One day’s traffic
ATM Today
Air Transport – Air Navigation - Europe

**ICAO:** The contracting States recognise that every State has complete and exclusive sovereignty over the airspace above its territory.

**EUROCONTROL**

- 41 Member States, typically each with its own ANSP
- Approximately 68 Area Control Centres (ACC)
- Over 700 sectors when at full capacity
- Approx. 17,000 Air Traffic Controllers
- Approx. 41,000 other staff

**Total Employees 58,000**
**Total revenue B€8/year**
Concentration of costs

Gate-to-gate ATM/CNS provision costs

France: €1,000
Germany: €800
Spain: €600
Italy: €500
Turkey: €400
Switzerland: €300
Norway: €200
Sweden: €150
Austria: €100
Netherlands: €75
Poland: €50
Romania: €35
Ukraine: €20
Belgium/Luxembourg: €15
Greece: €10
MUAC: €8
Portugal: €5
Czech Republic: €4
Ireland: €3
Hungary: €2
Croatia: €1
Bulgaria: €0.5
FYROM: €0.2
Serbia & Montenegro: €0.1

countries with less than €100 million
Traffic in Europe

IFR traffic in Europe
1960-2016 historical figures
2017-2035 forecast

Average daily flights in Europe

Annual Growth

Actual Traffic

Forecast Traffic

Long-Term Trend

Long-Term Average Growth

EUROCONTROL - General Presentation
Europe in World Traffic 2010/2036

Source: ICAO/CAEP FESEG/9 Forecast Inputs & Assumptions (units: Revenue Passenger Kilometres)

Other International Routes: 2%
SES II - ‘Pillars’

1. Regulating Performance
   - Performance Scheme
   - Functional Airspace Blocks
   - Network Manager

2. A Single Safety Framework

3. New Technologies

4. Managing Capacity on the Ground
Performance Scheme

- **Main feature**
  - Key Performance Areas (KPA) and Indicators
    - On safety, the environment, capacity and cost-efficiency
  - European targets
  - National/FAB Performance Plans
  - Periodic review, monitoring and benchmarking
  - Performance Review Body to assist the EC

- **European and local targets set for three to five years**
  - Reference Period 1: 2012-2014
  - Reference Period 2: 2015-2019
### KPIs for EU-wide targets in RP1

<table>
<thead>
<tr>
<th>Key Performance Area</th>
<th>Key Performance Indicator for EU-wide target setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>No EU target in RP1</td>
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<tr>
<td></td>
<td>Safety ensured through EASA</td>
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<tr>
<td></td>
<td>Monitoring of performance indicators</td>
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<tr>
<td>Environment</td>
<td>Horizontal en route flight-efficiency</td>
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<tr>
<td></td>
<td>(% additional distance)</td>
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<tr>
<td>Capacity</td>
<td>En route ATFM delay</td>
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<tr>
<td></td>
<td>(Minutes per flight)</td>
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<tr>
<td>Cost-efficiency</td>
<td>Unit price</td>
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<tr>
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<td>(Average determined en-route unit rate)</td>
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## EU-wide performance targets for RP2

<table>
<thead>
<tr>
<th>Key Performance Area</th>
<th>Key Performance Indicator for EU-wide target setting</th>
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</thead>
<tbody>
<tr>
<td>Safety</td>
<td>• All NSAs and ANSPs to achieve EoSM levels C/D (respectively) by 2019</td>
</tr>
<tr>
<td></td>
<td>• All NSAs and ANSPs to adopt the RAT methodology by 2019</td>
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<tr>
<td>Environment</td>
<td>By 2019, average horizontal en-route flight efficiency:</td>
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<td>Of last filed flight plan (KEP): 4.1%</td>
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<td>Of the actual trajectory (KEA): 2.6%</td>
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<td>Capacity</td>
<td>Annual average en-route ATFM delay (all causes) of 0.5 minutes per flight, to be reached for each year</td>
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<tr>
<td>Cost-efficiency</td>
<td>Determined unit rate for en-route air navigation services (expressed in real terms €2009):</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Rate</td>
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</tbody>
</table>
Single European Sky

Performance Scheme

- Functional Airspace Blocks
- SESAR & the SJU
- Network Manager
Fragmentation
Defragmentation – FABs
SESAR Concept of Operations is a Paradigm Shift for ATC

**Past**

**Procedural Control**
the current and planned a/c positions

**Today**

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

**Future**

**Trajectory Management**
**Know & share** the current & planned a/c positions
SESAR milestones

2015
- Launch of SESAR 2020
- Update of European ATM Master Plan
- Start of SESAR Deployment

2014 - Establishment of SESAR Deployment Manager (SDM)

2013 - Delivery of first SESAR Solutions

2009 - Council resolution on the endorsement of the European ATM Master Plan

2007
- Completion of SESAR Definition Phase
- Set-up of SESAR Joint Undertaking (SJU)

2004 - Creation of the Single European Sky legislation, establishing SESAR
SESAR Joint Undertaking

- **Public-private partnership** to manage the SESAR Development Phase
  - Execute the European ATM Master Plan
  - Work with the Deployment Manager on the Deployment phase
  - One single ATM R&D programme in Europe
    - Innovation from private sector
    - Public financial stability & enforcement power

- **Founding members:**

- **Industry members:**

- As part of SESAR 2020, being extended until 2024 with revised membership
Network Manager

One single Flow Management System over Europe

43 States
1750 Sectors – 68 en-route centres
520 Airports
1940 Aircraft Operators
61 FMPs

6,700+ connected end-users
Peak traffic – 35,937 flights in one day
10,600,000+ flights a year

Network Operations
Network Manager Main tasks

Improve network operations, contributing to EU-wide performance targets

- Develop an integrated Route Network design
- Provide a central function for radio frequencies
- Coordinate improvement of SSR code allocation
- Manage the operations of ATFM

- Develop, maintain and implement Network Strategic Plan and Network Operations Plan
- Consolidated approach to all planning and operational phases
- Coordination with other regions and countries
- Coordinate management of the response to network crises (EACCC)

- Support operational stakeholders in deploying ATM/ANS systems/procedures and SESAR
- Support accident and incident investigations

Contribute to the implementation of the Performance scheme

**Operational stakeholders:** the civil and military airspace users, civil and military air navigation service providers, Functional Airspace Blocks (FABs), airport operators, airport slot co-ordinators and operating organisations and any additional stakeholder groups considered relevant for the individual functions
Main tasks of Network Manager

EUROCONTROL was nominated as the SES Network Manager in July 2011

Its main role is to:

- optimise European ATM Network’s operations with ANSPs and airports;
- ensure that European ATM meets its performance targets
- provide a consolidated and coordinated approach to all planning and operational activities of the Network through defined functions and services
EUROCONTROL – History

41 member states & the European Community

2 ‘Comprehensive Agreement’ states – Morocco & Israel
EUROCONTROL members

- EUROCONTROL & EU
- EUROCONTROL but not EU
- 2 Comprehensive Agreement States: Israel and Morocco
ATM in Europe – looking forward

Regulate
- EC
- EASA
- NSAs

Operate/Coordinate
- Network Manager
- FAB

Research
- SJU (to 2024)

EUROCONTROL role
- Technical support
- Performance review
- Network management
- Deployment coordination
- Route charges

Founding member
- Major contributor
- Longer term research
Central Route Charges Office

- Collects air navigation charges on behalf of States across Europe
  - En-route
  - Terminal
  - Communication

- Pan-European service
  - Simple, equitable and transparent for airspace users
  - Quick, efficient and cost-effective for States/ANSPs

- Over 7,1 billion € collected annually

- Collection cost of less than 0.3% of amounts billed
The Route Charges System

One message per flight

Monthly bill

States / ANSPs

Disbursement

Payment

Airlines / airspace users
Maastricht Upper Area Control Centre

- 260,000 km² extending over Belgium, the Netherlands, Luxembourg and North-West Germany
- More than 1.7 million flights controlled (2016)
- Annual costs (2016): € 143 M

- 3rd largest control centre in Europe
- 6th largest ANSP in Europe
- Highest controller productivity in Europe

One of the most cost-effective ANSPs
Inter-institutional relationships

DGs MOVE, GROW, RTD, ENV, CLIMA, CNECT
2015 - Daily Flights in European NM Area

- Improved connectivity & interoperability required
- Predictability & capacity optimisation
- Disruption planning & management

Very significant growth expected
- Gulf
- SE Asia
- China
- Russia

NM area internal traffic 25862

Far East 285

NAM/SAM 1533

Southern MED 843

Middle East 151

Africa 334

Gulf 652

Russia Fed & *STAN 1383

Asia 292
Network Manager
The Network Manager
Connecting the Network to deliver Improved Performance
The European Organisation for the Safety of Air Navigation (EUROCONTROL) is an intergovernmental organisation for the central coordination of air traffic control in Europe. The headquarters of EUROCONTROL are in Brussels.
MUAC, Maastricht
IANS, Luxembourg