISRM ID	{5D32718A-9087-42e1-BB2A-5018ECDF53F4}
Version	3.0
Architect(s)	DFS
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.34.1 Service classification

Category	Mapping
ATM Capability	 Service Delivery Management Trajectory Management
ATM Process	 Facilitate Reference Business Mission Trajectory Manage Flight Monitor and Separate Traffic
Flight Phase	Cruise
ATM Information	 Operations Air Traffic Operations Demand and Capacity Balancing
SWIM-TI Profile	
Intended system type	Aircraft
Intended Provider	Airspace Users
Intended Consumer	Air Navigation Service Provider

3.34.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Traffic Synchronization	04.01Traffic Synchronization	04.01.05 I4D + CTA

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A common set of IER have been developed by P08.03.07 for inclusion in both P05.06.01 and P04.05 to cover the same functional area. This work has been used by P08.03.04 as part of FT08.

The physical interface for the service is defined by EUROCAE WG 78, As the interface is not defined in XML it is unnecessary to define WSDL and XSD definitions for the service payload.

3.34.3 More information

Service Description Document

08.03.10 D65_European_ATM_Service_Description_for_ReportAircraftTrajectory service in ISRM 2.0 Reference [6]

3.35 RunwayManagementInformation service

The service provides information about the runway configuration and capacity (current and planned) at an aerodrome. (Either via a request/reply or via a publish/subscribe interface)

Name	RunwayManagementInformation
ISRM ID	{87D76EF7-FFAB-459b-97DF-616FC96588D3}
Version	4.0
Architect(s)	FINMECCANICA DFS Frequentis
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.35.1 Service classification

Category	Mapping	
ATM Capability	 Aerodrome Operations Surface Guidance and Routing Surface Route Management Traffic Synchronisation Sequencing and Merging Arrival Sequencing Departure Sequencing Demand & Capacity Balancing Demand & Capacity Balancing (airport) 	
ATM Process	 Allocate STAR Change runway configuration for ADES Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Synchronise Traffic Plan ATS Operations Balance Local/Sub-Regional Demand with Resources & Capabilities Determine Local/Sub-regional Resources & Capab. OFA05.01.01 Process Breakdown Manage Airport Performance Perform Post-Operations Analysis 	
Flight Phase	Taxi-Out and Take-OffArrival	

founding members



ATM Information	 Infrastructure Base Infrastructure Aerodrome Infrastructure
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC
Intended Provider	 ATS Operations Aerodrome ATS Network Operations Network Management
Intended Consumer	 Airport Operations ATS Operations Aerodrome ATS En-Route/Approach ATS Approach ATS Network Operations Network Management

3.35.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	04.02 Integrated Surface Management	04.02.03 Surface management Integrated with Arrival & Departure Management

3.35.3 More information

Service Description Document

DEL 08.03.10 D65 European ATM Service Description for RunwayManagementInformation Service in ISRM 2.0 Reference [6]

3.36 RunwayMixSequence service

The service identified covers the operations dealing with the subscription and publication of the runway mix sequence.

This service enables the interested stakeholders to receive the runway operating in mixed mode, sequence information.

The interface offers three operations:

- to publish the runway mix sequence
- to subscribe to the publication and
- to unsubscribe from the publication

Name	RunwayMixSequence
ISRM ID	{F23B11ED_6E2E_4911_B769_DB5DA9346D27}
Version	1.0
Architect(s)	Indra
R&D Status	Designed
IOC	Not defined yet.
FOC	Not defined yet.

3.36.1 Service classification

Category Mapping

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61 of 92

ATM Capability	 Traffic Synchronisation Sequencing and Merging
ATM Process	 Execute Airport Operations Manage Traffic Flows [AP OPS] Manage (Pre-) Departure Sequencing Facilitate Reference Business Mission Trajectory Manage Flight Monitor and Separate Traffic
Flight Phase	Pre-DepartureArrival
ATM Information	 Operations Air Traffic Operations Traffic Synchronization Arrival Management Departure Management
SWIM-TI Profile	Blue Profile
Intended system type	 Aerodrome ATC Airport Operations Centre En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service Provider

3.36.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Traffic Synchronisation	04.01 Traffic Synchronisation	04.01.01 Integrated AMAN DMAN

3.36.3 More information

Service Description Document

08.03.10 D64, European_ATM_Service_Description_for_RunwayMixSequence service in ISRM 2.0 Reference [6].

3.37 SharedFlightObject service

The "SharedFlightObject" service allows the providers and consumers to share information regarding Flight Objects. This service is used to distribute Flight Object clusters and negotiate changes to the Flight Object by using the "what-if" process. It is closely related to the "ATCFlightObjectControl" service, which is used to carry out changes to the Flight Object.

The service implements functionality as defined in the EUROCAE ED-133 standard.

Name	SharedFlightObject
ISRM ID	31AB946E-F72E-4c79-88C1-CBA32BF0CA17
Version	3.0
Architect(s)	EUROCONTROL, THALES, DSNA, DFS.
R&D Status	Designed
IOC	Not defined yet.

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FOC Not defined yet.

3.37.1 Service classification

Category	Mapping
ATM Capability	 Service Delivery Management Trajectory Management
ATM Process	 Execute AU Operations Monitor/Adjust Trajectories Manage Flight Information Facilitate Reference Business Mission Trajectory Manage Flight
Flight Phase	Cruise
ATM Information	 Traffic Flight Operations Air Traffic Operations Trajectory Management
SWIM-TI Profile	Blue
Intended system type	En-Route / Approach ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	Air Navigation Service Provider

3.37.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Moving from Airspace to 4D Trajectory Management	03.01 4D Trajectory Management	03.01.08 System Interoperability with air and ground data sharing

3.37.3 More information

Service Description Document

DEL_08.03.10_D65_European_ATM_Service_Description_for_SharedFlightObject_Service in ISRM 2.0 Reference [6]

3.38 SNOWTAM service

The SNOWTAM service covers the dissemination over SWIM of standard ICAO Annex 15 SNOWTAM bulletins, which are shared with a wide range of subscribing ATM users. The SNOWTAM is special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format. It is formatted according to ICAO Annex 15 provisioning.

Name	SNOWTAM	
ISRM ID	{BF398C97-F92A-41bd-B64B-E274D101094B}	
Version	2.0	
Architect(s)	FINMECCANICA	
R&D Status	Validated	
IOC	Not defined yet.	
FOC	Not defined yet.	

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3.38.1 Service classification

Category	Mapping
ATM Capability	Information Management Aeronautical Information Provision
ATM Process	 OFA05.01.01 Process Breakdown Manage Airport Performance Plan Airport Operations Balance Airport Demand with Resources and Capabilities in Medium/Short Term Planning (Step1)
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Arrival Approach Final Approach Landing
ATM Information	 Operations Air Traffic Operations Aerodrome Operations Meteorology
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC
Intended Provider	Air Navigation Service Provider
Intended Consumer	 Air Navigation Service Provider Airspace Users Airport Operator Network Manager

3.38.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing. Airports	05.01.01 Airport Operations Management

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

3.38.3 More information

Service Description Document

08.03.10 D64, European_ATM_Service_Description_for_SNOWTAM_Service in ISRM 2.0 Reference [6].

3.39 TAF service

The TAF service covers the dissemination of standard ICAO TAF bulletins over SWIM. The TAF (Terminal Aerodrome Forecast) is a pre-defined ICAO format for reporting weather forecast information with particular reference to aerodromes. TAFs are issued every six hours for major civil airfields and generally apply to a 24 or 30-hour period, and an area within approximately five miles



from the centre of an airport runway complex. TAFs are issued every 3 hours for military airfields and some civil airfields and cover a period ranging from 3 hours to 24 hours.

Name	TAF
ISRM ID	{ECA03906-8600-4281-9EAF-449741058E9D}
Version	3.0
Architect(s)	FINMECCANICA
R&D Status	Validated
IOC	Not defined yet.
FOC	Not defined yet.

3.39.1 Service classification

Category	Mapping
ATM Capability	Information Management
ATM Process	 Execute Airport Operations Manage AOP Manage External Constraints Facilitate Reference Business Mission Trajectory Manage Traffic Flows [ATS OPS] Monitor Weather Situation Plan Airport Operations Balance Airport Demand with Resources and Capabilities OFA05.01.01 Process Breakdown Manage Airport Performance
Flight Phase	 Medium/Short Term Planning Pre-Departure Taxi-Out and Take-Off Approach Final Approach
ATM Information	Operations
SWIM-TI Profile	Yellow Profile
Intended system type	Aerodrome ATC4DWxCube
Intended Provider	Air Navigation Service Provider
Intended Consumer	 Air Navigation Service Provider Airspace Users Airport Operator Network Manager

3.39.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01Demand and Capacity Balancing, Airports	05.01.01 Airport Operations Management

The service was implemented, validated and assessed for SWIM Compliance in the context of validation exercise EXE-06.03.01-VP-669.

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3.39.3 More information

Service Description Document

DEL 08.03.10 D64 European ATM Service Description for TAF Service in ISRM 2.0 folder [6].

3.40 TargetOffBlockTimeSetting service

The TargetOffBlockTimeSetting service supports the Airport CDM concept and its implementation by allowing an A-CDM Partner to set the Target Off-Block Time (TOBT) that indicates the target time for the aircraft to be ready for Off-Block.

It is part of a set of services supporting the Airport CDM concept and its implementation by providing the A-CDM partners with Common Situation Awareness about flights at a CDM airport.

Name	TargetOffBlockTimeSetting	
ISRM ID	{C57377B3-B0AD-4e0e-B094-FFBB2D6ED18D}	
Version	2.0	
Architect(s)	(EUROCONTROL)	
R&D Status	Designed	
IOC	Not defined yet.	
FOC	Not defined yet.	

3.40.1 Service classification

Category	Mapping		
ATM Capability	 Traffic Synchronisation Sequencing and Merging Departure Sequencing Service Delivery Management Trajectory Management Collaborative Trajectory Planning 		
ATM Process	 Execute Airport Operations Manage Traffic Flows [AP OPS] Manage Turn Round Process [AP Ops] Execute AU Operations Fly trajectory Manage Turn-Round [AU Ops] 		
Flight Phase	Pre-Departure		
ATM Information	Traffic Flight		
SWIM-TI Profile	Yellow Profile		
Intended system type	 Airport Operations Centre FOC/WOC Aerodrome ATC 		
Intended Provider	Airport Operator		
Intended Consumer	Air Navigation Service ProviderAirspace UsersAirport Operator		



3.40.2 R&D Status

Priority Business Need	Operational Sub-Package	Operational Focus Area
Airport Integration and Throughput	05.01 Demand and Capacity Balancing Airports	05.01.01 Airport Operations Management

The designed A-CDM services result from a joint service activity between SESAR and ACI. Within ACI (Airport Council International), the ACRIS (Airport Community Recommended Information Services) working group had set up the project AACO (ACRIS Airport CDM Operational project). Within SESAR the Service Coordination Group had set up the FT10 Service Activity.

As AACO and FT10 were quite similar, it was decided to run a joint service activity, with common objective, scope and deliverable. This joint service activity has been run with close and effective collaboration, following the SESAR Method on Services. These A-CDM services are based on IP1- A-CDM.

Both FIXM and AIDX were recognised as valid candidates for encoding the service payload of the A-CDM services implementation instances. However, depending on the nature of the A-CDM partner, e.g. ATC Tower or Ground Handler, FIXM or AIDX might seem more "natural".

The decision taken is to allow for both options, SESAR prototypes will experience the A-CDM services with FIXM, while ACRIS prototypes will do so with AIDX. This would not only provide feedback on both approaches, it also might help learning in bridging them.

As FIXM in its current development status does not support all data elements required for the A-CDM services, the FIXM extension mechanism has been used to close the gap. This has resulted in the "Europe A-CDM FIXM Extension v1.0" for FIXM 2.0 which is publicly available at www.fixm.aero.

3.40.3 More information

Service Description Document

08.03.10 D65, European ATM Service Description for the TargetOffBlockTimeSetting service in ISRM 2.0 Reference [6]

4 References

- [1] B.04.03 D100, Working methods on Services (edition 2014), Edition 00.05.01
- [2] 08.03.02 D19, SWIM Registry Operational Requirements and Demands concerning ATM information Catalogue and Registry Services, Edition 00.01.00
- [3] 08.01.01 D42, SWIM Concept of Operations, Edition 00.04.00
- [4] EATMA Portal, Service Portfolio, https://www.eatmportal.eu/working/data/services
- [5] B.04.01 D66 EATMA Guidance Material, version 00.04.02
- [6] 08.03.10 D65 ISRM 2.0 folder in SESAR extranet: SESAR Joint Undertaking Programme > WP 08 > Project 08.03.10 > Project Execution > ISRM 2.0
- [7] 06.08.01 D05, Operational Service and Environment Definition (OSED) for Time Based Separation for Arrivals (TBS), Edition 00.01.02
- [8] COMMISSION IMPLEMENTING REGULATION (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan, 27 June 2014: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L..2014.190.01.0019.01.ENG



Appendix A Services per category

This appendix currently includes the concepts breakdown.

A.1 Alphabetical

See Table 5: Alphabetical list of services

A.2 ATM Capability

The concepts in this category are based on the capability elements taken from the B.4.1 EATMA V6.1 Capability model. https://www.eatmportal.eu/working/data/capabilities.

The link between services and concepts in this category are documented in the ISRM. A service can be linked to multiple concepts in the category.

A.2.1 ATM Capability breakdown

- Aerodrome Operations
 - ✓ AirportMETAlert
 - o Aerodrome Facilities Management
 - Low Visibility Operations Provision
 - Surface Guidance and Routing
 - Surface Guidance Provision
 - Surface Route Management
 - ✓ RunwayManagementInformation
 - Surface Route Management
- Airspace Organisation and Management
 - o Airspace Design
 - Airspace Reservation Design
 - Airspace/Sector Configuration Design
 - Arrival/Departure Route Design (incl. Options)
 - En Route Network Design
 - Free Route Airspace Design
 - Airspace Management
 - ✓ ARESPreActivation
 - ✓ ARESActivation
 - ✓ ARESDeactivation
 - ✓ ARESRelease
 - ✓ ARESQuery
 - Airspace Reservation Management
 - Airspace/Sector Configuration Management
 - Arrival/Departure Routes Management
 - ✓ ArrivalManagementInformation
 - Free Route Airspace Management
 - Route Network Management
- Airspace User Operations
 - Execute Trajectory
 - Optimised Climb Operations
 - Optimised Descent Operations
 - RNP Route Operations
 - Flight Prioritisation
- Conflict Management
 - o Airspace Collision Avoidance

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69 of 92

- Airspace Infringement Avoidance
- Ground Proximity / Terrain Avoidance
- Mid-Air Collision Avoidance
- o Airspace Separation Provision
 - Aircraft-to-Aircraft Separation Provision (airspace)
 - Aircraft-to-Ground/Obstacles Separation Provision
 - Aircraft-to-Weather Hazard Separation Provision
- o Surface Collision Avoidance
 - Ground Collision Avoidance
 - Runway Incursion Avoidance
- Surface Separation Provision
 - Aircraft-to-Aircraft (incl. Vehicles) Separation Provision (surface)
- Demand & Capacity Balancing
 - Demand and Capacity Balancing (airport)
 - ✓ NetworkOperationPlan
 - ✓ RunwayManagementInformation
 - Airport Capacity Information Provision (incl. Capacity Changes)
 - ✓ AirportMETInducedCapacityReduction
 - Dynamic Runway Allocation
 - Dynamic Stand Allocation
 - Runway Occupancy Monitoring
 - Stand Occupancy Monitoring
 - Target Time Arrival Allocation
 - Demand and Capacity Balancing (airspace)
 - Air Traffic Demand Provision (Airspace)
 - Airspace Capacity Information Provision (incl. Capacity Changes)
 - Airspace Demand Provision
 - Crisis Management
 - Dynamic (2D/3D) Re-Routing Measure Allocation
 - Ground Delay Allocation (incl. User Preferences)
 - Traffic Complexity Management
 - Traffic Load Monitoring
- Information Management
 - o Aeronautical Information Provision
 - ✓ AeronauticalInformationNotification
 - ✓ AerodromeMapInformation
 - ✓ SNOWTAM
 - Meteorological Information Provision
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETObservation
 - ✓ AirportMETNowcast
 - ✓ METREPORT
 - ✓ IntegratedDigitalBriefing
 - **✓** METAR
 - ✓ METGriddedForecast
 - **✓ TAF**
 - Weather Hazard Detection (airport)
 - Weather Hazard Detection (airspace)
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
- Service Delivery Management
 - o ATM Performance Management
 - o ATM Service Management

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- **Remote Tower Operations Provision**
- Trajectory Management
 - ✓ ATCFlightObjectControl
 - ✓ ExtendedFlightPlanSubmission
 - ✓ FlightPlanDataDistribution
 - ReportAircraftTrajectory
 - ReportAircraftETAMinMax
 - SharedFlightObject
 - Collaborative Trajectory Planning
 - AirportFlightInformationPublication
 - **OATFlightDataDistribution**
 - ✓ OATFlightPlanSubmission
 - ✓ TargetOffBlockTimeSetting
 - Coordination and Transfer
 - **Trajectory Conformance Monitoring**
 - Trajectory Consistency Maintenance
- **Traffic Synchronisation**
 - Sequencing and Merging
 - RunwayMixSequence
 - **Arrival Sequencing**
 - ✓ ArrivalManagementInformation
 - RunwayManagementInformation
 - **Arrival Traffic Merging**
 - ✓ DeparturePlanningInformation
 - **Departure Sequencing**
 - √ AirportFlightInformationPublication
 - ✓ CalculatedPreDepartureSequenceDelivery
 - ✓ PreDepartureSequenceSetting
 - ✓ RunwayManagementInformation
 - √ TargetOffBlockTimeSetting
 - Spacing
 - Aircraft-to-Aircraft Spacing Monitoring
 - Time-Based Spacing Provision (Arrival)
 - ✓ ArrivalSeparationIndicator
 - Wake Turbulence Separation Provision
 - Weather-Dependent Separation Provision

A.3 ATM Process

The concepts in this category are Activity elements taken from the B.4.2 CONOPS.

https://www.eatmportal.eu/working/data/activities

The applicable dataset is EATMA V6.1.

They are structured hierarchically according to the ATM Top Level Overview Operational Processes view in EATMA:

https://www.atmmasterplan.eu/architecture/views/56AA826550BB207C

In addition the category "OFA05.01.01 Process Breakdown" was added in order to cater for the MET Services.

The hierarchy consists of four levels.

The link between services and concepts in this category are documented in the ISRM by the ServiceSupportsActivity link. In some cases, a service can be linked to an activity at lower level in the activity hierarchy than the concepts included in the category. In these cases, the link to the nearest concept is derived from the EATMA model.

A service can be linked to multiple categories in the category.



A.3.1 ATM Process breakdown

- Allocate STAR
 - Change runway configuration for ADES
 - ✓ RunwayManagementInformation
- Execute Airport Operations
 - o Manage AOP
 - Execute Demand/Capacity Balancing
 - ✓ AirportMETInducedCapacityReduction
 - Manage Airport Resources
 - ✓ AeronauticalInformationNotification
 - Manage External Constraints
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETObservation
 - ✓ AirportMETNowcast
 - √ AirportMETInducedCapacityReduction
 - **✓** METAR
 - ✓ TAF
 - ✓ METREPORT
 - Manage Operational KPAs
 - Update AOP
 - Manage Traffic Flows [AP OPS]
 - Execute Vehicle Operations
 - Facilitate Airport Part of RBT
 - Manage (Pre-) Departure Sequencing
 - ✓ AirportFlightInformationPublication
 - √ CalculatedPreDepartureSequenceDelivery
 - ✓ PreDepartureSequenceSetting
 - ✓ RunwayMixSequence
 - Manage Stands & Gates
 - Manage Traffic Flows [AP OPS] in Arrival (Step1)
 - Manage Turn Round Process [AP Ops]
 - ✓ AirportFlightInformationPublication
 - √ TargetOffBlockTimeSetting
- Execute AU Operations
 - ✓ IntegratedDigitalBriefing
 - o Fly trajectory
 - ✓ AeronauticalInformationFeature
 - Avoid Collision
 - ✓ AerodromeMapInformation
 - Execute Trajectory
 - ✓ ATCFlightObjectControl
 - Execute Trajectory in Cruise (step1)
 - ✓ METGriddedForecast
 - Manage Turn-round [AU Ops]
 - ✓ AirportFlightInformationPublication
 - ✓ IntegratedDigitalBriefing
 - √ TargetOffBlockTimeSetting
 - Provide Aircraft Data
 - Monitor/Adjust Trajectories
 - Manage Flight Information
 - ✓ METHazardEnrouteForecast
 - Manage Flight Information



✓ METHazardEnrouteObservation

- Manage Flight Information
 - √ SharedFlightObject
 - Manage Flight Information in Pre-departure (Step1)
 - ✓ IntegratedDigitalBriefing
- Manage Trajectory Information by FOC
- Plan Fleet Turn-round
- Re plan Trajectories
 - √ ATCFlightObjectControl
- Execute Network Management Operations
 - ✓ AeronauticalInformationFeature
 - o Dynamic Airspace Management
 - ✓ ARESPreActivation
 - ✓ ARESActivation
 - ✓ ARESDeactivation
 - ✓ ARESRelease
 - Assess Requests and Adjust AUP
 - Monitor Network Airspace Allocation
 - Regional or Local Network Management
 - Dynamically Balance Network Capacity with Demand
 - ✓ ARESQuerv
 - **✓** METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - Manage Network Demand
 - √ FlightPlanDataDistribution
 - Monitor Network Capacity
 - ✓ AeronauticalInformationFeature
 - Monitor Network Capacity
 - ✓ METHazardEnrouteForecast
 - Monitor Network Capacity
 - ✓ METHazardEnrouteObservation
- Facilitate Reference Business Mission Trajectory
 - Manage Flight
 - ✓ SharedFlightObject
 - ✓ AeronauticalInformationNotification
 - Manage Alert
 - ✓ ArrivalSeparationIndicator
 - ✓ AeronauticalInformationNotification
 - Manage Trajectory Information by ATS
 - Monitor and Separate Traffic
 - ✓ AeronauticalInformationNotification
 - ✓ AeronauticalInformationMap
 - ✓ ArrivalManagementInformation
 - ✓ ArrivalSeparationIndicator
 - √ ReportAircraftETAMinMax
 - ✓ ReportAircraftTrajectory
 - ✓ RunwayMixSequence
 - Provide Flight Information
 - **✓** METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - ✓ OATFlightDataDistribution
 - ✓ OATFlightPlanSubmission
 - Manage Traffic Flows [ATS OPS]
 - Balance Workload

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- Monitor Weather Situation
 - ✓ AirportMETForecast
 - ✓ AirportMETObservation
 - ✓ AirportMETNowcast
 - **AirportMETAlert**
 - **METAR**
 - TAF
 - ✓ METREPORT
- Synchronise Traffic
 - ✓ DeparturePlanningInformation
 - RunwayManagementInformation
- Monitor/Analyse Airport Performance
 - Monitor Deviations to AOP
 - \circ Monitor/Analyse Airport Safety Performance
 - Monitor/Analyse Demand
 - Monitor/Analyse External Constraints
 - Monitor/Analyse Operational KPAs
 - Monitor/Analyse Operational KPAs in Medium-Short Term Planning (Step 1)
- Monitor/Analyse ATS Performance
 - Monitor/Analyse ATS Cost Performance
 - Monitor/Analyse Environmental Performance-1
 - Monitor/Analyse Local/Sub-regional ATS Capacity Performance
 - Monitor/Analyse Local/Sub-regional ATS Safety Performance
- Monitor/Analyse AU Performance
 - Monitor/Analyse AU Safety Performance
 - Monitor/Analyse Capacity Performance
 - Monitor/Analyse Cost Effectiveness Performance
 - Monitor/Analyse Environmental Performance
- Monitor/Analyse Network Management Performance
 - Feedback Planning and Execution Phases
 - Monitor Deviations to NOP
 - Monitor/Analyse Network Operational KPAs
 - Monitor/Analyse Network Resources and Capabilities Performance
- Plan Airport Operations
 - Balance Airport Demand with Resources and Capabilities in Medium/Short Term Planning (Step1)
 - ✓ AirportMETForecast
 - AirportMETObservation
 - **AirportMETNowcast**
 - NetworkOperationPlan
 - **SNOWTAM**
 - ✓ METAR
 - TAF
 - **METREPORT**
 - ✓ AirportMETInducedCapacityReduction
 - **Determine and Review Airport Demand**
 - Identify and Review Airport Resources and Capabilities
- Plan ATS Operations
 - AeronauticalInformationFeature
 - Balance Local/Sub-Regional Demand with Resources & Capabilities
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - ✓ RunwayManagementInformation
 - o Determine Local/Sub-regional Air Traffic Demand
 - Determine Local/Sub-regional Resources & Capab.





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✓ RunwayManagementInformation

- Determine Local/Sub-regional Resources & Capab.in Medium/Short Term Planning (Step
- **Develop & Implement Procedures**
- Implement Regulatory Requirements
- Plan & Implement Airspace Design
 - **ARESQuery**
- Plan and Implement Assets (incl. Staff)
- Plan AU Operations
 - AeronauticalInformationFeature
 - Plan Trajectory at Network Level
 - Agree on Trajectories Collaboratively
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - **ARESQuery**
 - **OATFlightDataDistribution**
 - Refine/Share Trajectory Preferences
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - ✓ ARESQuery
 - ✓ FlightPlanDataDistribution
 - Update Trajectories with ATM Constraints
 - Plan Trajectory at User Level
 - Balance AU Intentions with Resources
 - **Define AU Resources**
 - **Define Business or Mission Intentions**
- Plan Network Management Operations
 - NetworkOperationPlan
 - Balance Network Demand with Resources & Capabilities
 - **METHazardEnrouteObservation**
 - ✓ METHazardEnrouteForecast
 - **Determine Network Demand**
 - √ FlightPlanDataDistribution
 - ✓ OATFlightDataDistribution
 - **Determine Network Demand**
 - ✓ ExtendedFlightPlanSubmission
 - Plan Network Airspace Architecture
 - Plan Network Resources & Capabilities
 - ✓ METHazardEnrouteObservation
 - ✓ METHazardEnrouteForecast
- OFA05.01.01 Process Breakdown
 - Manage Airport Performance
 - ✓ AirportMETAlert
 - **AirportMETForecast**
 - AirportMETObservation
 - ✓ AirportMETNowcast
 - ✓ AirportMETInducedCapacityReduction
 - **METAR**
 - RunwayManagementInformation
 - TAF
 - **METREPORT**
 - ✓ SNOWTAM
 - Perform Post-Operations Analysis
 - ✓ RunwayManagementInformation



A.4 Flight Phase

The concepts in this category are View elements in EATMA taken from the B.4.2 SESAR CONOPS in EATMA V6.1. Flight phases are not hierarchical.

https://www.eatmportal.eu/working/rnd/arch-overview

The link between services and concepts in this category are documented by the Service <-> Activty <-> Flight Phase link. The Service <-> Activity link is maintained in the ISRM and the Activity <-> Flight Phase link is maintained in the SESAR CONOPS. A service can be linked to multiple concepts in the category.

A.4.1 Flight Phase breakdown

- Long Term Planning
 - ✓ ARESQuery
- Medium/Short Term Planning
 - ✓ AeronauticalInformationNotification
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETInducedCapacityReduction
 - ✓ AirportMetObservation
 - ✓ METREPORT
 - ✓ IntegratedDigitalBriefing
 - **ARESQuery**
 - ExtendedFlightPlanSubmission
 - √ FlightPlanDataDistribution
 - ✓ METGriddedForecast
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - **METAR**
 - ✓ OATFlightDataDistribution
 - ✓ OATFlightPlanSubmission
 - ✓ SNOWTAM
 - ✓ TAF
 - DeparturePlanningInformation
- Pre-Departure
 - ✓ AerodromeMapInformation
 - ✓ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - **AirportMETNowcast**
 - √ AirportMetObservation
 - ✓ ArrivalManagementInformation
 - ✓ ARESPreActivation
 - ✓ ARESActivation
 - ✓ ARESDeactivation
 - ✓ ARESRelease
 - ✓ CalculatedPreDepartureSequenceDelivery
 - DeparturePlanningInformation
 - ✓ IntegratedDigitalBriefing
 - ✓ METAR
 - METREPORT
 - √ NetworkOperationPlan
 - ✓ PreDepartureSequenceSetting



- ✓ SNOWTAM
- ✓ TAF
- ✓ TargetOffBlockTimeSetting
- ✓ RunwayMixSequence
- Taxi-Out and Take-Off
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - ✓ METREPORT
 - ✓ IntegratedDigitalBriefing
 - **✓** METAR
 - ✓ RunwayManagementInformation
 - ✓ SNOWTAM
 - TAF
 - AerodromeMapInformation
- Climb
- Cruise
 - ✓ ArrivalManagementInformation
 - ✓ IntegratedDigitalBriefing
 - ✓ METGriddedForecast
 - ✓ METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - √ SharedFlightObject
 - ✓ ReportAircraftTrajectory
 - ReportAircraftETAMinMax
 - ✓ ATCFlightObjectControl
- Arrival
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETInducedCapacityReduction
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - **✓** METREPORT
 - ✓ IntegratedDigitalBriefing
 - ✓ ArrivalManagementInformation
 - ✓ METAR
 - RunwayManagementInformation
 - ✓ SNOWTAM
 - ✓ RunwayMixSequence
- Approach
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - √ AirportMETInducedCapacityReduction
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - **✓** METREPORT
 - IntegratedDigitalBriefing
 - **METAR**
 - **TAF**
 - ✓ SNOWTAM
- Final Approach
 - ✓ AirportMETAlert



- ✓ AirportMETForecast
- ✓ AirportMETNowcast
- ✓ AirportMetObservation
- **✓** METREPORT
- ✓ IntegratedDigitalBriefing
- ArrivalSeparationIndicator
- **METAR**
- ✓ SNOWTAM
- ✓ TAF
- Landing
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - ✓ METREPORT
 - IntegratedDigitalBriefing
 - **METAR**
 - **SNOWTAM**
 - AerodromeMapInformation
- Post Flight

A.5 ATM Information

The concepts in this category are Subject Field elements taken from the AIRM 4.1.0. The link between services and concepts in this category are documented by the link between EntityItems in each ISRM Service Description and the EntityItems in AIRM which in turn are linked to Subject Fields. A service can be linked to multiple concepts in the category.

A.5.1 Concept breakdown

- Traffic
 - **Flight** 0
 - ✓ AirportFlightInformationPublication
 - ✓ ATCFlightObjectControl
 - ✓ CalculatedPreDepartureSequenceDelivery
 - **PreDepartureSequenceSetting**
 - SharedFlightObject
 - **TargetOffBlockTimeSetting**
 - Flight Event
 - Flight Identifier
 - Flight Phase
 - **Trajectory**
 - ✓ ExtendedFlightPlanSubmission
 - √ FlightPlanDataDistribution
 - OATFlightDataDistribution
 - **OATFlightPlanSubmission**
- Operations
 - Air Traffic Operations
 - **Trajectory Management**
 - ✓ SharedFlightObject
 - **ATM Phases**
 - **ATM Service Delivery Management**
 - **Aerodrome Operations**
 - AeronauticalInformationNotification





- √ AirportMETInducedCapacityReduction
- ✓ AerodromeMapInformation
- ✓ SNOWTAM
- ✓ NetworkOperationPlan
- Airspace Organization and Management
 - ✓ ARESPreActivation
 - **ARESActivation**
 - ✓ ARESDeactivation
 - ✓ ARESRelease
- Airspace User Operations
- **Conflict Management**
- **Demand and Capacity Balancing**
 - √ ReportAircraftTrajectory
 - ReportAircraftETAMinMax
- **Emergency Operations**
- **Information Services Products**
 - AeronauticalInformationProduct
 - AirportCDMInformationProduct
 - Air space Management Information Product
 - DCBInformationProduct
 - FlightInformationProduct
 - MeteorologicalInformationProduct
 - SurveillanceInformationProduct
- Military Operations
- **Traffic Synchronization**
 - **Arrival Management**
 - ✓ ArrivalManagementInformation
 - ✓ RunwayMixSequence
 - ✓ ArrivalSeparationIndicator
 - Coordination
 - ✓ ATCFlightObjectControl
 - Departure Management
 - √ RunwayMixSequence
 - ✓ DeparturePlanningInformation
- Environment
- Surveillance
- Meteorology
 - ✓ AirportMETForecast
 - AirportMETNowcast
 - **AirportMetObservation**
 - **METREPORT**
 - IntegratedDigitalBriefing
 - **METAR**
 - **SNOWTAM**

 - **METHazardEnrouteObservation**
 - **METGriddedForecast**
 - ✓ METHazardEnrouteForecast
- Infrastructure
 - Base Infrastructure
 - Aerodrome Infrastructure
 - ✓ AeronauticalInformationNotification
 - IntegratedDigitalBriefing
 - RunwayManagementInformation





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- Communication Infrastructure
- Navigation Infrastructure
- Obstacle
- Surveillance Infrastructure
- Airspace Infrastructure
 - Airspace
 - **ARESQuery**
 - ✓ IntegratedDigitalBriefing
 - Airspace Infrastructure Point
 - **Route and Procedure**
- Aircraft
- Stakeholders
 - BusinessService
 - ✓ AirportMETAlert
 - Stakeholder
- Common
 - 0 Geospatial

A.6 SWIM-TI Profile

The concepts in this category are taken from the WP14 SWIM-TI Profiles design document (P14.1.3-D36 SWIM Profiles for Iteration 3.0.doc). These are represented as System elements in EATMA. The link between services and concepts in this category are documented in the ADD. A service can be linked to multiple categories in the category.

A.6.1 SWIM-TI Profile breakdown

- Yellow Profile
 - ✓ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - AirportMETInducedCapacityReduction
 - AirportMetObservation
 - ✓ ARESPreActivation
 - ✓ ARESActivation
 - ✓ ARESDeactivation
 - ✓ ARESRelease
 - **ARESQuery**
 - ArrivalManagementInformation
 - CalculatedPreDepartureSequenceDelivery
 - ✓ ExtendedFlightPlanSubmission
 - √ FlightPlanDataDistribution
 - METHazardEnrouteForecast
 - IntegratedDigitalBriefing
 - **METHazardEnrouteObservation**
 - ✓ METAR
 - ✓ METREPORT
 - ✓ PreDepartureSequenceSetting
 - RunwayManagementInformation
 - **SNOWTAM**
 - **TAF**
 - **TargetOffBlockTimeSetting**
 - **METGriddedForecast**





- Blue Profile
 - ✓ ATCFlightObjectControl
 - ✓ NetworkOperationPlan
 - ✓ RunwayMixSequence
 - SharedFlightObject
- **Purple Profile**

A.7 Intended system type

The concepts in this category are System elements are based on the B.4.3 ADD in EATMA V6.1. https://www.eatmportal.eu/working/data/systems

The link between services and concepts in this category are documented in the ADD. A service can be linked to multiple categories in the category and the link has a qualifier on it that tells if the service is provided or consumed by the system.

A.7.1 Intended system type breakdown

- 4DWxCube
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - ✓ AirportMETObservation
 - ✓ METAR
 - METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation

 - ✓ METREPORT
 - ✓ METGriddedForecast
- **ACAS Monitoring**
- **ADS-B Ground Station**
- Aerodrome ATC
 - √ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - AirportMETForecast
 - √ AirportMETObservation
 - ✓ AirportMETInducedCapacityReduction
 - ✓ AirportMETNowcast
 - ✓ CalculatedPreDepartureSequenceDelivery
 - ✓ METAR
 - **PreDepartureSequenceSetting**
 - ✓ RunwayManagementInformation
 - ✓ RunwayMixSequence
 - ✓ SNOWTAM
 - ✓ TAF
 - **METREPORT**
 - ✓ TargetOffBlockTimeSetting
- AIM
 - ✓ AeronauticalInformationFeature
 - ✓ AeronauticalInformationMap
 - ✓ AeronauticalInformationNotification
- AIM (External)
- Air Defence (External)
- Aircraft
 - ReportAircraftETAMinMax
 - ReportAircraftTrajectory





- Airport Airside Operations
 - ✓ AerodromeMapInformation
- Airport Multilateration
- Airport Operations Centre
 - ✓ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - ✓ CalculatedPreDepartureSequenceDelivery
 - ✓ PreDepartureSequenceSetting
 - ✓ TargetOffBlockTimeSetting
 - ✓ NetworkOperationPlan
 - ✓ RunwayMixSequence
- ASM
 - ✓ ARESActivation
 - **✓** ARESDeactivation
 - ✓ ARESPreActivation
 - ✓ ARESQuery
 - ✓ ARESRelease
- ATC (External)
- ATFCM
 - ✓ ExtendedFlightPlanSubmission
 - √ FlightPlanDataDistribution
 - ✓ NetworkOperationPlan
 - ✓ OATFlightDataDistribution
 - ✓ OATFlightPlanSubmission
- ATM-dedicated Aerodrome MET Infrastructure
- BEIDOU (External)
- Data Radio Station
- DME
- Enhanced MET Sensors
- En-Route / Approach ATC
 - ✓ ARESActivation
 - **✓** ARESDeactivation
 - ✓ ARESPreActivation
 - ✓ ARESQuery
 - ✓ ARESRelease
 - ✓ ArrivalManagementInformation
 - ✓ ArrivalSeparationIndicator
 - ✓ ATCFlightObjectControl
 - ✓ RunwayMixSequence
 - √ SharedFlightObject
- FOC/WOC
 - ✓ AirportFlightInformationPublication
 - ✓ IntegratedDigitalBriefing
 - ✓ OATFlightDataDistribution
 - ✓ OATFlightPlanSubmission
 - ✓ TargetOffBlockTimeSetting
- GALILEO (External)
- GBAS Ground station
- GLONASS (External)
- GNSS Monitoring
- GPS (External)
- Ground ATM Networks
- ILS



- MLS
- Multistatic Primary Radar
- Non-ATM MET (External)
- Non-Aviation Users (External)
- Primary radar
- Routing Networking Equipment for A/G Datalink
- SATCOM (External)
- **SBAS**
- Secondary Radar
- Standard MET Sensors
- Surface Movement Radar
- **SWIM BCA**
- **SWIM Blue Profile**
- **SWIM PKI**
- **SWIM Registry**
- **SWIM Yellow Profile**
- **TACAN**
- TELECOM (External)
- Time Reference (External)
- Wide Area Multilateration
- Video Surveillance
- Voice
- Voice Radio Stations
- VOR

A.8 Intended provider

The concepts in this category are Stakeholder elements taken from the ATM Master Plan https://www.eatmportal.eu/working/data/enablers

The link between services and concepts in this category are currently documented in this document. A service can be linked to multiple concepts in the category.

A.8.1 Intended provider breakdown

- Air Navigation Service Provider
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETInducedCapacityReduction
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - ✓ ARESQuery
 - ✓ ArrivalSeparationIndicator
 - **ATCFlightObjectControl**
 - **METREPORT**
 - **✓** METAR
 - ✓ RunwayMixSequence
 - **SNOWTAM**
 - SharedFlightObject
 - **ANSP Civil**
 - 0 ANSP Military
 - 0 **TAF**
- **Airport Operator**
 - AerodromeMapInformation



- ✓ AeronauticalInformationNotification
- ✓ AirportFlightInformationPublication
- ✓ CalculatedPreDepartureSequenceDelivery
- ✓ DeparturePlanningInformation
- **PreDepartureSequenceSetting**
- ✓ TargetOffBlockTimeSetting
 - AP OPR Civil
 - ✓ ArrivalManagementInformation
 - AP OPR Military
- Airspace Users
 - ReportAircraftETAMinMax
 - ReportAircraftTrajectory
 - **AU Civil Scheduled Aviation**
 - \circ **AU Civil Business Aviation**
 - **AU Civil General Aviation**
 - **AU Civil Airline Operational Control**
 - o AU Military Transport
 - o AU Military Fighter
 - o AU Military Light Aircraft
 - o AU Military Wing Operations Centre
- **ATS Operations**
 - ✓ OATFlightDataDistribuion
 - ✓ ARESActivation
 - ✓ ARESDeActivation
 - ✓ ARESPreActivation
 - **ARESRelease**
 - Aerodrome ATS
 - ✓ RunwayManagementInformation
 - ✓ OATFlightDataDistribution
 - En-Route
 - Approach ATS
 - **OATFlightDataDistribution**
- **ATS User Operations**
 - ✓ OATFlightDataDistribution
- **Network Manager**
 - ✓ AeronauticalInformationMap
 - ✓ ExtendedFlightPlanSubmission
 - FlightPlanDataDistribution
 - √ NetworkOperationPlan
 - ✓ OATFlightPlanSubmission
- **Network Operations**
 - **Network Management**
 - ✓ RunwayManagementInformation
- Weather Provider
 - METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - ✓ METGriddedForecast
- **Pilot Briefing**
 - ✓ IntegratedDigitalBriefing



A.9 Intended consumer

Similar to the Intended Provider, the concepts in this category are Stakeholder elements taken from the ATM Master Plan https://www.eatmportal.eu/working/data/enablers

The link between services and concepts in this category are currently documented in this document. A service can be linked to multiple concepts in the category.

A.9.1 Intended consumer breakdown

- Air Navigation Service Provider
 - ✓ AerodromeMapInformation
 - ✓ AeronauticalInformationNotification
 - ✓ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation
 - ARESActivation
 - ✓ ARESDeActivation
 - ✓ ARESPreActivation
 - ✓ ARESRelease
 - ✓ ArrivalManagementInformation
 - ArrivalSeparationIndicator
 - ✓ ATCFlightObjectControl
 - √ CalculatedPreDepartureSequenceDelivery
 - DeparturePlanningInformation
 - ExtendedFlightPlanSubmission
 - √ FlightPlanDataDistribution
 - **METREPORT**
 - METHazardEnrouteForecast
 - ✓ METHazardEnrouteObservation
 - ✓ METGriddedForecast
 - ✓ METAR
 - **PreDepartureSequenceSetting**
 - ReportAircraftETAMinMax
 - ✓ ReportAircraftTrajectory
 - ✓ RunwayMixSequence
 - √ SharedFlightObject
 - ✓ SNOWTAM
 - **TAF**
 - **TargetOffBlockTimeSetting**
 - **ANSP Civil**
 - **ANSP Military**
- **Airport Operations**
 - RunwayManagementInformation
- **Airport Operator**
 - ✓ AerodromeMapInformation
 - ✓ AeronauticalInformationNotification
 - ✓ AirportFlightInformationPublication
 - ✓ AirportMETAlert
 - AirportMETForecast
 - ✓ AirportMETInducedCapacityReduction
 - ✓ AirportMETNowcast
 - ✓ AirportMetObservation



- ✓ ArrivalManagementInformation
- ✓ METHazardEnrouteForecast
- ✓ METHazardEnrouteObservation
- ✓ METAR
- ✓ NetworkOperationPlan
- **PreDepartureSequenceSetting**
- ✓ SNOWTAM
- ✓ TAF
- ✓ METREPORT
- √ TargetOffBlockTimeSetting
 - o AP OPR Civil
 - AP OPR Military
- Airspace User Operations
 - **OATFlightPlanSubmission**
 - Airspace User Ops Support
 - ✓ IntegratedDigitalBriefing
 - Flight Deck
 - ✓ IntegratedDigitalBriefing
- Airspace Users
 - ✓ AeronauticalInformationMap
 - ✓ AeronauticalInformationNotification
 - AirportFlightInformationPublication
 - ✓ AirportMETForecast
 - ✓ AirportMETNowcast
 - √ AirportMetObservation
 - ✓ ARESQuery
 - ExtendedFlightPlanSubmission
 - FlightPlanDataDistribution
 - **METREPORT**
 - **METHazardEnrouteForecast**
 - ✓ METHazardEnrouteObservation
 - ✓ METGriddedForecast
 - **METAR**
 - **SNOWTAM**
 - **TAF**
 - **TargetOffBlockTimeSetting**
 - **AU Civil Scheduled Aviation**
 - **AU Civil Business Aviation**
 - **AU Civil General Aviation**
 - o AU Civil Airline Operational Control
 - o AU Military Transport
 - o AU Military Fighter
 - o AU Military Light Aircraft
 - **AU Military Wing Operations Centre**
- **ATS Operations**
 - Aerodrome ATS
 - ✓ RunwayManagementInformation
 - EnRoute/Approach ATS
 - Approach ATS
 - ✓ RunwayManagementInformation
- **Network Manager**
 - ✓ AeronauticalInformationNotification
 - ✓ ARESQuery
 - ✓ DeparturePlanningInformation





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- ✓ METAR
- ✓ METHazardEnrouteForecast
- **✓** METHazardEnrouteObservation
- ✓ METGriddedForecast
- ✓ OATFlightDataDistribution
- **✓ TAF**
- ✓ SNOWTAM
- Network Operations
 - Network Management
 - ✓ RunwayManagementInformation
- Weather Provider

Appendix B Multi-facetted classification scheme

Note, the term 'facet' is only used in this appendix. In the remainder of the document, the term 'category' is used in order to increase readability for the general audience of the document.

B.1 Introduction to taxonomy and the service portfolio

Taxonomy is the practice and science of classification¹. The word is also used as a noun: a taxonomy, or taxonomic scheme, is a particular classification. In this case the taxonomy relates to the classification of Services provided and used between European ATM stakeholders.

The purpose of the European ATM Service taxonomy is to classify services so that they can be easily found and presented in a structured and consistent way. If this is achieved, the taxonomy can be of use throughput the whole lifecycle of services, from initial identification through design, development, deployment, operational use and decommissioning.

In a complex environment such as the European ATM, it is not sufficient to have a single classification scheme for the services since the topic of services has many dimensions. As an example, services can be classified based on the type of capability they provide, but at the same time it is relevant to classify them according to how and by whom they are implemented. To support this need, several classification schemes, called facets, have been defined.

Each facet serves one or more purposes and can be used in one or more lifecycle phase of a service. The contents of facets can come from different sources, thus enabling a very wide application. Facets can also be added or removed independently of each other so that the taxonomy can be kept relevant as the needs and maturity of service-orientation change.

One of the key artefacts which makes use of the taxonomy is the SESAR ATM Service portfolio. This contains a description of all services that have been identified, designed, developed and validated in the frame of SESAR. The taxonomy is a vital part of the service portfolio, but it is important to remember that the taxonomy is not the same thing as the service description which contains all information about how a service is designed and implemented.

The taxonomy can of course also be used to present the services each ATM stakeholder provides through the use of the SWIM Registry.

B.2 Classification theory

Faceted classification is an analytic-synthetic classification scheme. It classifies objects using multiple taxonomies that express their different attributes or facets rather than classifying using a single taxonomy².

A common way of describing and sharing taxonomies in machines is to use the Simple Knowledge Organization System (SKOS) defined by W3C³. It has been designed to be implemented using semantic web technologies and standards that are widely available. The SKOS data model is formally defined as an OWL Full ontology⁴. SKOS data are expressed as RDF triples⁵, and may be encoded using any concrete RDF syntax (such as RDF/XML). The SKOS data model views a knowledge

founding members



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¹ https://en.wikipedia.org/wiki/Taxonomy_(general)

² http://en.wikipedia.org/wiki/Faceted_classification

³ http://www.w3.org/TR/skos-reference/

⁴ http://www.w3.org/TR/2004/REC-owl-semantics-20040210/

⁵ http://www.w3.org/TR/2004/REC-rdf-concepts-20040210/

organization system as a **concept scheme** comprising a set of **concepts**. The concept scheme is referred to as **facet** in this document to indicate that it is a scheme that is part of a facetted classification. SKOS concepts can be **labelled** with any number of lexical (UNICODE) strings, such as "romantic love" or "れんあい", in any given natural language, such as English or Japanese (written here in hiragana). SKOS concepts can be **linked** to other SKOS concepts via semantic relation properties.

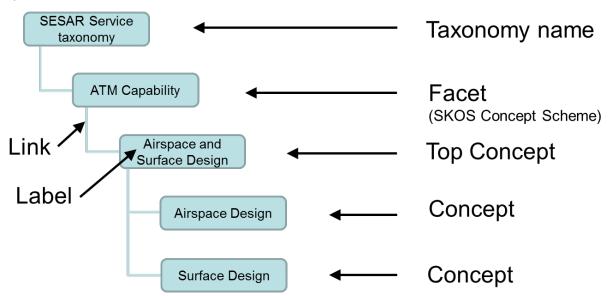


Figure 1 Example SKOS taxonomy

B.3 Application in SESAR

The SESAR service taxonomy is a key vehicle to ensure that services are addressed across the whole breadth of the programme, i.e. as a transversal topic. Therefore, it is important that the taxonomy relates to, and makes use of, the European ATM Architecture.

In the service identification and design activities, the services are already dealt with as an integral part of EATMA. The linkage between services an elements in other EATMA viewpoints are sometimes done at a very detailed level and it is not possible to have the complete contents of EATMA as part of the taxonomy. E.g. the linkage to operational activities is done at the lowest (primary) level of the operational architecture. However, as the purpose of the taxonomy is not to provide a full description of the services, it is feasible to only have a limited number of levels in the hierarchical breakdown in each facet. E.g. for operational activities facet it is possible to only show the SESAR CONOPS (transversal) level activities.

If the linkage in EATMA is done at a lower level than what is described in the facet, the trace to the higher level concepts can be derived using the EATMA repository.

In some cases, there will be no link between a service and concepts in a facet. If a service is not mapped to a facet it means that either:

- a) The service design process has not been completed, thus the mapping is unknown. Or
- b) The service does not address this facet, e.g. if a service is not meant to be implemented with information technology, there will be no mapping to technical facets

The taxonomy can be implemented in IT systems such as the ISRM repository, EATMA repository, SWIM Registry and exchanged between these using SKOS.

B.4 Facets overview

The table below provides an overview of all facets that are currently selected.

The Facet column describes the name of the facet (SKOS Classification scheme). The Description provides an explanation of what the facet is. The Purpose describes why the facet should be used and during which phase of the development process it is of use. The Source column indicates where the content of the facet comes from, i.e. which architectural product the Concepts in the hierarchy are defined and where Links between the Service and Concepts are defined.

Facet	Description	Purpose		_		Source
	, , , , , , , , , , , , , , , , , , ,		Research & Development	Deployment & Implementation	Operations	C=Concept L=Link
Alphabetical	Classifies services according to the English alphabetical order.	Allows finding detailed information about a service if its name is already known.	X	X	X	
ATM Capability	Classifies services based on the ATM capability they aim to provide. The capability model taxonomy is from the European ATM Architecture (EATMA).	Is used for finding and presenting services from a high level strategic and business perspective which is useful in a planning and development perspective.	X	X		C: Capability Model L: ISRM
ATM Process	Classifies services based on the operational activities they support. The process taxonomy is taken from the SESAR Concept of Operations.	Enables finding services that can support in performing specific operational tasks. This is useful in the design phase when identifying services to be provided or consumed. It is also used when planning for implementation as it links the services to Operational Improvement Steps. It might as well be applicable in the operational phase, in particular for services with human interfaces.	X	X	X	C: CONOPS L: ISRM
Flight Phase	Classifies services based on the flight phase they operate within. The flight phase descriptions are taken from the SESAR Concept of Operations.	Allows for presenting time aspects of how the service operates and is mainly used for informational purposes during development.	X			C: CONOPS L: ISRM
ATM Information	Classifies the services based on the type of content that is	Is used for finding services based on what information the consumer needs. This	X		X	C: AIRM L: ISRM



Facet	Description	Purpose		_		Source
Tucci	Безеприон	-	Research & Development	Deployment & Implementation	Operations	C=Concept L=Link
	provided through them.	is valid from a reusability aspect in the design-phase as well as for service discovery in the operational state.				
SWIM-TI Profile	Classifies services according to the type of SWIM-Technical Infrastructure Profiles that can be used to implement it.	This is necessary to be able to understand which services can be implemented using a specific type of technology. This information is used when planning the deployment of services and deciding to implement a provider or consumer service. It is also useful when evaluating the SWIM-TI Profiles relevance and application during the design phase.	×	×		C: ADD L: ADD
Intended system type	Classifies services according to the type of systems that are intended to provide them. The systems are defined by the EATMA Technical Architecture.	This is used in the design and deployment phases in order to understand which services are going to be implemented by which technical systems.	Х	Х		C: ADD L: ADD
Intended Provider	Classifies services according to the ATM Stakeholder type that is intended to provide the service. The types are defined by the European ATM Master Plan, possibly sub-typed by Node in EATMA.	This is valuable in the design phase in order to understand the intended provisioning of services, e.g. for planning Validation and Verification exercises. It is also suitable in the implementation planning to create deployment packages and scenarios.	X	X		C: ATM MP L: Currently manually derived
Intended Consumer	Classifies services according to the ATM Stakeholder type that is intended to consumer the service. The types are defined by the European ATM Master Plan, possibly sub-typed by Node in EATMA. Classifies services	This is valuable in the design phase in order to understand the intended provisioning of services, e.g. for planning Validation and Verification exercises. It is also suitable in the implementation planning to create deployment packages and scenarios. This is useful when	Х	X	X	C: ATM MP L: Currently manually derived
Provider	according to the	planning for updates,				Registry



Facet	Description	Purpose		. ⊆		Source
			Research & Development	Deployment & Implementation	Operations	C=Concept L=Link
	actual organisations that provides them. The labels in this facet are set by the providing organisations.	implementing consumers and creating Service Level Agreements. It is also valid when selecting which service instances should be used in run-time.				L: SWIM Registry

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