MISSION

Founded in 1960, today EUROCONTROL, the European Organisation for the Safety of Air Navigation, is a civil-military organisation committed to building, together with its partners, a Single European Sky that will deliver the air traffic management (ATM) performance required for the twenty-first century and beyond.

UNIQUELY QUALIFIED

EUROCONTROL is uniquely qualified to help make the Single European Sky a reality:

- its 39 Member States provide a truly pan-European perspective;
- its technical expertise is unrivalled and covers both the operational and regulatory elements;
- can advise on both the civil and the military aspects of ATM;
- has real experience at bringing States with different needs together for a common goal;
- has restructured the Agency to make sure its activities are tailored towards working with the EU on the Single European Sky.

MEMBERSHIP

EUROCONTROL currently counts 39 Member States.

The European Community signed an Accession Protocol in 2002. Member States include all of the EU States, with the exception of Estonia.

PARTNERSHIP

EUROCONTROL is an intergovernmental organisation, driven by its Member States (civil and military authorities). However, it also aims to ensure that the interests of all aviation stakeholders are represented in its decision-making process.

Consequently, airspace users, air navigation service providers and airports are fully involved in steering the Agency’s efforts to help create the Single European Sky.

EUROCONTROL MEMBERS STATES

39 COUNTRIES

Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, Turkey, Ukraine and United Kingdom of Great Britain and Northern Ireland
Foreword by David McMillan, Director General in 2012
Foreword by Patrick Gandil, President of the Provisional Council
Message from Frank Brenner, Director General
2012 highlights
2012 figures
Corporate governance
Senior management
Performance of European air traffic management
Supporting the Single European Sky implementation
Managing the network
Maastricht Upper Area Control Centre
Providing an efficient cost-recovery system
Delivering SESAR commitments & beyond
Resources
Glossary
2012, the last of my five years as Director General, was marked by a number of milestones. The Maastricht Upper Area Control Centre reached its 40th anniversary and Georgia signed the Accession Protocol in preparation to become EUROCONTROL’s 40th Member State. We also saw the end of ab-initio training for controllers at Luxembourg.

For ATM in Europe, however, it was particularly notable for being the first year of the Single European Sky Performance Scheme. The Agency is contributing to this, both in reducing its own costs and in helping to improve the efficiency of the network.

In the last few years, the budget of the Agency has fallen significantly in real terms and the actual expenditure has fallen in nominal terms. A major staff reduction process was undertaken and, by the end of 2012, over 200 permanent staff had left.

Delays in the system were low, with an average en-route delay of only 0.63 minutes. The Network Manager played a significant role in this achievement, with delay savings arising from measureable actions by the Network Manager amounting to some 730,000 minutes or 10.7% of the total network delay. This was particularly creditable in a year that was marked by a significant amount of industrial action and also major sporting events (EURO 2012, the Olympics and the Paralympics).

Indeed, the Network Manager has played a much more proactive role in general, as evidenced by the publication of the first Network Strategy Plan at the end of the year and the detailed preparations that were undertaken in preparation for a winter with a number of significant ANSP system changes.

More generally, I believe that EUROCONTROL has achieved a great deal in the last five years. I am proud to have been able to play my part and I wish everyone, in particular my successor Frank Brenner, all the best for the future.

For Europe overall, traffic fell in 2012 by 2.6% (average number of daily flights in NM area) although growth did take place in some areas, notably Turkey, Poland and Ukraine. The current forecast is for a further decline in 2013, before growth returns in 2014. This is continuing to have a major effect on our stakeholders and has made achieving the cost-efficiency target of the EU Performance Scheme particularly challenging.

EUROCONTROL’s partnership approach is proving to be very successful, both in helping its stakeholders improve their performance and also in promoting the position of European ATM globally. This was clearly to be seen at ICAO’s 12th Air Navigation Conference towards the end of 2012, where the Agency, in close collaboration with the European Commission and ECAC, played a major and successful role in coordinating and promoting Europe’s interests.

This partnership is also in evidence in the relations with EASA, NATO and the FAA and is a hallmark of the approach promoted by David McMillan during his five year term. I would like to take this opportunity to express again the Organisation’s thanks for his hard work and dedication.

His successor, Frank Brenner, is already building upon this base and I am sure that, under his leadership, EUROCONTROL will continue to demonstrate its tremendous value for the whole of European ATM.
MESSAGE FROM FRANK BRENNER  
DIRECTOR GENERAL

In 2012, EUROCONTROL signed a High Level Agreement with the European Commission, clear evidence of the dramatically improved relationship the Agency has with the Commission and one of the lasting legacies of David McMillan's tenure. We now have to build on this Agreement, not just by agreeing the Annexes, on which work is in hand, but also by looking at the governance of EUROCONTROL more generally, to ensure that it is fit for purpose.

At this time of economic hardship and depressed traffic levels, we also have to examine how we can best help our Member States and ANSPs – in particular, how to help them meet their SES Performance Scheme targets. This means continuing with the dual policy of controlling our own costs and striving to make the network more efficient.

Indeed, this is at the heart of everything we do, from research to operations. It is the reason why we have led the SESAR work package which, last year, produced the new edition of the ATM Master Plan; it is why the Network Manager is closely involved with the deployment of SESAR improvements; and it is also why we are promoting the concept of centralised services as a way to improve efficiency and to help European ATM become more competitive in the global arena.
**JANUARY**

EUROCONTROL celebrates RVSM’s 10th anniversary

**FEBRUARY**

Centralised SSR code assignment management system (CCAMS) goes operational for UKSATSE in Ukraine, the first of a number of ANSPs who will use the system

Surveillance capability in the cockpit using ADS-B (automatic dependent surveillance broadcast) is operationally deployed by a Swiss International Air Lines A330-300, taking off from Zurich Airport en route to Montreal.

The first fully operational GLS approach to CAT I decision height is made by an airberlin flight to Bremen airport in Germany; marking the beginning of the operational use of GNSS for all phases of flight.

MUAC celebrates 40 years of vision (1972-2012)

The world’s very first flight trial to test the initial fourth dimension (I-4D) – time, takes place as part of the SESAR validations. This is the result of cooperation between MUAC, Airbus, Honeywell, Thales, Indra and Noracon.

**MARCH**

EUROCONTROL’s ARN Version-7 project and the MUAC/Airbus/Noracon joint Initial 4D Trajectory Management Project receive prestigious Jane’s ATC Awards.

The Netherlands and EUROCONTROL sign a cooperation agreement for the provision of air traffic data services to the Royal Netherlands Air Force by Maastricht UAC. This marks the start of the Shared ATS System (SAS) project.

**APRIL**

Jac Jansen takes over as the new Director of the Maastricht Upper Area Control Centre.

Mode 5 implementation in Europe moves to the next stage by extending the number of flights using downlinked aircraft identification in order to be identified by air traffic controllers.

**MAY**

5 millionth FDPS flight controlled at the Maastricht UAC.

**JUNE**

EUROCONTROL and Boeing sign an amendment to the 2009 Cross License Agreement, setting the grounds for active collaboration in developing and maintaining BADA, the EUROCONTROL aircraft performance model and related database, to the highest standards.

The ELPAC test (English language proficiency for aeronautical communication) is fully endorsed by ICAO.

Solar Impulse, the solar-powered airplane successfully lands in Morocco. The Network Manager and the flow management positions of all ACCs involved worked hand-in-hand to escort it through European skies.

The Enhanced Mode S parameter Final State Selected Altitude (FSSA) is used in the short-term conflict alert (STCA) warnings at MUAC. This is the first time that FSSA is used for STCA anywhere in the world.

The first operational version of ATM Surveillance Tracker and Server (ARTAS) V8B1 is successfully released.

EUROCONTROL’s tool, showing status and plans for PBN final approaches in Europe, goes live.
In 2012 EUROCONTROL celebrates 10 years of RVSM, 40 years of MUAC and 40 years of ATC training.

**JULY**
EUROCONTROL’s Permanent Commission appoints Frank Brenner as Director General with effect from 1 January 2013.

**AUGUST**
EUROCONTROL, EASA and the EC successfully collaborate on the creation of a multi-airport noise model called STAPES (system for airport noise exposure studies).

**OCTOBER**
The European ATM Master Plan update is launched.

**NOVEMBER**
EUROCONTROL, together with EASA, the EC, the SJU and ECAC play a central role at ICAO’s Twelfth Air Navigation Conference.

The Network Manager’s operational units successfully manage the ICAO Flight Plan 2012 switchover in the EUR/NAT region.

**DECEMBER**
Over 40 years of ATC training at the Institute of Air Navigation Services ends.

The operational MUAC air traffic control system is extended to the RNLAF Air Operations Control Centre at Nieuw Milligen.

As part of SESAR’s FRAMaK (Free Route Airspace Maastricht and Karlsruhe) project, MUAC, Lufthansa and DFS pioneer large-scale free routing.

EUROCONTROL signs High Level Agreement with the European Union.
2012 FIGURES

TOTAL NUMBER OF IFR FLIGHTS

9,555 million

TRAFFIC SHARE BY MARKET SEGMENT

Traditional scheduled: 55.0%
Low cost: 25.1%
Business aviation: 7.2%
Charter: 5.4%
All cargo: 3.5%
Military: 1.3%
Other: 2.5%

Source: STATFOR

AVERAGE NUMBER OF FLIGHTS

Armenia 153
Moldova 175
Malta 264
FYROM 308
Albania 533
Latvia 637
Lithuania 644
Finland 688
Bosnia and Herzegovina 733
Cyprus 757
Slovenia 944
Slovakia 1,040
Ukraine 1,274
Romania 1,331
Croatia 1,354
Ireland 1,424
Bulgaria 1,476
Serbia + Montenegro 1,461

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**Primary Departure Delay Causes**

- Airlines: 53.7%
- Airport: 17.0%
- Weather: 11.8%
- En-route: 8.6%
- Government: 5.3%
- Miscellaneous: 3.7%

**Average En-route ATFM Delay**

- 0.63 minute per flight
- 37.8 seconds

**Per Day**

- Portugal: 1,519
- Norway: 1,604
- Hungary: 1,652
- Denmark: 1,652
- Greece: 1,730
- Czech Republic: 1,816
- Poland: 1,870
- Sweden: 2,088
- Switzerland: 2,912
- Turkey: 2,912
- Netherlands: 2,960
- Belgium + Luxembourg: 2,946
- Austria: 3,096
- Poland: 3,096
- Spain: 5,004
- UK: 6,041
- Italy: 4,604
- France: 7,987
- Germany: 8,246

Source: STATFOR

Source: Coda

Source: NM Operations Report
EUROCONTROL is an international Organisation established under the EUROCONTROL Convention of 13 December 1960, subsequently amended on 12 February 1981 (Amended Convention). The EUROCONTROL Convention was further revised on 27 June 1997 (Revised Convention).

Pending the entry into force of the 1997 Revised Convention, the EUROCONTROL Member States agreed on the early implementation of specific provisions thereof.

GOVERNANCE STRUCTURE

EUROCONTROL comprises three organs: two governing bodies (the Permanent Commission and the Provisional Council) and one executive body (the Agency).

EUROCONTROL PERMANENT COMMISSION

In the EUROCONTROL Permanent Commission, Member States are represented at ministerial level. The Permanent Commission formulates the Organisation's general policy and is the ultimate decision-making body of the Organisation.

It also approves the Agency's annual work programme, the five-year programme, the Agency's budget, the Contract Regulations, Financial Regulations and Staff Regulations, and is responsible for appointing the Director General and Directors. It gives a final ruling on the Agency's annual accounts.

EUROCONTROL Provisional Council

Member States are represented in the Provisional Council at the level of Directors General of Civil Aviation. The European Union participates in the work of the Provisional Council.

The Provisional Council is responsible for preparing the work of the Permanent Commission, implementing EUROCONTROL's general policy, as established by the Permanent Commission, and for supervising the Agency's work.

EUROCONTROL's institutional structure includes a number of advisory bodies to the Provisional Council and/or to the Permanent Commission that monitor the transparency of the Agency's work, supervise operations in specific areas, facilitate dialogue and coordinate work programmes in certain domains.

THE AGENCY

The EUROCONTROL Agency is responsible for performing tasks prescribed by the Convention or entrusted to it by the Permanent Commission. The Director General enjoys wide independence with regard to the management of the Agency.
STAKEHOLDER INVOLVEMENT

EUROCONTROL is an intergovernmental Organisation, driven by its Member States (civil and military authorities). However, it also aims to ensure that the interests of all aviation stakeholders are represented in its decision-making process.

Consequently, stakeholders such as airspace users, air navigation service providers and airports are fully involved in steering the Agency’s efforts to help create the Single European Sky at a pan-European level.

In essence, the governance arrangements break down into three different levels:

- At Organisation level, an Air Navigation Services Board (ANSB) is in place to advise the Provisional Council on areas of relevance to service provision and to endorse the Agency’s Strategy and Business Plan, including associated financial commitments, before their submission to the Provisional Council for approval.

- At Agency level, Supervisory Boards (open to senior managers at Director level outside the Agency) are in place within the Agency to advise the Director General and the respective Directors in the exercise of the tasks and functions as contained in the Statute of the Agency.

- At project and programme level, various advisory and consultative bodies composed of stakeholders (e.g. the Military ATM Board – MAB) provide advice to the Director General and where appropriate to the Provisional Council.

Strong coordination between these groups contribute to the Agency’s full alignment with the strategic priorities and objectives agreed with the Member States and stakeholders.

The route charges system continues to be governed, supported and monitored by the enlarged Committee for Route Charges, and MUAC by the Maastricht Coordination Group.

PERMANENT COMMISSION 2012

PRESIDENT:
Vladimir Cebotari
Acting Director of Civil Aviation of Moldova

VICE-PRESIDENT:
Iurie Zidu
Senior Deputy Director of Civil Aviation of Moldova

PROVISIONAL COUNCIL 2012

PRESIDENT:
Patrick Gandil
Director General of Civil Aviation of France

VICE-PRESIDENTS:
- Eric Kroese
  Special Advisor to the Minister on International Aviation Policy of the Netherlands
- Alessio Quaranta
  Director General of Civil Aviation of Italy
- Gerold Reichle
  Director General for Civil Aviation and Aerospace of Germany
- Haydar Yalcin
  Deputy Director General of Civil Aviation of Turkey
INTERNAL CONTROL

Executive responsibility for internal control is vested in the Director General. The Director General has decided to strengthen the measures in place which enable the Agency to:

- conduct its business in an orderly and efficient manner;
- safeguard its assets and resources;
- prevent and detect errors, fraud and theft;
- ensure accuracy and completeness of data;
- produce reliable and timely financial and management information;
- ensure adherence to the Agency’s policies and plans.

The Agency has adopted the 16 Internal Control Standards applied by the European Commission, based upon the 6 “building blocks” in the internationally recognised COSO Enterprise Risk Management — Integrated Framework.

1. Mission and values
   - Mission
   - Ethical values

2. Human resources
   - Staff allocation/mobility
   - Staff evaluation & development

3. Planning and risk management processes
   - Objectives & key performance indicators
   - Risk management

4. Operations and control activities
   - Operational structure
   - Processes & procedures
   - Management supervision
   - Business continuity
   - Document management

5. Information and financial reporting
   - Information/communication
   - Accounting & financial reporting

6. Evaluation and audit
   - Evaluation of activities
   - Assessment of internal control systems
   - Internal audit

In 2012 three pilot Directorates in the Agency embarked on a self-assessment of compliance with these standards. All Directorates will perform the self-assessment in 2013 and will make a Declaration of Assurance on the control procedures in place during the financial year 2013, contributing toward an Agency-wide assessment which will allow the Director General to provide an overall Declaration of Assurance for budgetary discharge by the Permanent Commission for the financial year 2014.

The Agency Board and each Director demonstrate accountability for the system of internal controls by:

- carrying out a yearly self-assessment of the internal control system;
- providing a yearly statement of assurance on controls;
- increasing control awareness throughout the Agency;
- Increasing accountability of the use of public and European Union funds;
- committing to continuous improvement.

Corporate risk management
EUROCONTROL has designed risk management systems to identify, assess and where necessary take action to counteract or mitigate any risks associated with its activities. Corporate-wide guidance on risk management has been developed. Risk management is an integral part of management activity, and is integrated into the business planning process.

Internal audit
EUROCONTROL’s Internal Audit Unit helps Agency management oversee an effective system of internal controls designed to help the Agency meet its objectives. Internal Audit’s scope includes the assessment of controls to ensure:

- the reliability and integrity of financial transactions and related information;
- the effectiveness and efficiency of operations and programmes;
- safeguarding of assets (including the pension fund);
- compliance with laws, regulations, policies, procedures and contracts;
- effective risk management processes.

The Head of Internal Audit, whose appointment by the Director General is approved by the Provisional Council and the enlarged Committee for Route Charges, reports directly to the Director General. He may bring matters which in his view are significant to the attention of the Audit Board, the Provisional Council and the enlarged Committee.

External audit
The Audit Board examines and reports annually on the Agency accounts, the Route Charges system accounts and the Pension Fund Accounts, and reports to the Permanent Commission, via the Provisional Council. With regard to the financial management of the Route Charges System, it reports also via the enlarged Committee. The Audit Board
also reviews the level of transparency of the Agency’s procedures and decisions.

The Board is independent of the Agency and has financial resources specifically dedicated to its work, provided through the Agency Budget and approved by the Commission. It is composed of six members designated by six Contracting States, on a rotating basis, for a period of four years. The Audit Board Rules of Procedure stipulate that its members must be professional auditors. Board members are not paid by the Agency, but are refunded in full for their travel expenses.

**Annual accounts**
EUROCONTROL produces budgetary accounts which present the execution of the budget and financial accounts which show the Agency’s financial position and financial performance. The financial accounts are produced in accordance with international financial reporting standards and the budgetary accounts according to the financial regulations.

The accounts of the Agency, Pension Fund and of the Route Charges System are audited by the Audit Board, assisted by an auditing company, selected through an open-call-for-tenders procedure. The annual accounts, including the audit opinion, are submitted to the Permanent Commission via the Provisional Council. The Commission gives a final ruling on the accounts and decides on the discharge to be given to the Director General in respect of his financial and accounting management.

**APPOINTMENT OF STAFF AND REMUNERATION**
EUROCONTROL officials/servants/contract staff members are appointed by the Director General following a rigorous recruitment and selection procedure involving selection boards, which are made up of management and staff representatives.

In accordance with the EUROCONTROL rules, any official/servant/contract staff wishing to engage in an outside activity must obtain the Director General’s prior approval, and further measures are in place to manage potential conflicts of interests.

The system of remuneration, including that of the Director General and the Directors, is approved by the Permanent Commission and is linked to the method used in the European Union.
MANAGEMENT

BO REDEBORN
Principal Director ATM, Director SESAR and Research

ALBERTO VARANO
Principal Director Resources

ADRIAAN HEERBAART
Director Central Route Charges Office

JACQUES DOPAGNE
Director Network Management (until June 2013)

JAC JANSEN
Director Maastricht Upper Area Control Centre

JOE SULTANA
Director Network Manager (as from 1 July 2013)

LUC TYTGAT
Director Single Sky
PERFORMANCE OF EUROPEAN AIR TRAFFIC MANAGEMENT

PRB ONLINE MONITORING DASHBOARD
HELPING STATES MONITORING THEIR PERFORMANCE

- EU wide view
- Performance plan view
- Airport view
This assessment of European air navigation services’ performance is based on data drawn from the Performance Review Commission’s Performance Review Report for 2012. This report advises EUROCONTROL’s Member States on the performance improvement measures that they need to take.

AIR TRAFFIC DEMAND

Air traffic is a key factor influencing ANS performance. The long-term trend of the growth in traffic came to an abrupt end in 2008 with the onset of the international financial crisis. The peak traffic level that was reached then is not expected to return until 2015-16.

In 2012, IFR flights in Europe decreased by 2.6% on average, while the number of passengers increased by 1.9%. The increase in demand was met through larger aircraft and higher load factors.

With varying levels of economic growth, traffic growth is not evenly spread across the continent. High growth rates were experienced in eastern European States and this trend is forecast to continue. In contrast, negative rates were witnessed in parts of Europe, where aviation markets are more mature.

2012 Traffic 9.55 M (-2.6%) ↓
ANS PERFORMANCE

The PRC assesses ANS performance under four key performance areas:

- safety;
- capacity (delays);
- environmental impact (flight-efficiency); and
- cost-efficiency.

For each of these areas, the following salient points can be reported:

Safety
As safety is the primary objective of ANS, it is a testament to the hard work of all involved that not a single accident with a direct ATM contribution in commercial aviation occurred in Europe in 2011.

Capacity / delays
The number of scheduled flights delayed by more than 15 minutes continued to decrease in 2012 to a record low value of 16.7%. Once again, it is a pleasure to report that ANS contributed positively through a substantial reduction in airport ATFM delays (30%) and en-route ATFM delays (-46%), albeit in a context of declining traffic.

Environment / flight efficiency
Emissions from aviation account for approximately 3.5% of total CO2 emissions in Europe, including 0.2% which is attributable to ANS.

In 2012, ANS-related CO2 emissions were reduced by approximately -2.8%, thanks to improved performance (-1%), and also decreasing traffic (-1.8%). ANS therefore contributed a net reduction of the carbon impact of aviation in 2012.

EUROCONTROL’s Network Manager played a key role in coordinating and delivering these operational performance improvements (delay reduction and flight-efficiency).

Cost-efficiency
In 2011, the latest year for which verified cost records are available, en-route ANS costs amounted to €6.45 billion. Significantly, en-route ANS costs reduced by -0.4% (€25M) compared to 2010 while traffic grew +4.9% (en-route service units). This decrease was mainly due to a one-off reduction in EUROCONTROL costs of €62M. If this is excluded, en-route ANS costs increased slightly by +0.7%. Terminal navigation costs amounted to €1.46 billion, which is a -2.0% reduction compared to 2010.

This significant improvement in unit costs in 2011 resulted from rigorous cost-containment measures taken in 2010 and 2011 in the wake of the economic crisis and subsequent sharp decline in air traffic in 2009, which illustrates the time lag in the ANS system response to the traffic downturn.

Total economic cost
In Europe, airspace users pay for route and terminal charges, and incur costs related to delays. These delay costs result from reduced crew and fleet utilisation, missed connections, passenger compensation and flight-inefficiencies (longer flight times and increased fuel burn). The PRC introduced the concept of total economic cost, which seeks to capture all ANS-related costs borne by airspace users and reflect interdependencies between performance areas, such as cost vs. capacity, or capacity vs. flight efficiency, within the overriding safety requirements.

The total ANS-related economic cost in Europe amounts to approximately €13 billion per annum, as illustrated in the graph.

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**ESTIMATED ANS-RELATED ECONOMIC COSTS TO AIRSPACE USERS (GATE-TO-GATE)**

<table>
<thead>
<tr>
<th>Year</th>
<th>En-route &amp; airport ATFM delays (capacity)</th>
<th>ANS-related inefficiencies (taxi-out, en-route, ASMA)</th>
<th>Terminal ANS costs (SES States only)</th>
<th>En-route ANS costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>6.8</td>
<td>1.5</td>
<td>1.5</td>
<td>6.8</td>
</tr>
<tr>
<td>2009</td>
<td>6.6</td>
<td>1.5</td>
<td>1.5</td>
<td>6.5</td>
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<tr>
<td>2010</td>
<td>6.5</td>
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<td>2011</td>
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<td>1.5</td>
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</tr>
</tbody>
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**Total Economic Cost**

In Europe, airspace users pay for route and terminal charges, and incur costs related to delays. These delay costs result from reduced crew and fleet utilisation, missed connections, passenger compensation and flight-inefficiencies (longer flight times and increased fuel burn). The PRC introduced the concept of total economic cost, which seeks to capture all ANS-related costs borne by airspace users and reflect interdependencies between performance areas, such as cost vs. capacity, or capacity vs. flight efficiency, within the overriding safety requirements. The total ANS-related economic cost in Europe amounts to approximately €13 billion per annum, as illustrated in the graph.
The total economic cost indicator is projected to decrease by -3.0% in 2012, which is slightly better than traffic decrease of -2.7%. The main driver of this projected improvement is the substantial reduction in ATFM delays, which more than compensates the projected increase in ANS costs.

It should be noted that 2011 was the last year that States subject to SES regulation were able to recover the full amount of en-route costs. From 2012 onwards, these States were subject to the new risk-sharing arrangements under the SES charging regulation aimed at incentivising ANSPs’ economic performance.

**Single European Sky Performance Scheme**

The SES Performance Scheme introduces enforceable mechanisms for performance target-setting and monitoring as well as incentives and corrective actions at both European and national/FAB levels. Its first reference period (RP1) started in 2012 and will end in 2014. Its geographical scope is:

- the airspace controlled by the 27 Member States of the European Union, and;
- the airspace controlled by Norway and Switzerland.

In 2010, the European Commission mandated EUROCONTROL to exercise the functions of the Performance Review Body (PRB), acting through its Performance Review Commission (PRC) and supported by the Performance Review unit (PRU). The designation as PRB is valid until mid-2015.

Acting as the PRB, EUROCONTROL plays a key role in underpinning the success of the SES Performance Scheme. It researches, refines and promotes air navigation service performance improvements for air navigation services all over Europe. In fact, the PRB’s membership mirrors that of the PRC and so covers all EUROCONTROL’s Member States. This means that the PRC can extend PRB’s ideas to create a harmonised approach to performance measurement beyond the 27 States in the European Union, covering all 39 EUROCONTROL’s Member States.

The EU-wide performance targets, adopted by the European Commission for RP1, which are closely based on PRB recommendations, are as shown.

To help States monitor their performance, the PRU established a regularly-updated online monitoring dashboard, which provides information on the performance plans at EU-wide, performance plan and airport levels. The dashboard can be accessed using the following link: http://prudata.webfactional.com/Dashboard/eur_view.html.

Throughout 2012, the PRB continued preparations for the second reference period (RP2) on behalf of the European Commission.
SUPPORTING THE SINGLE EUROPEAN SKY IMPLEMENTATION

In 2012
Signature of the High Level Agreement with the EU
The EUROCONTROL Agency contributes to the implementation of the Single European Sky (SES) at a pan-European level. It does so by supporting EUROCONTROL’s Member States and their civil and military authorities, as well as the European Union, in particular the European Commission and EU agencies such as the European Aviation Safety Agency. Due to the worldwide dimension of the Single Sky implementation, the Agency coordinates its activities with other international organisations such as ICAO, NATO and ECAC.

High Level Agreement with the EU

2012 marked an important institutional milestone on the road to cementing cooperation between the two very distinct worlds of the political and the technical. At the beginning of the year, substantial effort was focused on shaping earlier considerations as to the scope of the cooperation required between these two worlds and the appropriate status to be given to their joint cooperation instrument, namely a High Level Agreement (HLA).

The HLA is a formal and binding instrument which has the status of an international treaty, executed under the authority of Member States. The coordination of cooperative activities under the Agreement are undertaken on behalf of the EU by the European Commission and on behalf of EUROCONTROL by the Agency.

Through this agreement the Agency is recognised as a unique centre of technical expertise. Although the strategic objective common to both organisations is to improve the performance of the European ATM network, the scope of cooperation goes beyond the remits of the Single European Sky and ATM. In fact, the HLA takes a global view of aviation, and specifically the establishment of a competitive European air transport market within it.

The HLA recognises the evolution of the role of EUROCONTROL, as an organisation that not only brings its added value pan-European and military dimensions, but one that also provides assistance to States in the performance of public domain services and functions, in the implementation of SES and other related EU policies. It also recognises that the Agency offers a pan-European platform to facilitate the enhancement of military cooperation on ATM. The support provided by EUROCONTROL to the EU complies with the principles of transparency, impartiality and independence. Significantly, the HLA does not preclude the possibility of establishing additional cooperation instruments with other EU bodies with a view to optimising and integrating expertise and resources, as is already foreseen with EASA.

The HLA, which is not limited in time and can be adapted to future change, was initiated by EUROCONTROL and the EC in April 2012 and was signed by EUROCONTROL and the EU on 20 December 2012 at the Transport Council Meeting. The cooperation addresses the following subjects: functional airspace blocks (FABs), national supervisory authorities (NSAs), support in the field of ATM and ANS safety (including EASA), civil-military cooperation and coordination, international coordination in particular with ICAO and States other than EU/EUROCONTROL Member States, ATM/CNS (including space), air transport-related data and statistics, aviation environmental issues and airport policy. Further subjects of cooperation may address in particular: ATM security, spectrum policy and unmanned aircraft systems.

The text of the HLA is generic, with the details for its implementation contained in separate annexes. The drafting of the first three annexes (on SES, ATM/ANS safety and civil-military cooperation and coordination) was started soon after the Agreement was signed with the goal of having them approved in 2013. Additional annexes will be negotiated towards the end of 2013.

Also in 2012

The European Commission requests EUROCONTROL to elaborate further on the concept of centralised services as a way of addressing ATM performance and fragmentation in Europe.
SUPPORT TO THE EUROPEAN COMMISSION

SUPPORT TO DG MOVE

The framework contract with the Directorate-General for Mobility and Transport of the European Commission (DG MOVE) principally covered – through specific contracts – the assistance to the Performance Review Body and to the assessment of the functional airspace blocks (FABs).

In 2012, the Agency carried out additional support activities in the following main areas:

- SES annual reporting;
- support to FABs coordination;
- NSA coordination platform;
- NSA peer reviews;
- Single European Sky (SES) rule drafting;
- environment, and
- security.

Performance Review Body

Following the EC Decision to designate EUROCONTROL as the Performance Review Body, work on a SES Performance Scheme was started, driven by performance targets objectives.

This designation has already created synergies between SES and EUROCONTROL systems to improve the overall understanding of ANS performance and to promote pan-European performance enhancements, including delivering recommendations to EUROCONTROL’s Provisional Council and the Single Sky Committee. Tangible material was delivered, including, for the first time, assessment reports by country/FAB.

FAB assessment

In 2012, in accordance with Commission Regulation (EU) No 176/2011, the EC’s DG MOVE received support from EUROCONTROL for the conduct of the formal consultation and observation process concerning the establishment of nine FABs in Europe.

Substantial efforts were made involving expertise from across the Agency: 18 meetings with FAB stakeholders were organised; nine others were devoted to the rigorous preparation of the practical arrangements required within the consultation framework; and lastly, a meeting was attended by all the relevant stakeholders for each of the nine FABs after their authorities had formally submitted the set of documents required for each.

EUROCONTROL experts reviewed this FAB documentation and provided observations, on behalf of the EC, in the areas of legal/institutional/regional agreements, civil/military, operational and environmental aspects, technical matters and SESAR, social dialogue and performance. In addition, Agency experts supported the European Aviation Safety Agency (EASA) in the formulation of observations on most of the safety aspects of the FAB documentation. More specifically, for each FAB, the Agency submitted observations to the EC in the form of a common response document (CRD) prepared in two steps. Before each consultation meeting with a FAB representative, EUROCONTROL delivered a draft CRD to DG MOVE containing preliminary observations, mainly with a view to assisting with questions and answers. The EUROCONTROL team then compiled a final CRD containing additional observations received from EASA, the Network Manager, the Performance Review Board and all other interested parties, as defined in the Regulation.

After completion of the same process for the nine FABs, EUROCONTROL submitted to the EC a FAB synthesis report setting out the overall status of the nine FAB initiatives on the basis of all the observations received during the consultations. The report, the first of this kind on the establishment of FABs in Europe, addresses the legal, institutional, operational and technical questions. It collates and analyses the observations made for each area of requirements (legal, safety, operational, etc.). The analysis includes recommendations to State authorities, NSAs and ANSPs on possible improvements concerning their implementation of FABs in Europe.

Other tasks

In addition to, and outside of the Framework Contract, the Agency continued to manage the roadmap on standardisation and regulation within the general framework of the European ATM Master Plan, which was endorsed by the Council Decision in 2009 in accordance with Council Regulation of 2007 on the establishment of the SESAR Joint Undertaking (SJU) to develop the future ATM system. This entailed extensive coordination with SJU and standardisation organisations.

SES Annual Reporting

EUROCONTROL’s Directorate Single Sky (DSS) supported the SES annual and FUA reporting processes from EU Member and SES associated States. This provided the necessary SES progress data to initially deliver the SES Implementation Report to the EC in May 2012, and later, SES letters to States sent by the EC on national SES improvement areas.

NSA Coordination Platform

Support was provided to the four Working Groups belonging to the NSA Coordination Platform (human resources & cooperation, safety oversight and ongoing compliance, performance and interoperability) and the
Plenary Meeting. It was mainly focused on the development of the NSA processes support tool, a draft proposed Model (toolbox) NSA-NSA Agreement, the development and revision (by PRU) of guidance material for national/FAB performance plans and finally draft guidelines for NSAs for oversight of the interoperability regulation. EUROCONTROL also provided support to the ad hoc task force on the medium-term vision and strategy for NSAs.

**NSA Peer Review**
Peer Review reports for the NSAs of FABCE (Functional Airspace Block Central Europe), FABEC (Functional Airspace Block Europe Central), BlueMed and the UK-Ireland FAB were produced. This type of activity for the Agency terminated with the support to the organisation of the 2010-2012 Peer Reviews Conference in Cyprus, marking the end of the current NSA Peer Review Programme.

**SES Rule Drafting**
Besides Standardised European Rules of the Air (SERA), Aeronautical Data Quality (ADQ) and Performance Based Navigation (PBN) developments, EUROCONTROL was also actively involved in:

- a preliminary impact assessment and the evaluation of an EASA Notice of Proposed Amendment concerning a harmonised European transition altitude;
- the maintenance of regulatory material, notably phase 2 of Air Ground Voice Channel Spacing (AGVCS), the impact of the new ICAO Flight Plan format with regard to the IFPL Implementing Rule and the associated Community Specification;
- the conformity assessment and the endorsement of proposed Edition 3.0 of the conformity assessment guidelines for the interoperability regulation;
- operating the data-link services exemption cell with informal contacts as well as with applications for possible exemptions;
- the means of compliance with the implementing rule (IR) on Surveillance Performance and Interoperability/Aircraft Identification (SPI/ACID) with the formal release of the EUROCONTROL Specification for ATM Surveillance System Performance;
- the Centralised SSR Code Assignment and Management System (CCAMS) central server which began operations and now provides one of the possible means of compliance with the ACID IR;
- the means of compliance with the implementing rule on ADQ, Edition 1.0 of EUROCONTROL Specification on Data Assurance Levels (DAL) was released. The development of the remaining three potential means of compliance supporting the ADQ IR (73/2010) continued at various stages of the process. With electronic AIP published in 2011, this will deliver a set of five means of compliance for the ADQ IR.

- the means of compliance with the implementing rule (IR) on Mode S Interrogator Code Allocation (MSI). A new draft of the EUROCONTROL Specification for the Mode S Interrogator Code allocation coordination and Interrogator Code conflict management was circulated for a final review.

**SES Security**
The overall objective was to continue developing a comprehensive ATM Security Strategy for SES. An assessment of the current and future threats was produced, together with proposals to improve system security. A study on safety and security interfaces in ATM was presented, including proposed improvement measures.

**SES Performance Scheme**
Over the course of 2012, Agency’s support to the SES Performance Scheme primarily consisted of:

- following up the assessment of revised performance plans at national/FAB level including the evaluation of corrective measures presented by States;
- assessing the Network Manager performance plan;
- making proposals for amendments to EC regulation (EU) 691/2010 and the Charging Regulation in order to include key performance areas and indicators for the second, and more demanding, reference period of the performance scheme when it comes into force;
- summarising the outcome of the public consultation on the SES Regulatory Approach.

**Centralised services**
In November 2012, the European Commission requested EUROCONTROL to elaborate further on the concept of centralised services as a way of addressing ATM performance and fragmentation in Europe.

A ‘centralised service’ is an air navigation support service or function that is run at pan-European and central network level. It brings significant benefits in cost-effectiveness and harmonisation, contributes significantly to the performance plans of the Members States, supports the implementation of SESAR developments and contributes to the unbundling of ancillary services.

Stakeholder specific workshops took place until May 2013 while individual workshops on each of the nine centralised services proposed by EUROCONTROL took place in June-July 2013 with interested parties in order to evolve each service further.
SUPPORT TO DG CLIMA

Environmental matters were once again in the political spot in 2012, not least in the area of aviation emissions trading. In November, the European Commission proposed an exemption to the aviation element of the EU emissions trading scheme (ETS), temporarily exempting intercontinental traffic from obligations to report and surrender emissions allowances. As a result, the Agency quickly modified its ETS support facility to provide additional information to the States’ competent authorities and aircraft operators. This enabled them to compare and verify the traffic falling under the full scope of the scheme’s legislation against that which would be newly exempted. The support facility itself ran smoothly throughout the year, with a total number of 21 States having signed an ETS Agreement with EUROCONTROL.

EUROCONTROL continued to work with the European Commission’s DG CLIMA to help it discharge certain of its legal obligations under the relevant ETS legislation. This included providing the annual update of the official list associating aircraft operators to States’ competent authorities and recalculating historical aviation emissions for any change in the scope of the aviation element of the ETS. At the end of 2012, EUROCONTROL and the Directorate-General Climate Action (DG CLIMA) concluded a further cooperation agreement for continued aviation policy support by the Agency.

Continuing with the climate theme, the Agency’s Environment and Forecasting Units maintained their successful cooperation in two key areas. Firstly, the Environment Unit, in support of the 2013 Challenges to Growth report, conducted a study into the resilience of the aviation industry in the face of climate change. An industry-wide survey and stakeholder workshop confirmed that this question has risen quickly up the policy agenda since it was last looked at in 2008-2009. Many more ATM-related organisations have now either instigated work on climate adaptation/resilience, or are planning to do so. As a result of this new work, EUROCONTROL is collaborating with the European Commission and the EEA (European Environment Agency) to ensure that its own initiatives in this field take better account of aviation matters.

Secondly, the Forecasting Unit continued with the development of a new analytical capability to convert traffic demand forecasts into aircraft seat-size classifications from which emissions forecasts can be derived. This work is being undertaken in cooperation with DG MOVE and EASA in the framework of enhancing Europe’s policy modelling capabilities to support regulatory impact assessments within the EU, EUROCONTROL and ICAO’s Committee on Aviation Environmental Protection (CAEP).

A particular strength of EUROCONTROL is its technical capability to model environmental impact. Indeed, 2012 saw a major step forward in this regard with the completion of work, as part of the SESAR programme, to re-host the Agency’s System for Airport Noise Exposure Studies (STAPES) onto a cloud-based computing platform. This made its powerful data processing and management capabilities available to a wide range of stakeholders through remote access. Within SESAR itself, the Agency continued to successfully lead four of the five environmental work packages within Work Package 16 (R&D Transversal Areas). Expertise acquired by the Agency in this field is increasingly being used to assess the environmental impact of policy and operational initiatives, including that of the FABs. Finally, owing to a number of environmental reasons, airports continue to experience capacity constraints, the impact of which can often be mitigated, in particular by collaboration among operational stakeholders. To that end, EUROCONTROL launched the development of a new Specification on Collaborative Environmental Management at airports to provide those stakeholders with a framework within which such cooperation can be organised.
In 2012, the cooperation between EUROCONTROL and EASA, initiated in 2010, was strengthened through the adoption and joint execution of a Work Programme, facilitated by the establishment of a joint technical governance, the nomination of respective focal points and a performance monitoring process. The principle of this cooperation is that EASA builds on the Agency’s expertise in the ATM domain, thus ensuring synergies and optimising resources, in line with the objectives agreed in the High Level Agreement with the European Union.

DSS offers notable support to EASA in the following domains:

**Review of SESAR deliverables**

The activity of reviewing SESAR deliverables has become an ongoing task for EUROCONTROL, and is carried out under the framework of a 2011 agreement between the SJU, EASA and EUROCONTROL. The task consists in supporting EASA to ensure that their safety regulatory requirements are taken into consideration by SESAR at the earliest possible stage of development and deployment of all new SESAR-derived products and services.

In 2012, the review of SESAR deliverables, which lasted from between two to three months for each, focused mainly on Operational Service and Environment Definition (OSED) and Safety and Performance Requirements (SPR) documents. A report, including safety advice, was delivered to the SJU for each review.

In the course of 2012, EUROCONTROL undertook seven reviews. They addressed a variety of subjects such as the ground-based safety net, trajectory management in TMAs, ground and airborne capabilities to implement sequencing, tactical TMAs and en-route queue management, remote provision of ATS to aerodromes as well as approach procedures with vertical guidance. EUROCONTROL was in charge of four of these and contributed to the other three, which were led by EASA.

At the end of the year, a team of EUROCONTROL experts participated in the first SESAR workshop on regulatory activities, in which the SJU, EASA and all other competent authorities discussed the results of the Agency’s review of SESAR deliverables.

**Rule-making**

EUROCONTROL continued to respond to requests from EASA for support in developing regulatory material under the EASA/EUROCONTROL Joint Work Programme. This involved the provision of EUROCONTROL technical expertise in support of both rule-making and development of certification material for existing and planned regulations.

The majority of the work carried out in conjunction with EASA was devoted to developing material associated with the air traffic controller (ATCO) licensing regulation. To ensure appropriate stakeholder engagement in this critical regulatory area, the development of the required material made extensive use of the EUROCONTROL working arrangements, in particular the ATCO Common Core Content Training Task Force. Substantial effort was also devoted to the development of the EASA Certification Specification for Airborne Communications, Navigation and Surveillance (CS-ACNS). Addressing the requirements of data-link services (DLS), voice channel spacing, surveillance performance and interoperability (SPI) regulations, and the gradual transposition of JAA technical guidance leaflets into the CS-ACNS formed an integral part of EUROCONTROL’s contribution to EASA’s CS-ACNS.

EUROCONTROL also supported a number of other key developments, including the standardised rules of the air (SERA), a preliminary regulatory impact assessment concerning a harmonised European transition altitude (HETA) and the development of material in the air traffic safety engineering personnel, human factors and meteorology areas.

The coexistence of overlapping SES and EASA frameworks continued to bring uncertainties and challenges to EASA in identifying their specific tasks and needs. EUROCONTROL experts therefore worked closely with EASA to advise on the identification of relevant activities. This meant that a significant proportion of activities planned for 2012 could not be carried out, pending clarification, in particular by the EC, of the applicable framework.

In 2012, EASA and EUROCONTROL started to draft a new Memorandum of Cooperation, which will further define the working arrangements and should contain an action plan detailing those regulatory activities on which both agencies are expected to cooperate.
**SUPPORT TO STATES**

One of the Agency’s roles is to assist EUROCONTROL Member States’ civil and military ATM regulatory bodies with their harmonised, timely and efficient implementation of the Single European Sky. On the civil side, DSS provided the authorities of some 13 Member States with the following in 2012:

- customised support either to the National Supervisory Authority (NSA) for countries which are EU States or to the Civil Aviation Authority (CAA) for those which are not EU States;
- generic guidance material and training.

The Agency also provided expert support on behalf of the EC, to the coordination platform between the NSAs and the group of focal points designated to represent the FABs recently created in Europe.

As part of this effort, workshops and seminars were held at State and regional level, with EUROCONTROL’s involvement, in order to ensure assimilation of the support received. The Agency also accepted the secondment of national experts to provide them with relevant skills and take advantage of their presence for tasks involving bilateral contacts with their countries of origin. The support was provided in a proactive way, at as low a cost as possible, maximising synergies with other relevant Agency activities and ensuring that there was no conflict of interest with other regulatory support functions. EUROCONTROL was particularly successful in:

- preparing NSAs to become fully competent to supervise, oversee and certify ANSPs, and develop performance plans and to properly monitor their implementation;
- encouraging and supporting regional cooperation in the ATM regulatory domain; and
- promoting best practices on implementation policies and concepts.

At the end of the year, specific support programmes for Bosnia and Herzegovina and Lithuania were initiated via special agreements. They principally consist of:

- hands-on support, focusing on the development of handbooks and processes not only for the certification and designation of ANSPs and training organisations, but also for ongoing oversight in all domains under NSA/CAA remits;
- assistance in oversight of changes and interoperability; and
- legal and organisational studies, business planning and support vis-à-vis EASA observations.

In terms of development, it can be assumed that, following an initial period of intense drafting of the SES legislation, a period of consolidation and implementation will follow. The Agency has therefore started to shift its focus away from support for the establishment of NSAs/CAAs towards performing a relevant range of activities.

This refocusing of effort took place with Member States in the context of the Task Force created by the PC in order to define a “Single Sky Implementation Support Programme”. The outline of that programme was endorsed by the 38th Session of the Provisional Council (PC/38) in December 2012.

**ACHIEVEMENTS UNDER THE CONVENTION**

**SUPPORT TO THE PROVISIONAL COUNCIL ADVISORY BODIES**

The Agency’s DSS hosts the Safety Regulation Unit (SRU) and the Performance Review Unit (PRU) which are both mandated to provide support to the Safety Regulatory Commission (SRC) and the Performance Review Commission (PRC).

One of the main assistance tasks to the SRC in 2012 saw the DSS Safety Analysis Team conduct a detailed assessment of the ATM safety performance in Europe based on the reports submitted by Member States to the EUROCONTROL SRC, as part of its obligations under the EUROCONTROL revised Convention.

EUROCONTROL’s involvement in safety data analysis starts with the Agency feeding the European repository on ATM safety data with both mandatory and voluntary flows of data from Member States. The next step is to analyse these data in order to develop justifications for safety improvement initiatives. The overall output from these activities plays a key role in the development of safety regulation and safety management.

To meet the stringent reporting standards in ATM safety, the Member States send in their data using the Annual Summary Template (AST) defined within the reporting mechanism adopted by the SRC. This formal step is a mandatory link in the safety data analysis chain. It provides a comprehensive basis for the preparation of the SRC’s advice on ATM safety-related matters to EUROCONTROL’s governing bodies. The AST-based reporting supplies the ATM component of the EC’s aviation-wide reporting system and, with regard to ATM safety occurrences, ensures full inter-connectivity with the other systems that are associated with the European Coordination Centre for Aircraft Incident Reporting Systems (ECCAIRS) database.
In 2012, this work helped EUROCONTROL's Safety Analysis Team draft the ATM chapter for EASA's annual safety review report for the second time. The Agency also cooperated with the PRU/PRB and EASA to review the availability and quality of the ATM safety data in the European central repository as well as EASAs and EUROCONTROL's databases in order to promote improvements to the reviewed elements.

Throughout 2012, the Team facilitated workshops on the use, by the Member States, of the Risk Analysis Tool (RAT) methodology to support their analysis work in the context of the Performance Scheme Regulation.

In cooperation with the EC Joint Research Centre, whose mission is to provide scientific and technical support for the development and implementation of EU policies including safety, EUROCONTROL's Safety Analysis Team updated another tool, namely EASTER, to support automatic AST reporting to the SRC by ECCAIRS users. Finally, the 2012 SRC Annual Report was submitted to PC/38. The report underlined earlier adopted recommendations and added new ones designed to further enhance ATM safety.

During the year, a record number of Member States (33) reported AST data to the SRC. This remarkable achievement was possible thanks to the dedication of the national focal points and their advisers. EUROCONTROL continued to support the Member States in this field by, among other things, providing tools and training in order to improve data flows and reports in the safety area at national, European and global level.

Support to the PRC consisted mainly in the production of the following reports in 2012:

- the 2011 Performance Review Report;
- the 2010 ATM Cost-Effectiveness Report; and
- the 2010 US/Europe Comparison of ATM-related Operational Performance.

This work and deliverables feed the work of the EU Performance Review Body, thus generating significant synergies, for the benefit of all EUROCONTROL Member States.

**CIVIL-MILITARY ATM COORDINATION**

EUROCONTROL's specific ability to address military-military and civil-military ATM coordination matters is instrumental in the gradual implementation of a pan-European civil-military Single Sky. In 2012, substantial effort was devoted to civil-military ATM/CNS coordination, cooperation and interoperability in order to ensure increased network performance and military mission effectiveness.

As part of its support to Member States in these domains, the Agency continued to successfully accommodate military requirements and resulting civil-military ATM coordination needs in areas such as SESAR development, EU-mandated regulatory tasks, network operations and performance.

In 2012, EUROCONTROL's in-depth understanding of military matters was fundamental to achieving successful results in a number of critical areas.

**Airspace management support**

Throughout 2012, EUROCONTROL contributed to the development of new procedures to optimise airspace allocation with minimum disruption to civil traffic, while accommodating effective military operations. Notably, trials took place over the year to demonstrate the feasibility of the operational use of the LARA (local and regional ASM) support system in a FAB environment through FABCE (Functional Airspace Block Central Europe). Moreover, the Agency helped to deploy LARA in Belgium and at the EUROCONTROL MUAC (Maastricht Upper Area Control Centre) as well as in Bulgaria, Ireland, the Netherlands, Romania, Switzerland and the NEFAB (North European Functional Airspace Block) States.

EUROCONTROL also helped with the customisation of PRISMIL (Pan-European Repository of Information Supporting Military Key Performance Indicators) and contributed to civil-military performance monitoring for Belgium, France and Germany as well as implementing PRISMIL in the Netherlands and Switzerland.

Not only was support given to MUAC with their own PRISMIL activities, but also to FABEC (Functional Airspace Block Europe Central) States with a common military PRISMIL performance dashboard to measure specific FABEC key performance indicators.

**CNS and interoperability**

During 2012, EUROCONTROL provided a wide variety of CNS technical contributions to SESAR R&D for enhanced civil-military interoperability. This covered ADS-B capability for military aircraft (for which the Agency won the "Best in Class" award from the SESAR Joint Undertaking), military mission trajectory integration into future ATC systems, military-SWIM interoperability as well as advanced navigation for military aircraft, including the technical management of the SJU Military Avionics Study.

Guidance material was provided for aircraft identification (ACID), identification/interrogation of friend or foe (IFF) Mode 5/Mode S as well as certification and operation of State aircraft in European RVSM (Reduced Vertical Separation Minima) airspace. In addition, the
Agency developed civil-military standards for SESAR deployment and made progress on the civil-military CNS interoperability roadmap update.

Several guidance documents were provided to relevant stakeholders for increased civil-military CNS system interoperability. On top of that, the Agency participated in the effort to integrate civil-military requirements in the SES interoperability Implementing Rules: Aeronautical Data Quality 2 and Performance-Based Navigation.

During the course of the reporting period progress was also achieved on the harmonisation of military aeronautical information to ensure a better connection with the EAD (European Aeronautical Database) and improved OAT-IFR (Operational Air Traffic – Instrument Flight Rules) flight planning.

Security
ATM security is concerned with those threats that are aimed at the ATM system directly, or where ATM plays a key role in the prevention or response to threats aimed at other parts of the aviation system. As part of the work undertaken during 2012, EUROCONTROL was a major contributor to the development of the ICAO ATM Security Manual. In a related effort, the Agency also worked in close cooperation with the NATO-EUROCONTROL ATM Security Coordinating Group (NEASCOG) to update the ATM Security Threat and Risk Assessment document so that it can serve as a reference for the ICAO Threat and Risk Working Group when the latter updates ICAO Annex 17 (Security).

FABCE States received support from the Agency with the development of the National ATM Security Oversight Manual. In addition, the Agency organised five ATM security information days in October 2012 to initiate the creation of a policy framework for future security developments and a comprehensive ATM security education process in coordination with ICAO.

Concept and new developments
As an intermediate milestone for transition towards the planned trajectory-based environment, EUROCONTROL was instrumental in integrating the OATTS (OAT-IFR Transit Service) into the Mission Trajectory concept. Also, with regards to OAT-IFR, the national implementation of the EUROCONTROL Specifications for harmonised OAT-IFR Rules in the ECAC Area (EUROAT) across Europe was successfully progressed.

The Agency continued with its work on the development of a regulatory and R&D roadmap for full integration of civil and military UAS/RPA (Unmanned Aircraft System/Remotely Piloted Aircraft) into non-segregated airspace. Moreover, military requirements on Global Navigation Satellite System (GNSS) and technical requirements for UAS/RPA were also coordinated by the Agency with the European Commission and European GNSS Agency (GSA).

EDA and NATO support
As part of EUROCONTROL’s work with the European Defence Agency (EDA) and NATO, the Agency offered the use of the Civil-Military ATM Coordination Tool (CIMACT) to support NATO’s Cooperative Airspace Initiative with the Russian Federation. Similar activities to support FAA coordination with Russia were also launched.

Further military expertise was delivered in relation to initial SESAR deployment activities to the EDA and the European Commission via the Interim Deployment Steering group and Pilot Common Project. The Agency also assisted with EDA’s SESAR coordination activities with NATO through the preparation of technical workshops on AFUA, datalinks, SWIM and ADS-B.

SINGLE SKY IMPLEMENTATION PLANNING AND REPORTING
EUROCONTROL activities, grouped under the heading ‘European/Local Single Sky Implementation’ (ESSIP/LSSIP), support implementation planning, monitoring and reporting in all the European ATM domains.

The ESSIP Plan constitutes the Level 3 implementation phase of the European ATM Master Plan. It provides an all-inclusive view of the European Implementation Roadmap, by containing, in particular, a detailed description of all objectives endorsed by EUROCONTROL’s Provisional Council, including the 46 objectives from the 2012 edition of the ESSIP Plan. These ESSIP objectives were subsequently translated into implementation actions at local, national and regional level, with a prescribed timeframe for their completion.

Reporting on the progress of ESSIP Plan implementation was carried out both at local level through the national LSSIP documents, and at ECAC level through the ESSIP Report. This allowed rigorous monitoring by EUROCONTROL of implementation of the deployment baseline.

The EUROCONTROL report on ‘SES Legislation Implementation’ for the period January 2011 to December 2011 was delivered to the EC in June 2012. It was based on the 42 ECAC States’ LSSIP documents and contained a comprehensive analysis of the SES and FUA reports submitted by the States. It also contained recommendations for specific improvements, which were then considered by the EC.
Overall, the main deliverables produced by the Agency last year to support Single Sky implementation planning, monitoring and reporting were:

- the ESSIP Plan (published in August/September);
- the ESSIP Report (published in June);
- the SES Legislation Implementation report (produced at the end of May); and
- an LSSIP document for each of the 42 States (published between February and April).

In addition to these overarching activities relating to the Single Sky, the Agency was also involved in the relevant aspects of planning, monitoring and reporting for the Interim Deployment Programme and the Pilot Common Project, both of which are related to the forthcoming SESAR deployment.

EMERGING AND DEVELOPING ACTIVITIES

RPAS INTEGRATION

A considerable number of positive developments in the field of Remotely Piloted Aircraft Systems (RPAS) integration into ATM were achieved throughout 2012. Specifically, EUROCONTROL supported the development of the regulatory and R&D roadmaps with contributions to five workshops and the drafting of the EC position paper on the subject. The international Air Navigation Conference in 2012 was particularly significant for RPAS as the ICAO Member States called for immediate action from ICAO to accommodate this new type of airspace user.

Work with the other international entities involved in this field was continued and will be expanded as much as possible. For example, EUROCONTROL is now directly involved in the drafting of the UAS manual as a member of the Unmanned Aircraft System (UAS) Study Group. In addition, the Agency continues to support EASA and the Joint Authorities for Rulemaking on Unmanned Systems (JARUS) with their regulatory developments and assists EUROCAE's two relevant Working Groups with their ongoing standardisation work. Generic training material for a real-time simulation of the mid-air collision avoidance system (MIDCAS), planned for April 2013, was also developed.

Collaborative work with the Member States has led to several support activities like the Ranger RPAS that is now operating under Class C instrument flight rules (IFR) in Swiss airspace. In addition, the Agency also supported NATO with their plans to integrate Medium Altitude Long Endurance (MALE) RPAS into non-segregated airspace.

FREQUENCY SPECTRUM MANAGEMENT

The management of radio frequency spectrum takes place in a very complex environment wherein it has become more and more important to ensure that available frequencies can be used without interference. Just like airspace, radio spectrum is a scarce resource where fierce competition from the non-aviation sector is threatening both the available and required frequencies. The radio frequency spectrum is not only a key enabler for the current civil and military ATM environment but also for the future environment envisaged by SESAR.

In 2012, more than ever in the past, EUROCONTROL spent a lot of time and effort ensuring that aviation spectrum requirements are recognised worldwide. This was done through interaction with several working groups wherein the Agency promoted the European Aeronautical Common Positions to be adopted in line with the identified ATM/CNS requirements. These common positions are key outputs of the Aeronautical Spectrum and Frequency Consultation group (ASFCG), a strategic group set up by ECAC, which reports to both the EUROCONTROL DG and ECAC, with membership comprising regulators as well as ANSPs, CAAs, EUROCONTROL, IATA, NATO and the EU.

AIRPORTS

The main focus of the Directorate Single Sky is to develop a sound airport policy for the future, looking at a regulatory approach to improving quality and capacity at airports within the Single European Sky framework. Airport concerns cover issues ranging from policy and regulatory strategy to very practical aspects such as performance. In 2012, intensive collaboration was strengthened with the European Commission for the development of the ‘Better Airports Package’ and to advise Member States on strategic elements of each of the three legislative proposals contained within the Package.
TRAFFIC DROPPED BY 2.6% OVER 2011

-2.6%

THE NETWORK MANAGER CONTRIBUTED TO THE REDUCTION OF MORE THAN 10% OF NETWORK DELAYS
Network delay targets are being met but there is no room for complacency. Moreover, investment is essential if the ATM system is to have sufficient capacity to cope when air traffic levels pick up again. The Network Manager (NM) monitors developments and initiates action where necessary.

NM’s success in tackling network performance issues with stakeholders, in particular the air navigation service providers (ANSPs), has been recognised by the Agency’s governance bodies. Results show that our partnership approach to managing the network delivered clear benefits, particularly when managing unexpected situations, such as industrial action and other impacts of social tension. The NM’s development of an inventory of measures and contingency plans used by ANSPs in handling strikes is a concrete example of the added value that NM brings when dealing with issues that affect the ATM system as a whole.

The partnership approach was evident during the management of major events, including EURO 2012, the Eurovision Song Contest and the London Olympics. NM also oversaw the successful implementation of the ICAO Flight Plan 2012.

Further cooperative decision-making processes were agreed in 2012 and this way of working was used throughout the year to drive the development of key strategic documents.

The Network Strategy Plan, the NM Performance Plan and the Network Operations Plan describe common goals, obligations and duties in the context of the NM Implementing Rule. All three documents were approved and accepted by the NM’s oversight body, the Network Manager Board, in the course of 2012. These documents describe in detail our commitment to helping deliver capacity, to meeting our targets and to helping others meet theirs, as well as contributing to the overall network efficiency. The vision and strategy for network operations are contained in the Network Strategy Plan. NM now has a clear mandate to deliver the strategy and meet its own performance targets.

AIR TRAFFIC

In 2012, traffic growth was affected by the continuing financial downturn in much of Europe, with several airline bankruptcies contributing to the general decline in traffic.

However, some growth took place in the northern and eastern peripheries of the network – Estonia, Norway, Poland, Turkey and Ukraine – but a sharp contraction in the rest of the network cancelled out this rise and brought the traffic down to levels last seen in 2010, with a drop of 2.6% over 2011.

The low-cost and charter market segments bucked the trend with increases of 1.4% and 2.6% respectively in 2012 (compared with 2011). In contrast, traditional scheduled air traffic – which accounts for half of the total number of flights – business aviation and all-cargo suffered a pronounced decline of some 4-5% year-on-year.
In 2012, the effective capacity indicator increased by 6% over the whole European ATM network (an increase of 9% for the summer season), when compared with the corresponding period of 2011. The result was that in 2012 the European network enjoyed the highest capacity ever recorded and both en-route and airport ATFM delays were the lowest for some years.

The en-route ATFM delay was 0.63 minutes per flight, fully meeting the network performance target of 0.7 minutes per flight.

Airline delay data supports this improvement. ‘All causes’ departure delay per flight was 9.7 minutes in 2012, a fall of 5% compared to 10.2 minutes in 2011 with the ATFM element falling by 22%.

Across the European ATM network, the 20 airports and ACCs with the highest delay figures generated 67% of all ATFM delay in 2012. Moreover, the top eight of these locations generated almost 40% of all network delay: Barcelona, Langen, Marseille, Munich and Nicosia ACCs; Frankfurt, London Heathrow and Istanbul Ataturk airports.
NM’s contribution to delay savings
The NMOC (Network Manager Operations Centre) has numerous strategies and processes to reduce delays.

The overall en-route delay reduction in 2012 was of 730,522 minutes which equates to 10.7% of the annual saved network delay.

The average daily save was around 1,900 minutes. The impact of this reduction to individual flights (operated in 2012) was 0.08 minutes. Around 190,000 minutes of this reduction was achieved through direct re-routings. In total, the average daily saving through re-routings was around 530 minutes. During the summer, the average reduction was 13.3%, with 2.9% achieved through re-routings.

AVERAGE DAILY EXECUTED REROUTING PROPOSALS

The NMOC (Network Manager Operations Centre) has numerous strategies and processes to reduce delays. The overall en-route delay reduction in 2012 was of 730,522 minutes which equates to 10.7% of the annual saved network delay.

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The benefits of A-CDM implementation are visible at the network level, with more accurate departure information feeding into the air traffic flow and capacity management (ATFCM) system run by NM. The network is then able to use the available capacity more efficiently. The percentage of CDM departures at the end of 2012 was 10.7%.

AIRPORTS
The NM regulation stipulates that the NM should help airports enhance their performance and integrate airport operations into the network. Taking a network perspective, the impact of disrupted operations at an airport can have a far-reaching impact on the overall network performance as they can generate major follow-on delays across the network.

A key process to circumvent large-scale delay lies in ensuring that the right information is provided to the right actor at the right time; this is known as Airport Collaborative Decision Making (A-CDM).

To date, Brussels, Frankfurt, Munich and Paris Charles De Gaulle airports have all fully implemented A-CDM. London Heathrow implemented A-CDM on 31 May 2012 but due to local issues, the exchange of departure planning information with the network was suspended in July 2012.

The benefits of A-CDM implementation are visible at the network level, with more accurate departure planning information being exchanged with ATC, which is then able to use the available capacity more efficiently. The percentage of CDM departures at the end of 2012 was 10.7%.

Airport-CDM departures end 2012

By the end of 2012, some 16 additional airports published Continuous Descent Operations (CDOs) during some part of the day or night (mainly from intermediate levels at this stage). This makes for a total of 87 airports which have introduced CDOs.
MANAGING THE NETWORK

NETWORK SAFETY

Recognising that safety is the key rationale for ATM, the Network Manager has adopted a safety approach to ATM network operations that focuses on five key areas:

- the identification of ATM network operational safety risks;
- enhancing operational safety improvements;
- improving safety nets;
- providing support to SMS and safety culture;
- reducing the human contribution to ATM risk.

The Safety Team (ST) identified the ‘Top 5’ ATM operational safety risks affecting the network. These risks are associated with two spheres of operations – loss of separation in the en-route environment and runway safety.

The EUROCONTROL Voluntary ATM Incident Reporting (EVAIR) scheme provides the NM with another perspective of ATM safety as seen through the eyes of the 120+ airlines which voluntarily submit ATM-related incident reports to EVAIR.

The NM has also deployed a Call Sign Similarity Tool (CSST) to help aircraft operators detect and de-conflict similar call signs embedded in their schedules to reduce the risk of call sign confusion. To date, over 40 aircraft operators are registered to use the CSST. This not only delivers safety benefits but also significant efficiency (time) savings.

Risk identification is based on gathering, sharing and learning from safety knowledge. SKYbrary, a web-based, electronic repository of safety data related to ATM and aviation safety continues to thrive with more than one million visits in 2012.

NM also continues to develop and deploy a range of safety tools to identify safety ‘hot spots’ – Automatic Safety Monitoring Tool (ASMT), to assess ATM incident severity – Risk Assessment Tool (RAT) and to measure ATM safety performance – Aerospace Performance Factor (APF). Some eight RAT systems were delivered to ANSPs/FABs during 2012.

Airport safety features prominently in our activities. Alongside industry partners, NM has led and coordinated the compilation of the European Action Plan for the Prevention of Runway Excursions (EAPPRE). Together with the existing European Action Plan for the Prevention of Runway Incursions (EAPPRI), they raise awareness of what local runway safety teams can do to improve the safety of runway operations.

The importance of a just culture as an enabler for improved reporting and better lesson-learning is recognised through the inclusion of a just culture safety KPI in RP1 (Reference Period – 2012 to 2014). The major just culture developments during 2012 were the compilation of a Model Policy for national prosecutors (approved by EUROCONTROL’s Provisional Council in May), the development and trial of an ‘expert’ course with IFATCA, and an agreement to hold a series of regional roadshows to promote the Model Policy and expert course.

Another key ingredient for maintaining safe operations is a positive safety culture. As part of an ongoing process to measure and improve the safety culture in EUROCONTROL ANSPs by the end of 2014, NM conducted a further seven initial surveys and four follow-on surveys during 2012.
NETWORK CRISIS MANAGEMENT

In accordance with the EU NM regulation, the European Aviation Crisis Coordination Cell, EACCC, was formally established in 2012. It is made up of representatives from the European Commission, EASA and EUROCONTROL. There is also a representative from the EU Member State holding the Presidency of the European Council, the military, ANSPs, airports and airspace users.

Following the acceptance of the official nominations, EACCC held its meetings on 12 March, 12 September and 13 December 2012. In April 2012, EACCC participated in the ICAO VOLCEx 12/01 exercise and in May 2012 took part in the first Aviation Crisis Management Workshop, which was held in Brussels. Another major milestone was reached in November 2012 when the Network Management Board approved the EACCC rules of procedure.

In 2012, EACCC played a key role in the implementation of the Safety Risk Assessment (SRA) approach in the management of volcanic ash events across Europe. It also developed draft guidance on the role of State Focal Points.

Even though the EACCC was not activated in 2012, a number of events with a potential to develop into a crisis were dealt with by the Network Manager. Examples of such events are the Russian satellite Phobos Grunt's uncontrolled re-entry into the earth's atmosphere; a pre-alert for the Syrian situation and generalised industrial action. NM took preventive action in each these cases, ranging from holding teleconferences and/or meetings, and displaying information on the NOP portal to applying ATFCM measures such as re-routing when necessary.

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ATM/CNS TRAINING

In 2012, EUROCONTROL's Training Institute hosted students from all 39 EUROCONTROL Member States together with students from across the world. More than 9,000 students participated in the training with 3,400 of these being classroom students and more than 6,000 using our e-learning facilities.

One third of the students enrolled on safety-related courses, one third on network performance-related courses and another third on regulation courses. In addition, the Institute provided administrative and logistical support for the delivery of network operations training to another 900 students. The completion of ATC training in Luxembourg was marked with a certificate of recognition by the Maastricht Upper Area Control Centre.

The Training Institute's most popular tool was FEAST – the controller selection tool. Nearly 6,000 people undertook this test in 2012. The next most popular was ELPAC, the language proficiency test, with just under 1,500 assessments made. The Radar Skills Trainer was next in line, having been used by more than 600 trainees.

Training Zone, the platform that supports course management and hosts e-learning, is used by an increasing number of organisations as their learning management system. The Institute's instructors continued to be in high demand for their subject matter expertise in various other projects for the Agency, EASA, the SJU and for various Member State organisations.
KEY PAN-EUROPEAN PROJECTS

Scarce Resources
The frequency spectrum is limited for aviation and gaining access to it is becoming progressively more challenging as demand grows. In order to ensure both that European aviation’s existing operations remain viable and that there is room for the expected growth in traffic, scarce resources, like frequency spectrum, have to be carefully managed and efficiently distributed.

Radio Frequency Function (RFF)
It is still very difficult to find a voice frequency for a new sector in the central European region. The diagram shows the number of voice frequencies available for an average Area Control Centre (ACC) sector in each European geographical location. The black region over the centre of Europe is the area where there are no more ACC frequencies available at present.

2012 witnessed the definition and operational beginnings of the Radio Frequency Function.

One of the Network Manager’s four functions is to manage the Radio Frequency Function (RFF). The RFF’s main objective is to mitigate the impact of the aviation radio frequencies’ shortage on the network.

The Radio Frequency Function group (RAFT), the RFF’s managing body, consists of the National Frequency Managers nominated by the European States, ICAO and the NM. The RAFT met twice in 2012 to approve the RFF work programme and the transition arrangements for the phased introduction of frequency management improvements.

In order to deliver vital early benefits, two Europe-wide data management exercises were conducted in 2012. These exercises provided significant benefits by, for example, making more frequencies available and reducing the probability of unexpected radio interference in the future. The RAFT exercises also helped European States improve the quality of the information contained in the NM central register of frequency assignments, the reference database for finding new frequencies.

The Centralised Code Assignment and Management System (CCAMS) entered into operation in February 2012.

Transponder Code Function (TCF)
2012 was a transition year between the Aircraft Identification Programme (ACID) and the Transponder Code Function (TCF) that also saw the introduction or extension of multiple technologies that contribute to the optimisation of transponder code usage in Europe.

By the end of 2012, six States had joined CCAMS: Bulgaria, Denmark, Ireland, Norway, Ukraine and the United Kingdom. In the current configuration, at autumn 2012 traffic levels, CCAMS was assigning transponder codes to approximately 10,000 flights each day. The expansion of CCAMS will continue in 2013, with another nine States planning to join during the year.
Datalink
Datalink implementation is spreading as more and more ANSPs and aircraft operators use it. In addition to Maastricht, DFS and skyguide became fully operational in 2012. Airlines are equipping their fleets and a Central Reporting Office was set up to support stakeholders and to analyse any trouble reports.

ICAO Flight Plan 2012
15 November 2012 was the date earmarked for the mandatory switchover from the old format used for flight plans to the new, much more complex one. From that date on, every flight plan filed had to be in the new format. There were significant changes to the flight plan’s content and processing. For instance, detailed information on the flight's navigation capabilities and approvals had to be given.

Not only flight plan content was affected but the systems for processing flight plans had to be adapted, too. This change had the potential to cause significant, worldwide disruption.

To prevent this widespread disruption in Europe, ICAO’s EUR/NAT office requested EUROCONTROL to coordinate the communication of the changes to the interface specifications and operational procedures that the new format Flight Plan entailed.

EUROCONTROL had already set up a dedicated task force in 2009 to coordinate the detailed changes to interface specifications and operational procedures, as well as the deployment and transition issues. The task force worked in close collaboration with international organisations – including ICAO, the FAA and IATA – as well as States, airspace users and ANSPs. They also put together specific guidance material, testing sessions, training manuals, validation exercises and live training.

An interactive user guide met with much success. There were over 53,000 individual visits accounting for more than 350,000 page views. In all, 187 countries participated, so the reach was global – not just European.

The fact that the switchover to the new format went smoothly was attributed in no small part to the role played by EUROCONTROL.

PENS
PENS, the Pan-European Network Service, provides a common Internet Protocol (IP)-based network service for both voice and data air traffic management communications across Europe. It is a joint ANSP-EUROCONTROL initiative which was launched in 2009.

In 2012, it formed an operational network for over a dozen ANSPs. Delivered by SITA, PENS is guided by a steering group and managed in EUROCONTROL by the PENS Management Unit.

It delivers high-availability IP services to the European AIS Database (EAD) and NM’s network for Flow Management Position (FMP) data exchanges. PENS allows ATC centres to exchange flight information data securely and efficiently, using IP Version 6, as required by the European Commission’s Flight Message Transfer Protocol Implementing Rule.

To date, PENS has delivered significant savings through excellent economies of scale. As a result, several other ANSPs plan to join the PENS network.

EAD
The European AIS (Aeronautical Information Services) Database was a EUROCONTROL-led project that was launched in 2003. It was set up to make European AIS more cost-effective and consistent.

Before EAD, there was no single consolidated database of aeronautical information; no systematic coherence checking and a general lack of interoperability. The fact that ANSPs and end users ran different systems meant that there was duplicated, redundant and dispersed investment in both development and maintenance of databases. There were potential safety issues, too, given that the timely distributions of updates to information could not be guaranteed. EAD helped resolve all these issues.

Today, EAD has a wide range of tools, especially adapted for their individual users. Some 150 organisations with over 3,000 operators use EAD on a daily basis – they include people working in airlines, airports, the military as well as ANSPs. EAD Basic is a service provided to general aviation and that has some 5,000 users.

EAD’s service ensures that aeronautical and airspace data – including guidance material related to data harmonisation and consistency – are complete and consistent.

NM makes certain that EAD stays compliant with ICAO’s rulings on information management as well as EC regulations affecting data management.
MAASTRICHT UPPER AREA CONTROL CENTRE

MUAC IS ONE OF THE MOST COMPETITIVE AIR NAVIGATION SERVICE PROVIDERS IN EUROPE WITH A TOTAL ECONOMIC COST PER FLIGHT-HOUR OF €261

TOTAL ROUTE EXTENSION IN THE MUAC AIRSPACE REDUCED BY OVER 7.3 MILLION NAUTICAL MILES (NM)

\[ 7.3 \text{ MILLION NM} = \downarrow 44,000 \text{ T OF FUEL} = \downarrow 147,000 \text{ T OF CO}_2 \]
ECONOMIC WEAKNESS IMPACTS AIR TRAFFIC TRENDS

During the 2012 business cycle, air traffic in Maastricht Upper Area Control Centre (MUAC) airspace was impacted by the economic instability in the eurozone and elsewhere. As anticipated, in spite of the leap year and major sporting events, traffic decreased by 1.2%. This was mainly due to high fuel prices, the slow economic recovery in the eurozone, the streamlining of routes and load factors by operators as well as the growing number of larger aircraft being flown. Total yearly traffic amounted to 1,529,356 flights, which is lower than the levels last seen in 2008.

With 99.7% of flights unimpeded, 2012 was yet another year in which MUAC recorded very high punctuality levels. This helped to maintain a best-in-class level of performance with an average ATFM delay per flight of only 0.04 minutes. While this optimum punctuality performance meets the EU performance targets and is highly appreciated by passengers and operators, MUAC nevertheless currently operates above the optimum cost operating point due to a capacity and staff surplus. However, this imbalance is being addressed through numerous cost-effectiveness activities.

TRAFFIC AND ATFM DELAY TRENDS 2003-2012

2012 saw a downturn in yearly traffic of 1.2%. Since 2003, traffic has grown by 23%, whilst ATFM delays remained exceptionally low with 99.7% of flights unimpeded. It is worth noting that no linear or even exponential correlation seems to exist between traffic and delay trends over the 2003-2012 period.

TOP PUNCTUALITY AND PRODUCTIVITY BUT TRAFFIC DOWNTURN IMPACTS COST-EFFICIENCY

In 2012, MUAC's cost base amounted to €141.2 million. In nominal terms, costs were up by 5% compared to the 2009 baseline which is lower than the inflation rate. After the exceptionally low costs recorded in 2011, maintaining high-quality service provision in 2012 led to a 9.4% increase in expenditure. This resulted in a total economic cost per flight-hour of €261 — a 9.6% increase on 2011 levels but still well below the target of €289, published in the 2012-2016 Business Plan and securing MUAC's position as one of the most competitive air navigation service providers in Europe. In this respect, it is important to note that controlling MUAC's airspace is more economic than controlling arrival and departure traffic at airports and that MUAC benefits from being a cross-border ATC centre.

TRAFFIC AND ATFM DELAY TRENDS 2003-2012

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During 2012, the decline in traffic impacted on MUAC’s overall cost-efficiency as the income from route charges decreased. In order to secure and enhance its capability to cope with the expected challenges in Reference Period 2 (2015-2019), MUAC engaged in further cost-effectiveness measures and launched a Transition Implementation Programme. An incentive scheme for staff was agreed, which will foster future structural changes. Furthermore, new revenue-generating agreements were concluded, which contributed to the reduction of the 2012 cost-base by some €4.8 million. This amount will be returned to airspace users.

Overall, these measures resulted in an actual cost for service provision of €141.2 million against a planned €144.5 million, while high-quality service continued to be provided at an average delay level of 0.04 minutes per flight.

GAT COST-BASE 2008 – 2012 (€M)

In 2012, staff costs increased by 12.7% – mainly driven by the incentive scheme provisions and salary indexations. Total costs were up by 9.4% (Delta calculated disregarding the exceptional reduction due to the implementation of accrual accounting and revalorisation of fixed assets on 2011 costs).

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<tr>
<td>Staff (remuneration)</td>
<td>97.9</td>
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<td>12.3</td>
<td>12.6</td>
<td>12.7</td>
<td>+ 0.8 %</td>
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<tr>
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<td>15.5</td>
<td>10.5</td>
<td>9.7</td>
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<tr>
<td>Interest</td>
<td>2.6</td>
<td>1.8</td>
<td>1.0</td>
<td>1.2</td>
<td>0.7</td>
<td>- 42 %</td>
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<td><strong>Total costs (€ M)</strong></td>
<td>128.4</td>
<td>134.6</td>
<td>138.8</td>
<td>129.1</td>
<td>141.2</td>
<td>+ 9.4 %</td>
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<tr>
<td>Exceptional reduction</td>
<td>-12.8</td>
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<td><strong>Total costs (€ M)</strong></td>
<td>128.4</td>
<td>134.6</td>
<td>138.8</td>
<td>116.3</td>
<td>141.2</td>
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TOTAL ECONOMIC COST PER FLIGHT-HOUR (€) – TREND 2003-2012

The total economic cost per flight-hour controlled is a standard key performance indicator used in the ATM Cost-Effectiveness (ACE) benchmarking reports, produced by the Performance Review Commission. It is the sum of ATM/CNS costs (or financial cost) and air traffic flow management delay costs per composite flight-hour. From 2003 to 2012, the total economic cost per flight-hour controlled went down by 20% and delays reduced by 93%. Since 2009, the average delay per flight is at minimal levels.
In May 2012, for the ninth consecutive year, the ATM Cost-Effectiveness (ACE) 2010 benchmarking report confirmed MUAC’s ranking among the top-performing ANSPs in Europe. The economic gate-to-gate cost-effectiveness indicator for MUAC amounted to €266 per composite flight-hour while the European system average stood at €544. The cost-effectiveness indicator in Europe ranged from €849 to €179. High levels of performance are predominantly driven by high air traffic controller productivity, high-performing technology as well as efficient management of resources and operational procedures. Moreover, the ACE 2010 report confirmed that MUAC’s support costs per composite flight-hour were among the lowest in Europe. This cost-effective performance has been reconfirmed for the year 2011 (ACE 2011, April 2013).

Cost per Kilometre Controlled (€) - Trend 2003-2012 (EUR 2005)

With a sharp drop in traffic in 2009, marginal growth in 2010 and another traffic drop in 2012, the long-term target, set by the EUROCONTROL Provisional Council, could not be met. The cost per km controlled is 10% below that of 2003.
SAFETY

In preparation for the introduction of future Single European Sky and FABEC performance developments, safety occurrence indicators have been complemented with a leading indicator which describes MUAC’s safety management system (SMS) maturity. The SMS key performance indicator covers the development of safety management processes across 11 study areas, ranging from safety culture to safety performance monitoring. As all of these study areas are aimed at minimising MUAC’s contribution to the risk of an aircraft accident, this new indicator defines and measures targeted improvements in selected individual study areas.

In 2012, MUAC set itself a target to achieve at least 80% in each of the 11 SMS maturity study areas. Improvements above 80% were also targeted in a number of selected areas. Although the overall objective of 80% was achieved, the targeted improvements in the specific areas were not achieved by the end of 2012. The SMS maturity scores for 2012 therefore remain the same as for 2011.

It should be noted, however, that a number of significant improvements were achieved in 2012. The following are highlights of some of them:

**SA1 - Safety culture**
The Just Culture working group has continued to assess what needs to be done to implement Just Culture improvements. An action plan will be published in 2013 describing the actions needed to formalise the administrative arrangements for Just Culture within MUAC.

A second safety culture survey was initiated in late 2012, and the results of this survey, and the subsequent action plan, will be developed in the course of 2013.

**SA2 - Safety Policy**
The safety organisation accountabilities and responsibilities in the Safety Management Manual have been revised so that they are easier to understand and offer a clearer account of the improvements in safety culture over the last few years.
In 2012, the total number of Severity A and B separation infringements (two) did not exceed the ceiling defined in the Business Plan (four). Moreover, the results from incident analysis show that misjudgment errors are the most common causal factor for these incidents but also that these incidents are very marginal as most of them classify as severity E, which has no safety impact.

**SA3 - Compliance with International Obligations**
In order to demonstrate MUAC compliance with European Commission Regulation EC482/2008, the SSAS (Software Safety Assurance System) was published in the Safety Management Manual.

**SA4 - Safety achievement**
Steps have been taken to improve the efficiency of MUAC safety processes. These included the simplification of the safety assessment methods used in projects and the implementation of changes. Safety assessments have also been better aligned with project and change deliverables.

**SA8 - Safety assurance**
The STOP Campaign developed and implemented actions aimed at reducing the use of incorrect techniques and the occurrence of misjudgement errors.

**SA9 - Safety Performance monitoring**
The Integration of the SES safety performance indicators within the MUAC Safety Management System was completed.

In 2012, the total number of Severity A and B separation infringements (two) did not exceed the ceiling defined in the Business Plan (four). Moreover, the results from incident analysis show that misjudgment errors are the most common causal factor for these incidents but also that these incidents are very marginal as most of them classify as severity E, which has no safety impact.

**SEPARATION INFRINGEMENTS (SEVERITY A, B, C, D AND E) ATTRIBUTABLE TO MUAC IN 2012**

**SEPARATION INFRINGEMENTS (SEVERITY A AND B) ATTRIBUTABLE TO MUAC (2008-2012)**

Severity A and B incidents refer to serious and major incidents respectively. Severity A (serious) refers to an incident where an aircraft proximity occurred in which there was a serious risk of collision.

Severity B (major) denotes the occurrence of an aircraft proximity in which the safety of the aircraft may have been compromised.
ENVIRONMENT
In 2012, the total route extension in the MUAC airspace was reduced by 1.03%, equating to over 7.3 million NM. This resulted in 44,000 t of fuel and, therefore, 147,000 t of CO₂ saved.

Free Route Airspace Maastricht (FRAM)
A flagship activity, which began in March 2011, and continues to deliver substantial benefits to ANSPs and airspace users in terms of reduced fuel burn, flight/engine-run time, gas emissions and costs is the successful phased deployment of Free Route Airspace Maastricht (FRAM) in the MUAC area. FRAM has been expanded to incorporate the airspace controlled by the DFS’s Karlsruhe UAC to form the FRAMaK (Free Route Airspace Maastricht and Karlsruhe) project. This SESAR programme, between MUAC, Lufthansa and DFS, aims to offer additional direct cross-border routes in the busy and complex core area of Europe. Momentum gathered speed in 2012 with the introduction of additional direct routes in this joint airspace, over Belgium, most of Germany, Luxembourg and the Netherlands. With almost one third of the entire FABEC airspace now covered by FRAMaK, this successful expansion is a major catalyst for the FABEC Free Route Airspace project aimed at the progressive deployment of free routes in the entire FABEC airspace.

On top of the 182 FRAM routes which were already available every night from 00:00 to 8:00 local time, MUAC extended its service to include weekends – from 00:00 Fridays to 8:00 am on Monday mornings. In December 2012, a large number of direct routes, including routes available on a 24-hour basis, were introduced bringing the total of flight-plannable direct routes to 405.

Also in 2012, free route airspace was connected to similar initiatives in the Nordic countries, in the UK/Ireland and in FABCE.

Throughout the year, the use of free routes has been actively promoted with aircraft operators by means of bilateral meetings and briefings. Data analysis for 2012 reveals that FRAM-route usage amounted to 30.8% and that the total number of NM saved by operators amounted to 237,093 NM. In 2012, FRAM generated savings of the order of 1,420 t of fuel and 4,740 t of CO₂ compared to the previous fixed route network.

CUSTOMERS
During 2012, improved customer service was ensured on several fronts, thanks to optimised airspace design and usage, enhanced civil and military cooperation, better customer relationship management and the introduction of new technology. Focus on SESAR programmes continued with several ground-breaking developments, in particular the world’s first I-4D (initial four dimensional) flight.

Several airspace design projects contributed to enhanced performance or to laying the foundations for more efficient ATM: the Free Route Airspace Maastricht and Karlsruhe (FRAMaK) project, new sectorisation, several FABEC projects (e.g. the FABEC Olympics Cell which operated from MUAC) and the Maastricht Airspace Re-Structuring (MARS-2) project.

On the civil and military cooperation front, one of the most notable developments was the extension of the operational MUAC air traffic control system to the RNLAF Air Operations Control Station at Nieuw Milligen (AOCS NM) as part as the Shared ATS system (SAS) project. The primary benefits of the shared system between RNLAF and MUAC are increased safety, important efficiency gains and greater cost-efficiency. Furthermore, as MUAC facilities are upgraded and/or developed to SESAR standards, the improvements will automatically flow to the RNLAF virtual military centre served from MUAC.

In a bid to constantly improve performance and customer service, MUAC has continued throughout the reporting period to work closely with customers and partners to design and develop the most technologically advanced and innovative solutions. Some of the most prominent developments were: the use of the Enhanced Mode S parameter Final State Selected Altitude (FSSA) in Short-Term Conflict Alert (STCA) warnings, the further development of the ATFCM/ASM tools portfolio and continued development of the traffic management system.
SESAR DEVELOPMENT PHASE – VALIDATIONS OF SYSTEMS AND OPERATIONAL CONCEPTS

With its constantly upgraded Industry Based Platform (IBP), MUAC has been active in the SESAR Programme for almost a decade. MUAC validations concentrate on air-ground interoperability, ground-ground interoperability, complexity management and network-related activities.

In this context, the world’s very first flight trial to test the initial fourth dimension (I-4D) – time, took place on 10 February 2012 as part of the SESAR validations. I-4D will improve air traffic predictability and flight efficiency, contribute to reducing emissions as well as facilitate Continuous Descent Operations (CDOs) into airports. Following this first campaign of validations, the involved systems (flight data processing system, human-machine interface and data link front-end processor) were upgraded using lessons learnt during the initial trials. By the end of 2012, further preparations were completed on the upgraded IBP, to get it ready to execute the second set of validations planned for early 2013.
PROVIDING AN EFFICIENT COST-RECOVERY SYSTEM

TOTAL AIR NAVIGATION CHARGES BILLED

€7.8 billion

- Multilateral route charges: €6,900 million
- Terminal charges: €556 million
- Shanwick communications: €17.2 million
- Air navigation charges to non-Member States: €396 million
By the end of 2012 the Central Route Charges Office (CRCO) had processed over 10.83 million flight messages and billed a total of €7.8 billion in air navigation charges (including the multilateral route charges system and the bilateral agreements for air navigation, terminal and communication services). The number of kilometres recorded in Member States’ airspace, used in the calculation of en-route charges, was 8.97 billion kilometres. Notwithstanding the adverse economic climate, the CRCO managed to maintain the medium-term recovery rate as of 31.12.2012 at 99.7%.

**EFFICIENT AND COST-EFFECTIVE COLLECTION OF ROUTE AND OTHER AIR NAVIGATION CHARGES**

EUROCONTROL collects route charges on behalf of its Member States through its Central Route Charges Office. The CRCO provides a recognised and highly efficient cost-recovery system, which funds the pan-European ATM system.

In addition to its primary task of establishing, billing, collecting and disbursing en-route charges to Member States, the CRCO also offers similar cost-effective services in respect of terminal navigation charges (TNC) and communication charges to Member States as well as air navigation charges (en-route and terminal charges) to non-Member States. As at 31.12.2012, some 13 Member States used the CRCO for the collection of TNC and communication charges, whereas five other States used the CRCO’s services for the collection of air navigation charges.

As substantial amounts are invoiced and collected, the CRCO and the charging systems it operates are closely supervised by the Member States. Appropriate governance and audit structures have been implemented. Furthermore, air navigation service providers’ (ANSPs) and airspace users’ representatives are consulted on all significant decisions.

**MULTILATERAL ROUTE CHARGES SYSTEM**

In all, 9.58 million flight messages (IFR flights only) were processed over the year. During 2012, the number of kilometres recorded in Member States’ airspace, used in the calculation of route charges, was 8.97 billion kilometres.

The CRCO billed a total of €6.9 billion in route charges for flights operated in the airspace of the participating States between January and December 2012 – a slight decrease of 1.0% over 2011. The medium-term recovery rate for 2011 (or recovery rate after one year measured on 31 December 2012) was 99.70%. In 2012, the recovery rate at due date was 91.19% as against 90.54% in 2011.

The average weighted national unit rate for Member States (calculated by dividing the sum of the costs chargeable to users by the sum of chargeable service units) slightly decreased from €58.09 to €57.75 in 2012. The 2013 unit rate forecast is €58.45.

**FLIGHT MESSAGES AND KILOMETRES FLOWN**

<table>
<thead>
<tr>
<th>Year</th>
<th>Flight Messages (Million)</th>
<th>KM Flown (Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>8.55</td>
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<td>9.77</td>
</tr>
<tr>
<td>2011</td>
<td>8.97</td>
<td>9.58</td>
</tr>
</tbody>
</table>

**ROUTE CHARGES BILLED**

<table>
<thead>
<tr>
<th>Year</th>
<th>Route Charges Billed (Billion €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>6.24</td>
</tr>
<tr>
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<tr>
<td>2010</td>
<td>7.0</td>
</tr>
<tr>
<td>2011</td>
<td>6.9</td>
</tr>
<tr>
<td>2012</td>
<td>7.0</td>
</tr>
</tbody>
</table>
BILATERAL AGREEMENTS FOR THE BILLING AND COLLECTION OF TERMINAL CHARGES

All EUROCONTROL Member States can take advantage of the cost-efficient and effective terminal charges billing and collection services offered by the CRCO. EUROCONTROL has bilateral agreements for this service with Croatia, Denmark, France (billing only), Greece, Hungary, Ireland, Italy, Lithuania, Moldova, the Netherlands, Slovenia and Sweden.

Costs for billing and collecting terminal charges are low, since the same data and processes are used for both en-route and terminal charges. Moreover, claims submitted by users - and payments made by users – for both types of charge are processed in a single operation. The billing currency is euros (€) for all States, with the exception of Denmark and Sweden where the local currency is used. The total amount of terminal charges billed in 2012 was €555.6 million (including France), corresponding to 2.6 million flights.

BILATERAL AGREEMENTS FOR AIR NAVIGATION CHARGES

EUROCONTROL has bilateral agreements relating to air navigation charges with four non-Member States, namely Belarus, Egypt, Morocco and Uzbekistan, as well as with one EUROCONTROL Member State, Ukraine (until its technical integration into the Multilateral Route Charges System). Air navigation charges comprise en-route charges and, optionally, terminal charges. In 2012, terminal charges were billed on behalf of Belarus, Egypt and Ukraine corresponding to €39.4 million. The States concerned fund all resources required for operating these bilateral agreements without any financial contribution from EUROCONTROL’s Member States. The total amount of bilateral air navigation charges billed in 2012 was €396.1 million, corresponding to 1.25 million flights.

SHANWICK COMMUNICATIONS CHARGES

EUROCONTROL bills and collects Shanwick communications charges on behalf of the Irish Aviation Authority (IAA) for flights performed in the Shanwick Oceanic Region. In 2012, the total amount of charges billed amounted to €17.2 million, corresponding to 396,285 flights.
The number of kilometres recorded in Member States’ airspace, used in the calculation of en-route charges, was **8.97 billion km**
DELIVERING SESAR COMMITMENTS & BEYOND
SUPPORTING THE EUROPEAN ATM INDUSTRY IN THE DELIVERY OF THE SJU PROGRAMME

At end of 2012, around 90% of the research projects (non-management activities) and all management activities (65) were in the execution phase. Overall, the Agency was involved in 202 projects and leading 36% of them, i.e. 73. Following the Agency modernisation and prioritisation required to reduce its cost base, EUROCONTROL has reduced its overall contribution to the Programme by 20% through the reduction of its ‘in-kind’ contribution effort. The resulting best and final offer (BAFO I/II) reallocation was approved by the SJU at the December 2011 Administrative Board.

The opposite picture shows the latest status of direct EUROCONTROL contribution within SESAR compared to the other SESAR partners. As shown, the main focus from EUROCONTROL is in transversal and network areas. The other important contributions are TMA (predominantly traffic synchronisation) and en-route I4D (Initial 4D), interoperability ground–ground and complexity management (these two last elements being mainly ensured by MUAC), airport integration with network management (TAM/CDM) and ensuring interoperability on runway management (procedures, dynamic separation) and surface movement.

The work packages, led by the Agency (WPC, 7, 13 and 16), have recovered the one-year delay generated by the fact that they were part of the second set of proposals of the SESAR call for tender. Overall, the consequence of the slow ramp-up of the Programme is that STEP1 concept (Time Based) is currently being addressed; STEP2 (Trajectory Based) will be addressed in the coming months. However, it will not be possible to address STEP3 (Full 4D) within the programme horizon in 2016.
EUROCONTROL’S CONTRIBUTION

In 2012 the Agency contributed substantially to:

- The 2012 update of the Master Plan which was finally endorsed by the European Commission on 8 October 2012. Together with this update, the Master Plan Portal was developed bringing together many perspectives of the ATM system (performance, operational, technical, business, etc) and ensuring consistent maintenance of all information.

- The development of the transversal assessment methodologies and of validation tools required to support decision making for implementation of new concept elements. Focus was on the development of harmonised validation methodologies and support to assessment cases. Assessment reference materials were produced and business cases were delivered for Release 1.

- The pragmatic development of SWIM, to make sure that SWIM services will be ready in time to support the SESAR concept. Focus has been on the architecture work, ATM data models and on first potential SWIM implementation (AIM, Meteo, NOP). SWIM demonstration days for SESAR members were organised in 2011 and 2012, to demonstrate the current availability of information services and SWIM technical infrastructure. In addition, a “first in class competition” was initiated and organised by EUROCONTROL with the participation of external SESAR stakeholders. It showed that external partners to SESAR (more than 100) were interested in and capable of quickly developing innovative and interesting applications based on existing SWIM services.

- Validations through strategies, plans, simulations and participation in validation exercises of the SJU annual releases (Release 1 in 2011 and Release 2 in 2012) were also completed.

On Release 1, the Agency contributed to three out of 25 validation exercises, in particular the:

- Live trial using the NM test platform to validate the short-term ATFCM measures;

- Validation of air-to-ground exchange of trajectory information on required time of arrival (RTA). This experiment involved the Maastricht UAC and other ANSPs, Airbus aircraft and industrial partners among the SJU members;

- Participation in the prototyping of the Point Merge Concept with Heathrow and Rome as well as live trials in support of the same concept at Charles de Gaulle Airport.

These exercises demonstrated partial maturity of the concepts and the need to pursue activities and perform new exercises within Release 3 before industrialisation can occur (SJU Release 1 close-out report 27/06/2012).

On Release 2, the Agency contributed to 13 out of 44 Release exercises. The validations were completed by year-end and reports delivered in March 2013. The main focus of the Agency was on:

- Time-based separation concept, aimed at reducing separation minima in some challenging wind conditions and some off-nominal cases. The main focus was on prototyping procedures and Tower and Approach controller support tools, as well as collecting wake vortex behaviour data in particular by a LIDAR ground-based system. The collected LIDAR wake data was complemented by a full set of aircraft and MET data to support assessment of time-based separation concept.

- Trials of surface routing, D-Taxi assignment and modification of a route to individual aircraft and vehicles using data link for a safe, expeditious and efficient movement to their intended position on the airport movement area. The main focus was on validating, through real-time simulation, a preliminary enhanced surface routing function for surface management by using improved surveillance and encompassing a modernised integrated tower controller working position (CWP) at a complex airport.

- Free Routing operations inside the ECAC core area. The main focus was on real-time simulation at MUAC to investigate specific scenarios for low military traffic and all DCTs open, and to identify implementation limits and derive implementation recommendations.

- Enhancement of the current flight-plan filing process to include the possibility for the flight-plan originator to send calculated 4D profiles and aircraft performance information, in order to improve the quality of the flight trajectory used by the network management systems. The main modification was focused on the IFPS in order to integrate received additional data (4D profiles and performance information).

- Advanced FUA, with a main focus on validating, through fast- and real-time simulation, the concept of variable profile areas, the impact of automatic update, via an ASM tool, of ATC systems for visualisation on controller working position and of ATFM systems in order to facilitate collaborative decision making.

- First experimentation of the user-driven prioritisation process (UDPP) enabling airspace users to swap TTOT (target take off time) at a CDM airport in case of “significant” demand/capacity mismatch on the day of operations.
In addition, as part of the Membership Agreement, the Agency made progress on four contracts on behalf of the SJU:

- **Long-term & innovative research (WP E):** Current activities comprise two research networks, 18 projects, mostly executed by multi-partner consortia and 20 PhDs. Almost 50 universities and research organisations are receiving support and funding from WP-E for their ATM research and innovation work. A second call for tenders for research projects received a strong response. As a result, 20 new projects will be started early 2013. Through its leadership of WP E, EUROCONTROL is widely recognised as providing the technical and management expertise needed to define and oversee a programme of innovation and long-term research for European ATM.

- **Flight/wing operations centres (WP11.1):** The contract was awarded to the Fly4D consortium, led by Airbus with members: Cassidian, Honeywell Lufthansa Systems and Sabre in May 2011. The contract covers four major areas of work for the airlines and military operation centres: management of the business and mission trajectories, trajectories’ flight planning, operations control management (both ground and air) and support to the post-flight analysis reporting. EUROCONTROL is overseeing the administration of the contract on behalf of the SJU as well as providing expertise, particularly with regard to the interaction and integration of these concepts and related systems with the network operations and systems.

- **Meteo (WP11.2):** A contract was signed on 16 January 2012 — after approval by the Provisional Council — with the Economic Interest Grouping (EIG) EU METNET comprising: Belgocontrol, DWD, FMI, KNMI, MET Office, Meteo France, MET.NO, NLR, SHMI and Thales Air Systems. The main focus of this contract is on the definition of ATM requirements on meteo information and on prototyping the integration of this meteo information with ATM. First deliverables consisted of requirements, specification and architecture of a MET prototype for the airport environment. This prototype was demonstrated at Paris Charles de Gaulle at the end of 2012.

- **Military Engagement Plan:** The Agency completed the contractual set-up for military inputs. The contract is being used to obtain participation from the States’ military organisations to counter the difficulty of gaining support via secondments.

**EUROCONTROL will concentrate on areas where the overall network performance can be improved.**

**SJU TIGER TEAM ON WORK PROGRAMME PRIORITISATION**

The Directorate SESAR and Research (DSR) performed a critical analysis of the EUROCONTROL work programme in 2011 to ensure that it fits within the Business Plan envelope. This review led to a refocusing on key projects and to a smoothing of activities in future years designed to incur limited impact on the Agency contractual deliverables. This resulted in the revised Best and Final Offer (BAFO I/II) at the end of 2011 which was accepted by the SJU Administrative Board at its final meeting in 2011.

In addition, EUROCONTROL has been actively supporting an SJU initiative to prioritise the SESAR Programme, in order to deliver greater efficiency and increased benefit. Accordingly, the current 300 projects within the framework of the Tiger Team, launched by SJU in 2012, are proposed to be grouped in five business priority areas:

- traffic synchronisation;
- 4D trajectory management;
- network management;
- airport integration and throughput;
- conflict management and automation.

EUROCONTROL will continue to work in this direction in 2013 to make SESAR a reality, with focus on added-value and tangible deliverables. It will reduce the overhead, currently resulting from too many projects, cross dependencies that are difficult to manage, and overall it will improve the value of SESAR when it is delivered in full.

This prioritisation work, performed in collaboration with all SJU members, will be concluded in 2013 with a second re-allocation of workload to allow all SJU members to align their contribution with the agreed priorities. EUROCONTROL will concentrate on areas where the overall network performance can be improved.
PREPARING THE NEXT PHASE: SESAR DEPLOYMENT

SESAR deployment discussions on how to most appropriately organise the management of projects and activities led to an agreement to establish a three-level structure. At the top of this structure is the political level, which has responsibility for deciding what is needed from a network perspective. The second level will be the creation of a Deployment Manager to run and coordinate the activities that will be selected to belong to “Common Projects”. The third level will be made up of the specific deployment projects.

The modalities and accountabilities have been laid out in the form of an Implementing Rule for Common Projects which was approved by the Single Sky Committee in March 2013. EUROCONTROL will play a role at all three levels while the Deployment Manager is anticipated to be industry-led.

A FRAMEWORK FOR THE EUROPEAN ATM RESEARCH POST SJU I

In the course of 2012, driven by the time horizons addressed by the Agency's business planning process and the new financial perspectives of the European Commission's Horizon 2020 programme covering the period 2014 to 2020, the Agency sought guidance from the Provisional Council regarding its role and general orientations with respect to ATM-related research beyond the current commitments to the SESAR work programme.

The Agency accepted that societal and market needs, as described in the new Strategic Research and Innovation Agenda provided by ACARE, require further ATM evolution beyond existing goals and time horizons addressed through the current SESAR work programme.

Similarly, the European transport industry recognised that after 2014 further research will be required under the new financial perspectives within the Horizon 2020 programme to implement a managed process which ensures the transition from ideas to deployment. This additional research will help to successfully achieve the SES ambitions, not least those addressing the wider Flightpath 2050 vision.

The Agency followed these developments carefully and presented ideas to the Provisional Council for its own future involvement. On this basis, the Provisional Council confirmed that the Agency shall retain a role in relevant air transport research. It underlined the fact that EUROCONTROL engagement in research and innovation serves to complement industry efforts, in particular the functions for which the Agency is mandated, especially network management and the overall performance and architecture of the European air traffic system.

Following an initiative launched by the European Commission, and acknowledging that the SJU has been instrumental in bringing together experts from across European aviation, EUROCONTROL simultaneously engaged in discussions about the extension of the SJU’s remit. The SJU, it was agreed, has also played a major role in focusing European public and private resources around a common programme, and supporting the development of essential improvements in ATM service delivery (albeit exploiting results obtained from past research).

Nevertheless, as an SJU founding member, the Agency gave due consideration to the current economic climate and the effects of the public-private partnership (PPP) upon the ability of the sector to innovate and address applications beyond existing levels of expertise prior to further engagement in an eventual extended SJU. To this end, the Agency reviewed the arguments regarding whether to extend the SJU and if so how. Further consideration was given to options for guaranteeing the efficient delivery of future improvements and, consequently, how to allow EUROCONTROL to better define its future contribution to European research.

It concluded that if European ATM wants to be able to face future performance challenges, effort and resources must be made available during all the phases of the research and innovation lifecycle in a balanced way, and through an oversight process which is specifically adapted to each of these phases.

However, in view of the current challenges, EUROCONTROL suggests that even if there is a strong case for early adaptation within the current arrangements, this should be done without disrupting the execution and delivery of the ongoing work programme.

The Agency started to identify, with the EC and the SJU, the possible structure and mechanisms of the programme, so as to ensure that an extension of the SJU and complementary instruments provide the conditions which would enable appropriate Agency engagement while taking into consideration the pressure to reduce the Agency's cost base. This will be progressed in the course of 2013 with a view to reaching agreement with the EC and decision by the Provisional Council by the end of the year.
WORKING TOWARDS GLOBAL INTEROPERABILITY

The 12th ICAO Air Navigation Conference was held in Montreal from 19 to 30 November 2012. Preparations for the event started in 2011 with the active participation of the Agency in the definition of Aviation System Block Upgrades (ASBUs) within an ad-hoc ICAO Technical Team. The ASBUs are made of “modules”. Their implementation, according to operational needs, is to deliver performance improvements and global interoperability. This also provides the basis for ICAO standardisation work and global synchronisation. The modules are to be progressively available, a ‘block’ grouping those which are coming to fruition in a defined five-year period. The ASBU form, together with the roadmaps of enabling capabilities and technologies, the core substance of the revised version of the Global Air Navigation Plan (gANP) which was submitted to the Conference and which structured its agenda.

Among the 155 Working Papers and 64 Information Papers submitted to the Conference, 36 WPs and 4 IPs were jointly presented by the Presidency of the European Union on behalf of the European Union and its Member States; the other Members States of the European Civil Aviation Conference; and the Member States of EUROCONTROL. This combined effort resulted from intensive coordination efforts among European States and organisations which began at the end of 2011, and from the substantial drafting of the associated documents by Agency experts. The introduction of the papers at the Conference, alongside their initial support enabled 23 European State delegations to take the floor. The coordination during early preparations for the Conference and during the Conference itself proved extremely useful in ensuring streamlined common positions and mutual support.

Overall, from a European perspective, the Conference was a success and the recommendations are a great reflection of what was needed to support European developments.

Europe, therefore, needs to actively continue supporting ICAO work and contributing to the timely delivery of the required provisions, particularly as some of the planned improvements require wide dissemination beyond Europe.

The Conference has “endorsed” ASBU Blocks 0 and 1, and “agreed in principle” Blocks 2 and 3. The GANP will be submitted to the next ICAO Assembly. Overall, this will provide a global planning structure consistent with European views and needs through the performance-based, deployment oriented ASBU modules. Furthermore, it is well aligned with the European ATM Master Plan, meaning that the core technical aspects of SESAR are now well anchored into the global perspective, with suitable recommendations covering the development of complementary standards and deployment/implementation actions. Global interoperability and a well-organised process for standardisation to prevent duplication and/or dispersion of resources have been confirmed as essential.

Through its contribution to the SJU work programme and the achievements of other Agency work programme activities, presented in other sections of this document, the Agency is in a position to — and already does — deliver significant input to the drafting of new/updated ICAO provisions as well as contributing well targeted input to the formulation of industrial standards.

As in previous years, the Agency actively participated in and provided significant input to the ICAO working arrangements at global and/or European Region level in 2012. This work developed provisions and standards to facilitate the development of the European ATM system, and ensure interoperability in the global context. In 2012, this input continued, especially on the topics which are central to SESAR and to the European ATM Master Plan, such as PBN, SWIM, FF-ICE, as well as RPAS and GNSS. Where appropriate, this action is extended to other bodies such as the industrial standard organisations.

The actions related to global interoperability would not be complete without mentioning those undertaken in the context of the Memorandum of Cooperation with the FAA, as well as the participation of the Agency, at executive level, to the discussions of the NextGen Advisory Committee of RTCA.

Based on the positive experience of AN-Conf/12, a strong European coordination will continue for the preparation and running of other major ICAO events such as the 38th Assembly (September 2013).

Europe needs to actively continue supporting ICAO work and contributing to the timely delivery of the required provisions.
RESOURCES

AGENCY PEOPLE AT A GLANCE

1968 OFFICIALS/SERVANTS

& 101 CONTRACT STAFF
Making the Agency More Compact

The Agency continued in 2012 to strive for a leaner staff complement with a view to keeping its cost base firmly under control, and staff numbers declined further from 2,029 officials/servants and 105 contract staff at the end of 2011, to 1,968 and 101 respectively at the end of 2012. These reductions were attributed to three factors:

- the final batch of departing staff members who had applied for the Early Termination of Service (ETS) scheme, bringing the effect of ETS to an end as of 31 December 2012;
- strict controls continued to apply to the external replacement of staff, following a very limited replacement policy, with significantly restricted new arrivals;
- this trend of declining staff numbers was further supported by restrictions in the renewal of contract staff.

With the termination of support at Karlsruhe in 2012, the Agency consolidated down to just four locations (Brétigny, Brussels, Luxembourg and Maastricht), completing a regrouping of the Agency which started with the closure of Budapest and Prague in 2010.

Mitigating the Risks Associated with Operating with Less Staff

This global policy of rightsizing the Agency’s staff complement, while continuing to deliver agreed activities to stakeholders as per the Agency business plan, has required considerable effort internally to rebalance staffing levels to avoid disruption and loss of knowledge, a particularly important aspect given the non-replacement of a considerable number of highly experienced senior assistants, experts and managers.

The main mechanism used to mitigate these effects has been redeployment of existing staff, through either the iMOVE scheme (internal mobility at the same grade), or through a limited number of internal competitions. This has ensured that essential positions have been filled while, at the same time, providing some career opportunities for staff.

Individual handover plans were prepared for each planned departure on ETS, ensuring effective knowledge transfer, while training continued to be provided to allow staff to acquire further skills.

The Agency also started work on developing a dynamic resource allocation approach which will be rolled out in 2013, with the aim of identifying in-house expertise, in particular specific skill-sets, which could be drawn on for particular tasks, or to address seasonal workload peaks.

Tackling the Age Pyramid

The limitations on recruitment over the past few years, while having a positive budgetary effect, have resulted in a very low number of arrivals and have seen the Agency’s age pyramid continue to worsen. In 2012 direct action was taken to address this by putting in place a Graduate Programme. This programme envisages bringing in to the Agency annual waves of high-potential graduates for a three-year programme. 15 graduates arrived in October 2012, and 12 are expected each subsequent year of the business planning cycle.

The Agency’s aim with this programme is to grow its own next generation of junior experts at an affordable cost, and simultaneously start to tackle the age pyramid – an essential measure given that the demographic forecasts predict a large proportion of expert staff will retire in a short space of time within 10 years. The Graduate Programme represents a balanced partial solution to this issue. This programme will be complemented by other actions to tackle the age pyramid, and to provide staff with the opportunity to grow in the Agency.

Maximising In-House Potential

In parallel with the Graduate Programme, the Agency placed renewed emphasis on developing its workforce to meet present and future needs through the other deliverables of the People Development Programme. To meet the strategic objective of ensuring a flexible and mobile workforce, work continued on developing new career management approaches, and on conceptualising a talent management approach designed to recognise and foster potential at all levels of the Agency.

2012 saw a set of pilot projects rolled out to assess the developmental impact of specialised and managerial programmes, with the aim of putting these in place as specific development actions designed to grow in-house talent in the years ahead.

Keeping a Close Eye on Staff Well-Being and Motivation

The changes of the past years and the profound effect of the modernisation of the Agency, together with reduced staffing levels in most units, have placed significant pressures on staff. The People Support function, which comprises the socio-medical services as well as the part of the administration dealing with staff matters, played an important role in alleviating this pressure and in strengthening support available to staff, in particular by rolling out an improved absence management approach that saw new processes developed, and line managers trained to deal better with absence.
Work was also focused on strengthening morale and motivation, with the formal adoption of the Agency’s Corporate Behaviours, a set of values designed to build a common Agency culture. These behaviours have been introduced into all relevant corporate processes, particularly competitions, mobility and the performance appraisal system. A second related development was the introduction of a Code of Conduct, which distils the main advice from the staff regulations into a clear and comprehensive guide reminding staff of their obligations as international civil servants.

**AGENCY PEOPLE AT A GLANCE**

- 1,968 officials/servants (down from 2,029 on 31/12/2011)
- 101 contract staff (down from 105 on 31/12/2011), of which 15 are new arrivals as the first wave of the Agency’s Graduate Programme

**FINANCIAL RESOURCES AT A GLANCE**

- € 501.0 million cost base, Part I – Network Management, SESAR & Research, Single Sky, Corporate Functions and financing
- € 17.6 million, Part II – CRCO
- € 141.2 million, Part III – MUAC
- € 659.8 million total nominal costs

**CONTINUING TO DELIVER MAJOR STRUCTURAL SAVINGS**

The Agency made a powerful pro rata contribution to the Performance Scheme targets in 2012. Reduced staffing levels, accompanied by prudent spending across the Agency, resulted in major savings in operating costs. The positive effects of these measures were enhanced by a lower than forecasted salary and pension adjustment, greatly decreased depreciation costs and cost of capital thanks to the containment of new investments, and the application of IFRS.

As a result, 2012 saw the Agency keep its cost-base (i.e. Part I of the Budget) significantly below the planned ceiling of € 536.3 million. The outturn of €501.0 million included an additional transfer of €28.9 million to the Pension Fund (PBO sub-account) in accordance with the Permanent Commission’s decision that unused budgetary credits could be transferred to the Pension Fund.

This represents a significant achievement, and builds on efforts made since 2008: the Agency has successfully delivered significant efficiencies with the 2012 outturn far below the €572.6 million cost base that had been envisaged in the 2008-2012 Agency Business Plan, before the decision was taken in 2009 to freeze the cost base at or below its 2008 level. This achievement was recognised at the December 2012 Provisional Council, when the Member States applauded the Agency’s plans to contribute on a pro rata basis to the targets of the Performance Scheme in the reference periods (RP1-RP2), by adjusting the Agency’s cost base.
COST-BASE EVOLUTION 2008-2012 (in M€)

INITIATIVES TO IMPROVE BUSINESS EFFICIENCY

These positive budgetary impacts were accompanied by renewed efforts to improve and harmonise internal processes, with major initiatives launched in the areas of IT, procurement and corporate services.

In IT, work started to unify the fragmented structure of the Agency’s IT services with the aim of progressively consolidating infrastructures and services around a common strategy. This will create opportunities for future savings, and ensure a better use of internal IT resources. In procurement, work began on making the overall process leaner and faster, helping the business areas achieve their goals, while continuing to guarantee a high level of compliance with the rules. And in corporate services, consolidation continued in the area of facility management, with a view to finding significant savings through concluding cross-site contracts.

COST-BASE EVOLUTION 2008-2012 PER EXPENSE CATEGORY (in M€)

<table>
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<th>2010</th>
<th>2011</th>
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<td>2.046</td>
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<td>531.553</td>
<td>537.904</td>
<td>526.455</td>
<td>533.362</td>
<td>501.028</td>
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<tr>
<td>Exceptional</td>
<td>-68.538</td>
<td>-68.538</td>
<td>-68.538</td>
<td>-68.538</td>
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<tr>
<td>Total EUROCONTROL costs (including exceptional)</td>
<td>531.553</td>
<td>537.904</td>
<td>526.455</td>
<td>464.824</td>
<td>501.028</td>
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## Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACARE</td>
<td>Advisory Council for Aeronautics Research in Europe</td>
</tr>
<tr>
<td>ACC</td>
<td>Area Control Centre</td>
</tr>
<tr>
<td>A-CDM</td>
<td>Airport Collaborative Decision Making</td>
</tr>
<tr>
<td>ACE</td>
<td>ATM Cost-Effectiveness</td>
</tr>
<tr>
<td>ACID</td>
<td>aircraft identification</td>
</tr>
<tr>
<td>ACID IR</td>
<td>aircraft identification implementing rule</td>
</tr>
<tr>
<td>ADS-B</td>
<td>Automatic Dependent Surveillance – Broadcast</td>
</tr>
<tr>
<td>ADQ</td>
<td>Aeronautical Data and Information Quality</td>
</tr>
<tr>
<td>AFUA</td>
<td>Advanced Flexible Use of Airspace</td>
</tr>
<tr>
<td>AGVCS</td>
<td>Air Ground Voice Channel Spacing</td>
</tr>
<tr>
<td>AIS</td>
<td>Aeronautical Information Services</td>
</tr>
<tr>
<td>ANS</td>
<td>air navigation services</td>
</tr>
<tr>
<td>ANSB</td>
<td>Air Navigation Services Board</td>
</tr>
<tr>
<td>ANSP</td>
<td>Air Navigation Service Provider</td>
</tr>
<tr>
<td>AO</td>
<td>Aircraft Operator</td>
</tr>
<tr>
<td>AOCs NM</td>
<td>Air Operations Control Station Nieuw Milligen</td>
</tr>
<tr>
<td>APF</td>
<td>Aerospace Performance Factor</td>
</tr>
<tr>
<td>ARN</td>
<td>ATS Route Network</td>
</tr>
<tr>
<td>ARTAS</td>
<td>ATM Surveillance Tracker and Server System</td>
</tr>
<tr>
<td>ASBU</td>
<td>Aviation System Block Upgrade</td>
</tr>
<tr>
<td>ASFCG</td>
<td>Aeronautical Spectrum Frequency Consultation Group</td>
</tr>
<tr>
<td>ASM</td>
<td>Airspace Management</td>
</tr>
<tr>
<td>ASMA</td>
<td>Arrival Sequencing and Metering Area</td>
</tr>
<tr>
<td>ASMT</td>
<td>Automatic Safety Monitoring Tool</td>
</tr>
<tr>
<td>AST</td>
<td>Annual Summary Template</td>
</tr>
<tr>
<td>ATC</td>
<td>air traffic control</td>
</tr>
<tr>
<td>ATCO</td>
<td>Air Traffic Controller</td>
</tr>
<tr>
<td>ATFCM</td>
<td>AirTraffic Flow and Capacity Management</td>
</tr>
<tr>
<td>ATFM</td>
<td>Air Traffic Flow Management</td>
</tr>
<tr>
<td>ATM</td>
<td>Air Traffic Management</td>
</tr>
<tr>
<td>ATS</td>
<td>Air Traffic Services</td>
</tr>
<tr>
<td>BADA</td>
<td>Base of Aircraft Data</td>
</tr>
<tr>
<td>BAFO</td>
<td>Best And Final Offer</td>
</tr>
<tr>
<td>CAA</td>
<td>Civil Aviation Authority</td>
</tr>
<tr>
<td>CAEP</td>
<td>Committee on Aviation Environmental Protection (ICAO)</td>
</tr>
<tr>
<td>CBA</td>
<td>Cross Border Area</td>
</tr>
<tr>
<td>CCAMS</td>
<td>Centralised SSR Code Assignment and Management System</td>
</tr>
<tr>
<td>CDM</td>
<td>collaborative decision-making</td>
</tr>
<tr>
<td>CDO</td>
<td>Continuous Descent Operation</td>
</tr>
<tr>
<td>CFMU</td>
<td>Central Flow Management Unit</td>
</tr>
<tr>
<td>CIMACT</td>
<td>Civil/Military ATM/Co-ordination Tool</td>
</tr>
<tr>
<td>CNS</td>
<td>Communication, Navigation &amp; Surveillance</td>
</tr>
<tr>
<td>CO₂</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>COSO</td>
<td>Committee of Sponsoring Organisations of the Treadway Commission</td>
</tr>
<tr>
<td>COTS</td>
<td>Commercial Off-The-Shelf</td>
</tr>
<tr>
<td>CRCO</td>
<td>Central Route Charges Office</td>
</tr>
<tr>
<td>CRD</td>
<td>Common Response Document</td>
</tr>
<tr>
<td>CS-ACNS</td>
<td>Certification Specification for Airborne Communications, Navigation and Surveillance (EASA)</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>--------------</td>
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<tr>
<td>CSST</td>
<td>Call Sign Similarity Tool</td>
</tr>
<tr>
<td>CWP</td>
<td>Controller Working Position</td>
</tr>
<tr>
<td>D</td>
<td>Data Assurance Level(s)</td>
</tr>
<tr>
<td>DAL</td>
<td>Direct Routing</td>
</tr>
<tr>
<td>DFS</td>
<td>Deutsche Flugsicherung GmbH</td>
</tr>
<tr>
<td>DG CLIMA</td>
<td>Directorate-General for Climate Action</td>
</tr>
<tr>
<td>DG MOVE</td>
<td>Directorate-General for Mobility and Transport</td>
</tr>
<tr>
<td>DLS</td>
<td>Data-link services</td>
</tr>
<tr>
<td>DSR</td>
<td>Director SESAR and Research</td>
</tr>
<tr>
<td>DWD</td>
<td>Deutscher Wetterdienst (German Weather Service)</td>
</tr>
<tr>
<td>E</td>
<td>European Aviation Crisis Coordination Cell</td>
</tr>
<tr>
<td>EACCC</td>
<td>European AIS Database</td>
</tr>
<tr>
<td>EAPPRE</td>
<td>European Action Plan for the Prevention of Runway Excursions</td>
</tr>
<tr>
<td>EAPPRI</td>
<td>European Action Plan for the Prevention of Runway Incursions</td>
</tr>
<tr>
<td>EASA</td>
<td>European Aviation Safety Agency</td>
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<tr>
<td>EATM</td>
<td>European Air Traffic Management</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>ECAC</td>
<td>European Civil Aviation Conference</td>
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<tr>
<td>ECCAIRS</td>
<td>European Coordination Centre for Aircraft Incident Reporting Systems (EC)</td>
</tr>
<tr>
<td>EDA</td>
<td>European Defence Agency</td>
</tr>
<tr>
<td>EEA</td>
<td>European Environment Agency</td>
</tr>
<tr>
<td>EIG</td>
<td>Economic Interest Grouping</td>
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<tr>
<td>ELPAC</td>
<td>English Language Proficiency for Aeronautical Communications</td>
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<tr>
<td>ESSIP</td>
<td>European Single Sky Implementation</td>
</tr>
<tr>
<td>ETS</td>
<td>Emissions Trading Scheme</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>EUMETNET</td>
<td>European Meteorological Services Network</td>
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<td>EUROAT</td>
<td>EUROCONTROL Specification for harmonized Rules for Operational Air Traffic under Instrument Flight Rules (IFR) inside controlled Airspace of the ECAC Area</td>
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<tr>
<td>EUROCAE</td>
<td>European Organisation for Civil Aviation Equipment</td>
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<tr>
<td>EVAIR</td>
<td>EUROCONTROL Voluntary ATM Incident Reporting system</td>
</tr>
<tr>
<td>F</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FAA</td>
<td>Functional Airspace Block</td>
</tr>
<tr>
<td>FABCE</td>
<td>Functional Airspace Block Central Europe</td>
</tr>
<tr>
<td>FABEC</td>
<td>Functional Airspace Block Europe Central</td>
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<tr>
<td>FDPS</td>
<td>Flight Data Processing System</td>
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<tr>
<td>FEAST</td>
<td>First European Air Traffic Controller Selection Test</td>
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<tr>
<td>FIR</td>
<td>Flight Information Region</td>
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<td>FF-ICE</td>
<td>Flight and Flow Information for a Collaborative Environment</td>
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<tr>
<td>DMI</td>
<td>Finnish Meteorological Institute</td>
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<td>FMP</td>
<td>Flow Management Position</td>
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<td>FRAM</td>
<td>Free Route Airspace Maastricht</td>
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<tr>
<td>FRAMaK</td>
<td>Free Route Airspace Maastricht and Karlsruhe</td>
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<td>FSSA</td>
<td>Final State Selected Altitude</td>
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<tr>
<td>FUA</td>
<td>Flexible Use of Airspace</td>
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<tr>
<td>G</td>
<td>Global Air Navigation Plan</td>
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<td>GAT</td>
<td>General Air Traffic</td>
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<tr>
<td>GLS</td>
<td>GNSS Landing System</td>
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<tr>
<td>GNS</td>
<td>Global Navigation Satellite System</td>
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<tr>
<td>GSA</td>
<td>European GNSS Agency</td>
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<tr>
<td>HETA</td>
<td>Harmonised European Transition Altitude</td>
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<tr>
<td>HLA</td>
<td>High Level Agreement</td>
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<tr>
<td>I</td>
<td>Initial 4D</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
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<tr>
<td>IBP</td>
<td>Industry Based Platform</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>ICAO-CAEP</td>
<td>ICAO Committee on Aviation Environmental Protection</td>
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<tr>
<td>IFATCA</td>
<td>International Federation of Air Traffic Controllers' Associations</td>
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<tr>
<td>IFF</td>
<td>interrogation of friend or foe</td>
</tr>
<tr>
<td>IFPL</td>
<td>Initial Flight Plan</td>
</tr>
<tr>
<td>IFPS</td>
<td>Integrated Initial Flight Plan Processing System</td>
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<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
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<tr>
<td>IFRS</td>
<td>International Financial Reporting Standards</td>
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<td>IP</td>
<td>Internet Protocol</td>
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<tr>
<td>IR</td>
<td>Implementing Rule(s)</td>
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<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>IFPS</td>
<td>Integrated Initial Flight Plan Processing System</td>
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<tr>
<td>J</td>
<td>Joint Aviation Authority</td>
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<td>JARUS</td>
<td>Joint Authorities for Rulemaking on Unmanned Systems</td>
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<tr>
<td>JAA</td>
<td>Joint Aviation Authority</td>
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<tr>
<td>K</td>
<td>Koninklijk Nederlands Meteorologisch Instituut (NL) / Royal Netherlands Meteorology Institute</td>
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<tr>
<td>KPI</td>
<td>key performance indicator</td>
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<tr>
<td>L</td>
<td>Local and Regional Airspace Management</td>
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<td>LARA</td>
<td>Light Detection and Ranging</td>
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<td>LIDAR</td>
<td>Local Single Sky Implementation</td>
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<td>LSSIP</td>
<td>Local Single Sky Implementation</td>
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M
MAB Military ATM Board
MALE Medium Altitude Long Endurance
MARS Maastricht Airspace Re-Structuring
MIDCAS Mid-air Collision Avoidance System
MoC Memorandum of Cooperation
MSI Mode S Interrogator Code Allocation
MTOW Maximum Take-Off Weight
MUAC Maastricht Upper Area Control Centre

N
NATO North Atlantic Treaty Organization
NEASCOG NATO/EUROCONTROL ATM Security Coordinating Group
NEFAB North European Functional Airspace Block
NLR Nationaal Lucht- en Ruimtevaartlaboratorium
(National aerospace laboratory (NL))
NM nautical mile
NMOC Network Manager Operations Centre
NORACON Northern European and Austro Control Consortium
NSA National Supervisory Authority

O
OAT Operational Air Traffic
OAT-IFR Operational Air Traffic under Instrument Flight Rules
OATTTS Operational Air Traffic Transit Service
OSED Operational Service and Environment Definition

P
PBN Performance Based Navigation
PBO past benefit obligation
PC Provisional Council
PENS Pan-European Network Service
PPP Public-Private Partnership
PRB Performance Review Body
PRC Performance Review Commission
PRISMIL Pan-European Repository of Information Supporting Military Key Performance Indicators
PRU Performance Review Unit

R
R&D Research and Development
RAFT Radio Frequency Function group
RAT Risk Analysis Tool
RFF Radio Frequency Function
RNLAF Royal Netherlands Air Force
RP Reference Period
RPA Remotely Piloted Aircraft
RPAS Remotely Piloted Aircraft Systems
RRP Rerouting Proposal
RTA required time of arrival
RTCA Radio Technical Commission for Aeronautics
RVSM Reduced Vertical Separation Minimum

S
SAS Shared ATS System
SERA Standardised European Rules of the Air
SES Single European Sky
SESAR Single European Sky ATM Research
SJU SESAR Joint Undertaking
SMHI Swedish Meteorological and Hydrological Institute
SMS safety management system
SPI Surveillance Performance and Interoperability
SPI IR Surveillance Performance and Interoperability Implementing Rule
SPR Safety and Performance Requirements
SRA Safety Risk Assessment
SRC Safety Regulation Commission
SRU Safety Regulation Unit
SSAS Software Safety Assurance System
SSR Secondary Surveillance Radar
STAPES System for Airport Noise Exposure Studies
STATFOR (EUROCONTROL) Statistics and Forecast Service
STCA Short-Term Conflict Alert
SWIM System-Wide Information Management

T
TAM Total Airport Management
TCF Transponder Code Function
TMA Terminal Manoeuvring Area
TTOT Target take-off Time
TNC terminal navigation charges

U
UAC Upper Area Control Centre
UAS Unmanned Aircraft System
UDPP User Driven Prioritisation Process
UIR Upper Flight Information Region
UKSATSE Ukrainian State Air Traffic Services Enterprise