

‘Working Together’ for Safety within
The Single European Sky

SESAR

Today's Partners for
Tomorrows Aviation

**Our Contribution to a
Safer Sky**



Contents



- ⇒ Single European Sky
- ⇒ SESAR: Why, What and Who?
- ⇒ Goals, Concepts and Key Features
- ⇒ The Work programme
- ⇒ Safety in the Work programme
- ⇒ Role of Standardisation
- ⇒ Conclusions

Single European Sky 2nd package

- **Based on 4 pillars**

- **PERFORMANCE**

- **CAPACITY**

- **SAFETY**

- **TECHNOLOGY**



The SES II Pillars

- **Performance**
 - Introduction of a **performance-driven approach** and **framework**
 - Includes **independent performance review** on safety, environment, capacity and cost efficiency.
- **Capacity**
 - Implementation of an integrated **Capacity Management** with an increased predictability.
- **Safety**
 - Effective use of the **Community approach**. **Extension of EASA competence** to airports, air navigation services and Air Traffic Management.
 - **Strengthen** the oversight of National Supervisory Authorities.
- **Technology**
 - Drive **technological improvements** (converge fragmented R&D efforts) in line with the **ATM-Masterplan**.
 - **SESAR** is the operations, validation and **technological / industrial component** of the Single European Sky.

Why SESAR?



European Challenges:

- Capacity: Air Traffic to double by 2025
- Safety: Improvements linked to growth
- Environment: Growth must be 'green'
- Economics: Incentives & liberalisation
- Operations: Eliminate fragmentation
- Technology: All above & interoperability



A new Air Traffic Management System is required:

SESAR

For the benefit of all air space users:

airlines, airports,

**Air navigation service providers,
military, passengers & citizens**

SESAR is organised in three phases:

The definition phase

Co-funded by the EC and EUROCONTROL and *under the responsibility of the Agency* Resulted in the **European ATM Master Plan**

The development phase

under the management of the **SESAR Joint Undertaking**

Based on the Master Plan, results in **Standards, new operational procedures, new technologies and pre-industrial components,**

The deployment phase

Implements the results of the development phase, delivers **the performance increase** foreseen in the ATM Master Plan

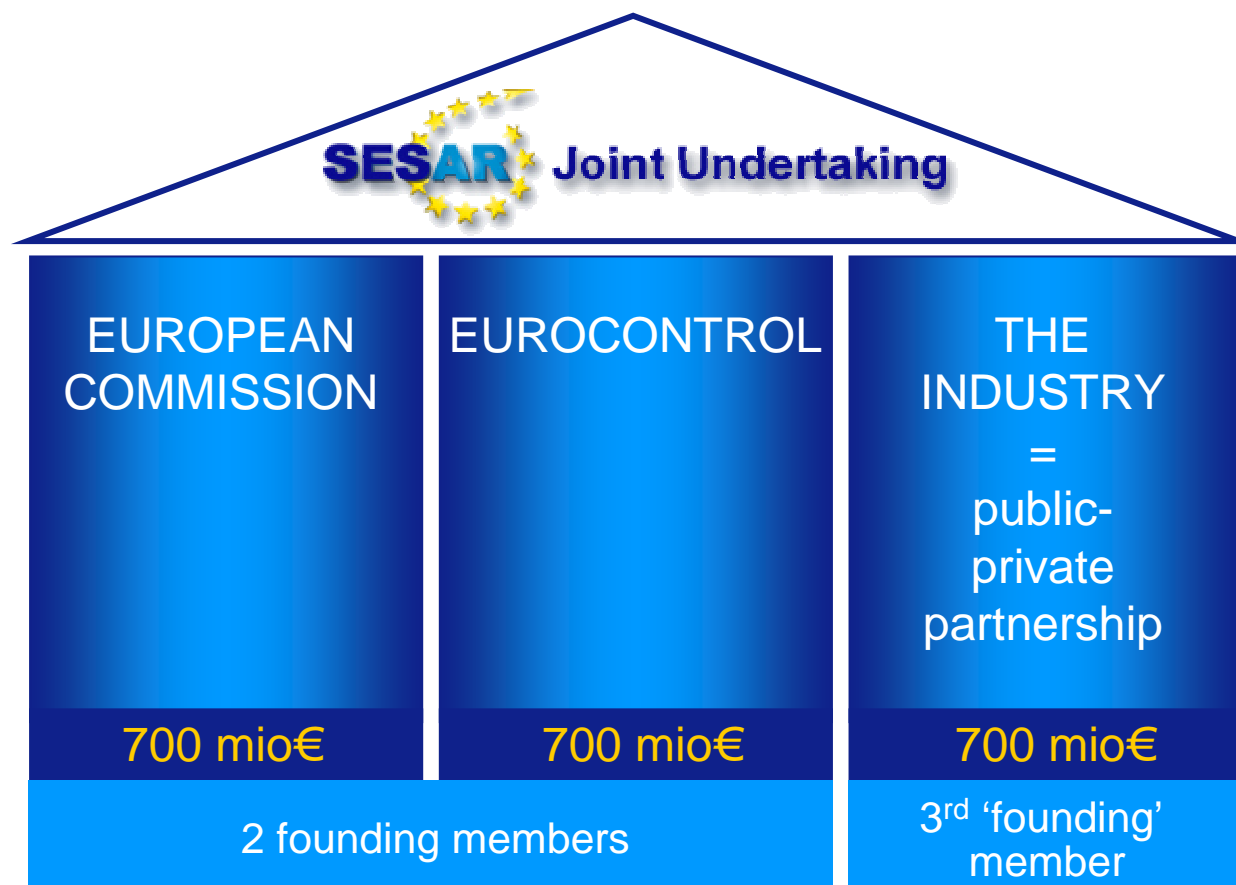
2006-2008

2008-2016

2015-2025

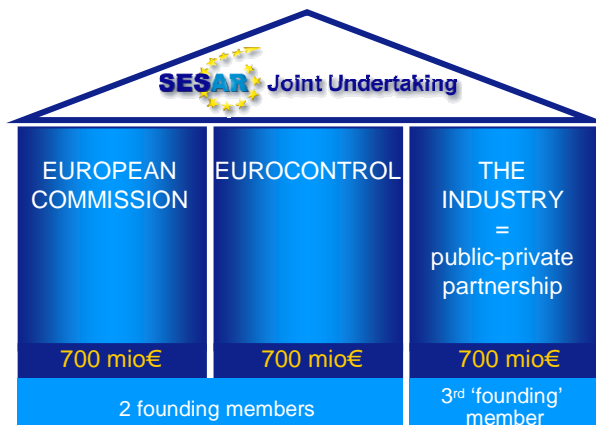
SESAR Joint Undertaking

Created by the
European Union Council Reg. N°219/2007



Role of SESAR Joint Undertaking

- Budget of € 2.1 billion
- Responsibilities:
 - Through partnership,
 - ensure the modernisation of the European air traffic management system,
 - execute and maintain the Air Traffic Management Master Plan,
 - coordinate and to concentrate all relevant research and development efforts,
 - ensure the involvement of all stakeholders of ATM sector.
- Led by Patrick KY,
Executive Director // 25 FTE



The 4 Goals of SESAR



Enabling handling
3 times the traffic



Improving safety
by a factor of 10

Reducing by 10%
the **environmental**
impact
per flight

Cutting ATM
costs by 50%

Operations Concept evolution

PAST



Procedural Control

Estimate the current and the planned a/c positions

TODAY



Radar Control

Know the current and **estimate** the planned a/c positions

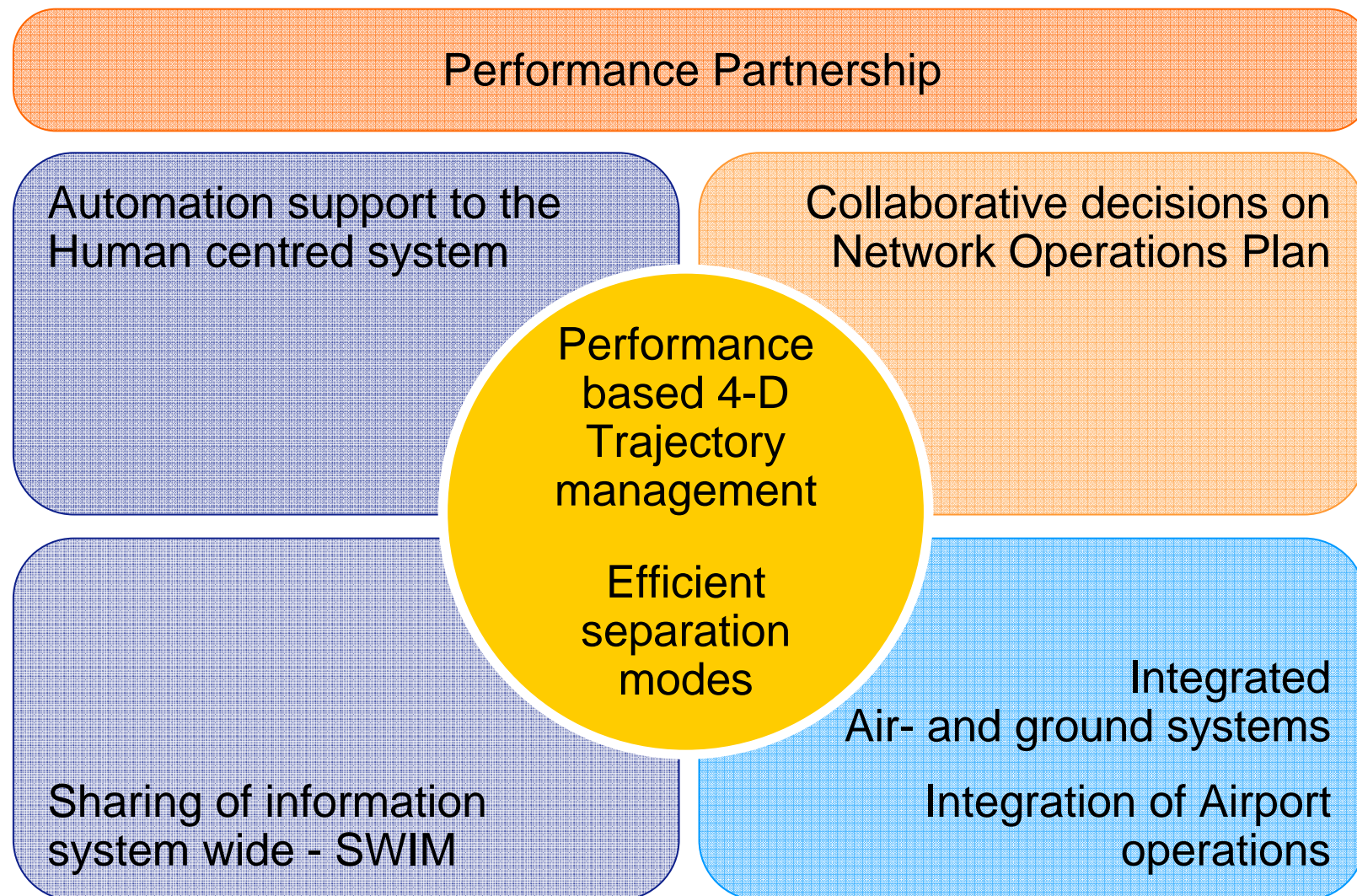
FUTURE



Trajectory Management

The Business trajectory principle:
Define together optimal flight path

Key Features of a new ATM System



The Work Programme



- Descriptions developed in partnership under a WBS:
 - Operations & Validation Workpackages
 - Systems Development and Prototyping Workpackages
 - Transversal - strategic Workpackages
 - Transversal - support workpackages.

An initial group of 15 candidate members:

- Air Navigation Services Providers
- Airport Operators
- Manufacturing industry

committed to the SESAR programme!

- Other Stakeholders being engaged through a Performance Partnership.

Safety in the Work Programme



- **Safety related development activities**

- Automation Support (tools):
 - Research and Develop Safety enhancing technology and operations that support the human-centred system.
- ATM System Development:
 - Integration brings more stakeholders and their system interactions into consideration,
 - Information Sharing reduces duplication and could reduce the risk of error,
 - Trajectory Management fully includes the aircraft and airline operations in the concept.
- SESAR to provide evidence the technology and operations will meet safety targets when used as designed, the safety argument.

- **Technology R&D and Safety**

- Transversal workpackage includes safety management across the programme.

Safety in the Work Programme



- **Our part in the Safety Argument**

- Increased levels of Integration require a coherent contribution to safety.
- Safety taken seriously within the SESAR Work Programme, all projects will address safety
- Safety best-practice and assurance implemented as a transversal activity in the Work Programme.
- Role of the National Supervisory Authority (NSA) applies at Deployment but also depends on the right evidence from earlier phases of work.
- Ad Hoc working arrangements will be put into place in order to ensure an adequate participation of regulatory authorities in the technical activities.
- A Chief of Regulatory Affairs is being recruited
- Note: SESAR JU is not the accountable body for delivery of a finalised safety argument; this is part of deployment phase (out of SJU scope).

Role of Standardisation



- **Regulation 552/2004 - Interoperability**

- Applies to Member States & ANSP's, although SJU will be creating common technical architecture and specifications.
- It is for the ANSPs (supported by industry) to make declarations of compliance/verification with essential requirements and implementing Rules.
- Our contribution will allow industry to deliver a 'Technical File' including evidence on compliance with SESAR and consideration of safety.

- **Role of Standardisation**

- During development the SJU and partners will identify the need for appropriate technical standardisation and co-ordinate this across the programme.
- Technical standards can lead to improved design assurance.
- Success is dependant on supply industry contribution and Standardisation bodies to buy-in and develop the standards.
- Community or Eurocontrol Specifications can be used as a means of compliance to an Interoperability Regulation.

In Conclusion



- **The SJU takes Safety seriously.**
- The Work Programme addresses safety both within projects and across the programme (transversal).
- **The SJU promotes a benefit driven approach.**
- A step-by-step approach with a clear outcomes that is user-driven, focusing on delivery of results every 1-2 years.
- **The SJU will specify, develop, prototype and validate**
- The SESAR Development phase includes a lifecycle from research through development and prototyping to validation ready for deployment.
- **The SJU leads Operational and Technological Innovation (paradigm shift).**
- With innovation comes an opportunity to re-visit how ATM operational and system safety can be assured. We welcome the opportunity to work with EASA (in their oversight of the NSA's role) and others to ensure we are making the best preparation for the safety argument needed in the Deployment Phase.

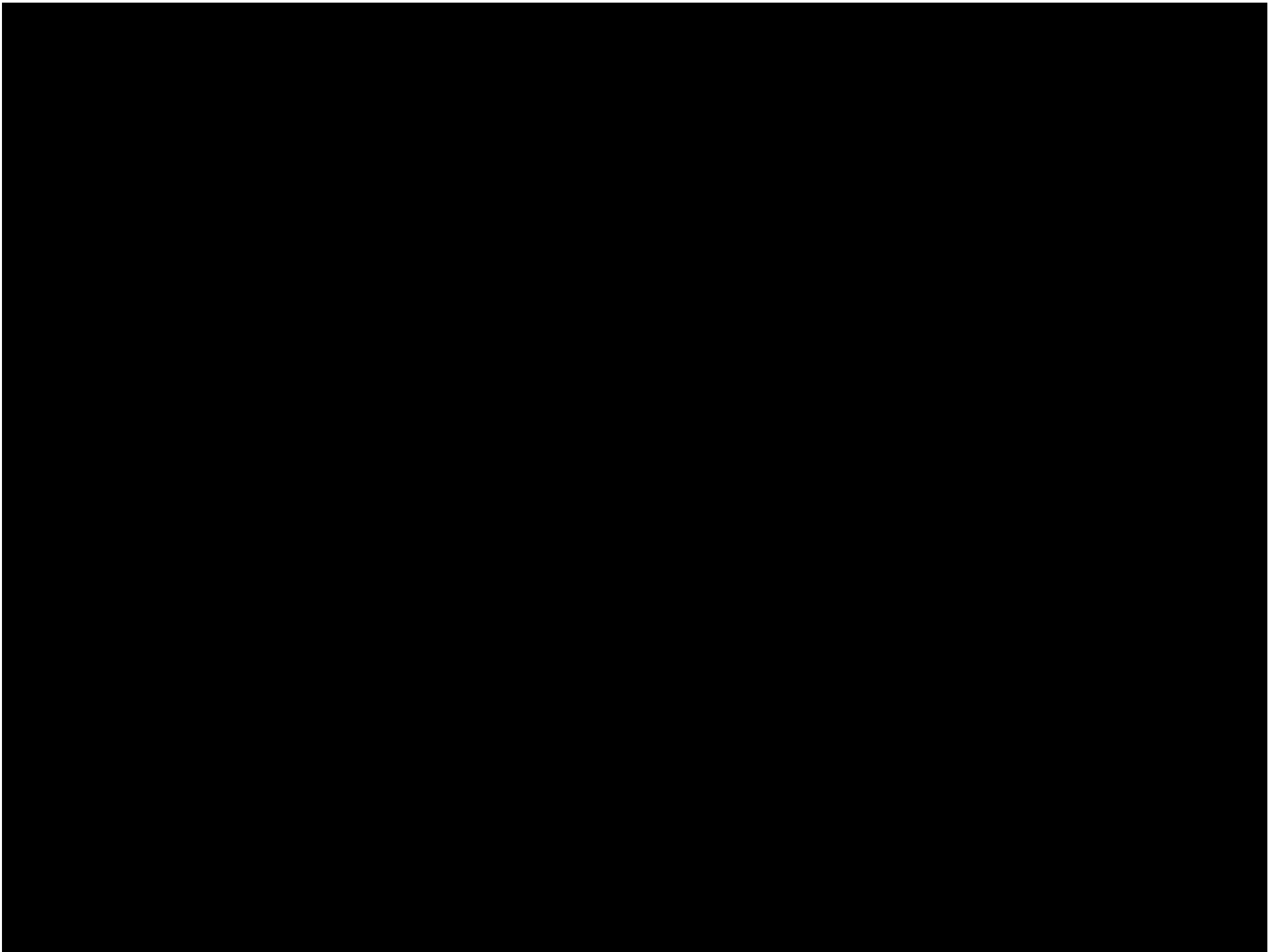
Thank you for your attention



Rue du Luxembourg 3
Brussels

Tel: +32 2 5078000

www.sesarju.eu



Facts & figures - background



“ Air transport contributes € 220 billion to European gross domestic product ”

“ Air Transport employs 3.1 million people ”

“ Aviation is estimated to account for 2% of the world's CO² emissions ”

“ Air Traffic Management costs total € 7 billion per year ”

“ Traffic reaches 30 000 flights per day during peak period ”

“ Air traffic is growing about 5% a year ”

The shortcomings of the European ATM system are estimated to cost some €4 billion:

- ⇒ €2 billion because of fragmentation of the ATM network
- ⇒ €1 billion because of non-optimised flights
- ⇒ €1 billion because of delays

Sources: European Commission & Airbus - 2008