SESAR & NextGen
Working together for Aviation Interoperability

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Peter Hotham
Chief of Technology & Innovation
SESAR Joint Undertaking
The Growth Challenge

• 2.5 Billion passengers and a growth in international travel of 8.8% (ICAO 2010 actual figures)

• 1.7 Million out of 9.4 Million flights in Europe were international - in or out of Europe (Eurocontrol 2009 figures)

• Where next? Maybe not quite like this! But to cope, a new and interoperable ATM System is needed
SESAR = 3 Fundamental Changes to ATM

THE 4D TRAJECTORY PRINCIPLE
Improving the predictability of the system

THE SYSTEM WIDE INFORMATION MANAGEMENT
Sharing data across systems and between stakeholders

AUTOMATION
Human operators concentrate on high value-added tasks
SES Performance, Safety & Cost targets

- 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%
Air Transport in Europe – 2050?

• From 9.4 Million to 25 Million Flights and from 751 Million to 16 Billion passengers.

• **Ground infrastructure** comprising major hubs, secondary airports, vertiports and heliports **connected to a multimodal transport network.**

• **Passenger and freight** Infrastructure, services, operators, aircraft, airports, ground-handlers and the military are **integrated into global interoperable multi-modal networks** provided by a small number of organisations.

• **Shared information** platforms and **new IT concepts** facilitate planning and decision-making.

• Easy passenger access to airports – **seamless door-to-door services.**

• Airport design, processes and services are based on new highly efficient concepts with **disruption resilient operations.**

• Levels of automation mean unmanned flights are commonplace, opening new aviation applications.
The Global Context

- SESAR is developing the new ATM System for Europe.
- Europe cannot be isolated in the global ATM context.
- Interoperability is key to ensuring coherent global solutions.
Interoperability – What does it mean?

- It does NOT mean the same solution everywhere.
- It does mean ‘systems’ able to work together.
- ‘Systems’ in this context are at many different levels.
- The Aircraft is at the heart of worldwide interoperability.
- Information exchange at the global level is becoming essential.
Framework for Global Interoperability

The Target

Interoperability
Achieved with:
Optimum Solutions
Meeting:
Different Needs
Operating in:
Different Environments
Global Coordination and Interoperability

While regional differences require different solutions there are some issues where interoperability can only be achieved through the adoption of common standards and common reference frameworks at a global level.
Global Cooperation & Interoperability

Standards built on SESAR and NextGen developments will support harmonised Implementation and Regulation.

Global consensus to ensure world-wide interoperability.

Programme level coordination enhanced by interoperability and wider industry buy-in.

Development of a common avionics roadmap is a priority for SESAR.
EU–US Coordination - SESAR-NextGen

MoC Signed Early March with Annex 1

Next CCOM meeting: end May

SJU & FAA Working Group Leaders

Working Group 1

Coordination Plans

Phased launch – Priority based (Expected June)

SESAR Member Focal Points

SJU & FAA Working Group Leaders Agreed

Priorities agreed and work scope drafted

Coordination Committee

5 Working Groups

5 Appendices

Annex 1

EU

US

Annex

Political level

Administrative level

Appendices being exchanged with US (via FAA)
Appendices, Working Groups and Coordination Plans 1

Transversal Activities

1. Operations concept convergence and service definitions.
2. Evolution of separation provision based on 1.
3. Coordination of standardisation and regulatory road-mapping including implementation planning synchronisation.
4. Business case, investment planning and coordinated delivery of technical and operational changes to achieve/maintain seamless operations from a user perspective.
5. Environment.
6. Coordination of technical efforts in support of global and ICAO standardisation activities.
7. Cooperation on Safety & Security Methodology and Target Setting.
Appendices, Working Groups and Coordination Plans 2

Information Management

1. System Wide Information Management (SWIM) interoperability.
2. Aeronautical Information Management (AIM) interoperability.
3. Meteorological information exchange.

Trajectory Management

1. Common trajectory definition and exchange.
2. Flight planning and dynamic flight plan updates.
3. Traffic management (including trajectory integration and prediction).
4. Unmanned Aircraft Systems (UAS) integration into ATM.

CNS & Airborne Interoperability

1. Airborne Collision Avoidance System (ACAS).
2. Avionics technology and applications roadmap.
3. Airborne Separation Assistance Systems (ASAS) for air/air and air/ground separation assistance.
Appendices, Working Groups and Coordination Plans

**CNS & Airborne Interoperability**

1. Data-link technology.
2. Data-link services (applications).
5. Automatic Dependent Surveillance (ADS) services and technology.

**Collaborative Projects**

1. Atlantic Interoperability initiative to Reduce Emissions (AIRE).
2. Improvements in monitoring and position tracking of aircraft over oceanic and remote regions.
Wider Global Cooperation

SESAR international cooperation is wider than the critical EU-US agreement.

SESAR is also working directly with other major global players in ATM.
SESAR Coordination with ICAO

• The goal is Global Interoperability and ICAO sets the framework for achieving this.
• SESAR will support ICAO and the member states in defining the way ahead.
• Taking the opportunity of ANC12 to set the agenda going forward.

SESAR is committed to working with ICAO to establish clear needs for high level global standards, supplemented by harmonised industry standards to support ‘block upgrades’ of the future ATM system.
Building the Global Blocks

Operational Demonstration Validations

Global Block 1  Global Block 2  Global Block 3

SESAR

NEXTGEN GATE TO GATE

CARATS Collaboration Actions for Resilience of Air Traffic System
What is an ‘Aviation System Block Upgrade’?
Global Interoperability

• Aeronautics & Aviation are global businesses

• There are and will remain different operating environments (both within & outside Europe)

• International collaboration is essential for Air transport operations (ICAO)

• Greater levels of connectivity across the network need International collaboration beyond operations

• Investment in Aerospace to deliver Air Transport solutions is essential if Europe is to maintain its global influence

• We cannot afford not to think global and act collaborative
Thank You