



SUPPORTING
EUROPEAN
AVIATION

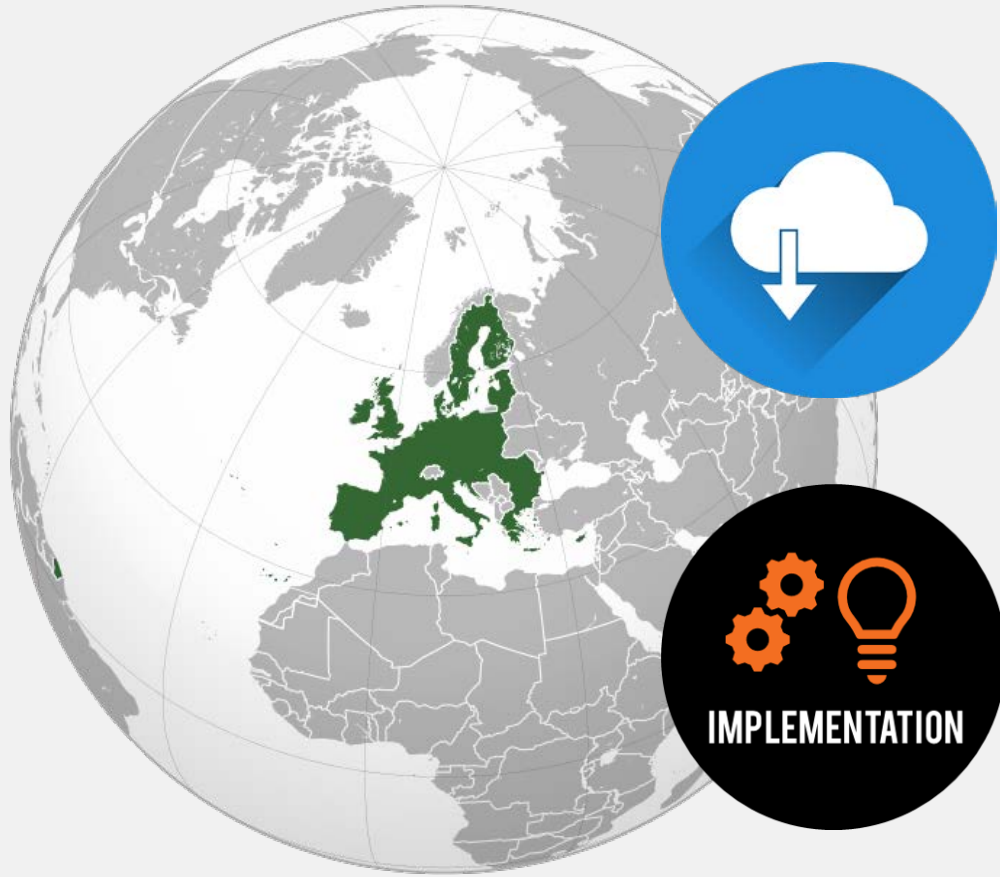
SWIM Services

Transversal view to EUR implementation

Pedro Fernandez
June 2026



EUR Approach to SWIM Deployment



GLOBAL FRAMEWORK

PANS IM (Doc10199), SWIM Concept (Doc10039), SWIM Implementation Manual



DEPLOYMENT

Concrete common requirements for specific services with a shared timeline for implementation.



WHEN

TIME / EVOLUTION



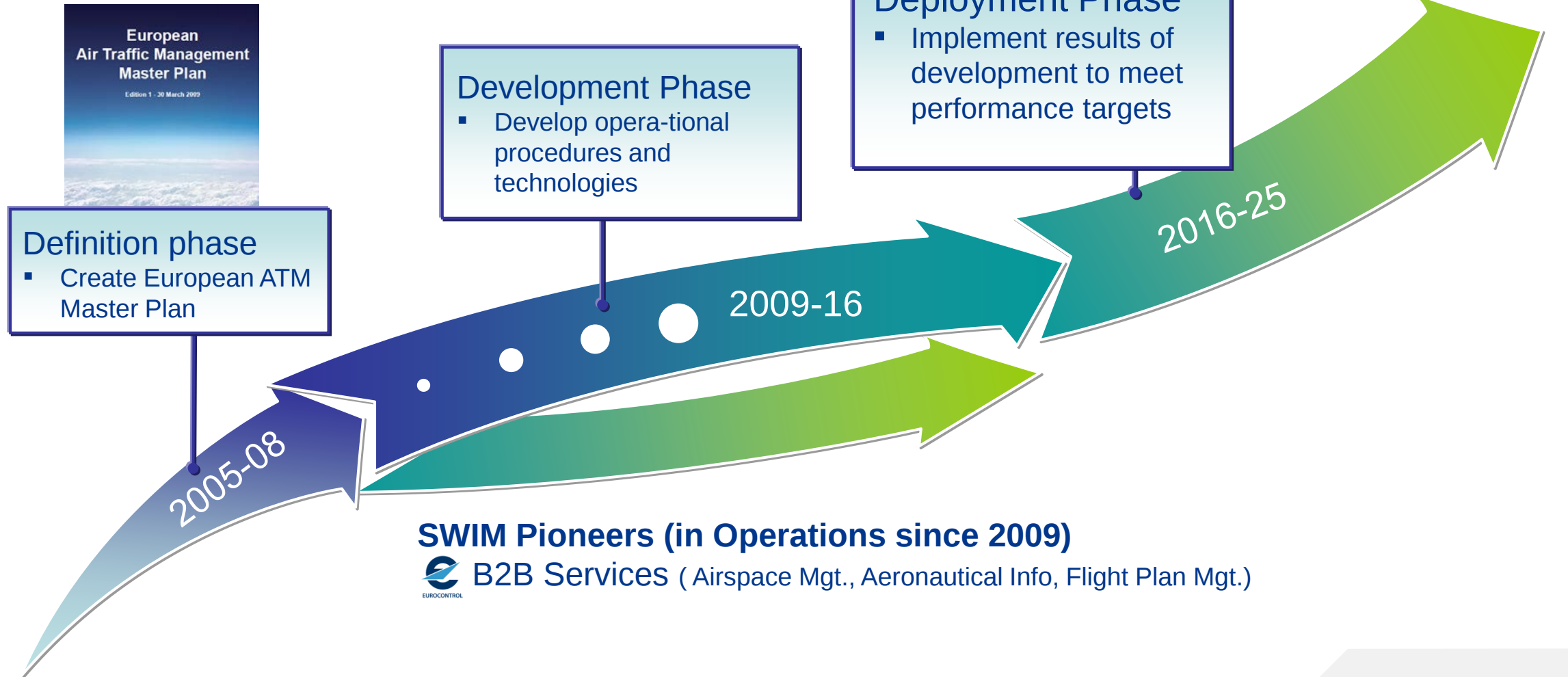
WHERE

PLACE / COVERAGE



SWIM Deployment

20 years of history in ATM



REGULATORY FRAMEWORK – SWIM

Developed and consulted by all stakeholders



Vision for EU Digital Sky

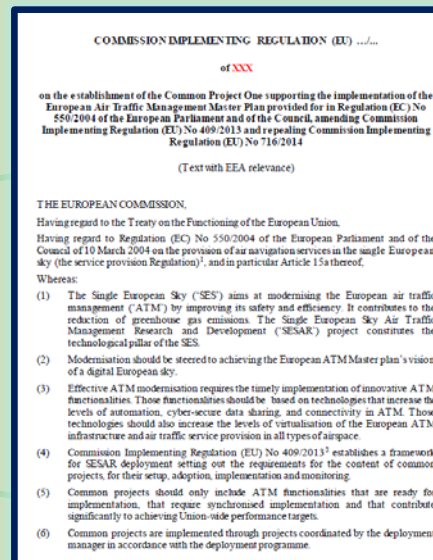
Essential Operational Changes

PILOT COMMON
PROJECT REG. (EU)
N.716/2014



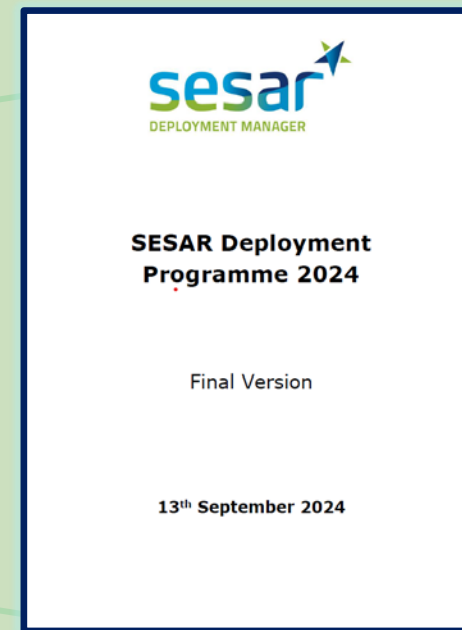
2014 - 2021

COMMON PROJECT
ONE REG. (EU)
N.116/2021

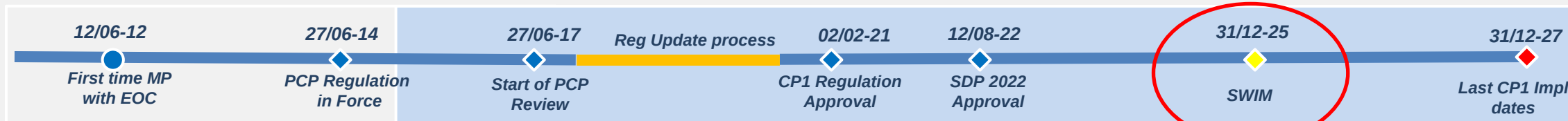


2021-2027

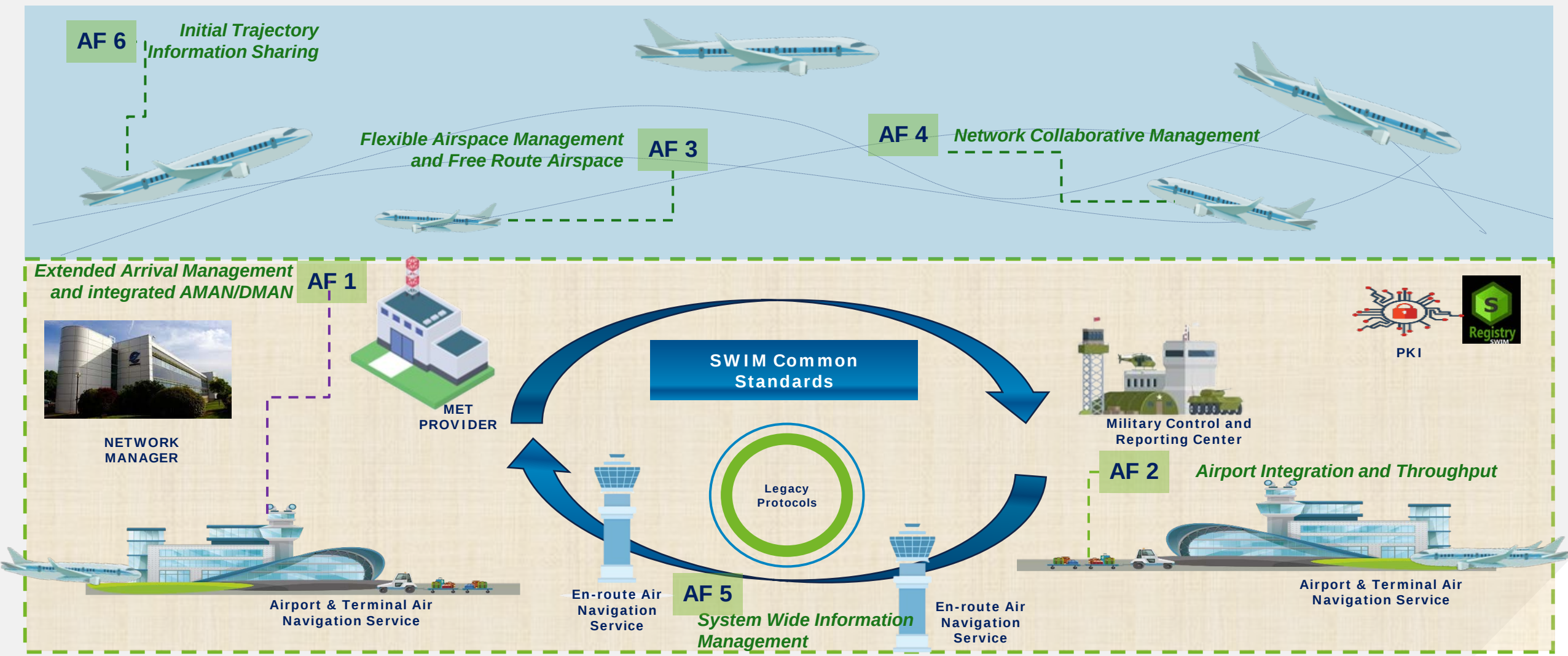
SESAR DEPLOYMENT
PROGRAMME (SDP)



Workplan for CP1 Deployment



The 6 ATM functionalities of CP1



Geographical scope



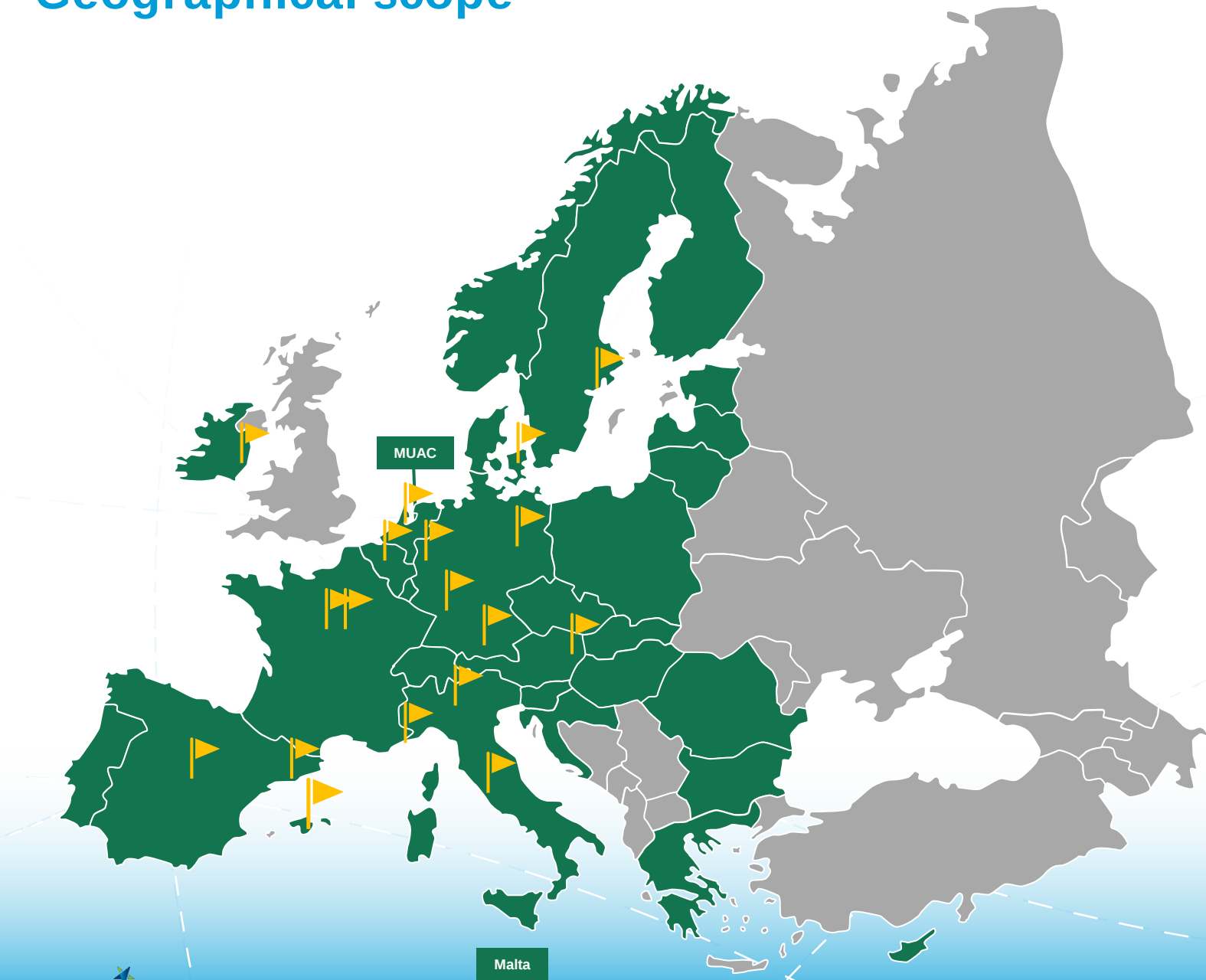
NM, 27 EU ANSPs+ 2 and MUAC



18 EU Airports Mandated



All AUs flying in the Airspace



Transversal SWIM



SWIM Foundations



Service Definitions



SWIM Registry



SWIM Governance

SWIM Foundations



SWIM Foundations



Service Definitions



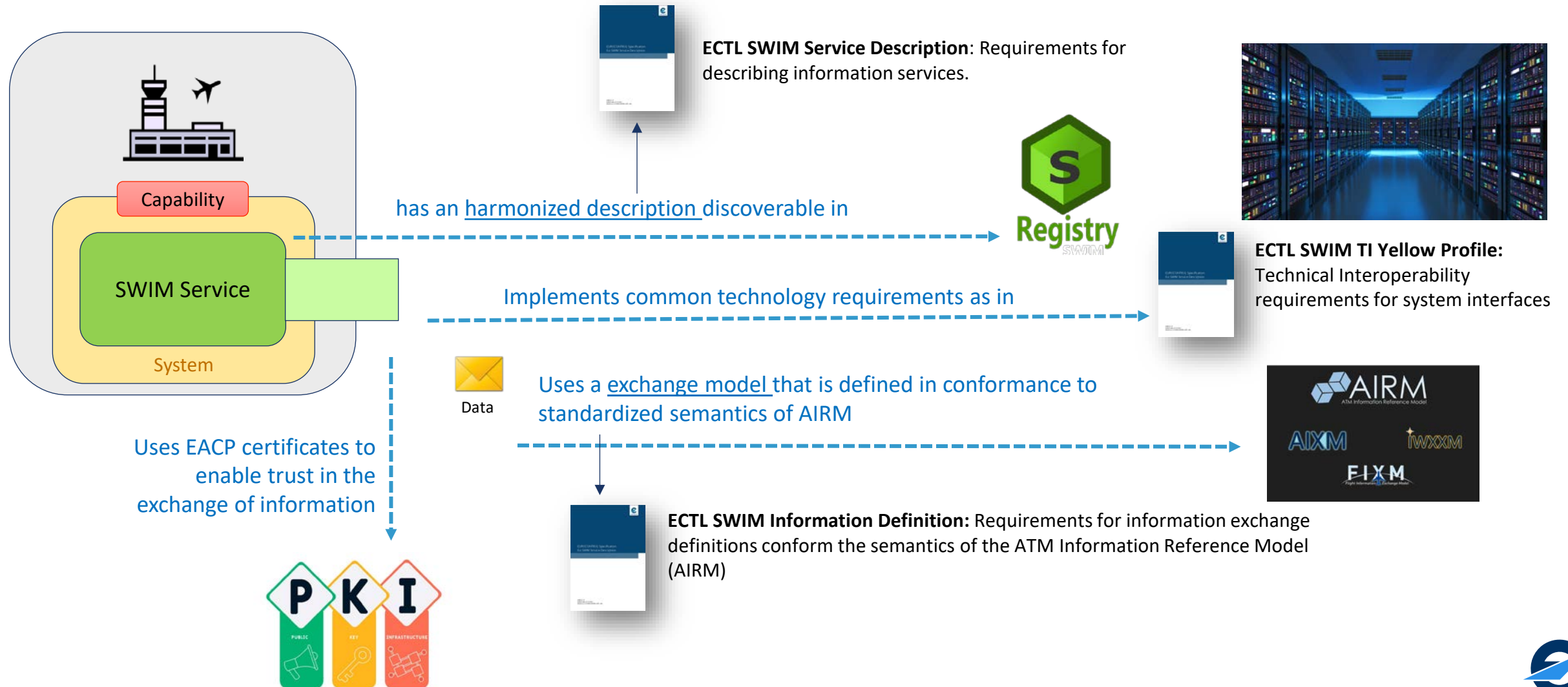
SWIM Registry



SWIM Governance

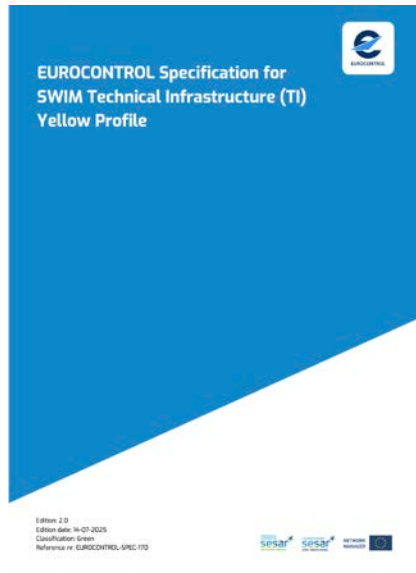
SWIM – Foundational Requirements

Specifications and requirements applicable to all SWIM Services



SWIM Foundational Specifications

Specifications transversally applicable in all information domains and across all types of information services.



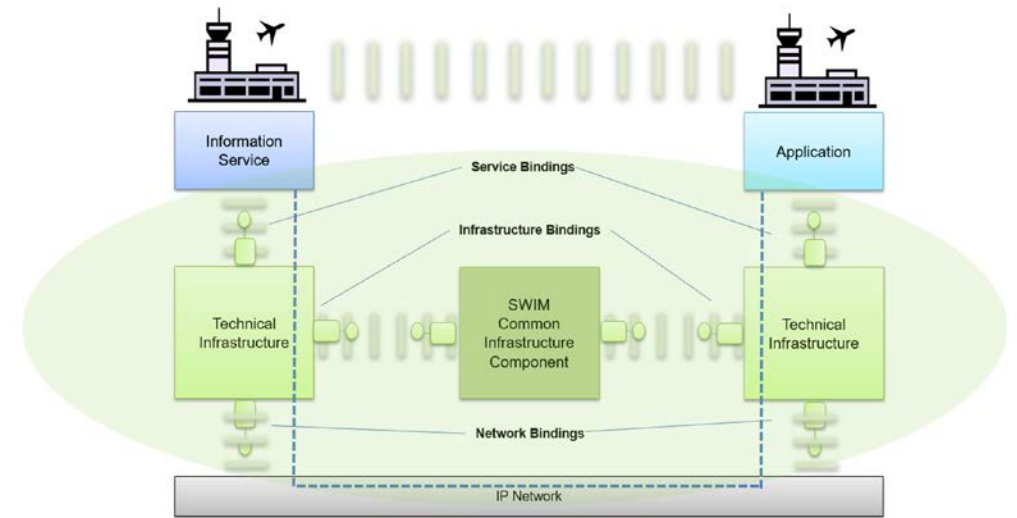
Produced by Standard Development Organizations
Supported by SWIM dedicated working groups

SWIM TI Yellow Profile



Requirements for the implementation of technical infrastructure to enable technical interoperability

- **Catalogue of interface bindings**
 - WS Light (HTTPs, OpenAPI)
 - AMQP
 - ...
- **Infrastructure capabilities**
 - Security
 - Monitoring



Various profiles considered previously in SESAR

SWIM Service Description



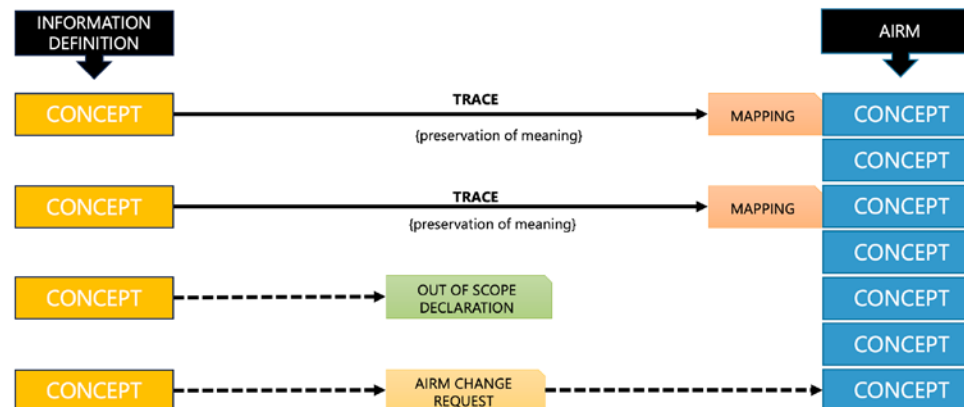
Requirements with minimum required information to describe services.

Service Description		[SWIM-SERV-010] Service Description Coverage	[SWIM-SERV-020] Service Description Language	
[SWIM-SERV-030] Service Description Identification				
General Service Information	[SWIM-SERV-040] Service Identification	[SWIM-SERV-050] Service Abstract		
Service Provider and Contact Information	[SWIM-SERV-060] Service Provider	[SWIM-SERV-070] Provider Point of Contact	[SWIM-SERV-080] Support Availability	
Service Characteristics	[SWIM-SERV-090] Geographical Extent of Information	[SWIM-SERV-100] Service Categories	[SWIM-SERV-110] Service Lifecycle Information	[SWIM-SERV-120] Service Standard Reference
High-level Description of Service Offer	[SWIM-SERV-130] Operational Environment	[SWIM-SERV-140] Service Functions		
Limitations and Constraints on Using the Service	[SWIM-SERV-150] Service Access and Use Conditions	[SWIM-SERV-160] Security Constraints	[SWIM-SERV-170] Additional Tech. Information for the Service Consumer	
Quality Aspects	[SWIM-SERV-180] Quality of Service	[SWIM-SERV-190] Source of Information	[SWIM-SERV-200] Service Validation Information	
Behaviour of the Service	[SWIM-SERV-210] Application Message Exchange Pattern	[SWIM-SERV-220] Service Behaviour	[SWIM-SERV-230] Service Monitoring	
Service Implementation and Structural Details	[SWIM-SERV-240] Service Interfaces	[SWIM-SERV-250] SWIM TI Profile and Interface Bindings	[SWIM-SERV-260] Service Interface Protocols and Data Format	
	[SWIM-SERV-270] Service Operations	[SWIM-SERV-280] Service Messages		
Information Aspects of the Service	[SWIM-SERV-290] Information Definition (Minimum)	[SWIM-SERV-300] Information Definition (Extended)	[SWIM-SERV-310] Filter Encoding	
Resources	[SWIM-SERV-320] Machine-Readable Service Interface	[SWIM-SERV-330] Model View	[SWIM-SERV-340] Examples of Code	[SWIM-SERV-350] Abbreviations and Acronyms

SWIM Information Definition



Requirements to ensure exchanged information is clearly defined, harmonized, understood and shared



Service Definitions



SWIM Foundations



Service Definitions



SWIM Registry

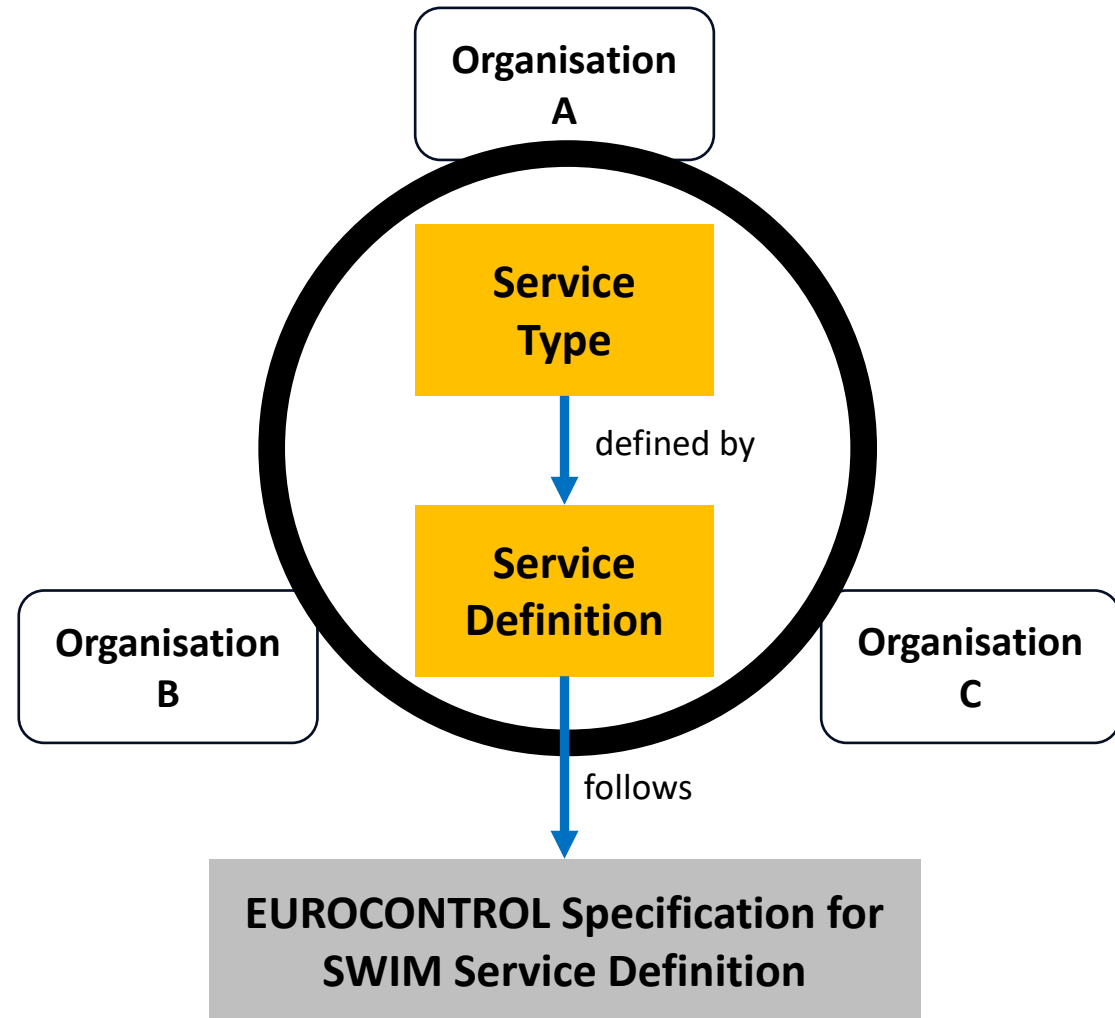


SWIM Governance

Service Definitions



Service Definition
Document issued by a community of interest to
harmonize service implementation



SWIM Service Definitions

Specifications for harmonized implementation of a specific service



ECTL Spec for
Service Definition



Service Definition
(e.g. DNOTAM SWIM
Service Definition)

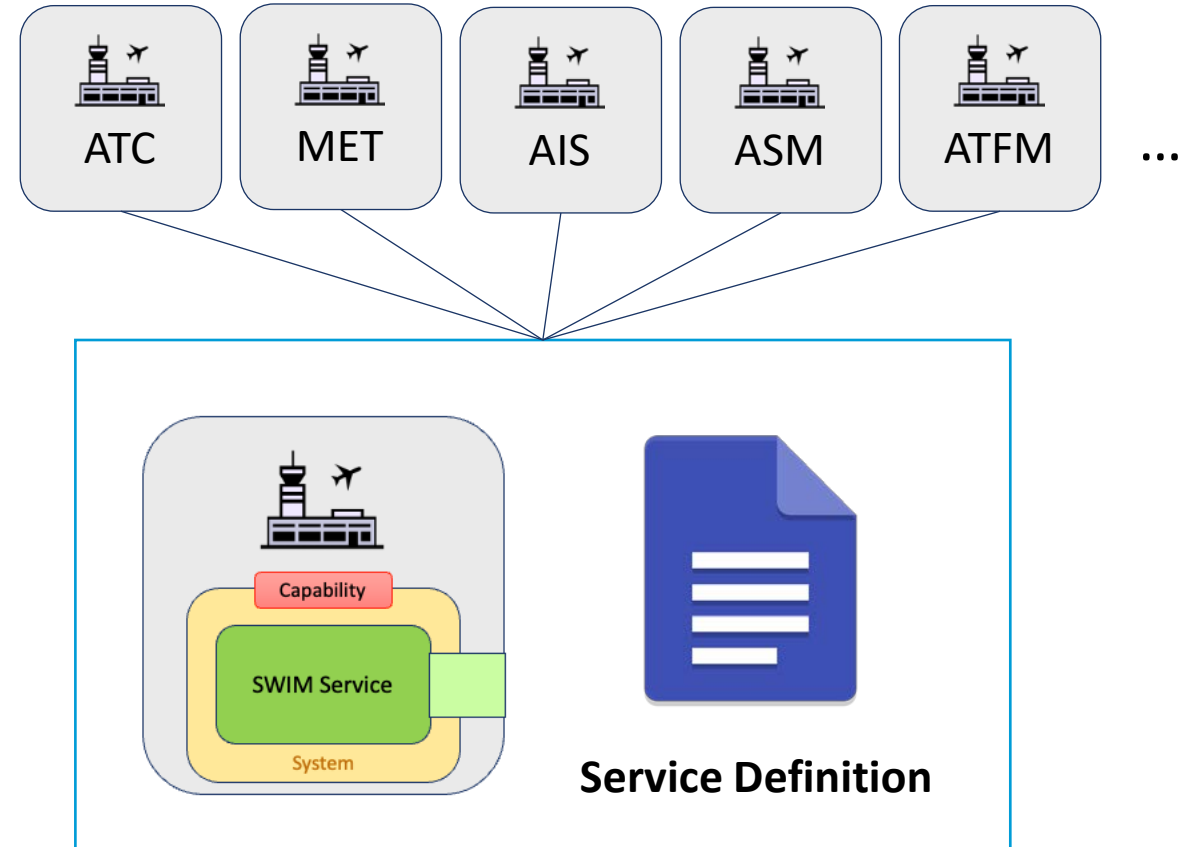
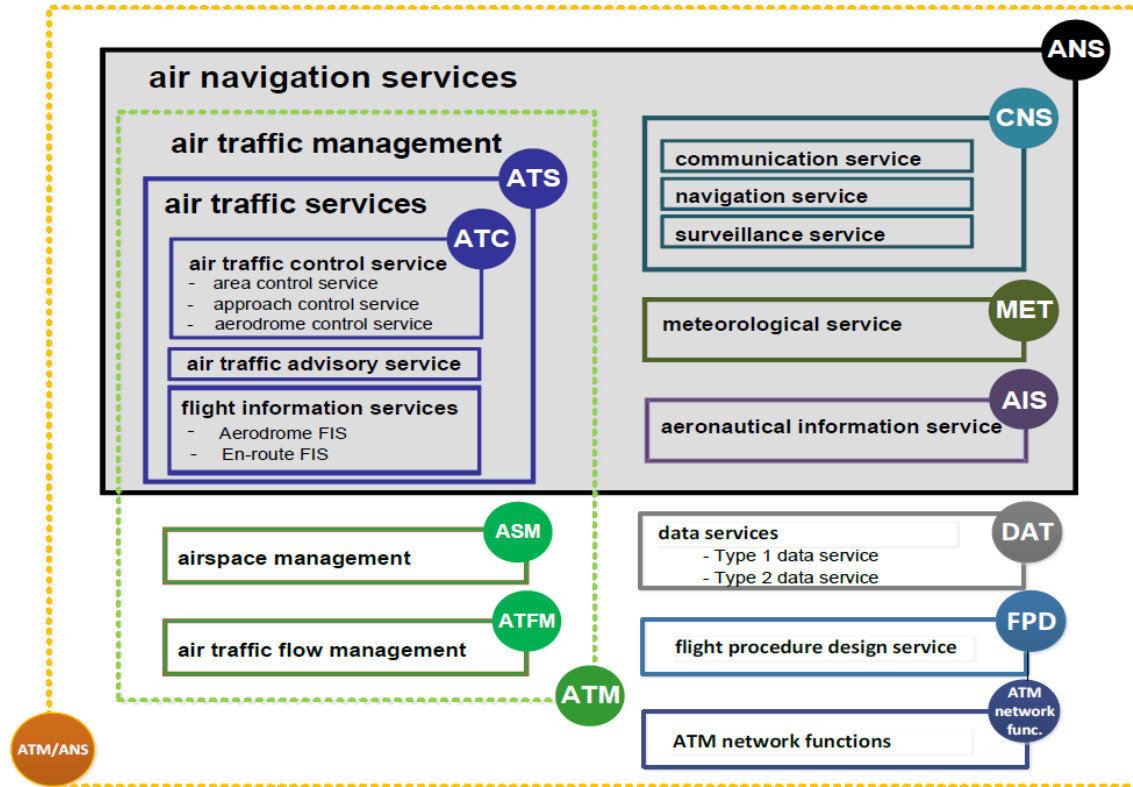


SWIM Services

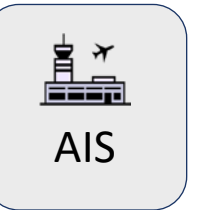
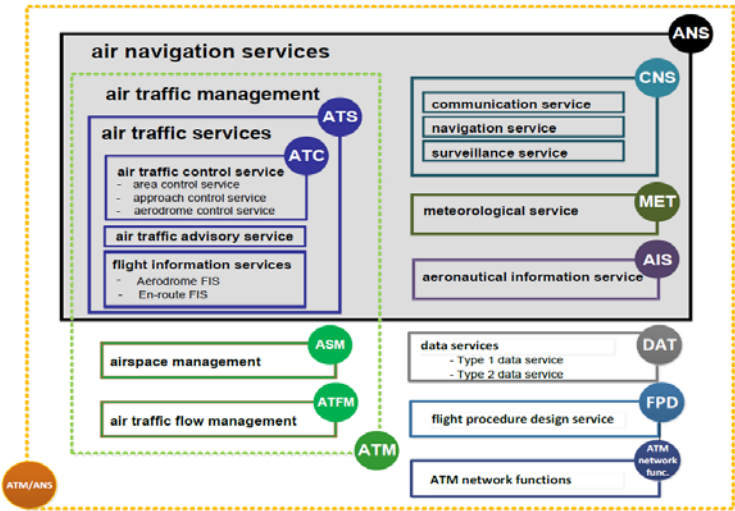
Used as reference for
implementation of



ATM/ANS Digital Interoperability



ATM/ANS Digital Interoperability



...





EUROCONTROL

version: 1.0

IWXXM METAR-SPECI
Subscription & Request Service

Service Definition

IWXXM METAR-SPECI...

The IWXXM METAR-SPECI Subscription and Request Service provides the service consumer with METAR/SPEC...





EUROCONTROL

version: 1.0

IWXXM SIGMET
Subscription & Request Service

Service Definition

IWXXM SIGMET Subs...

The IWXXM SIGMET Subscription and Request Service provides the service consumer with SIGMETs for wea...





EUROCONTROL

version: 1.0

IWXXM TAF
Subscription & Request Service

Service Definition

IWXXM TAF Subscri...

The IWXXM TAF Subscription and Request Service provides the service consumer with TAFs for one or mo...





EUROCONTROL

version: 1.0

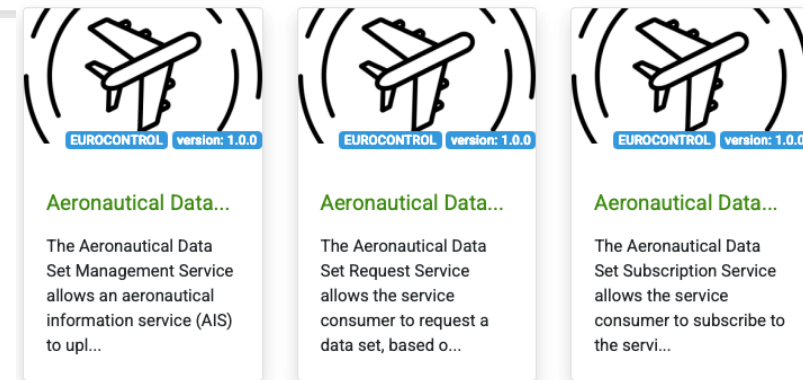
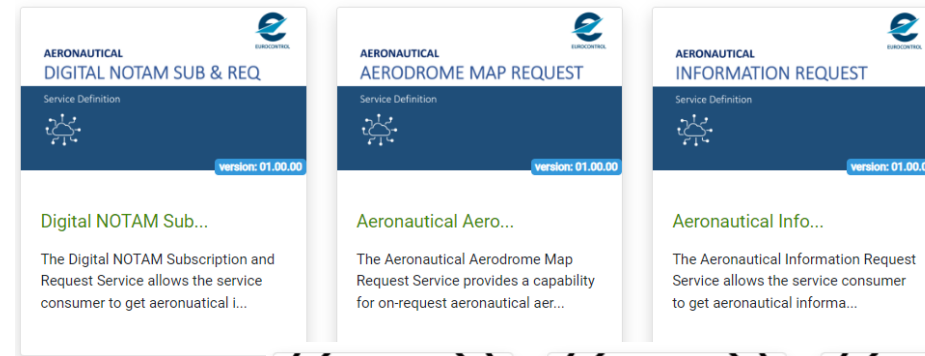
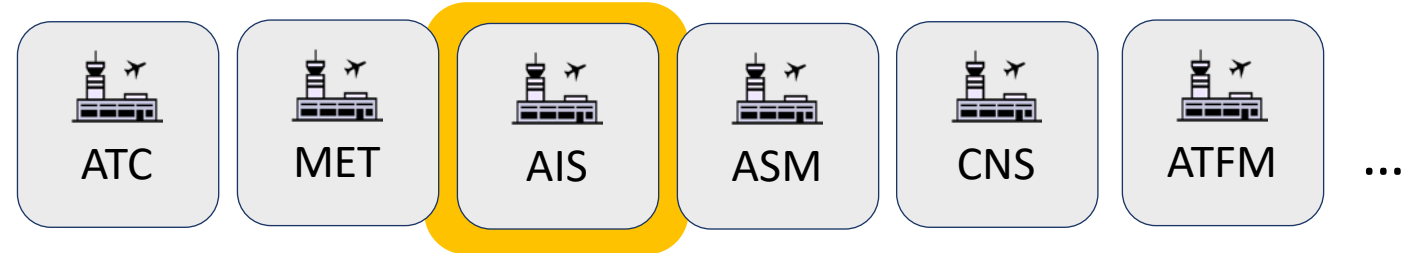
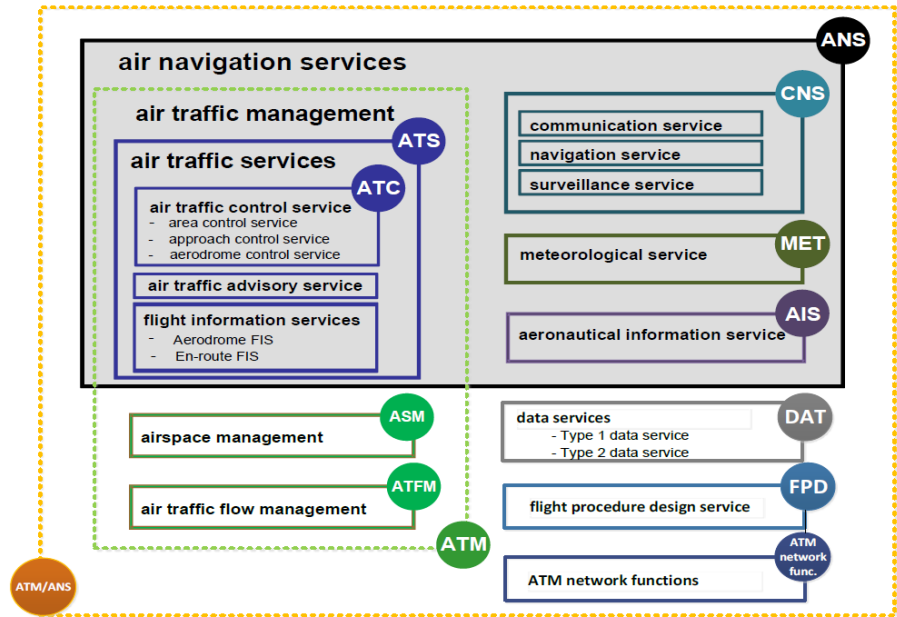
Quantitative Volc...

The Quantitative Volcanic Ash Concentration Information Subscription and Request Service allows the ...

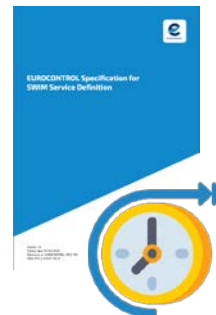
Identified Service	Service Name in Service Definition	Requirement(s)
Aerodrome Forecast information service	Meteorological Aerodrome Forecast Subscription and Request Service	the information currently included in the TAF and TREND as a minimum requirement
Aerodrome Observation information service	Meteorological Aerodrome Observation Subscription and Request Service	the information currently included in the METAR, SPECI, local routine report and local special report as a minimum requirement



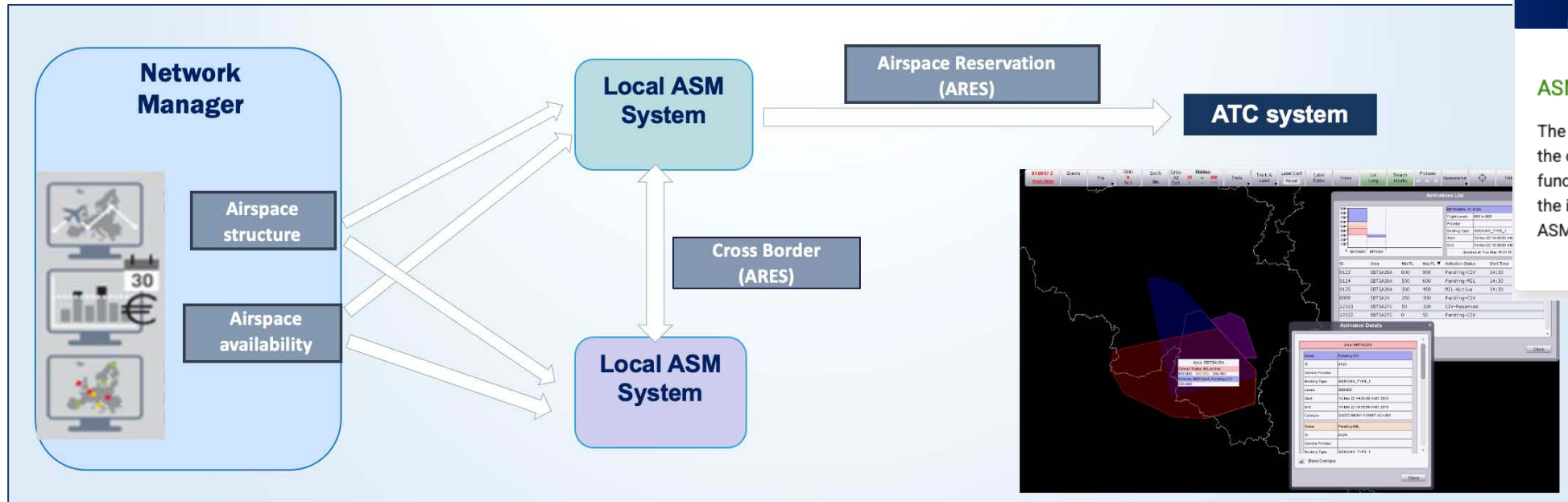
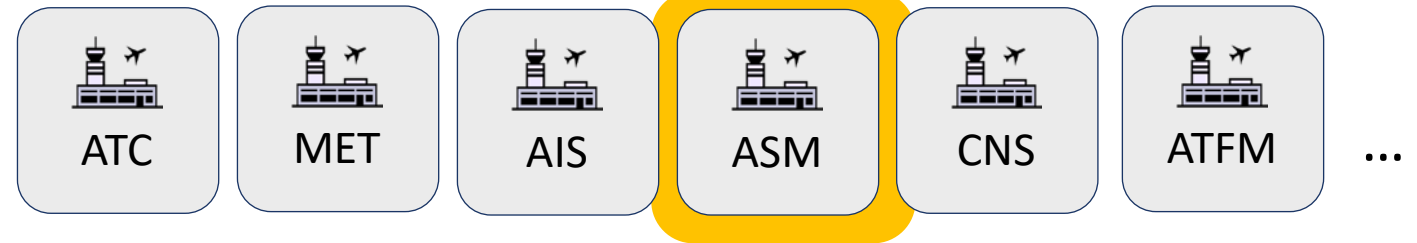
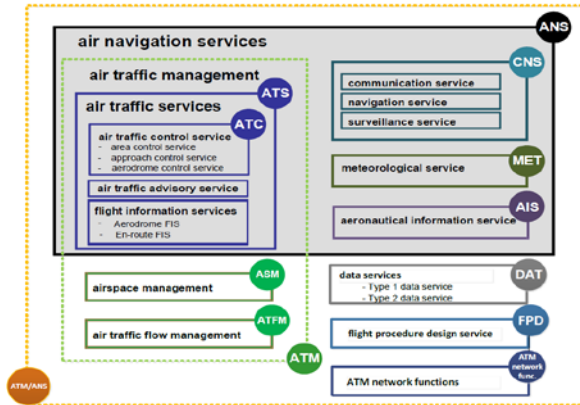
ATM/ANS Digital Interoperability



AIXM Specs
 -Digital NOTAM
 -Static Data (AIP,OBS,AMD,IFP)



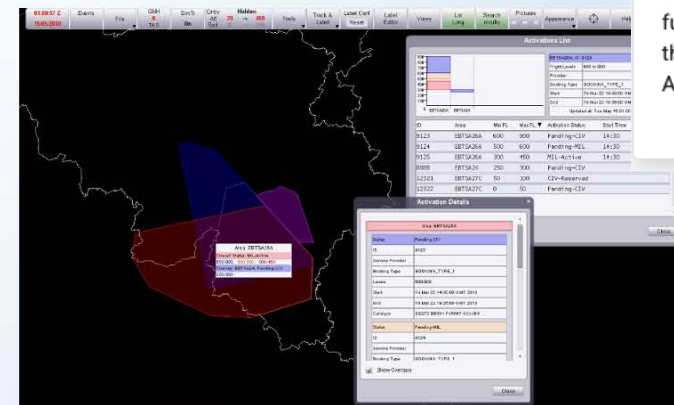
ATM/ANS Digital Interoperability



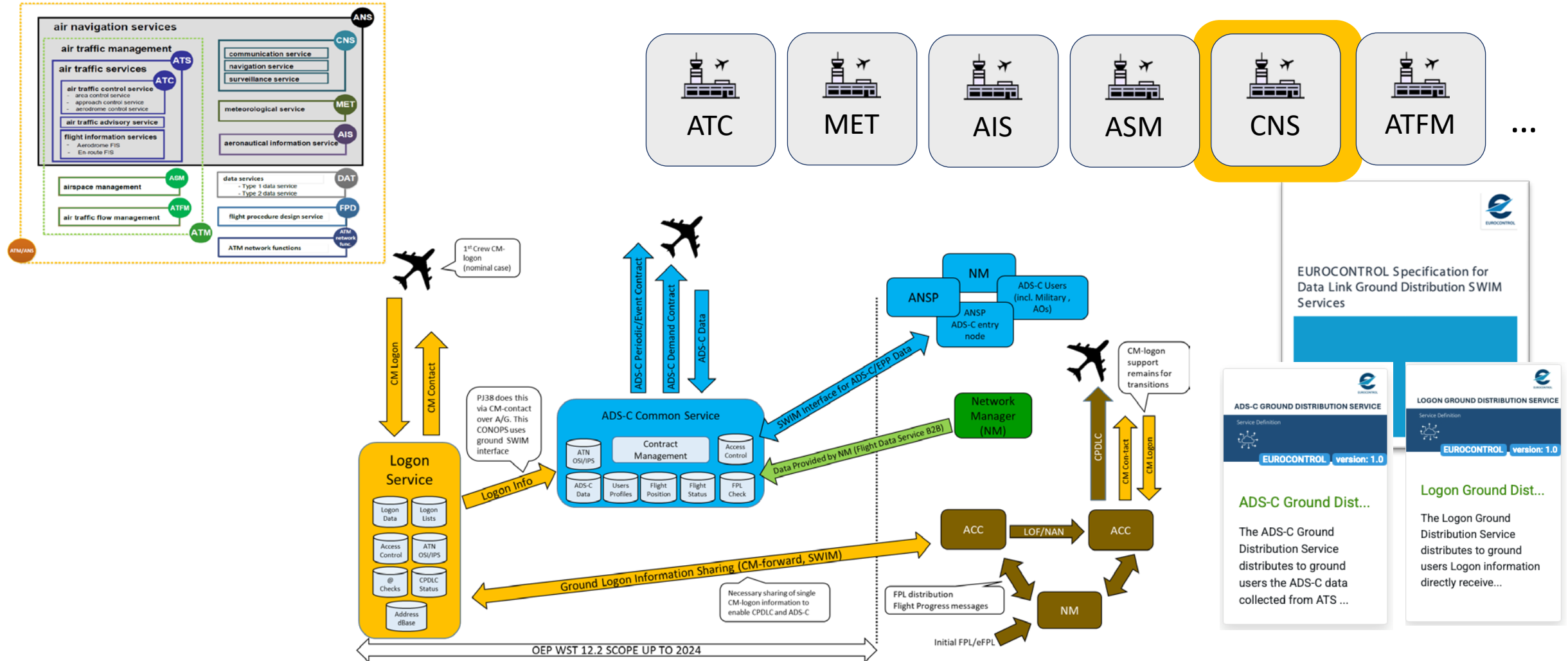
EUROCONTROL version: 2.0

ASM

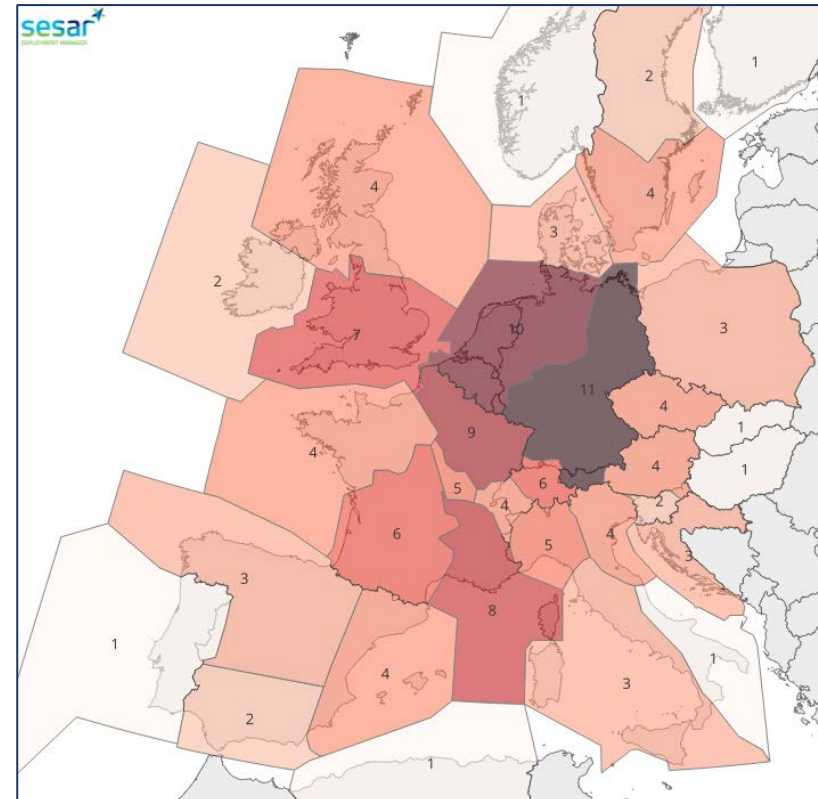
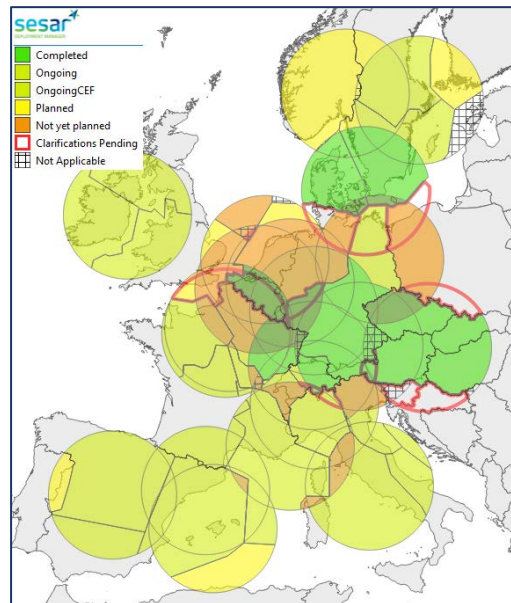
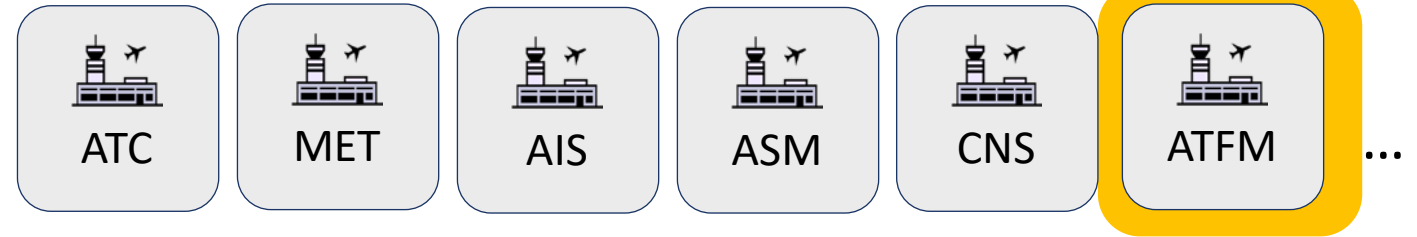
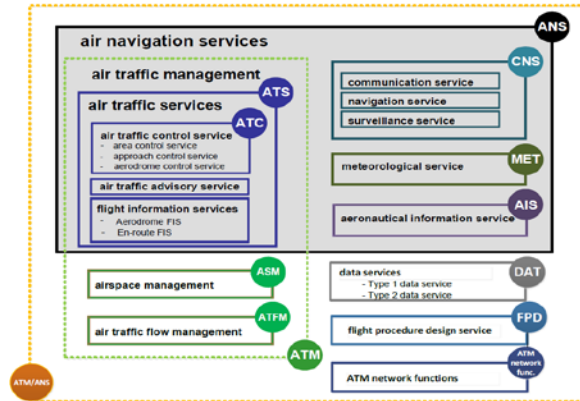
The ASM service enables the complete set of ASM functions necessary for the interactions between ASM...



ATM/ANS Digital Interoperability



ATM/ANS Digital Interoperability



The European Organisation for Civil Aviation Equipment
L'Organisation Européenne pour l'Équipement de l'Aviation Civile

EUROCAE version: 1.02

Arrival Sequence ...

The Commission Implementing Regulation (EU) No 716/2014 requires the upgrade of existing AMAN to pro...

SWIM Registry



SWIM Foundations



Service Definitions



SWIM Registry



SWIM Governance



Discovery of ATM Service Information

The SWIM Registry is a directory of information that supports the discovery of SWIM services. It uses a formal registration process to store, catalogue and manage information about services

[Sign up](#)

Service Descriptions

The registry provides information about upcoming or implemented information services by service providers in SWIM. It provides all information required by service consumers to identify and implement interfaces to information services.

Service Definitions

The registry provides also information about service definitions, that are provider agnostic and reusable descriptions of services that facilitate alignment and interoperability in the implementation of services.

What does the registry enable to do?



Discovery

Discovery functionality enables to identify registered services, obtain their descriptions and follow up their evolution.

- Search
- Taxonomy browsing
- Notification of updates



Registration

Registration functionality enables the controlled and structured registration of services in the registry:

- Validation
- Access control
- Import

Growing number of registered services

<https://eur-registry.swim.aero>

150+ Services

SWIM Governance



SWIM Foundations



Service Definitions



SWIM Registry

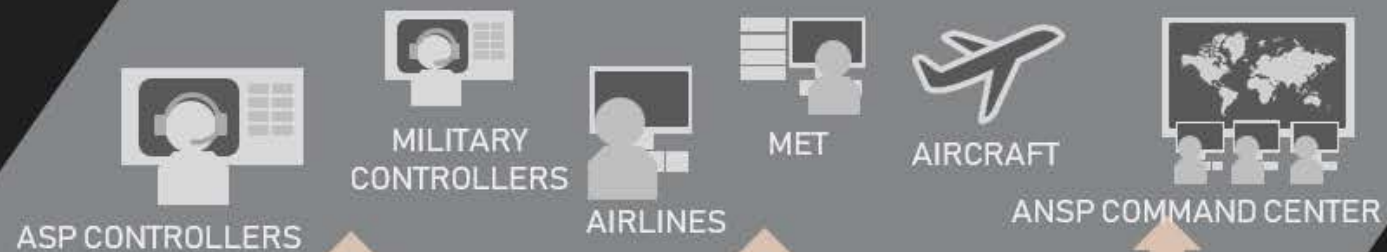


SWIM Governance

S
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SWIM-ENABLED
APPLICATIONS



INFORMATION
SERVICES

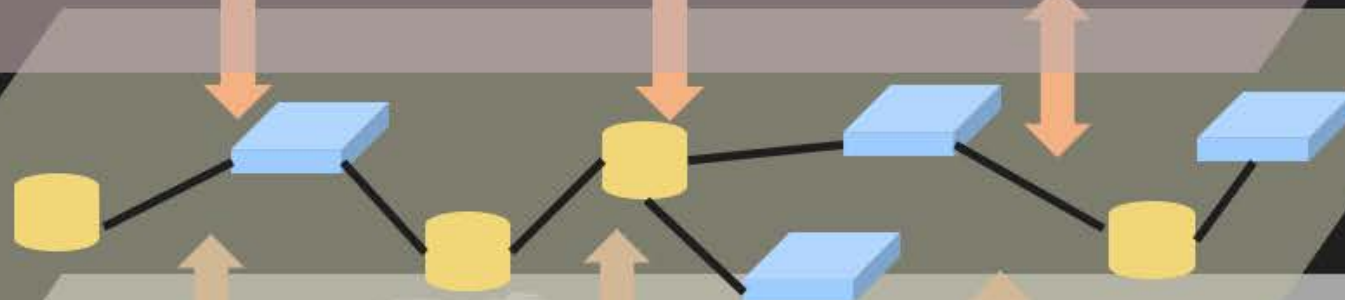


INFORMATION
EXCHANGE MODELS

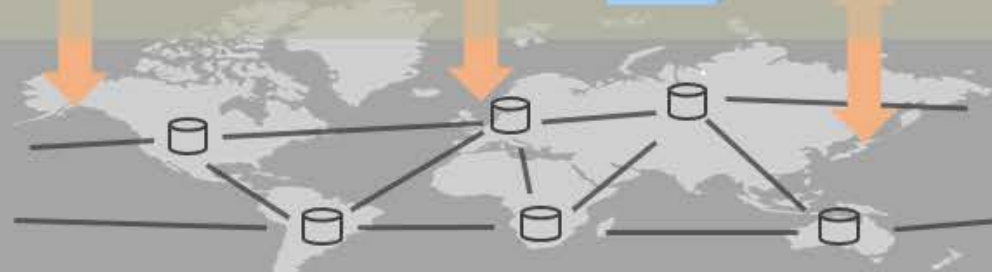


 AIRM

TECHNICAL
INFRASTRUCTURE

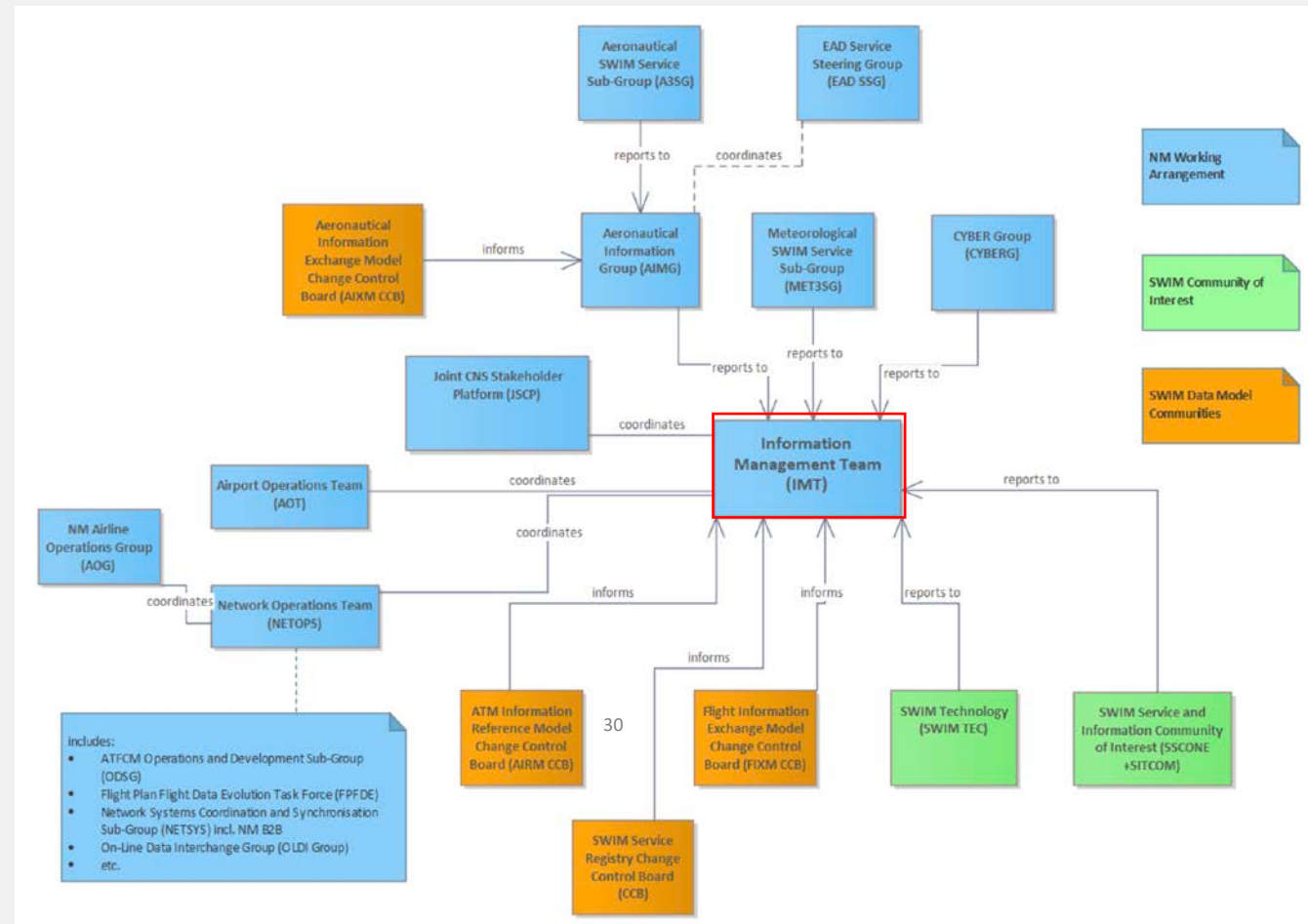


NETWORK
CONNECTIVITY



European Coordination and collaboration for SWIM

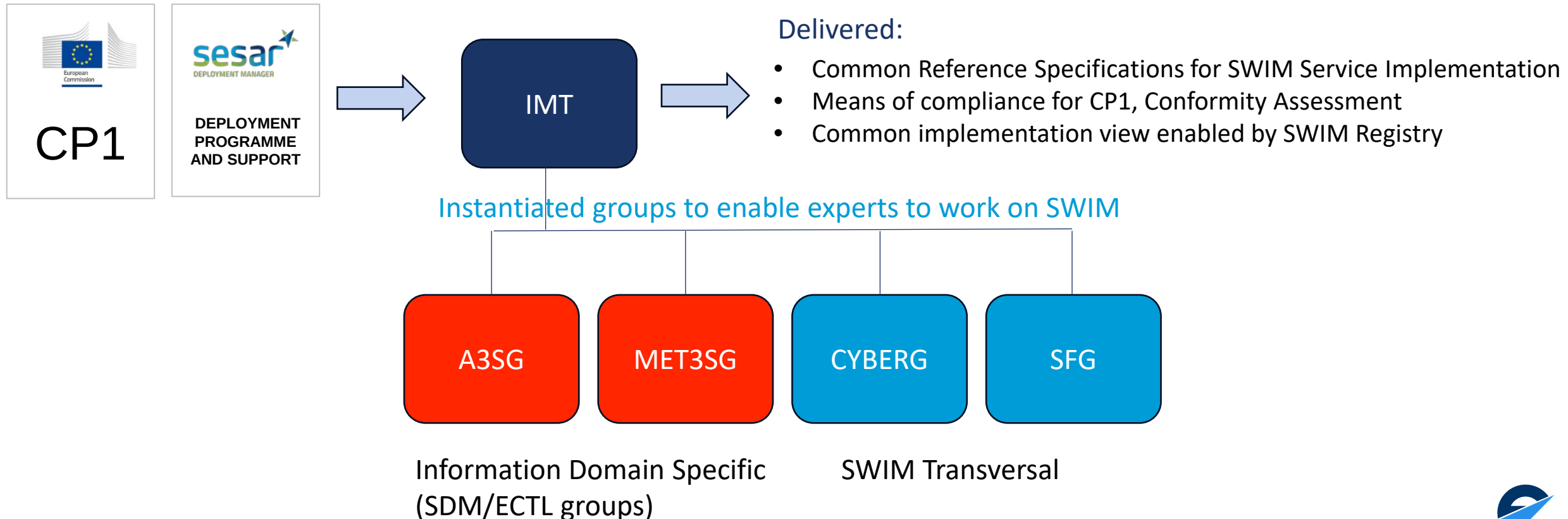
- Decision making at CTO level: **NDTECH**
- Consolidation and Endorsement: **IMT**
- SWIM Domain Focus groups: **MET3SG, A3SG,...**
- SWIM Technical Groups: **SFG**
- Coordination with Operational groups: **NDOP, AOT..**
- Domain Groups, **AIMG, FPFDE,...**
- Information Groups: **AIXM CCB, FIXM CCB,...**



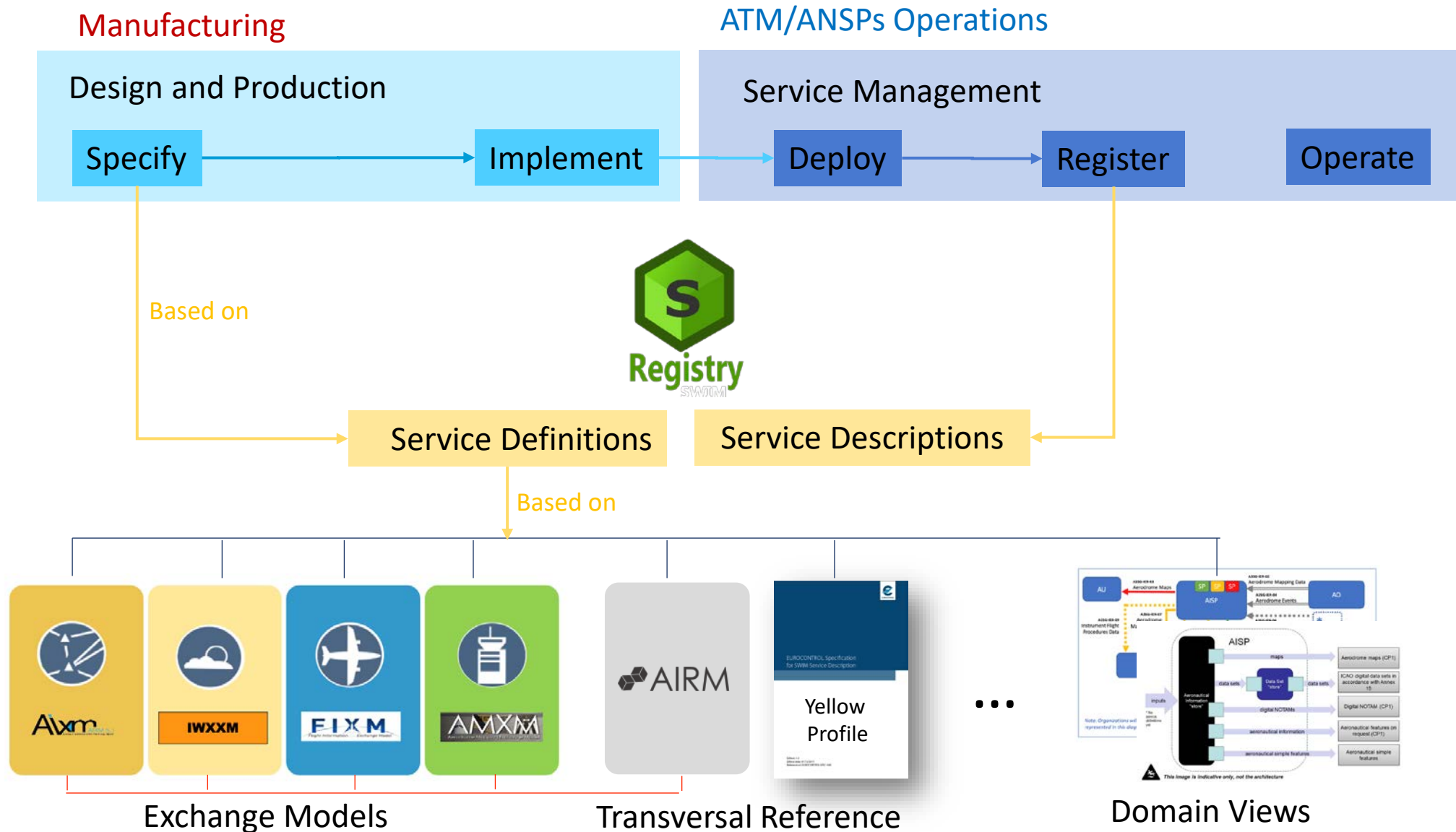
IMT Approach to SWIM Governance

Agreed/Performed scope:

- Coordination of SWIM Standardization Activities
- Development of SWIM Service Definitions and Guidance Materials
- Managing of user requirements for SWIM Registry



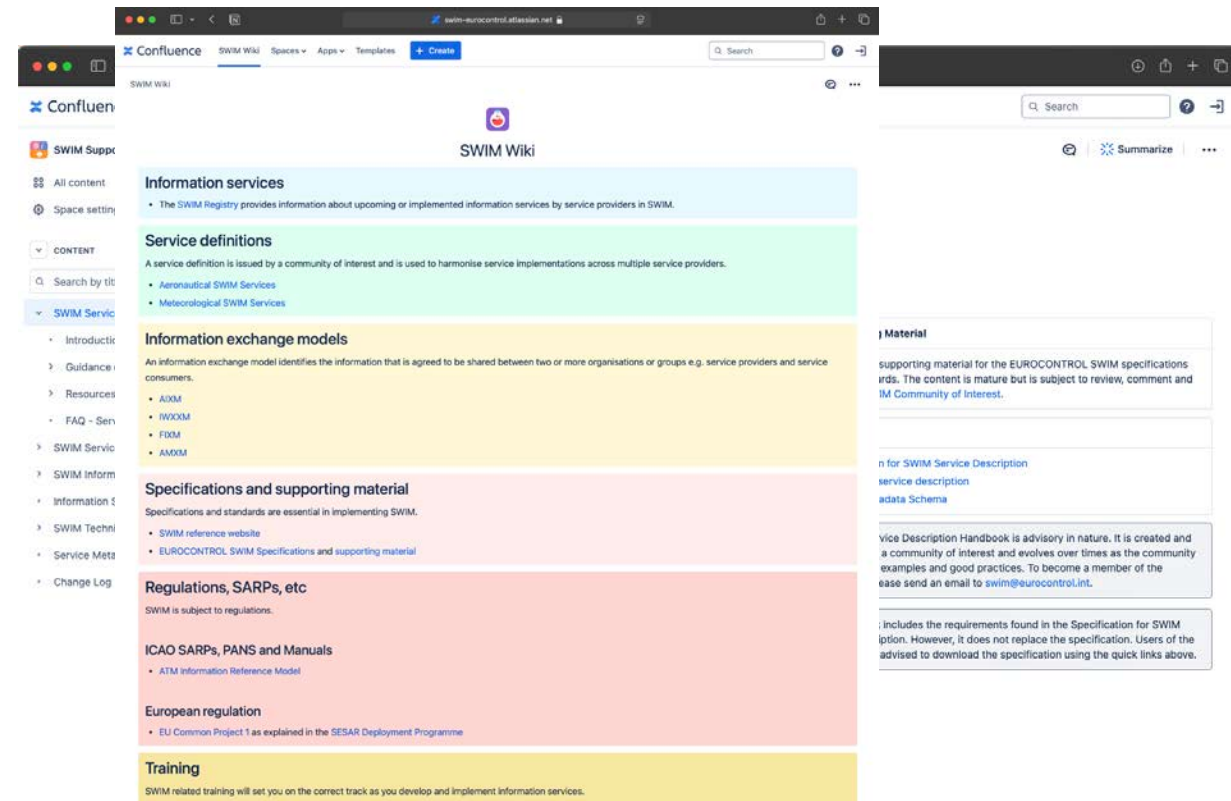
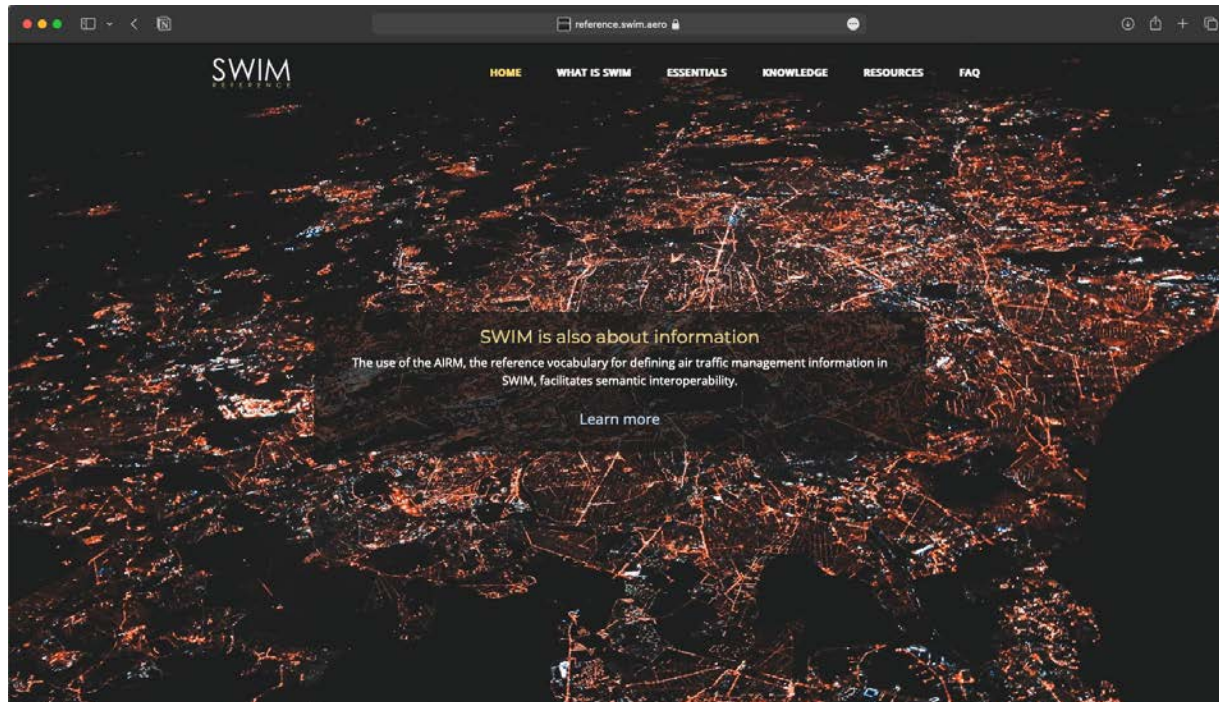
SWIM Service Lifecycle



Supporting Material

<https://reference.swim.aero/index.html>

<https://swim-eurocontrol.atlassian.net>





SUPPORTING
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AVIATION

Thank you!

