

# *FAA Eurocontrol Symposium*

## **European Research Needs**

### *Baltimore 2005*

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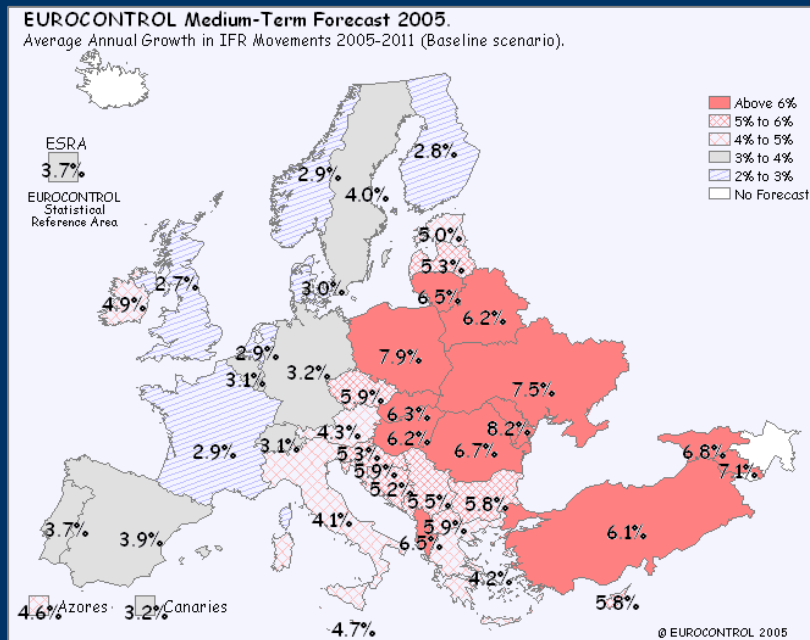
# My Presentation

Major European medium and long term research initiatives

ATM Master plan and research processes

# Demand

- Aviation is in full expansion
- Traffic demand up by 5%
- Some Eastern European Countries with spectacular increases of 20% +

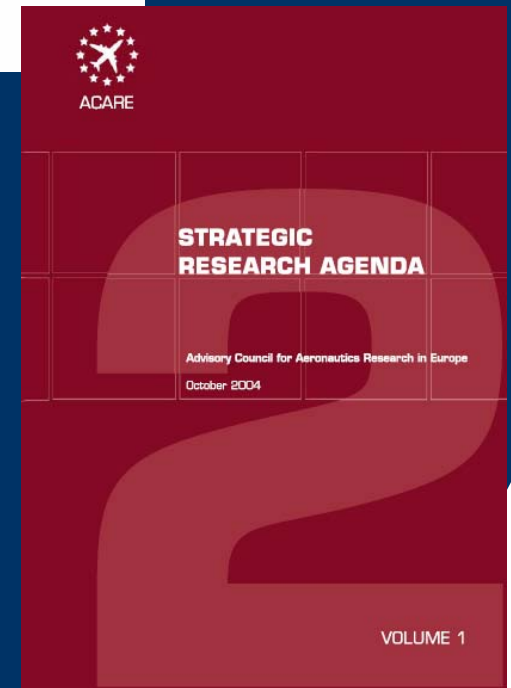


**Growth 2005-2011**



# Europe is getting its act together!

- Positioning as
  - ✓ Leader
  - ✓ Competitor, and
  - ✓ Innovatorin global aviation
- Through "SESAME"  
Single European Sky Implementation Programme
- "ACARE SRA 2"  
Advisory Council for Aeronautics Research in Europe  
Strategic Research Agenda 2



# SESAME (1)

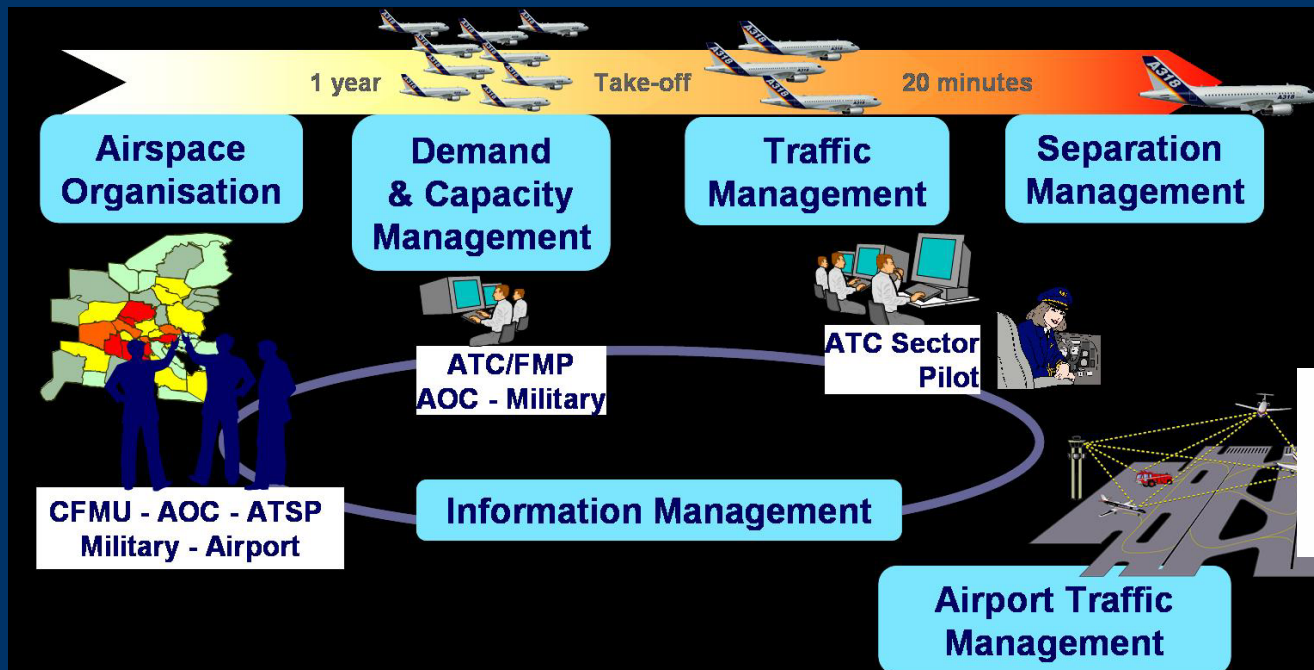
- Responding to the European Commission's legislation package
  - Single European Sky
- Joint Eurocontrol / European Commission initiative
- Involves all Air Transport System stakeholders
- A research to implementation master plan
  - Medium to long term planning
- Associated research and implementation programmes

***SESAME***

# SESAME (2)

- ATM2000+ and Eurocontrol Operational Concept Document  
+ Portfolio of concept and performance documents  
detailing an integrated ATM system

Operational Concept –  
Vision for 2020  
+ CATM HLOC  
Concept of Operations  
+ CATM Mode of Operation  
Operational Requirements  
+ CATM OSEDs  
+ OATA Use Cases  
Logical Architectural Model  
Performance Requirements



# SESAME



# ACARE

- Strategic Research Agenda 2 - SRA 2:
  - A holistic and integrated view of the European Air Transport System
  - Meeting societies needs whilst seeking global leadership
  - High level target concepts - extreme challenges for leading edge research
- Five High Level target Concepts
- ATM – a main pillar in SRA 2
  - Operational concept vision
  - Input to each “High Level Target Concept”
  - Air Traffic Management Challenge -

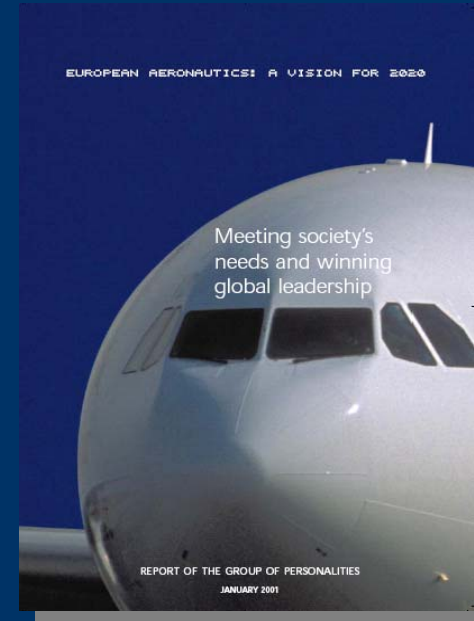
The key infrastructure baseline for the Air Transport System

Safely catering for 2 / 3 times traffic growth scenarios > 2020



# VISION 2020

- 'Group of Aeronautics Personalities' goal for Europe
  - Uncontested world leader in the field of aeronautics.
  - Through:
    - Coordinated collaborative effort, strengthened and guided by a single shared vision & creation of a common framework for research and technological development.
  - To better serve the needs of European society and responding to issues of public interest including:
    - Noise reduction, emission reduction, reduced travel delays, & safer air transport.



The EUROCONTROL Air Traffic Management 2000+ strategy document is updated and aligned with the Vision 2020 and **ACARE** Strategic Research Agenda 1





# ACARE

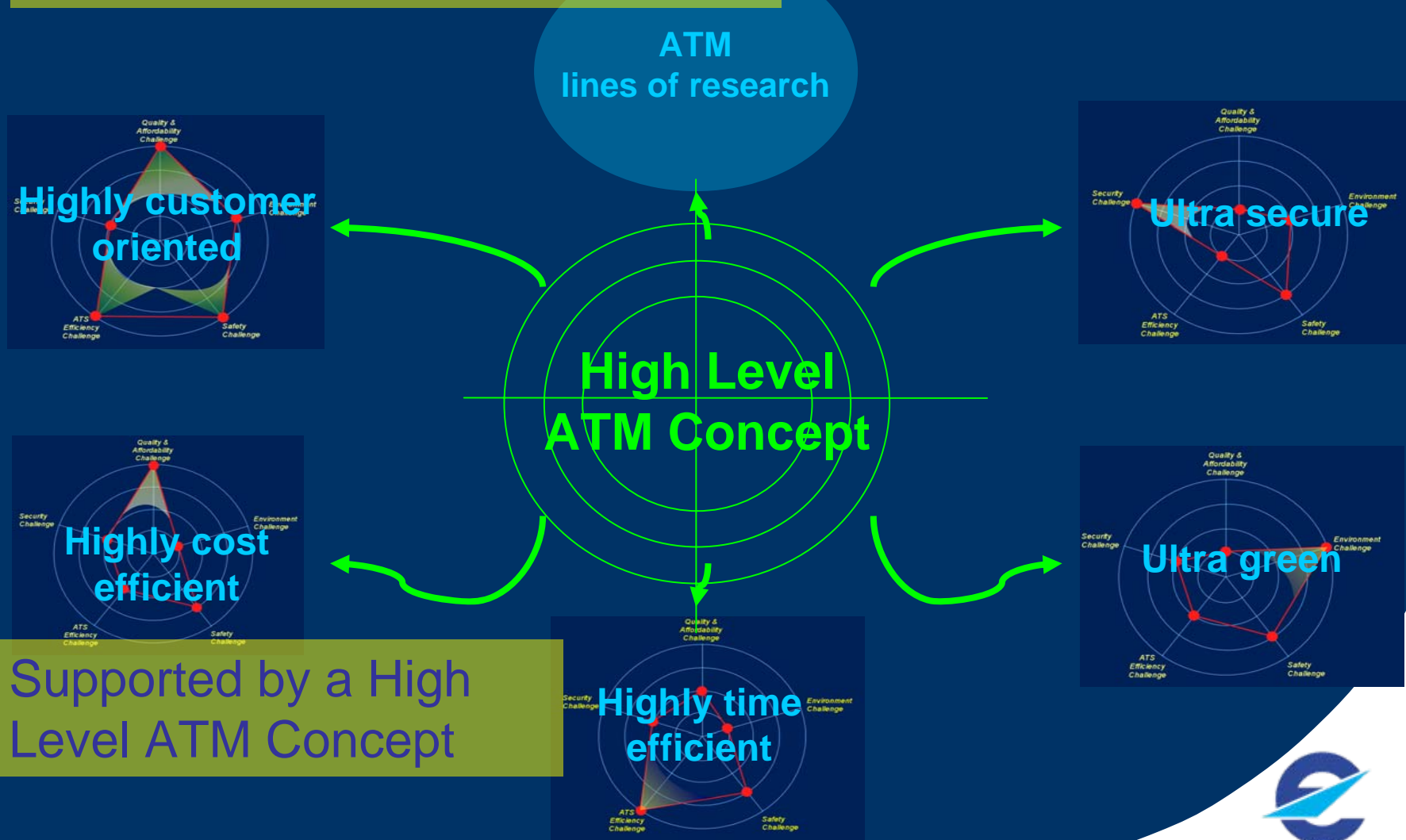
- Five High Level target Concepts
  - Ultra Green
  - Ultra Secure
  - Highly Cost Efficient
  - Highly Time Efficient
  - Highly Customer Oriented





# ACARE

## Five High Level Target Concepts



Supported by a High Level ATM Concept



# ACARE

- Main themes from the ATM concept:
  - Safety is “non- negotiable”
  - Modes of Operation
    - Dependent on Levels of Service
    - Density of Traffic
  - Exploiting
    - Network wide managed system
    - Integrated Air Ground approach - System Wide Information Management
    - 4D Trajectory Management and precision navigation
    - Aircraft Autonomous Operations / Airborne Separation Assistance System
    - Human System Automation Support – decision support tools
    - Exploiting Aircraft Communication and Navigation capability
    - Integrated Airport and ATM processes with environment considerations



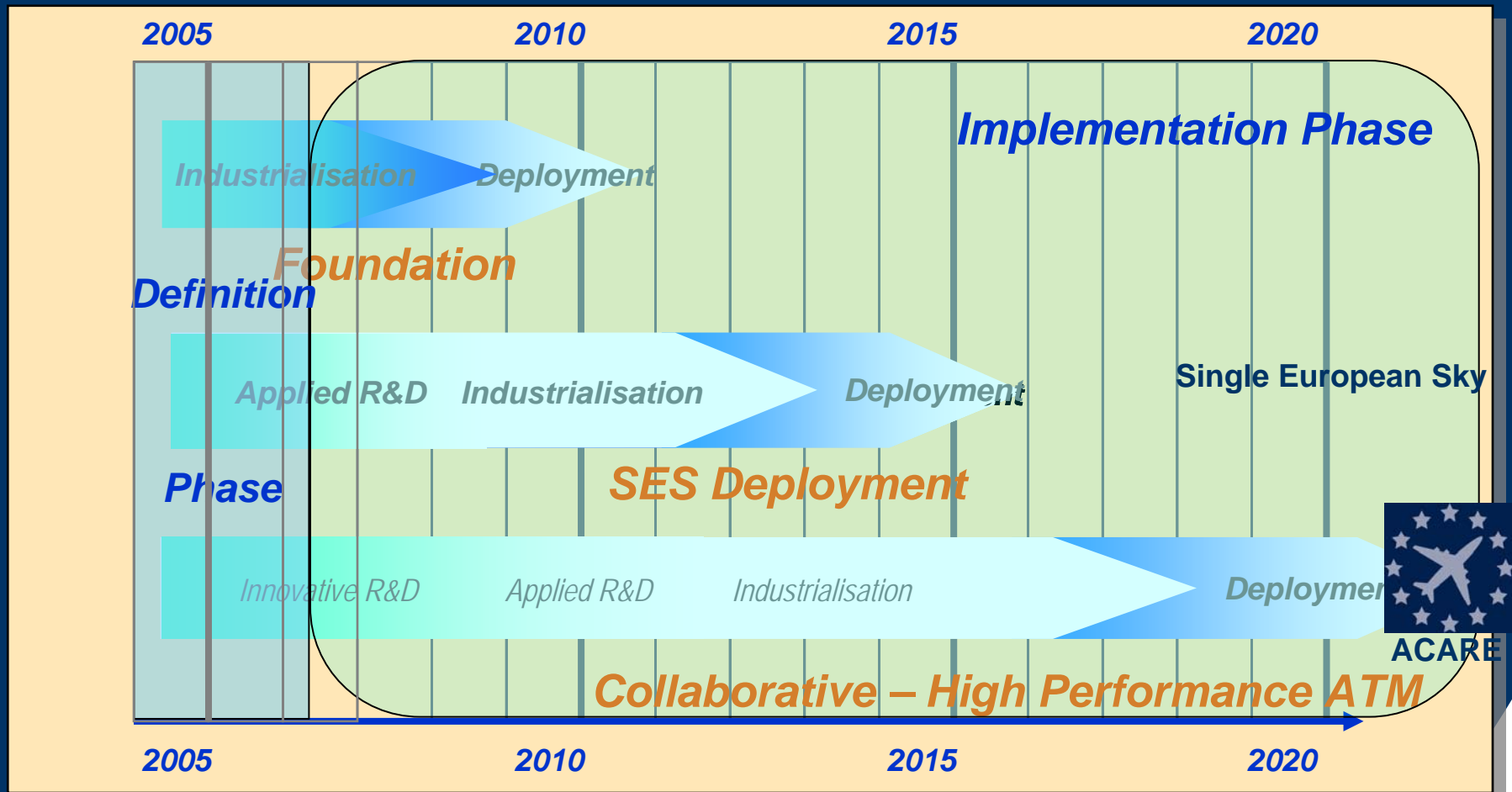
# ACARE

- High Level Target Concepts – posing stretch targets to ATM:
  - All weather operations
    - Airport – low visibility operations
    - En-route – weather avoidance
  - Future Traffic Mix
    - Hub operations and point to point
    - Very large aircraft
    - Regional & Business aircraft
    - Sport & Personal Air Vehicles
    - Vertical take off and landing vehicles
    - Un-manned Air Vehicles
  - Trade-Offs yet to be understood between concepts

# SRA 2: EUROCONTROL & The European Commission

- Cohesion through:
  - Joint Programme Board for aligning common ATM research initiatives
  - SESAME for defining the future research to implementation needs
  - ACARE SRA 2 for long term research – High Level Target Concepts
- Mechanisms include:
  - European Frame Work programmes
  - Trans European Networks (TEN-T)
  - Eurocontrol research programme
- Research Organisation:
  - Aligned with the content of the Strategic Research Agenda – exploiting synergy between EUROCONTROL and the European Commission research capabilities
  - Linking through the European ATM Master Plan as defined by SESAME

# Fitting it together - ACARE & SESAME



Europe - positioning as Leader, Competitor, and Innovator in global aviation



Thank You