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Setting the standard for pan-European service enablement of air traffic management

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### Agenda

- → The SESAR programme and the approach to EA
- Introduction to the System Wide Information Management (SWIM) concept
- → The SESAR Services Working Method and the Information and Services Reference Models
- Lessons learned and deployment preparation



### Single European Sky (SES)



Goals of the Single European Sky Enabling EU skies to handle 3 times more traffic Improving safety by a factor of 10

Reducing the environmental impact per flight by 10%

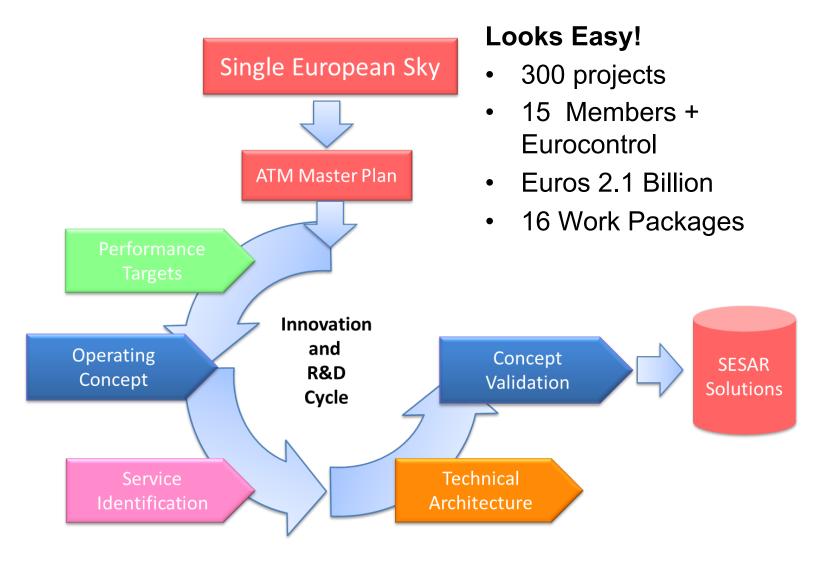
Cutting ATM costs by 50%

Save 8 to 14 minutes, 300 to 500 kg of fuel and 945 to 1575 kg of CO2 on average per flight

- To meet these Goals we need to:
  - Understand what and where the performance problems are in European ATM
  - Identify and validate effective operational Concepts and Technologies
  - Deploy these operational concepts and tools at the appropriate time and place
    - ATM Master Plan
- The role of SESAR (SES ATM Research) Programme is:
  - develop and validate the candidate concepts and technologies



### SESAR Development Cycle





#### **SWIM Definition**

### (System Wide Information Management)

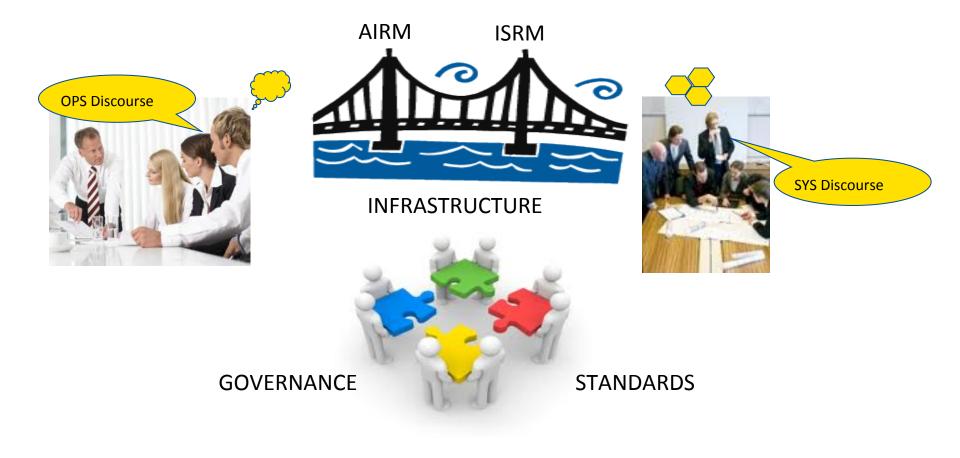


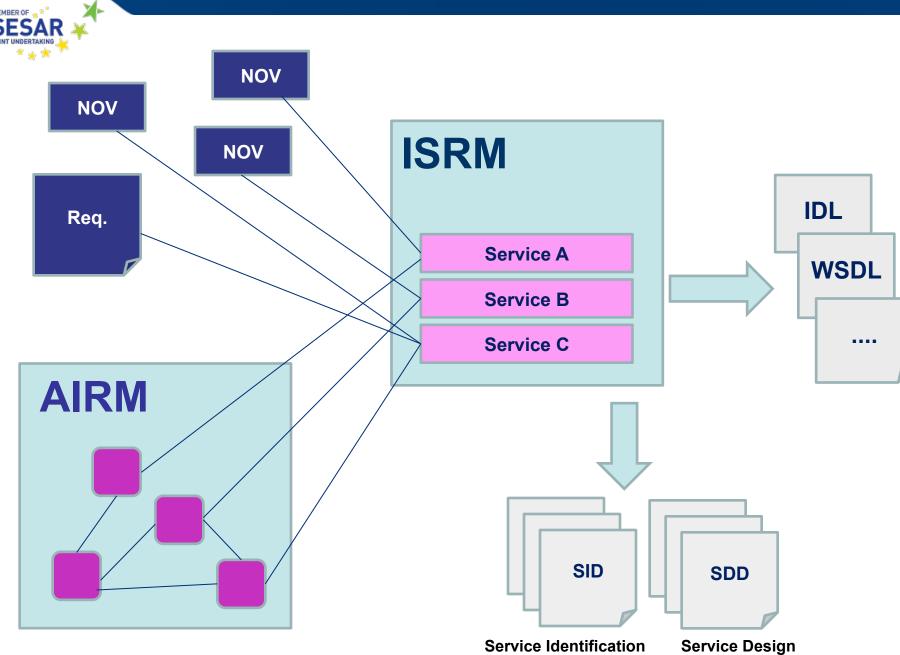
"SWIM consists of standards, infrastructure and governance enabling the management of ATM information and its exchange between qualified parties via interoperable services."

SESAR SWIM DEFINITION: Ref: WP8 SWIM CONOPS



### **SWIM - OPS to SYS bridge**





**Document** 

**Document** 



### AIRM general

#### **AIRM**

**Information Model** 

This provides a reference model of the SESAR information concepts for operational experts.

**Consolidated Logical Data Model** 

This provides a reference model of the SESAR data concepts for service architects and system implementers.

oundation

Primer

Glossary

NATO Architecture Framework (NAF)

payload to AIRM (ATM Information Reference Model) AIRM gives common semantics to different used XMs

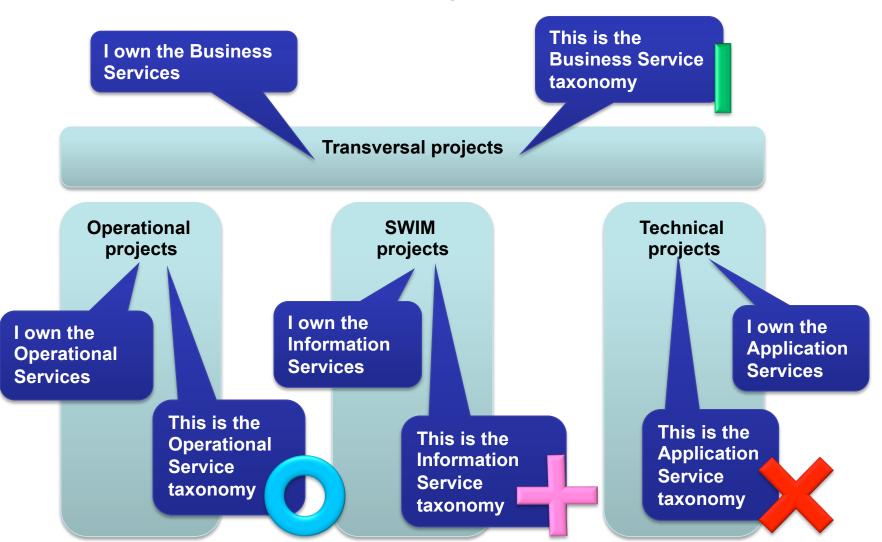


### ISRM general

**Service Portfolio Service Design Model SDD** SID **Service Taxonomy Foundation documentation Service Data Model NATO Architecture** Framework (NAF) **Services Common Model Package**  ATM services on a logical level Service instance shall be compliant with a service in ISRM NSOV views in NAF Services are organized in taxonomy/ies **Identified Services Model** • Service is traced to operational views and/or requirements Semantic operability is reached by tracing of message



### We had a challenge...

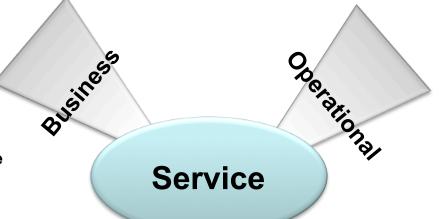




### A common Service concept

#### Why

- ATM Federation value proposition
- Identified problems
- •ATM Goals & change agenda
- ·KPA's/KPI's
- Stakeholder & federative capabilities



#### What

- Actors interaction/ Information exchanges
- Operational processes
- Operational performance

#### When

- Operational & technical roadmap
- Improvement steps & phases
- · Standards evolution

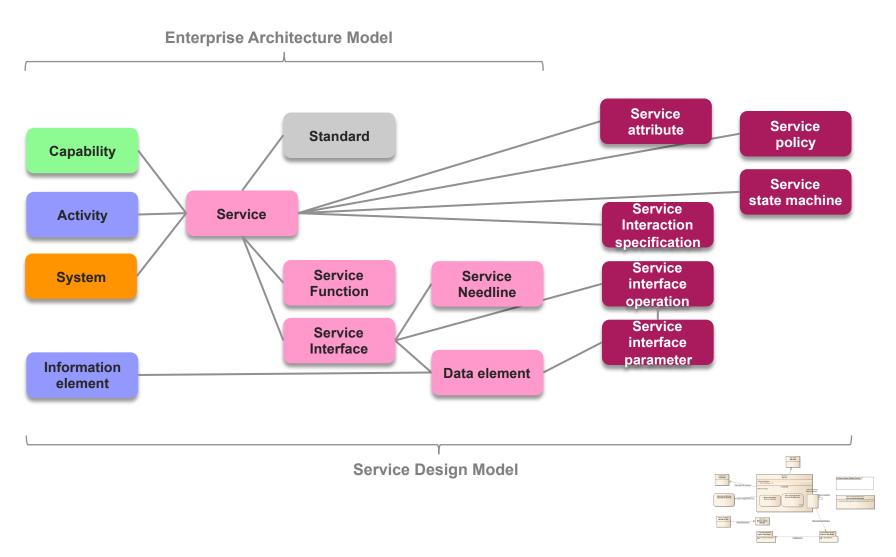


#### How

- Implementation choice
- **Interface descriptions**
- Data models
- **Technical standards**
- **Provisioning to systems**
- Service level monitoring



### The Service Meta Model



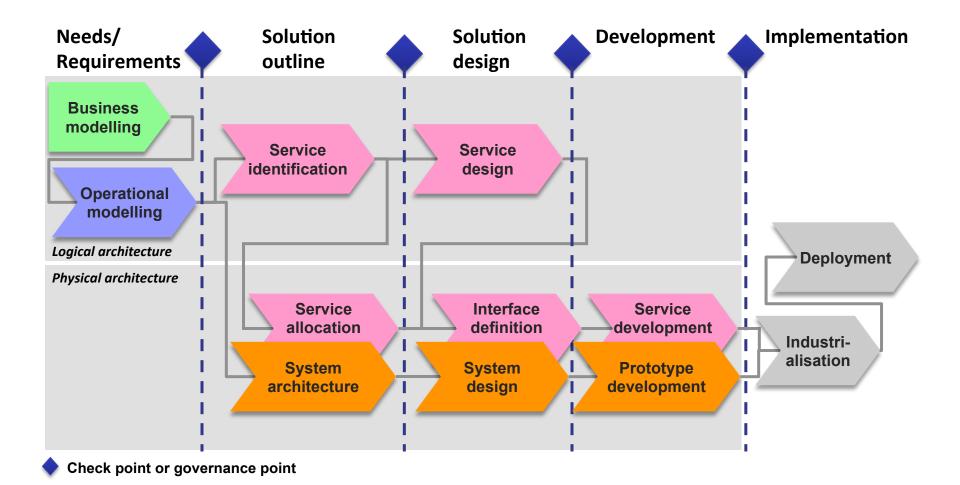


### We had another challenge...

It looks like no one works together on Services **Transversal projects SWIM Operational Technical** projects projects projects I have no one to I don't have I spend 80% of talk to regarding any operational my resources the implementation requirements discussing of my Operational for the Information **Services Application** Services **Services** internally



### The Services Working Method





### We had (yet) another challenge...

I create a Business Reference Model that contains Business Services

#### **Transversal projects**

Operational projects

I describe
Operational
Services in the
Operational
Services
Environment
Description
documents

SWIM projects

I create an Information Service Reference Model for the Information Services

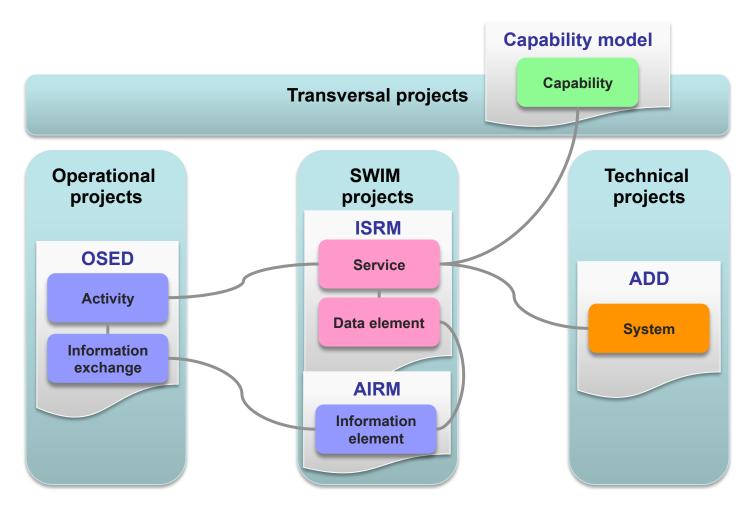
I create an Aeronautical Information Reference Model for ATM Information Technical projects

I haven't decided how or where to document the Application Services

WP8 Information and Service enablement of air traffic management

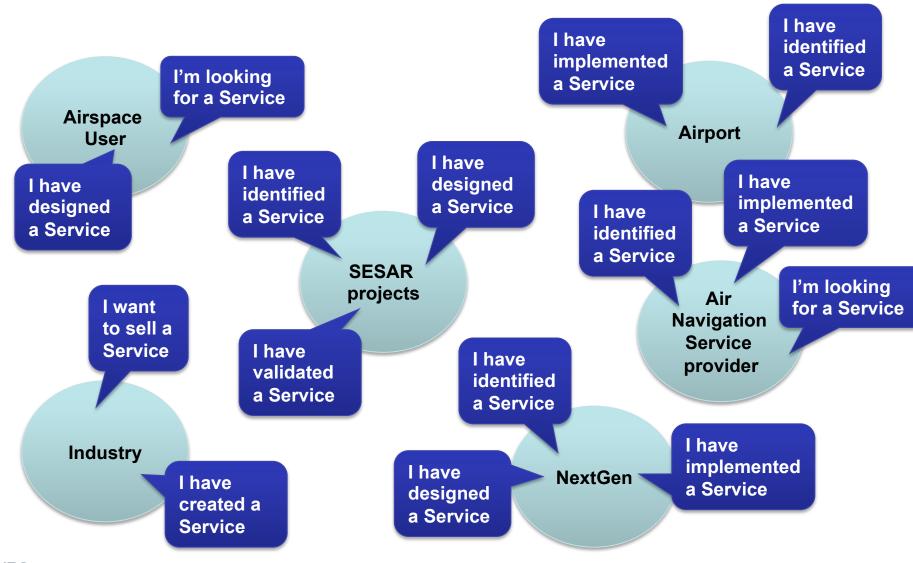


### Integrated deliverables



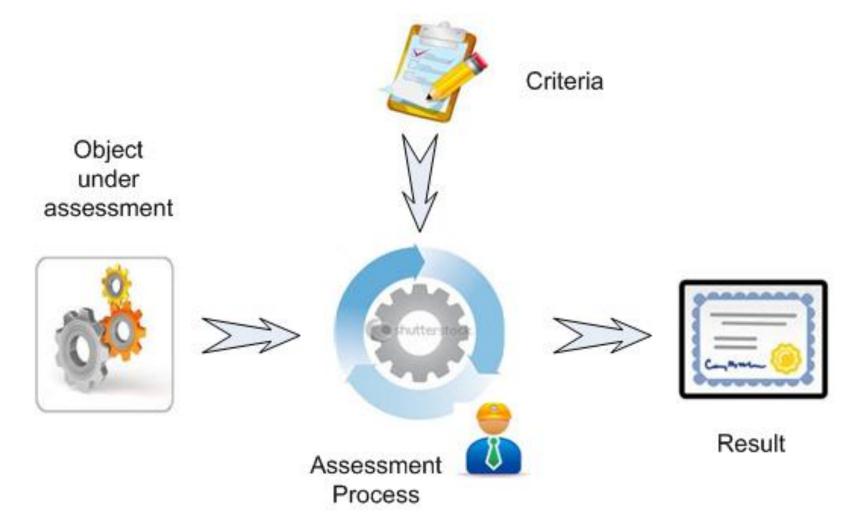


### We will have a challenge...



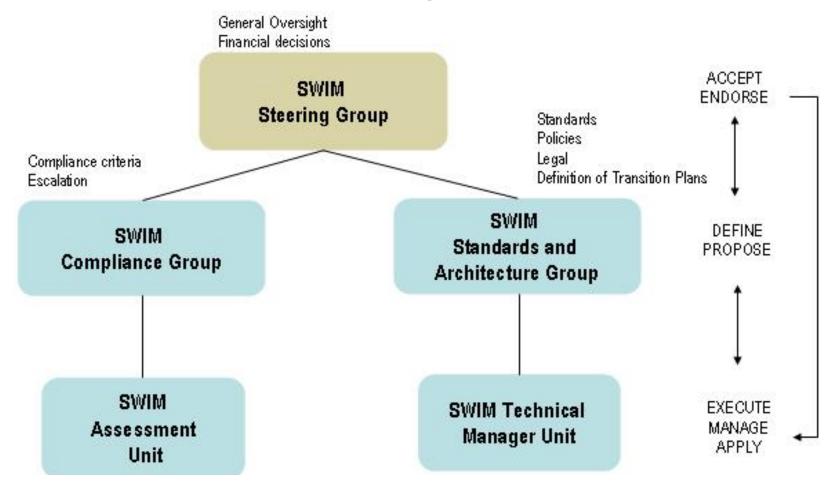


### Compliance and governance model



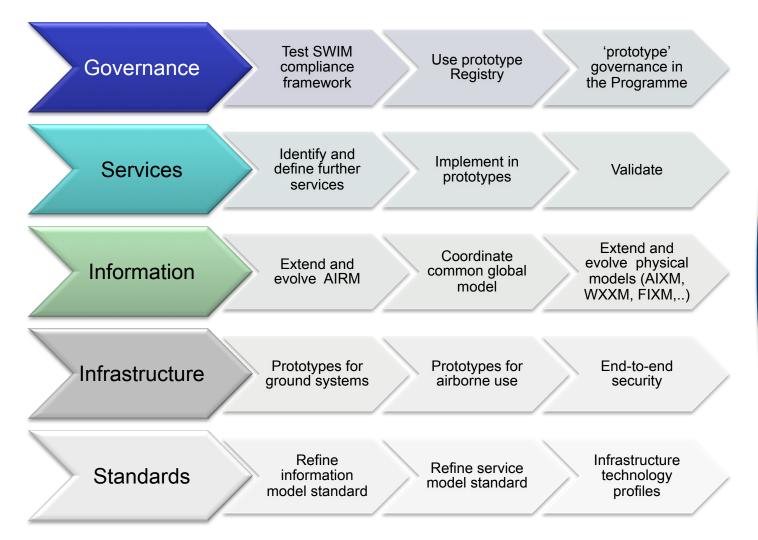


### Compliance and governance model





### What's next with SWIM in SESAR?





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founding members



