SESAR - Overall Framework and Concept

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CND - Collaborative Network Design
What I will talk to …

SESAR
Work Programme
Current Timeline (to Work Programme)
Concept Focus
Opportunity
Objective – “to eliminate the fragmented approach to ATM, transform the European ATM system and synchronise the plans and actions of the different partners and federate resources”.

SESAR is structured in three major phases:

- **Definition Phase** (2005 - 2008 – complete with delivery of the ATM Master Plan)
- **Development Phase** (2008 - 2013 – started and under management of the SESAR JU)
- **Deployment Phase** (2014 - 2020 – implement the results of the Development Phase)
SESAR
Definition - Delivered ..
To manage the development phase a legal entity was created, under European Community law, on 27th of February 2007: The SESAR Joint Undertaking.

The aim of the Joint Undertaking is to ensure the modernisation of the European air traffic management system by federating research & development efforts in the Community.

As such, it will organise and coordinate the development activities of the SESAR project, in accordance with the ATM Master Plan.

www.sesarju.eu
- Programme Management – 4 Levels
  - Programme Level
  - Work Package Level
  - Sub-Work Package Level
  - Project Level

- Project Life Cycle Phases
  - Project Initiation
  - Project Execution
  - Deliverables Acceptance
● Stakeholder Buy-in

Through direct participation in the delivery of projects.
Endorsement of output via ATM Performance Partnership Stakeholders
(recommendation to the EDJU before proposal for acceptance to the Administrative Board)
Current Timeline

Call for binding proposals – 17th December

- Closing date for binding proposals 16th February (at 5 pm)
- Selection by project (according to published selection criteria)

- Results submitted to Administrative Board 17th March
- EU Council Endorsement of Master Plan in March
- Signature of MA Mid-April
- Initiation of Work Programme April (initiation phase per project)

January  February  March  April  May Onwards
Structuring the concept

An integrated and concept driven approach
Concept Focus
Integrated High Performance ATM

- Three key enablers: Time, Arrival Runway based and globally agreed 4D Trajectory definition. And ..... 
  - A clear focus on safety, efficiency, predictability and reduced emissions;
  - An agreed common “Time” reference to match the need for precise predictability at the arrival runway with the Airport airside turn-around integrated into ATM;
  - Globally defined and agreed 4D trajectory exchange format;
  - Common shared data and information network providing for collaboration between partners;
  - Strategically and tactically planned business from gate to gate based on collaboratively agreed business/mission trajectory;
  - Establishment of ATM as an enterprise system where airspace users participates as performance partners and the aircraft is fully integrated into as a component of the system.
Structuring the concept

An incremental approach
Structuring the concept

Time Based Operations

An example...

- High Level Free Routing
- User Preferred Routing
- Dynamic Demand & Capacity Balancing
- “Rolling” Network Operations Plan

Initial 4D Operations → Controlled Time of Arrival

Data Link – Aircraft Derived Data

Integrated Arrival and Departure Management

P-RNAV & RNP

Continuous Descent Arrival

Time Based Spacing

Advanced Flexible Use of Airspace

Low Visibility Procedures

Brake to Vacate Routing

Turnaround

Vortex Departure Separations & Cross wind operations

Continuous Climb Departure

ASAS:

ATSA SURF

ASPA S&M

ATSA ITP

> 2012
Structuring the concept

Trajectory Based Operations

An example of Free Routing between TOC & TOD
Flexible: Dynamic military airspace
Dynamic ATFM using the RBT
Network Operations Plan integrated with SWIM

Trajectory Based Operations: Reference Business & Mission Trajectories
Trajectories revised by Data Link
Tailored Terminal Airborne and Ground Operations
Performance based navigation with trajectory “tubes”

Conflict Free trajectory clearances for pre-defined segments - PTC
Multi Airport arrival & departure Management

User Defined Priority Process

ASAS: ASEP S&M ASEP C&P ASEP ITP

Gate, Surface and Runway management is integrated

Network Wide Management using Shared and Business trajectories Supported by air ground exchanges and SWIM.

> 2017
Structuring the concept

Performance Based Operations

An example of Free Routing between TMA
Dynamic military mobile areas
Airspace Continuum & Two Categories
Network Operations Plan integrated with SWIM

Trajectory Based Operations  User Preferred Trajectories

Trajectory Management Requirements and full SWIM enable the Business
Trajectory and dynamic Network Operations Plan

Integrated Multi Airport arrivals and “tubes in space”

Pilot manages time based and vortex spacing

User Defined Priority Process

LVP with Synthetic Vision Systems

ASAS: SSEP

LVP with Synthetic Vision Systems

> 2020
Opportunity: Initial emphasis on early benefits

EC Council Communication
October 2008

The SESAR JU is encouraged to “to identify, at an early stage, existing and validated technical solutions that can serve as a basis for early deployment to secure early benefits.”
Summary …

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Thank You