



SESAR

Directorate-General
for Energy
and Transport



● MODERNISING AIR TRAFFIC
MANAGEMENT IN EUROPE

The single European sky

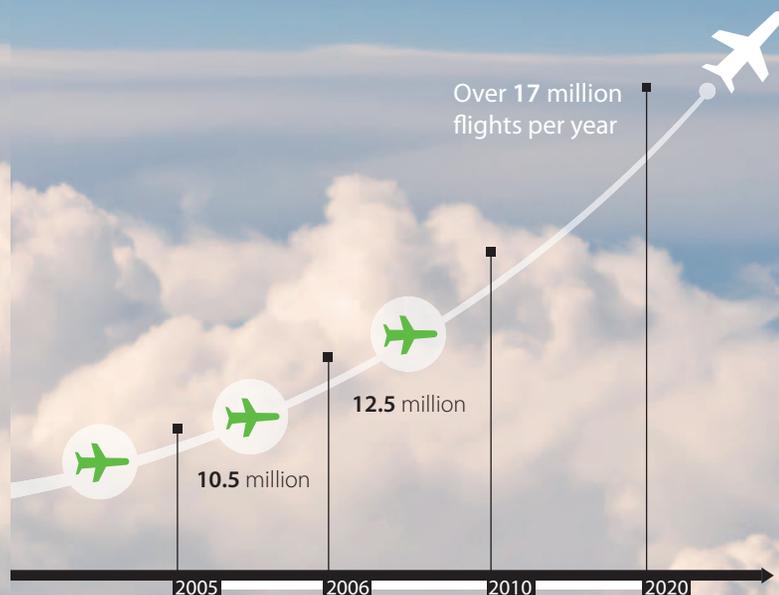
Air transport contributes significantly to European economic growth and employment. As demand in air transport is constantly growing, developing an efficient air transport infrastructure in Europe is a priority for the European Union (EU). This is why the EU launched in 2004 the **single European sky** initiative, which aims to:

- restructure national airspaces with a consolidated air traffic service provision;
- modernise air traffic management (ATM) infrastructure in order to provide the required capacity that continuing traffic growth entails.

SESAR: the single European sky ATM research programme

Significant progress has been made in achieving the single European sky. However, with air traffic volumes rising constantly and given the insufficient capacity of the current ATM systems and increasing environmental consciousness, better technology and more harmonised procedures are needed to face the expected increased complexity and density of air traffic.

A 'capacity crunch' can only be avoided through revolutionary **technological innovation** and the **elimination of fragmentation**. To achieve these objectives, the European Commission has launched an ambitious pan-European programme called **SESAR**: the technological dimension of the single European sky.



SESAR: one programme for Europe

SESAR is a performance-driven programme built around the ATM stakeholders' expectations for the new ATM system to be developed by 2020.

SESAR brings a truly new approach to ATM modernisation through a coherent programme which will provide guidance and leadership to all ATM-related initiatives in Europe with a view to achieve global interoperability.

The SESAR programme comprises three phases:

The **definition phase** (2005-08) has produced the **ATM master plan**, which identifies the technological steps and the modernisation priorities necessary for implementing a new **ATM concept**.

The **development phase** (2008-13), managed by the **SESAR Joint Undertaking**, will develop the new equipment and standards to ensure, through the regulatory mechanisms of the single European sky, the replacement of the existing ground and airborne systems and interoperability with those outside Europe.

The **deployment phase** (2014-20) will consist of large-scale production, procurement and implementation of the new ATM infrastructure and of the corresponding aircraft equipment.



Ambitious but realistic objectives

The ultimate goal of SESAR is to ensure **sustainable air transport development** in Europe in a safe and efficient manner through a performance-driven approach.

The **key performance targets** are:

- enabling a three-fold increase in capacity;
- improving safety by a factor of 10;
- reducing by 10% the environmental impact per flight;
- cutting ATM costs by 50%.

Traffic reaches 30 000 flights per day
during peak periods 

 Air transport contributes EUR 220 billion
to European gross domestic product



 Air transport employs 3.1 million people

Air traffic is growing by about 4-5% a year 



The SESAR concept

is the solution for achieving these objectives

Key to the SESAR concept is the **business trajectory** principle in which the users of the airspace and controllers define together, through a collaborative process, the optimal flight path.

Taking full advantage of both existing and newly developed technologies — such as Galileo — SESAR's target concept relies on a number of **new key features**:

- the **network operation plan**, a dynamic rolling plan for continuous operations that ensures a common view of the network situation;
- full **integration of airport operations** as part of ATM and the planning process;
- **trajectory management**, reducing the constraints of airspace organisation to a minimum;
- **new aircraft separation modes**, allowing increased safety, capacity and efficiency;
- **system-wide information management**, securely connecting all the ATM stakeholders which will share the same data;
- **humans as the central decision-makers**: controllers and pilots will be assisted by new automated functions to ease their workload and handle complex decision-making processes.

The SESAR Joint Undertaking

The SESAR Joint Undertaking, the first European ATM public-private partnership, is the single managing entity for the **SESAR development phase**.

The founding members of the SESAR Joint Undertaking are the European Community and Eurocontrol. Membership is open to public or private entities across the EU and in third countries.

The Joint Undertaking's mission is to execute the European ATM master plan by bringing together and managing public and private resources and by rationalising ATM-related research and development activities in Europe.

Synergy with other projects such as the Clean Sky (www.cleansky.eu) and the US Federal Aviation Administration's NextGEN initiatives will ensure that there is a combined effort to reduce the impact of aviation on the environment and to promote the global interoperability of ATM systems.

The estimated cost of the development phase is EUR 2.1 billion which shall be equally supported by the European Community, Eurocontrol and the ATM industry.

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

ATM costs total EUR 7 billion per year 

The shortcomings of the European ATM system are estimated to cost some EUR 4 billion: EUR 2 billion is attributed to fragmentation of the ATM network and its associated effect on productivity, EUR 1 billion to non-optimised flights and EUR 1 billion to delays 



SESAR enjoys strong commitment from the European aviation community. With SESAR, Europe will not only have the safest and most modern ATM infrastructure in the world, but will also continue to be a leader in the wider aeronautics sector.

Practical information

Air transport portal of the European Commission:

http://ec.europa.eu/transport/air_portal/sesame/index_en.htm

Eurocontrol:

<http://www.eurocontrol.int/sesar/>

SESAR Joint Undertaking:

<http://www.sesarju.eu>

