AERONAUTICAL INFORMATION PROVISION
From AIS to AIM

EAD: European AIS Database
CHAIN: Controlled & Harmonised Aeronautical Information Network
AIXM: Aeronautical Information Exchange Model
# Contents

3 Editorial

**Focus**

4 From AIS to AIM: evolution of aeronautical information provision to serve ATM better

7 AIXM: a bridge to computer-interpretable NOTAMs

10 CHAIN: Controlled & Harmonised Aeronautical Information Network

14 The world’s largest aeronautical information service: EAD (the European AIS Database)

**Review**

17 Network Operations Plan: latest news

29 Harmonising air traffic controller training standards: EUROCONTROL issues its first-ever ATC certificate of competence

**Independent Platform**

20 The role of AIS in future ATM systems

**Stakeholder Forum**

23 AIS regulation: the need for change

26 The evolution of global aeronautical information management: the impact on AIS in Africa

**Datelines**

32 A strategy for cooperative change: the Global AIS Congress, 27-29 June, Madrid

**SESAR**

35 SESAR Definition Phase progress

D1: Air Transport Framework – the current situation

Step completed

36 **Industry News**

38 **Visits & Agreements**
Dear readers,

The provision of aeronautical information has become a core process that underpins all the elements of air traffic management (ATM).

That is why we believe that aeronautical information services should change and go much further in terms of the services they currently provide.

By enhancing our global aeronautical information service systems, we will improve safety, improve ATM system efficiency and reduce costs by eliminating the expensive need to continually validate data throughout the production process.

Europe has already gone some way towards addressing its aeronautical information service issues through the development of the European Aeronautical Information Services Database – the EAD.

Of course, different continents have different requirements and needs. In order to move forward, we must however recognise that the global nature of aeronautical information provision and its exchange calls for an active, coordinated, global approach.

We must draw up a practical, affordable roadmap to support ICAO in facilitating change on a global scale, within the framework of the ICAO Global ATM Concept. This should be based on a common exchange format, a digital environment, and automated processing.

From our experience in Europe, we know that major improvements in this area can be achieved with comparatively limited financial resources.

Aeronautical information services will strengthen the capability of ATM to meet the challenges which have been identified for the upcoming years in terms of safety, capacity, efficiency and environment.

The stakes are huge – and potentially involve substantial benefits for society, for air transport has increasingly become a key driver for economic growth and is growing faster than other sectors of the economy.

The 20th century was a pioneering era for aviation. The 21st century is beginning to be a pioneering era for information exchange and global communications.

Aeronautical information spans both domains. It will act as a bridge into the future of aviation by championing 21st-century technology.

Victor M. Aguado
Director General

---

Chers lecteurs,

La fourniture de l’information aéronautique est devenue un processus essentiel, qui sous-tend tous les éléments de la gestion du trafic aérien (ATM).

C’est pourquoi nous estimons que les services d’information aéronautique devraient évoluer dans le sens d’un élargissement de la palette des prestations offertes.

En renforçant les systèmes de nos services d’information aéronautique à l’échelle mondiale, nous améliorerons la sécurité ainsi que l’efficacité du système ATM, et nous réduirons les coûts en supprimant l’onéreuse nécessité d’une validation permanente des données tout au long du processus de production.

L’Europe a déjà réalisé des avancées dans ce domaine avec le développement de la base européenne de données AIS, plus connue sous l’appellation EAD.

Certes, les exigences et les besoins varient d’un continent à l’autre.

Pour aller plus loin, nous devons reconnaître que la dimension planétaire de la fourniture et de l’échange des informations aéronautiques requiert une approche globale, coordonnée et soutenue.

Nous devons définir une feuille de route pratique et financièrement acceptable à l’appui des efforts déployés par l’OACI pour faciliter un changement à l’échelle de la planète dans le cadre de son Concept d’ATM mondial. Les trois fonde- ments de cette feuille de route devraient être un format d’échange commun, un environnement numérique et un traitement automatisé.

Notre expérience européenne nous permet d’affirmer que des améliorations importantes dans ce domaine peuvent être obtenues moyennant des investissements relativement limités.

Les services d’information aéronautique renforceront la capacité de l’ATM à répondre aux défis qui se poseront dans les prochaines années, en termes de sécurité, de capacité, d’efficacité et d’environnement.

Les enjeux sont énormes, mais il pourrait en résulter des avantages considérables pour la société.

Le transport aérien est en effet devenu un levier de plus en plus important de la croissance économique, et son essor est plus soutenu que d’autres secteurs de l’économie.

Si le 20e siècle fut l’ère pionnière de l’aviation, le 21e siècle se profile comme l’ère pionnière de l’échange de l’information et des communications mondiales.

L’information aéronautique recouvre précisément ces deux domaines, en se faisant le champion des technologies du siècle, elle jettera une passerelle vers l’aviation de demain.

Victor M. Aguado
Directeur général
Air transport is an essential enabling component of the global, regional and (in many States) national economies. It contributes 1% in pure aviation operations terms to global Gross Domestic Product (GDP) and 8% when all related activities are factored in. And as the global economy expands, so does the demand for air transportation. As a result, global air traffic management (ATM) is faced with a significant and continuous increase in air traffic demand over the next fifteen years and beyond. Recognising this, the ICAO ATM concept at the global level and the EUROCONTROL ATM Strategy for the years 2000+ which focuses on regional needs, have been developed to provide the strategic framework for change. Both documents describe the objectives, processes and measures by which the forecast demand may be satisfied, while improving aviation safety.

The overall objective of the future ATM network, though written for Europe, is well described in this extract from the ATM Strategy: “For all phases of flight, to enable the safe, economic, expeditious and orderly flow of traffic through the provision of ATM services which are adaptable and scalable to the requirements of all users and areas of (European) airspace. The services shall meet demand in a cost-effective way, be globally inter-operable, operate to uniform principles, be environmentally sustainable and satisfy national security requirements”.

This demanding challenge requires that all airspace in Europe and perhaps globally be progressively regarded as a continuum, organised on the basis of air traffic management requirements and this is one objective of the Single European Sky regulations. In consequence, the new ATM systems, concepts and techniques now under development must be designed to ensure that they contribute to improved safety, increased efficiency and greater cost-effectiveness to users.

The key to the future is the harmonisation of present and future systems to provide the fundamental interoperability which underpins the future ATM concept. At a physical level, navigation and ATM systems are, or will be, data-dependent – reliant on access to global broad-based aeronautical information of a considerably higher quality and timeliness than is generally available today.

The provision of aeronautical information has become a core process that underpins all elements of ATM and, without good data, the future ATM system cannot be realised.

Aeronautical information has to be developed to support seamless air traffic and navigation services. It must evolve from its presently mainly pre-flight orientation to be able to cover all phases of flight and all the procedures related to it. The developments should be such as to facilitate the ability to plan and operate flights with maximum flexibility, flight efficiency and cost-effectiveness and in an environmentally friendly way. Yet such flights require to be con-
ducted with minimum constraints and with no deterioration in safety. A most challenging balancing act to perform.

Traditionally, aeronautical information has been provided by a State in accordance with the provisions of ICAO Annex 15 (Aeronautical Information Services – AIS). The Annex, first published in May 1952, details the requirements – the what, why and in some cases how of what information should be made available.

Since 1952, Global AIS has continued to provide a sterling service but, given the new and most demanding information paradigm, there is growing recognition that Annex 15 no longer fully represents users’ needs. The scope and content of the Annex is thought by many to be too limited. Moreover, ongoing studies in Europe have shown that there is a significant failure to meet the levels of data integrity proscribed by ICAO for flight-critical data. This in turn has an impact on the implementation of advanced systems and concepts such as Precision Area Navigation in the Terminal Area and in consequence on the ability to provide extra capacity safely in an affordable way.

The integrity issue, or more properly the challenge of providing quality-assured aeronautical information, is one that is exercising global AIS particularly. In Europe it has the highest priority within the AIS domain for resolution. There have been, and continue to be, many initiatives in this field. The European AIS Database (EAD) and the CHAIN Project both outlined in following articles in this edition of Skyway are two very significant initiatives in this respect.

Yet despite these investments, the root cause of the problem will continue to exist and will require radical action to address. One issue is that AIS data is currently still manually-processed and paper-based. It is now commonly agreed that a transition to an automated and fully digital environment is required. The future system will strike a balance between the capacity of computers to avoid transactional mistakes, a problem of human processing today, and the cognitive processes of humans to resolve problems in an intelligent and intuitive way.

The ATM 2000+ Strategy recognises the challenges and identifies the role of AIS as follows:

- “AIS will be improved and developed to provide a harmonised, co-ordinated service delivering quality-assured most up-to-date information for all phases of flight and all users.”
- “AIS must make the transition from supply of predetermined products to the management of aeronautical information to serve future ATM needs.”

It also identifies the essential need for the exchange of information between civil and military air navigation service providers, and clearly states that this can only be achieved if civil and military systems are interoperable.

**Clearly AIS must evolve to meet these changing and most demanding needs. But how?**

AIS has evolved over the years to meet the needs of airspace users for comprehensive information on airspace configuration, aerodrome and navigation facilities and other details needed by pilots. This development is ongoing and much effort is being devoted to enhancing and refining the provision of aeronautical
Focus

From AIS to AIM
Evolution of aeronautical information provision to serve ATM better

Information even more over the next few years. More radical action is, however, required. AIS has to make the transition in the medium and longer term to Aeronautical Information Management (AIM), a significantly different method of information provision and management.

AIM is data-centric in nature in contrast to the product-centric approach of AIS. AIM can meet the future needs of air-space users in a cost-effective way. A carefully developed and agreed strategy is needed to guide the transition process, and significant changes to Annex 15 are clearly required.

In Europe, a strategy for transition to AIM has been agreed policy since 2000. It was compiled to define the development of aeronautical information management necessary to support implementation of the ATM2000+ Strategy. It considers the nature of the future ATM operational environment and proposes the means by which its needs should be met.

**What is AIM?**

AIM is the term applied to the globally interoperable provision of aeronautical data of the required quality, covering the needs of the present and future ATM system and all phases of flight. It is a data-oriented, holistic approach to aeronautical information provision.

The objective of AIM is to foster the notion and the implementation of collaborative information-sharing, which is essential if the concept of Collaborative Decision-Making (CDM) is ever to be fully realised. The role of AIM at one level is to monitor and control the quality of the shared data. It will provide the basis for improved decision-making by all ATM community members during the strategic, pre-tactical and tactical planning processes.

User applications, which may be external to AIM, will interface with it to pull data that will be converted and organised into aeronautical information for use by pilots, air traffic controllers and other data users. It should however be clearly noted that within the concept, it is the information itself that is of significance and not the technology that supports it.

The ultimate goal of AIM at the conceptual level is to evolve into a (generic) System-Wide Information Management (SWIM) system, a globally recognised goal. SWIM will be a global, distributed aeronautical data management environment. It will manage the aeronautical content (format, timeliness, collection, checking, distribution, etc.) as well as the technical elements (storage, consistency of data bases, global interfacing, etc.).

The AIM concept does not infer a change of ownership of function. For instance, aviation meteorology (MET) will continue to be provided by the MET authorities. AIM therefore can best be likened to a managed and regulated Internet for ATM. In time, SWIM will evolve and incorporate AIM. However, it will also encompass all other ATM information management functions not already incorporated in AIM.

Achieving full SWIM implementation will take time. The present target bracket is 2015-2025. Though seemingly distant, there is very little time to lose. Clearly stakeholder buy-in is required. In this respect the implementation of AIM, foreseen in the 2008-2012 timeframe, can be regarded as the proof of the concept (the basis of the business case) for SWIM.

AIM is therefore the all-important intermediate step to ensuring effective transition of AIS to a system better-suited to the evolving needs of ATM. Well managed, it will create the basis for the evolution of ATM information services and pave the way for SWIM.

The AIM concept has growing global recognition. The United States announced its adoption as core policy in a paper to the ICAO 11th Air Navigation Conference in the Autumn of 2003 and a number of AIS have already renamed themselves AIM to reflect the change.

A global version of the second edition of the European AIM Strategy, presently in the approval process, was presented to the Global AIS Congress in Madrid in June this year (see article on page 32). The document, entitled the AIM Concept, was submitted as a catalyst to engineer informed debate for change. It was well received and the challenge now for all AIS, or should it be AIM stakeholders, is to participate in the global debate to deliver AIM. A start has been made but much more is required to translate AIS into AIM and beyond and all stakeholder groups must be fully engaged in the debate.
AIXM: a bridge to computer-interpretable NOTAMs
The xNOTAM project

Aeronautical information is a critical component of the present and future air traffic management system, as the performance of the system is increasingly dependent on its ability to access aeronautical information which is reliable, of high quality and timely.

This valuable information is traditionally published in the form of Aeronautical Information Publications (AIPs), with short-duration amendments being provided through the use of Notices to Airmen (NOTAMs). As you start reading this article, approximately 18,000 international NOTAMs are in force worldwide. Within an hour, an additional 20 to 25 NOTAMs will have been issued, replaced or cancelled.¹

NOTAMs contain information relating to runway closures (most commonly), situations on runways and at aerodromes, danger area activation, taxiway closures, etc. As a result, they are essential, indeed critical, for the safety, regularity and efficiency of international air navigation.

The current NOTAM system was designed more than 50 years ago and its messages are intended to be read and interpreted by humans (briefing officers, pilots, air traffic controllers, flight dispatchers, etc.). Since their introduction, ICAO efforts towards improving the system have been oriented towards adding codes that allow for better storage and selection of NOTAM messages. However, the most meaningful part of the NOTAM information has remained free text, a loosely structured message.

Automation needed

Today’s aviation world is increasingly reliant on computers and automated systems for tasks which range from computer-based charting and document-editing to automatic conduct of flights. Many such systems depend on up-to-date aeronautical information, including the last-minute changes which are disseminated via NOTAMs. With each new type of automation equipment installed on board aircraft or at air traffic control centres, there is increasing pressure for NOTAMs to be made understandable to computers.

A case in point is the present trend towards replacing the paper charts and flight manuals on board aircraft with electronic ones. Paper charts, however, have a facility which is not obvious for electronic charts: with the pre-flight bulletin at hand, a pilot can annotate the paper chart of the destination airport to indicate taxiways that are closed, work areas, temporary obstacles, etc. When the chart is readily available in electronic form on board an aircraft, such as in an “electronic flight bag”, it is normal for a pilot to expect such charts to be up-to-date and to incorporate all last-minute NOTAM information.

¹- This is statistical data provided by the EAD worldwide NOTAM database.
However, it is currently not feasible for computers to reliably interpret the free text contained in NOTAMs, in order to update the database and in turn the chart. Using the NOTAM selection criteria, a computer program can detect that a NOTAM for instance concerns a taxiway closure at Brussels airport. However, which taxiway is involved, can only be determined precisely by a human, who reads and interprets the free text “E” field. Moreover, there are examples of complex NOTAMs which even humans have difficulty understanding.

If NOTAMs were fully computer-interpretable, then it would be possible to automatically update the electronic chart with last-minute information. Most people involved in aeronautical information management would agree that the time has come for such a change. NOTAM information is critical for safe flight operations and must be integrated into automated data-processing chains.

The solution: AIXM

In the Aeronautical Information Management (AIM) Domain of EUROCONTROL’s European Air Traffic Management Programme (EATM), we believe that we have found the key for making the NOTAM text understandable for computers. The project behind this is known as “xNOTAM”.

The name of the solution is AIXM, which stands for Aeronautical Information Exchange Model. AIXM is a data-exchange specification originally developed for the European AIS Database (EAD), with the objective of encoding the structured data contained in AIPs and related data, such as the flow restrictions contained in the Route Availability Document (RAD) issued by the Central Flow Management Unit (CFMU). The first versions of AIXM were developed by the AIM Unit of EATM, with a substantial contribution from the CFMU.

The AIXM standard has two main components. One component describes the concepts of the aeronautical information domain as a collection of classes, attributes and relationships. This component is referred to as the Aeronautical Information Conceptual Model (AICM). The AICM can be used as the basis for the design of an AIS database. The second component derives from AICM and describes how to encode aeronautical data in a format that can be transmitted electronically between computer systems. The second component uses XML (Extensible Mark-Up Language) as a language for system-to-system exchange. This component is also referred to as the XML Schema of AIXM. Today AIXM is implemented in the central EAD system, in a number of local aeronautical information systems in European States, and its use is expanding globally.

A joint effort

The next version of AIXM (5) will provide the means for computer-interpretable NOTAMs. It is being developed by EUROCONTROL in a joint effort with the United States Federal Aviation Administration (FAA), with the support of the National Geospatial Intelligence Agency (NGA). The aim is to position AIXM as a globally applicable aeronautical information exchange standard, which can satisfy the requirements of the current and future applications for automated aeronautical data management. The major tenets are:

- alignment with the relevant standards for geospatial information of the ISO 19100 series, including the use of the Geography Mark-Up Language (GML);
an exhaustive temporality model, including support for the encoding of information of a temporary nature and/or short duration, as contained in NOTAMs (the essence of the xNOTAM project);

■ support for the latest industry and ICAO requirements for aeronautical data, including obstacles, terminal procedures and airport mapping databases;

■ modularity and extensibility.

The major design principles of AIXM 5 are mature and have been available for public review since February 2006. The design team is currently working on refreshing selected AICM domains (obstacle data, terminal procedures, airspace usage, etc.). The aim is to issue AIXM 5 as a candidate release by November 2006.

**First trials**

In parallel with the AICM design process, a first xNOTAM trial was run by

the Darmstadt University of Technology (TUD), under contract to EUROCONTROL. In a cockpit simulation environment, the trial demonstrated that it is possible to automatically update an on-board electronic airport map with xNOTAM information. The main goal of the trial was to validate the AIXM 5 temporality model and to identify the gaps between the current AIXM capabilities and the aeronautical information items that are relevant for digital airport maps. More information about this trial, including a short movie, is available on the website at http://www.aixm.aero.

However, the business case for computer-interpretable NOTAMs is not primarily based on benefits which will accrue on board aircraft. In the short term, it is unlikely that the avionics of the aircraft flying today will integrate automatic xNOTAM processors.

**The future**

In the short term, the most radical improvements brought by computer-interpretable NOTAMs are likely to occur in the content and layout of pre-flight information bulletins (PIBs) and perhaps in the way in which the pre-flight information is delivered. It will become possible to apply appropriate human factor principles to the PIB structure and presentation. For example, the information may be ordered by relevance and feature affected, using colours and text hints to enhance readability, etc. The radical improvement of PIBs does not require huge costs and can be quickly implemented.

Finally, it is important to note that the xNOTAM project does not have as its objective the elimination of the NOTAM system. The aim is to provide the means to make the NOTAM information computer-interpretable. Many end-users and legacy systems will still need classical free-text NOTAMs for many years to come. Consequently, the xNOTAM is being configured to serve current and future users. However, it is expected that with time, computer-interpretable aeronautical data will become the norm and the NOTAM as we know it today may cease to exist.
Introduction

The quality of aeronautical information is becoming more and more important as existing and new navigation methods and systems rely extensively on accurate and reliable data. To reach the required levels of performance, navigation and ATM systems need aeronautical information of considerably higher quality than that currently available.

For international civil aviation, ICAO has specified the requirements for aeronautical data quality in Annex 15; these include accuracy, resolution, traceability, timeliness and in particular integrity.

Integrity is understood to be a degree of assurance that aeronautical data and its value have not been lost or altered since the origination or authorised amendment.

Recognising the common need for high-quality aeronautical data, the EUROCONTROL Agency has initiated an activity called Controlled and Harmonised Aeronautical Information Network (CHAIN).

Problem

The core problem appears when tasks are performed by multiple actors based on manual processes involving numer-
At each of these points, data may leave a (semi) electronic (or even a fully manual) environment and be transferred in paper form (= media break) rather than in electronic form. As a result, we are faced with repeated re-entry and checking, involving a high risk of error with a likely impact on safety.

**Objective**

The objective of CHAIN is to improve the accuracy and quality of the originated aeronautical data and its management from the point of origination to the point of publication. It is designed to assist in the establishment of an automated data supply chain to support States’ regulators, service providers and originators in their compliance with internationally agreed standards. This in turn will enable system-wide interoperability and improve the integrity and quality of aeronautical data throughout the data chain, through the implementation and maintenance of traceable, controlled and auditable processes.

CHAIN covers flight-critical and essential navigational aeronautical data (e.g. a runway threshold) as established in ICAO Annex 15, supplemented by the industry standards EUROCAE ED-76 and ED-77. Based on the current mandate, CHAIN is to operate between March 2005 and September 2007.

**Main deliverables**

CHAIN is expected to deliver:

- A campaign to raise awareness of the problem. To this end a series of regional awareness workshops are being conducted in order to present problems, requirements and responsibilities related to the aeronautical data supply chain and data integrity, in particular. The aim is to identify best practice, promote potential solutions and encourage improvement actions.
- Guidance material to cover data and quality management, data exchange and data publication.
- Harmonised specifications in support of automated processes, which is crucial to achieving integrity as the primary threat to this is the presence of manual intervention in the chain.
- Implementation support and training to assist in implementation of CHAIN deliverables based on the ECIP objective INFO5: “Improve end-to-end integrity of aeronautical data”.

---

Skyway 42 - Autumn 2006

11
CHAIN
Controlled & Harmonised Aeronautical Information Network

Current status

CHAIN has recently finalised the system-wide awareness phase. In parallel, the development of a series of guidelines has taken place including pilot trials and implementation to proactively validate and enhance the deliverables. The implementation and training phase will be launched in October 2006.

Awareness

Eleven regional awareness workshops have taken place to date (5 October 2006). Over 400 experts from 33 States have participated, representing the main data supply chain actors, including the military sector and industry, and covering all levels from operational/ technical to managerial.

Development of guidelines

A series of distinct and independent elements are being put in place to provide a ‘suite’ for the various types of actors serving a quite heterogeneous institutional environment.

- The Family of Data Integrity Documents was finalised in May 2006. These comprise guidance material consisting of principles, data and quality management, data exchange, data publication and a glossary. A further document on “Aeronautical Data Origination” is currently being revised.
- Service Level Agreements (SLAs) between data providers and aeronautical information services are being developed, under the umbrella of the regulator.

On 26 July 2006 the first SLA was signed between AIS Latvia, Ventspils International Airport and the Civil Aviation Agency as a result of the cooperation between Latvia and CHAIN through a pilot implementation. Similar pilot implementations – currently ongoing in Slovakia, the Netherlands and Slovenia – show very promising progress. On this basis, the SLA package can be rolled out to all stakeholders.

- Detailed data process mapping to perform supply chain modelling and verification to map individual data elements to processes, identify key steps and functions, including transaction processes. The output will be 6 State-specific models (those providing active input during fact-finding) and a generic data process model that can subsequently be used by all stakeholders to model their processes in support of e.g. automation or SLAs.
- Standard Input Forms (SIFs) will cover all entities which are defined by ICAO Annex 15, Appendix 7 as being critical and essential. They consist of a set of templates for the input of AIS data. For example, data originators receive guidance on how to provide more structured and complete input. This is expected to enable a proactive provision of digital data along the supply chain supporting and enhancing a series of quality attributes before system-wide automation takes place.

Development of a specification in support of an automated process

This work consists of two parts:

- A study of existing industry workflow management solutions.
- A common and harmonised specification in support of an automated process.

Its aim is to facilitate the provision of a common operational specification for an ‘automated process’ supporting States in developing specific, national solutions through a harmonised approach.

This should directly support individual State developments or may form the basis for individual State procurement of a process support means under national responsibility.

This development is at an early phase and delivery of the specification is planned for late spring 2007.

Benefits

The main benefits to be derived through CHAIN are in the areas of safety and efficiency. More specifically these have been identified as:

- increased safety due to higher quality, reliability and confidence in data;
- reduced costs through the reduction/elimination of repeated processing and multiple quality checks;
- reduced aeronautical data errors and increased user satisfaction;
- enhanced traceability through consistent provision of meta data;
- improved interoperability in a digital data environment (process automation);
- prevention of unauthorised corruption through restricted, controlled access.

- improved definition of roles and responsibilities within the process;
- more efficient deployment of human resources;
- provision of a framework to conform to ICAO SARPs.

The adoption of a harmonised automated process in the provision of aeronautical information will contribute to higher quality, reliability and integrity and result in increased safety for the users. In turn this situation will contribute to increased interoperability, thus enabling the implementation of new navigation applications and other improvements of the European ATM system.

**Conclusion**

The first CHAIN deliverables are available. They will pave the way for progressive implementation:
- national implementation actions need to be initiated now;
- European planning and commitment are facilitated through ECIP INF05;
- CHAIN is closely related to the SES Aeronautical Data Integrity (ADI) mandate;
- CHAIN is not a single solution to a single and isolated problem.

For further information:
chain@eurocontrol.int
www.eurocontrol.int/chain
CHAIN OneSky teams

Aeronautical Data Chain

Although CHAIN’s scope is ‘upstream data operations’ only (point of origination to point of publication), the awareness phase does consider wider aspects of ‘end-to-end’ aeronautical data integrity reflecting upon ‘downstream data operations’ (data integration to the end users).
The world’s largest aeronautical information service

EAD: the European AIS Database

By Sylviane Wybo, Head of the CFMU/EAD Aeronautical Information Bureau

Based on a need to meet requirements regarding safety, availability and cost-effectiveness, a concept was developed to improve the quality and accessibility of all aeronautical information. Since 2003 this concept has become a reality and it is known as EAD, the European Aeronautical Information Services (AIS) Database.

ECAC AREA

Static Data Operations (SDOs)
Full set of aeronautical information data published in AIPs:
- Aerodrome information including procedures and obstacles
- En-route information such as airspaces, routes, navaids and waypoints
- General information such as organisation, authority and units

International NOTAM Operations (INOs):
Original NOTAM, SNOWTAM, and ASHTAM

Published Aeronautical Information Management Publication (PAMS): AIP, Amendments, Supplements, AIC and Charts

WORLDWIDE

Static Data Operations (SDOs)
- Minimum set of SDO required for NOTAM validation and pre-flight
- Information Bulletin (PIB) generation encompassing aerodromes identification with associated runways, airspaces (FIR, UIR, TMA, P-D-R), routes, navaids and waypoints.

International NOTAM Operations (INOs):
Worldwide NOTAM, SNOWTAM and ASHTAM

At beginning of the 1990s, the processing chain of aeronautical information was fragmented. Lacking standardisation, being both manually-driven and paper-based, it raised serious safety concerns and meant high costs for all parties involved. As a result, the EUROCONTROL Member States decided in 1997 to launch as an alternative the European AIS Database (EAD).

EAD is a reference database of quality-assured aeronautical information, incorporating a fully-integrated state-of-the-art AIS solution. AIS units, acting as data providers, maintain the aeronautical information under their responsibility whereas airspace users and others, acting as data users, can retrieve, consult, and download this information. The European AIS Database became fully operational in June 2003.

Validated data for safer flying

Before EAD, each Member State of the European Civil Aviation Conference (ECAC) had its own system for collecting and distributing its AIS data to and from airspace users and AIS information providers. This led to incoherencies in aeronautical information, lack of interoperability between systems and late distribution of aeronautical information updates.

The creation of this new, easily accessible database therefore addressed safety issues through the provision of quality data, meeting cost-effectiveness concerns and ensuring the availability of data and systems.
**Data quality**

Quality of data is being increased on a daily basis with all parties involved using standardised rules and procedures to ensure cross-border consistency.

**Cost-effectiveness**

The central processing of the data and the availability of worldwide and European data, as well as the fact that the application is commonly developed and maintained, have reduced the cost associated with aeronautical information services.

**Availability**

Data is always instantly available through dedicated applications, while systems availability is defined in Service Level Agreements.

As a reference repository of aeronautical information, the EAD allows centralised management of digital aeronautical information based on AICM/AIXM (Aeronautical Information Conceptual Model – Exchange Model) developed by EUROCONTROL. It enhances the quality of aeronautical data by using international standards and rigorous data-checking procedures, including in-depth validation and verification.

**The role of data providers**

Data providers, typically AIS units from civil aviation authorities, air navigation service providers and military authorities, use the different EAD components for the creation, maintenance and storage of aeronautical information. They retain full control of and copyright for the data they input into EAD. The concept of having the data providers maintain their data in a common database is unique in the aviation world.

**... for the benefit of data users**

Data users, ranging from aircraft operators, aerodromes, pilots and commercial users to the general public, can consult and download aeronautical data or publications, and can generate reports from EAD through dedicated applications or via the internet.

**EAD services**

The EAD available components are:

- **SDO** – maintenance, download and reporting of static data;
- **INO** – creation and retrieval of NOTAM;
- **PAMS** – publication and consultation of aeronautical documents;
- **AIP** – AIP production;
- **CHART** – chart production;
- **PIB** – generation of pre-flight information bulletins.

In addition to the availability of the operational AIS data, clients can take full advantage of:

- 24h/day service availability: professional staff work around the clock to process aeronautical information and to provide a client helpdesk.
- Periodic data-quality reviews: data input by both EUROCONTROL and clients is reviewed regularly against international regulations and printed publications in order to develop data quality and continually improve completeness, correctness and timeliness.
- Consistency with ICAO and EUROCONTROL standards and recommendations: the system, database and the operations are updated whenever new standards are introduced or old ones are updated.
Focus

The world’s largest aeronautical information service
EAD: the European AIS Database

EAD key benefits

**EAD offers a number of clear benefits to both data providers and data users:**

- a reliable and easily accessible source of European aeronautical information, in real time;
- significantly improved data quality made possible by constant data-checking (based on ICAO and EUROCONTROL recommendations);
- data integrity ensured on the basis of cyclic redundancy checks (CRC);
- additional cross-border data-coherence verification;
- a secure channel for timely and efficient electronic distribution of aeronautical information to all users;
- reduced workload throughout the complete AIS process;
- reduced investment costs in the development and maintenance of local systems by both AIS units and airspace users;
- increased availability of data through easy access.

The EAD contributes to a reduction of the safety risks posed by the distribution and publication of aeronautical information. A full safety case in line with EUROCONTROL safety regulatory requirements (ESARRs), has allowed to identify, mitigate and manage all risks with respect to the introduction, operation and correct use of the EAD.

- **Migration support:** from point of commitment through to start of operations, clients are fully supported to ensure a smooth transition from their current system.
- **User groups:** one of the goals is to ensure clients’ evolving requirements are understood. Regular User Groups are held, to provide clients with a forum to exchange ideas and experiences.
- **Cost-effective integrated AIS solution** by implementation of automated processes and a commonly developed and maintained application.

**Continuous evolution**

As AIS is constantly evolving, EAD adapts to these changes. Through yearly releases (release 4 is currently being developed), the EAD makes sure it keeps up-to-date with the AIXM and projects like DMEAN, CHAIN, CASCADE, and SESAR. Furthermore, feedback from user experiences, shared for example at User Group Meetings (i.e. improvement of the briefing based on the integrated briefing specifications) and recommendations from other sources, are taken into account when defining a new release.

Although the EAD will always be perceived as a centralised system, it may develop over time thanks to modern technologies into a virtual centralised system, where the database itself could physically be operated from a number of sites.

In January 2005, EUROCONTROL’s CFMU/EAD and Aeronautical Information Bureau (EAB) took over all activities related to the management of the EAD. It is the Agency’s objective to ensure both close coordination with data providers and the successful provision of the EAD service to data users, as well as the future evolution of the service.

**Today’s concept for the future**

After three years of operation, the EAD has proven its efficiency through:
- **continuous improvement of data quality;**
- **99.975% availability;**
- **achievement of the service’s performance targets.**

Many ECAC States use the EAD as their sole mean of delivering the full scope of their AIS services while some other air navigation service providers have decided to use it in parallel with their existing systems. All, however, recognise the value of the EAD, and more importantly, they recognise the impact the EAD has on the harmonisation and quality of aeronautical information.

Increasingly, other parts of the world are showing interest in making use of this unique concept and exchanging data with the EAD. The European AIS Database will therefore continue to address all safety aspects and cost-effectiveness concerns of the aviation world, today, tomorrow and into the future, whilst increasing the availability and accessibility of AIS information.

**ead.service@eurocontrol.int**
**www.eurocontrol.int/ead**
Network Operations Plan

Latest news

The Network Operations Plan (NOP) is a key tool in the achievement of operational improvements in the context of the Dynamic Management of the European Airspace Network (DMEAN) Programme. This document incorporates the existing information on traffic demand and capacity plans, identifying bottlenecks and presenting the air traffic flow, capacity and airspace management measures being planned to counterbalance them.

NOP Summer 2006:
a successful first release

This first summer edition of the NOP was well received by the Agency stakeholders. It was used at working level at flow management positions meetings and aircraft operator summer briefings. Two updates of the documents were made available on the CFMU website in July and September so as to reflect the latest planning information available.

In total, 850 copies of the documents have been distributed; the NOP file has been downloaded more than 2500 times and 6500 NOP-related pages have been consulted since the publication.

NOP Winter 2006:
the process goes on

The successful operational partnership approach involving the main ATM partners continues.

The NOP Winter 2006 issue will be compiled using feedback from users as well as the experience gained in establishing the coordination process to generate the plan.

It will cover mainly network measures and activities such as winter scenarios covering the ski traffic and the Santa flights flow, winter procedures at airports regarding in particular de-icing and management of chaotic situations, and special events and dynamic management of the Route Availability Document using CFMU 11 functionalities.

The plan will be consolidated via the autumn FMP regional meetings and the DOP meeting.

The CFMU will publish the NOP Winter 2006 in mid-November.

The document will be downloadable from the CFMU website www.cfmu.eurocontrol.int/cfmu and the DMEAN page www.eurocontrol.int/dmean
ATC Maastricht Exhibition

ATC
Maastricht MECC
13-15 February 2007

The exhibition will feature:
- More than 150 of the most influential and dynamic companies from all over the world and all sectors of the industry
- Product demonstrations, workshops and the free seminar programme
- A variety of networking opportunities including the ATC Maastricht Awards

To register for FREE entry to the exhibition or to book your conference place please go to www.maastricht.com
The future of air traffic management

The speaker list for 2007 will include the key political, operational, institutional and technical decision-makers in the industry. Confirmed speakers include:

Russ Chew, Chief Operating Officer, the Air Traffic Organisation of the Federal Aviation Administration
Alexander ter Kuile, Secretary General, Civil Air Navigation Services Organisation
Victor M Aguado, Director General, EUROCONTROL
Dieter Kaden, Chief Executive Officer, Deutsche Flugsicherung GmbH (DFS)
Wrenelle Stander, Chief Executive Officer, ATNS South Africa
Greg Russell, Chief Executive Officer, Airservices Australia
Alex Hendriks, Deputy Director ATM Strategies, EUROCONTROL
Bill Voss, President, Flight Safety Foundation
Amr ElSawry, General Manager and Senior VP, Center for Advanced Aviation System Development, MITRE
Philip Clinch, Director of Cockpit Communications Services, SITA

Benefits of attending

The 2007 conference will give delegates an opportunity to discover and debate:

- The key political challenges to developing transnational ATM services
- The key technologies, ground-based and airborne, which will be required
- How appropriate safety management systems will be integrated
- Views of developing new ATM solutions from dynamic aviation growth areas such as the Far East
- How aircraft operators view the current plans - how they want to see the next generation of ATM service provision improved
- The implications for mitigating the impact of aviation on the environment for ATM service providers
- The evolving role of controllers
- The current state of ATM research
- The changing relationship between manufacturers and ANS service providers
- How airports will work to improve their aircraft throughput rates
- The impact of emerging new aircraft on the developing ATM infrastructure

The conference will set a new agenda for the future. It will encompass all aspects of the future ATM system, including technical and institutional, and across all regions of the world.
The role of AIS
in future ATM systems

Aeronautical information is aviation’s oxygen. Without it pilots cannot navigate and they have no advance warning of changes, hazards and inoperative systems, and controllers have no access to information about changes in infrastructure status both en route and at airports. So without high-quality aeronautical information, there can be no high-quality air navigation service provision.

Somebody has to assemble and disseminate the information. Yet there is no globally unified aeronautical information system, and the standards that define what is required are in dire need of an update, a fact acknowledged by the International Civil Aviation Organization’s Air Navigation Commission. Of course an AIS exists today, and it does work, but it consists of individual, nationally-based entities working to specifications first published in Annex 15 in May 1953, with no fundamental updates since then. And there is no global AIS quality control system.

At the end of June this year in Madrid, Spain, the EUROCONTROL-organised Global AIS Congress agreed on the need for a coordinated worldwide approach, and it identified numerous areas for action. Heading the list was the recommendation that ICAO should adopt a standard model for aeronautical information, a standard system for exchanging it, develop a means of defining and ensuring compliance, and set up a system for managing and developing both the model and the exchange system. The whole system, the Congress agreed, should be based on digital information technology and communications.

Bo Redeborn says it was no accident that the Agency is heading the move toward AIS digitisation.

Director of Air Traffic Management (ATM) Strategies at EUROCONTROL Bo Redeborn says it was no accident that the Agency is heading the move toward AIS digitisation. Europe’s nationally fragmented ATM system, unlike the US Federal Aviation Administration’s single organisation for a country of geographically similar size to continental Europe, meant that its AIS were similarly complex. So in 1997 it decided to set up the European AIS Database (EAD), a unified digital system for Europe that would have the potential for forming part of a global network. It has now been active since 2003.

Based on the concepts employed for EAD, EUROCONTROL and the US FAA have since developed what is effectively a prototype for a global system. Known as the Aeronautical Information Conceptual Model (AICM), it embodies a networking enabler called the Aeronautical Information Exchange Model (AIXM), and these models have both been welcomed by the national aviation authorities of the world’s major aviation nations. Now they are calling on ICAO to provide the forum through which this can be agreed, ratified, and made to happen.

The oxygen metaphor is not an exaggeration of how important aeronautical information is to all aviation operations. Without it, charts of the world’s airways and airports could not be created and provided to pilots, and flight management systems on aircraft would have no geographical, terrain, or route waypoint coordinates to upload, so navigation would be impossible. On a local scale, warnings of – for example – work in progress that shortens a runway temporarily would be unknown to the arriving pilots who would innocently land and find the usable runway length is shorter than published – possibly with disastrous consequences.
Aeronautical information takes various forms. There is the information that is permanent, like geographical coordinates defining terrain; semi-permanent, like local variations to international practices – for example the definition of altitude in metres rather than feet; and temporary, like equipment or infrastructure that is unserviceable or under maintenance. It is about routes, air-space structure and who controls it, local procedures and regulations, services (radio communications, radio navigation beacons and radar surveillance), and service providers. And information on all of these regularly needs updating for both temporary and long-term changes. Finally, pilots need weather information, both forecast and real-time, at airports and in the upper atmosphere.

At present, aeronautical information is gathered locally at points all around the world, committed to paper, then transmitted either by post or by what are effectively telegrams via aeronautical telecommunications networks to a massive number of addressees. At the receiving end they are printed out and may be transcribed for local distribution within an airline, an operations centre at an airport, or at a national aviation authority. Ken Reid, the Head of EUROCONTROL’s AIS Team, points out that the more transcriptions or interpretations there are in the information chain, the greater the potential for introducing unintentional mistakes.

At the Global AIS Congress, Reid presented what he called “the road map for change”. He explains: “We should move away from reliance on paper-based, specified products to the provision and management of data itself, and let the end users select the information or data they want to use, and enable them to customise their own tools to do it.” That would, Reid explains, transform an aeronautical information provision system into an aeronautical information management (AIM) system – a data-bank that could be accessed for precisely the information relevant to a pilot’s needs for a particular flight or mission. For example, a pilot could sit down at an AIXM terminal, enter a departure airport, principle route waypoints, the destination and potential alternate airports, and this query would locate all the data for the entire route or – if it were a schedule the pilot flies often – just the notices to airmen (NOTAMs) that apply to it currently. All the information would be sourced from its point of origin, so although human error at the point of entry cannot be ruled out, transcription and interpretation errors would be eliminated. Also, the information will be delivered in plain English, not in the code currently used, Reid explains. Finally, if the meteorological service were to become part of the AIXM, the weather for the route could be extracted at the same time. Reid characterises the change from an AIS to an AIM system as being one of the most significant objectives of the upgrading process.

Reid presented the Congress with a description of the long road to get to AIM, and named the essential partners in charting its course and the challenges they face. ICAO is the essential enabler, he made clear – it is the only forum with the constitution and the clout to ensure global cooperation. Yet, he told the Congress: “The scope of Annex 15 [the present ICAO document defining standards and recommended practices on AIS] is too restrictive. So change is needed – and needed now!” ICAO is ready – in principle – to do this, Reid pointed out. The 11th Air Navigation Conference at the ICAO headquarters in Montreal in September 2003 made three recommendations for AIS: that it should move to a digital environment; that it should adopt a common information exchange model – and in that context the AIXM was specifically mentioned. Also, the Air Navigation Commission recommended, Annexes 4 (which covers charts) and 15 (which covers the AIS) should be reviewed urgently. The only problem is that, although much groundwork to define the AICM/AIXM can be done
The role of AIS in future ATM systems

between now and 2010, it will not be until that year that the plan can be ratified at ICAO’s Assembly in Montreal. Assemblies are convened every three years, but by the 2007 Assembly the detailed proposals will not yet be ready. Until the requirements for digital AIM are embodied in an updated Annex 15, however, according to Reid, many nations will not convert to it however desirable the objective is seen to be.

Meanwhile EUROCONTROL is leading the digitisation of its Member States’ AIS, and has set up the European Aeronautical Information Services Database (EAD), which Reid describes as “a component, and the first step into the digitisation of data”. But, he adds: “There is a huge amount more to do, and of course the EAD is designed by Europe for Europe, it does not cover the world”. It does, however, host some global information – what Reid refers to as the “the Annex 15 material, the material normally found in aeronautical information publications [AIP]” – but only the geospatial data so far. Some individual countries, Reid reveals, have already converted their AIP information into digital form: Belgium became the first of them, he explains, as a result of its taking part in a EUROCONTROL project based on AIXM, so it has the foundations for taking part in the future AIM system.

For those countries which will struggle to find the resources to digitise their systems, Reid has talked to the World Bank to see if that organisation could provide the necessary assistance. The costs are actually very low, he says, and once a nation’s AIS has been digitised, the costs of providing the service drop dramatically at the same time as the levels of accuracy and integrity have the potential to rise.

When all aviation countries or regions have digitised their AIS and created a local, updatable database, the AIXM will enable them all to become an integrated network. Not only national AIS databases, but terrain databases, obstacle databases, meteorological databases, “will all be able to be synthesised into a single tool”, Reid explains. The meteorological services are talking to the managers of AIS with the aim of enabling the information to be merged by adopting the same language.

The International Air Transport Association (IATA) is starting its own AIS working group next year, not having taken a great deal of interest in the subject up to this point. However, the airlines are now beginning to realise that there may be a serious business case for the greater operational efficiencies accurate AIM can bring. Since, as Reid says, “if you don’t get AIM you don’t get future air traffic management (ATM) systems – it’s as simple as that”, the airlines now see it as being in their interest to have a stake in how AIM develops. Reid explains further: “If you want to introduce Precision Area Navigation (PRNAV) into the Terminal Manoeuvring Areas (TMAs), unless you can guarantee the quality of the data you can’t have it. So where do you get your capacity growth from?” The same is true of positioning aircraft closer – with safety – in any airspace: “You can only do that by guaranteeing the precise position of the aircraft, so if the underlying geospatial data is not high enough quality, you can’t do it,” Reid points out.

EUROCONTROL plans to host a mini-Global AIS Congress at its Brussels headquarters in 2007 just after the Paris Air Show, and another full-scale Congress is expected to take place in 2010. The pressure to advance is inexorable, and EUROCONTROL is doing what it can to facilitate the process and to help ICAO in its central role.
Both States and ICAO need to step up their efforts if they are to meet the regulatory challenges inherent in readying aeronautical information services for the role they will play in the future ATM environment.

Australia accepted the task of identifying some of the regulatory questions that will need to be addressed.

We fully realise the extent of the task. Some little time ago, Australia commenced a study of the arrangements for delivering the Australian AIS. Our thinking has been driven by the ICAO Global ATM Operational Concept and the idea of a global AIS. We are also well aware of the established role of private data providers, not just in the Australian market, but also globally.

As the Aviation Policy Agency for government, we needed to examine the issues from the broadest possible perspective. Therefore, we focussed on just what an AIS is – it is a comprehensive system of equipment, processes and people by which the State fulfils its obligation to provide the “aeronautical information/data necessary for the safety, regularity and efficiency of air navigation”.

The review is not yet complete. However, I can outline some of the key issues we have considered.

**The ICAO Global ATM Operational Concept**

Australia is strongly influenced by the conclusions of the 11th Air Navigation Conference (ANC) of ICAO in 2003. ANC-11 made it very clear that AIS was central to the long-term vision of a Global ATM and that it needed to considerably improve data quality and integrity and also needed to develop an efficient means of data exchange.

**Oversight by the safety regulator**

The performance of Australia’s AIS provider, Airservices, is not currently subject to oversight from the safety regulator. ICAO Annex 15 calls for the establishment of quality systems and, while there is every confidence in the ability of Airservices to meet the requirements of the Annex, the provision of the AIS remains a State responsibility, even where delegated or allocated to an agency.
Therefore, we have concluded that there should be independent oversight of Airservices to confirm Australia’s compliance with Annex 15 as well as the performance of Airservices as data compiler and manager.

The publishing function

The location of and arrangements for the publishing function should be a business decision for the AIS provider, provided Annex 15 and domestic safety regulatory requirements are met. In our case, we also recognise that Airservices has a monopoly on the provision of aeronautical data. The Australian government has systems in place to ensure that a monopoly position cannot be abused.

Data chain integrity

The increasing importance of data means States have added responsibilities for the integrity of aeronautical data – see for example the heavy requirements of amendment 33 to Annex 15.

As a number of aviation administrations are realising, much of the data in use to support precision navigation applications in the approach phase of flight (the most operationally critical phase) does not meet the “critical” standard of accuracy now specified in Annex 15. Safety cases based on the achievement of the reliability standards cannot be sound if these levels are not delivered.

Errors in current data sets are already causing problems that are requiring the use of additional checking mechanisms to ensure safety levels for specific operations such as RNAV (GNSS) and RNP approaches. Demonstrably accurate data is essential for emerging ATM and FMS systems to be introduced safely.

The question of the integrity of data is most acute when considering the whole data chain, particularly once it has left the State provider and is in the hands of third-party data providers. It is surely an anachronism today for private sector data processors to manually transcribe State data, as they do. This has been unavoidable to date because so few States have automated, but Australia is forming the view that manual processes are becoming a liability as the demands on data accuracy escalate.

States need to insist upon higher levels of data integrity and robust, common mechanisms are needed to support them. This was well recognised by ANC 11, which urged ICAO to: “urgently adopt a common aeronautical information exchange model, taking into account operational systems or concepts of data interchange, including specifically, AICM/AIXM which was under development by EUROCONTROL and the FAA, and their mutual interoperabilities.”

States also need to develop methods of including the regulation of the operation of third-party data providers in their safety regulatory systems. This will be an important focus of work in Australia.
The future of AIS

The Congress heard about the future for AIS – and the necessity for enhanced interoperability. ICAO’s ATM Operational Concept calls for a convergence of the data needs of airlines, pilots, air traffic control and airports. This demands an integrated approach to AIS.

IATA’s implementation road map also makes specific reference to the need for standardised flight information data set formats and for the development and implementation of integrated data services.

While the SWIM (System Wide Information Management) concept may be something for the future, it is important to ensure our systems are constructed to fit that framework.

Data will need to be managed so that all players can access the database. AIS managers will be less in the business of offering predetermined hard products they think users want – they will need to provide data to feed whatever needs users decide for themselves they want – in an AICM/AIXM-compliant quality-assured process if the ANC 11 recommendations are implemented.

Clearly, there needs to be a debate about the boundaries of the State AIS – to determine what data sets, and to what quality, need to be provided by the State and what does not.

A global approach, and a complementary operating model in which all players are allowed to use the common data as best fit their requirements, is essential.

Third-party providers

Of course, there already is a global AIS – private data suppliers have been consolidating State AIPs for many years. Generally for the cost of a subscription to the State AIP, they have built a business of repackaging State AIS data for their customers. Not only do they provide a “one-stop-shop” access to the world’s global AIS information, they also fill an indispensable need in translating that information into digital form, suitable for use in aircraft flight management systems and GPS data cards.

The private sector has been the driver of innovation in aviation and Australia is concerned to strike the right balance between regulatory oversight in the interests of safety and allowing sufficient freedom for the private sector to develop services and respond to market demands. Australia believes that private suppliers are an integral part of the aviation industry.

However, ICAO guidance on how States should regulate their access to

AIS regulation

The need for change

State AIS is at best ambiguous. There is a need for agreement on clear principles to govern access if we are to take best advantage of the ICAO vision for a Global ATM. Australia believes that ICAO is in the best position to provide this guidance, most likely in the context of further development of Annex 15.

As already mentioned, these downstream suppliers also need to come under the same disciplines regarding data integrity and quality assurance as State AIS providers.

Conclusions

We can draw a number of important conclusions about the regulatory task facing us, both as regulators of the State AIS and as participants in the future global AIS:

■ A Global ATM system needs a global, integrated and quality-assured AIS.
■ States have a responsibility to regulate both the State AIS and the operations of downstream suppliers.
■ The future of aviation will be data-driven – for all players – and AIS will be central to that future.
■ As this future approaches, States will face new regulatory challenges where a way will have to be found to encourage innovation while ensuring that the data reaching the end user is safe.
■ Private sector aeronautical data suppliers are an integral part of the current and future global AIS and ICAO guidance on principles to govern their access to State AIS will be important for the achievement of a global AIS.

To meet these challenges, both States and ICAO need to step up to the mark.
The growing importance of aeronautical information is recognised throughout Africa. Yet just as in many other parts of the world its quality and timeliness may not be as required by ICAO Standards and Recommended Practices (SARPs) detailed in Annex 15 (Aeronautical Information Services – AIS).

In an effort to increase the level of awareness of the AIS/MAP service providers in the ICAO African and Indian Ocean (AFI) Region regarding quality issues and in consequence the need for conformity with and application of SARPs, and to foster implementation of the AIS quality systems and automation, the ICAO WACAF Office organised an AIS/MAP Special Implementation Project Workshop for States of the Region in Dakar, Senegal, on 11-14 October 2005.

The corresponding report can be downloaded from the ICAO public website at www.icao.int from the list of meetings for 2005.

**The AIS/MAP Special Implementation Project Workshop**

The Workshop considered the objective of aeronautical information services, which is to ensure the flow of information necessary for safe, orderly and efficient international air navigation. As each State must interact with one another, AIS was recognised to be a truly global business.

In spite of the economic hardship affecting most States in the region, the Workshop was well attended with 60 participants from 26 AFI ICAO Contracting States and four international aviation organisations. This participation served to highlight the recognition in the AFI Region of the key role of aeronautical information in air traffic management (ATM) and the importance attached by this Region to coping with the challenges posed by the global implementation of aeronautical information management (AIM).

In practical terms, the Workshop considered topics which were of great interest to the ICAO African Region and in some ways pre-empted the Global AIS Congress of June this year. It presented the current status and challenges of global AIS, the implications for the AFI Region and its possible contribution.

The Workshop highlighted that AIS is changing rapidly from AIS to AIM and that the AFI Region is being invited, indeed being challenged, to be a part of the future global AIM. The AFI Region showed its determination to embrace such change and to shape it to suit its own purposes.

The Workshop also clearly recognised that the role and importance of aeronautical information/data has changed significantly with the implementation of Area Navigation (RNAV), Required Navigation Performance (RNP) and airborne computer-based navigation systems. It was agreed that aeronautical data has become a critical component of present and future ATM systems. States in the AFI Region were urged to take the message home to ensure that appropriate follow-up action was taken by their respective authorities. In particular, they were encouraged to facilitate the implementation of the ICAO provisions in the fields of Aeronautical Information Services (AIS) and Aeronautical Charts (MAP).

**Actions**

Efforts on various fronts are being undertaken by the African Region towards the implementation of the ICAO provisions.

With respect to AIS automation, States which have not yet introduced automation within their aeronautical information services have been encouraged to do so.

The African States are also undertaking actions to implement the Integrated Aeronautical Information Package (IAIP), Aeronautical Information Regu-
ICAO WACAF Office

This Office was established in Dakar (Senegal) in 1963 and has 24 accredited ICAO Contracting States in the African and Indian Ocean (AFI) Region. A multidisciplinary team of 25 staff members carries out the Office’s mandate, which is:

- to promote the ICAO policies and Standards and Recommended Practices (SARPs) contained in the Annexes to the Convention on International Civil Aviation (signed in Chicago on 7 December 1944) and to further the implementation of the Air Navigation Plans (ANPs) approved by the Organisation on the basis of the recommendations issued by Regional Air Navigation (RAN) Meetings and the AFI Planning and Implementation Regional Group (APIRG);

- to closely liaise with States of accreditation, appropriate organisations and regional civil aviation bodies, by giving advice and providing necessary assistance as required in their endeavours to establish and maintain a coordinated and high-performance air navigation system aiming at a safe, orderly and efficient air transport system.

This Office also provides support and assistance to the Secretariat of the African Civil Aviation Commission (AFCAC), which is a specialised agency of the African Union (AU) in the field of civil aviation.

ICAO WACAF Office

Skyway 42 - Autumn 2006

1 - From conversations during the Global AIS Congress it became apparent that all States are grappling with identifying the means to implement this very demanding set of requirements.

2 - The ICAO Regional Officer AIS/MAP at Dakar Regional Office is the secretary of the AIS/MAP task force and is currently working on a draft plan for the establishment of a centralised AIS database similar to the EAD to suit the purposes of the AFI Region within the framework of the African Civil Aviation Commission (AfCAC), which collectively embodies all the States in the AFI Region.
governmental organisations, for the provision of aeronautical information as well as other technical administrative aspects associated with such arrangement”. This statement is in full compliance with the provisions of Annex 15 with regard to service provision. Nevertheless, the State retains full responsibility for the information that is published on its behalf.

From the foregoing, it can be seen that the AFI Region has clearly identified the shortcomings of AIS, the challenges that it faces and its determination to affect change. In doing so it has mirrored the conclusions of other ICAO Regions, which in turn led to the Global AIS Congress. After having noted the challenges, what is however the current status of AIS in the Region?

**Current AIS Status**

**AIS automation**

Eighteen States of the ICAO Western and Central African (WACAF) region have started AIS automation at their main airports and they have a common website where all AIS products (AIP, AIP Supplements, AIC, Summaries, Checklists of NOTAMs) are posted on the ASECNA AIS website: www.ais-asecna.org.

**AIPs**

Of the 24 WACAF States, 23 States have published their AIPs in accordance with the new three-part format, recommended by ICAO.

**Provision of aeronautical data at aerodrome and aeronautical information offices**

Presently, some aerodromes in the region can issue pre-flight information bulletins for flights departing to regional or inter-continental aerodromes electronically and more are following suit.

**NOTAM distribution**

All States in the region use the standard ICAO NOTAM format, which contains necessary qualifiers needed to facilitate storing, sorting and retrieval of NOTAM information.

**Implementation of WGS-84 Coordinates**

Twenty-two States of the region have conducted coordinated surveys for World Geodetic System (WGS-84) at their main airports. The conversion of reporting points was done and disseminated in AIPs.

An Implementation Training Programme was concluded with the US National Geospatial Intelligence Agency (NGA), which provided workshop training for regional WGS-84 surveyors to support GNSS aeronautical operations.

**A global challenge**

The subjects discussed and the challenges noted in the ICAO African Region are echoed around the world. They describe well the task that global AIS collectively must address in order to provide aeronautical information of the quality and timeliness required by ATM.

The article demonstrates that that the AFI Region is fully aware of its responsibilities with regard to AIS and the challenges that face AIS providers both today and tomorrow in the transition to AIM. It is clear that AFI Region is determined and committed to making the required change.

The problems of data quality, timeliness and resources are common to many AIS throughout the world and the AFI Region looks forward to working with its global colleagues to ensure that its stakeholders’ needs are satisfied.
Harmonising air traffic controller training standards

EUROCONTROL issues its first-ever ATC certificate of competence

The Institute has been training ab-initio students for years. The difference in this case however was the introduction of the student ATC certificate of competence reflecting the changes in the licensing of controllers over recent years.

Background

The Agency has always issued its air traffic controllers with certificates of competence since the beginning of operations of the Maastricht UAC in 1972. This was founded on an earlier decision of the then Policy and Planning Committee (PPC) of the four States, which has since been lost in the mists of time.

The Institute has always been involved in training controllers, too. However, the curriculum was based on internal Agency decisions which have also evolved over time, particularly with the increasing use of radar control and the progressive disappearance of procedural control functions. Students who succeeded in their “Institution” training simply went on to Maastricht UAC and followed the local unit training plan until “validating” on their first sector, when they received their ATC certificate of competence.

In essence, the regulation required air traffic controllers to be licensed – this did not change much for the Agency as it had already been issuing equivalent certificates since 1972. However, it did introduce a new concept – that of the student ATC licence. The purpose was to ensure that, for safety reasons, trainees did not carry out any duties in a live environment without having had adequate preparatory training. Again, this was fully in line with Agency practices, but the issuing of a student licence for this was new. This in itself was no great change, but it came with additional requirements. ESARR5 introduced a training curriculum, known as Common Core Content, which formed the basis of training for all air traffic control ratings.

Air traffic controller licence

A further development came with the European Commission proposing a Directive for the licensing of air traffic controllers in the European Union. This Directive, EC 2006/23/EC on a Community air traffic controller licence, finally released on 5 April 2006, drew heavily on the work carried out for ESARR5. Its purpose, apart from the safety issue, is to introduce greater flexibility within the labour market, and it requires Member States to mutually recognise the ATC licences of other Member States. It also mandates the use of the Common Core Content as the basis for the training of air traffic controllers. The EU Directive goes further, requiring regulatory authorities to certify ATC training providers.

On 7 July 2006 a group of trainees received their student ATC certificate of competence, after having successfully completed the ab-initio 40 course at the EUROCONTROL Institute of Air Navigation Services in Luxembourg. This was a major achievement for them as they demonstrated the required knowledge and capability to begin ATC on-the-job training at an operational unit – more specifically at the Maastricht Upper Area Control Centre (UAC). At the same time, this event was a significant step forward in the safety regulatory framework within the Agency and the EUROCONTROL Member States.

By Jan van den Assem, Head of the Agency Safety Regulatory Oversight Unit
This is a key development towards overcoming the mobility problems of air traffic controllers caused by different licensing and training standards, medical requirements, etc. in the various European States.

Consequently, the progressive introduction of safety regulations and labour market freedom have brought about a change in the training requirements for air traffic controllers. In short, the training establishments must be approved, they must teach a curriculum based on Common Core Content, and at the end, the student should receive a licence (or certificate of competence) which is trustworthy and can be mutually recognised by any other EU Member State.

What at first seemed just a simple piece of paper is in fact the tip of an iceberg, where what is below the surface is much bigger and more significant than would at first appear. Looking back to the 1971 decision of the Policy and Planning Committee, it becomes obvious that now is the opportune moment to review the lost-in-time air traffic controller licensing requirements and bring them up to date with the latest international developments.

**At Agency level**

What then do these developments mean for the Agency and its air traffic controller training programme? Firstly, the Agency Safety Regulatory Oversight Unit (ASRO) prepared an Executive Rule (ER) on the training and certification of air traffic controllers. This was issued by the EUROCONTROL Director General and came into force in September 2005. Essentially the ER transposes within the regulatory framework of the Agency the generic ESARR-5 requirements into more specific requirements relating to the Maastricht UAC and the Institute, as ATC training providers. It also introduced the student ATC certificate of competence, for the first time.

An Executive Rule does not in itself generate the level of safety which is being sought. That comes from actually implementing the training curriculum and ensuring that students are taught in accordance with it. This task has been a significant undertaking for the Institute.

Prior to the Executive Rule, controller training had been streamlined and targeted at the upper airspace of Maastricht UAC – a very advanced system. As such it did not seek to provide the trainee controllers with an all-round appreciation of other types of airspace and control techniques which might need to be used in less sophisticated systems. However, the introduction of a common curriculum made it necessary to take a wider view of the controller training. If every Member State only trains for its own ATC systems, then the word “common” would cease to have any real value in terms of Common Core Content, and the idea of mutual recognition of licences and freedom of movement, advocated by the EU, would be hard to sustain.

Thus, the Institute had the demanding task of comparing the training curriculum planned for the ab-initio students for Maastricht with the Common Core Content curriculum. This was indeed a long and gruelling task, not only for the meticulous approach which needed to be taken, but also because it was an unforeseen workload placed on top of the already busy staff of the Institute.

Finally, after a thorough two years of evaluation, the Institute was in a position to present an assessment of the course with the Common Core Content curriculum, together with a proposal for adaptation to meet any objectives not currently achieved. This assessment covered both the basic course, common to all ratings, and the Area Control Surveillance (with radar endorsement) rating course.

The ASRO Unit, which is charged with the safety oversight function within the Agency, received this evaluation and proceeded with a series of four audits, over an eight month period, in which the auditors verified the compliance of the
updated course of the Institute against the Common Core Content objectives. As is often the case with external oversight, a number of deviations were identified. The Institute was however able to correct any problem in a relatively short time, thanks to the considerable dedication and commitment of its staff. The ASRO Unit was able to approve the course as Common Core Content compliant, by the end of June 2006.

Another element of the Executive Rule was the introduction of a separate medical oversight process, under the formal responsibility of the Head of Medical Services. The purpose is to ensure an independent medical fitness assessment of air traffic controllers, which meets internationally agreed standards. In future, all air traffic controller and student air traffic controllers will be issued with a medical certificate by an approved medical examiner, which will form part of the new ATC certificate of competence and student ATC certificate of competence.

Despite the completion of all these tasks, there still remained the production of the certificate. The Executive Rule requires air traffic controllers to have the certificate with them – to ensure they have proof they are operationally current and medically fit. This required the format of the present certificate to be reduced to a new compact format which could be easily carried around. Also, it was desirable to have both the ATC certificate and the student ATC certificate in the same format. Eventually a suitable compact format was developed and it was ready for the graduation ceremony in July.

This being the first time a student ATC certificate of competence had been issued, a handout was prepared and delivered with the certificate explaining the rights, privileges and responsibilities of the holder.

When the student certificate was handed over to the successful trainees in July, it might have looked just like a simple piece of paper in a small yellow holder. It was however the culmination of a chain of events set in motion by the SRC, and a great deal of unseen work by many people within the Agency.

The result is that the trainees now hold a student certificate of competence which is fully compliant with the new Agency Executive Rules and the ESARR5 requirements prepared by the SRC and adopted by the Permanent Commission. The certificate is delivered by an independent authority which has audited and approved the training provider as compliant with Common Core Content, and which other Member States can have full confidence in as regards the mutual recognition of licences as provided for by the EU Directive.
The pressing need to increase capacity in Europe and to find innovative ways of providing such capacity have resulted in an ever-growing reliance on the provision of timely aeronautical information of the right quality. But Europe is not alone in this respect. Other ICAO Regions and/or individual States are active in this field, yet there is no mechanism for coordinating and harmonising such efforts.

The key word “harmonise” is an essential component in this area, since the provision of aeronautical information is a global business which transcends regional boundaries and national frontiers.

Recognising this, a number of States and organisations came together to do something about the promotion of “change”. The result was the “Global Aeronautical Information Services (AIS) Congress”, held on 27-29 June in Madrid.

The origins of the Global AIS Congress lay in the recognition of the critical role that aeronautical information will play in the future ICAO air traffic management (ATM) concept. Requirements regarding the integrity of flight-critical data and the scope of aeronautical information needed by ATM to ensure interoperability exceed what AIS currently provides.

The objectives of the Congress were to bring together originators, processors, publishers, regulators, system designers, service providers and end-users, who collectively constitute the global AIS community. Drawing on collective experiences needs and requirements, the Congress:

- considered the essential role of AIS in the evolving world of ATM;
- identified the key drivers for change;
- explored what must be done to ensure that aeronautical information of the right scope and quality is made available;
- reviewed technologies at a high level that will facilitate change in a practical and affordable way; and
- outlined a roadmap for the future of aeronautical information provision to assist ICAO to facilitate global change.

The Global AIS Congress entitled “A Strategy for Cooperative Change” was a structured three-day event. It opened with a presentation on the ICAO ATM Concept and went on to address the many facets of the aeronautical information provision paradigm. The subjects presented included user requirements, the present status of AIS in some globally representative States and the technologies available to facilitate change. Of critical interest to Europe in the context of the Single European Sky, and also to other States, were the presentations on legal, institutional and planning considerations, since these are probably the most challenging issues that will have to be addressed (see the article from Australia earlier in this edition of Skyway).

The final presentation, made by EUROCONTROL, was a high-level indication of how a roadmap for change could be constructed. The presentation included a submission to the Congress of a “glob-
The “version of the second edition of the Aeronautical Information Management (AIM) Strategy, to act as a catalyst for further engaged and global debate. The Strategy has been European policy since 2000 and the second edition is in the approval process.

The Congress culminated in a most useful and constructive “open-panel” debate, following which the Congress’s conclusions and recommendations were agreed.

So what did the Global AIS Congress achieve?

The Congress served to bring together some 500 AIS stakeholders, with 85 nationalities present. As such it was by far the largest gathering of the AIS family staged to date. It provided a very effective platform for information and debate both in the auditorium and in the exhibition area. It was also an excellent forum for networking and exchanging ideas.

It considered the essential role of AIS in the evolving world of ATM. It discussed the complex issues associated with evolution, explored what must be done and identified the key drivers for change. Recognising this, the Congress began to define a future high-level view as to the shape, nature and content of a strategy for the evolution of AIS and in the provision and management of aeronautical information in general. It was also agreed that the AIM, a Global Strategy made available to the Congress, constituted a firm basis for further debate.

The Global AIS Congress agreed that ATM is dependent on the availability of timely high-quality aeronautical information and that the nature and scope of such information had evolved quickly from the narrow requirements laid down in ICAO Annex 15. In consequence, the Global AIS Congress confirmed that change was needed and these needs were driven by, amongst other factors:

- The increased reliance on computerisation, both in the air and on the ground (ground-based ATM systems, avionics, flight dispatch solutions, procedure design tools, etc.) and the dependence on available, timely, high-integrity aeronautical information.
- That the provision of aeronautical information of the integrity required by ATM could no longer be reliant on paper-based and mainly manual processes and that AIS must quickly migrate to electronic media and automated processing to provide the total quality environment to satisfy its customers needs.
- Emerging technology such as data-exchange models and communications protocols that allowed the safe and timely exchange of digital and interoperable information in a secure way.
- The growing user requirements for more broad-based provision of aeronautical information, the scope of which is currently far broader than that laid down in Annex 15, involve supporting present operations and emerging concepts and applications such as Collaborative Decision-Making (CDM) and system-wide Information Management.

Moreover, the Congress confirmed the global nature of aeronautical information provision and its exchange and called for an active, coordinated global approach to the evolution of AIS in accordance with the recommendations of the 11th Air Navigation

- When developing ATM requirements, ICAO should define corresponding requirements for safe and efficient global aeronautical information management that would support a digital, real-time, accredited and secure aeronautical information environment.
- ICAO should urgently adopt a common aeronautical information exchange model, taking into account operational systems or concepts of data interchange, including specifically, AICM/AIXM, and their mutual interoperability; and
- ICAO should develop, as a matter of urgency, new specifications for Annexes 4 and 15 that would govern provision, electronic storage, on-line access to and maintenance of aeronautical information and charts.

From left: Manuel Bautista, Director General of Spain’s Civil Aviation, Víctor M. Aguado, Director General of EUROCONTROL, and Roberto Kobeh González, President of the ICAO Council (since 1 August 2006)
Conference and agreed that this should include all AIS stakeholders. They agreed that the objective should be to develop and agree on a practical, business-oriented, validated and affordable roadmap for change on which States and industry (in the broadest sense) could build investment, staffing and training plans to support change.

The Global AIS Congress agreed that salient to change was the adoption by ICAO of a common aeronautical information model, since this was an essential component of change. Moreover, the Global AIS Congress recognised that the AIXM developed by EUROCONTROL and the FAA was the only candidate.

**So was the Global AIS Congress successful?**

From the very positive feedback, the answer is an unqualified yes. It met all its objectives and more. It was greatly welcomed and appreciated and, in response to stakeholder requests, a further Global AIS Congress is being discussed for 2010. However, debate is all very well, but what concrete actions will be taken?

The global Consortium that came together to organise the Congress will meet to agree the Congress Report to be submitted to ICAO and published and will consider the next steps. EUROCONTROL is organising a Workshop to develop the enabling objectives defined in the AIM Strategy, involving (limited) global participation. A mini Congress will also be hosted at EUROCONTROL’s headquarters in June 2007. Small steps perhaps, but a start has been made along the long road of change.

---

**The above conclusions were then translated into ten robust recommendations for submission to ICAO. These were:**

**Recommendation 1:**
ICAO should adopt the AICM/AIXM as the standard aeronautical information conceptual model and the standard aeronautical information exchange model, and develop appropriate means of compliance, and global mechanisms to manage and develop the AICM/AIXM.

**Recommendation 2**
ICAO should evolve the AIM Concept and associated performance requirements and develop a road map to plan, manage and facilitate on a world-wide basis the transition from AIS to AIM.

**Recommendation 3**
ICAO should instigate an urgent review of Annex 4 and Annex 15 in accordance with the recommendation of the 11th Air Navigation Conference.

**Recommendation 4**
ICAO should incorporate transition activities into the Global Air Navigation Plan in order to ensure broad-based development of AIS/AIM capabilities across all ICAO Regions.

**Recommendation 5**
ICAO should, as a matter of urgency, address legal and institutional issues, including those associated with an expansion of service from AIS to AIM that could constrain the adoption and implementation of AIM.

**Recommendation 6**
States working in close coordination with international organisations should support ICAO in any activity to accommodate the transition from AIS to AIM.

**Recommendation 7**
Recognising the critical nature of aeronautical information in the present and future ATM systems, States should give high priority to the implementation of existing standards such as WGS-84 and Quality Management Systems and should, if necessary, request assistance from ICAO or, if appropriate international organisations, to do so.

**Recommendation 8**
Recognising the social dimension associated with change, ICAO working with States and international organisations should determine the required staff profile(s) for AIM and determine appropriate skills and competencies and amend existing guidance material and develop new guidance and training material, under the Trainair programme perhaps, to assist States and other AIS organisations in the transition process.

**Recommendation 9**
ICAO should promote open access to information.

**Recommendation 10**
ICAO should consider as a matter of priority how a Global Forum could be established.

---

1: AICM Aeronautical Information Conceptual Model  
2: AIXM Aeronautical Information Exchange Management
SESAR Definition Phase progress

D1: Air Transport Framework – the current situation

The first major milestone of the SESAR Definition Phase was reached in August with the acceptance of the first deliverable known as D1: Air Transport Framework - the current situation. This document describes the major aspects which define, describe, shape and influence the air transport industry today. This is a key milestone as it constitutes the first step in the development of the ATM Master Plan for Europe.

The document is widely available to the aviation community for feedback, and is the subject of targeted distribution and presentations. It can be accessed on the website at http://www.eurocontrol.int/esar/public/standard_page/documentation.html or http://www.sesar-consortium.aero.

The SESAR Consortium presented and discussed the results of Deliverable 1 at a Stakeholder Forum held in Geneva on 12 September 2006, to 250 people, representing 33 organisations from 23 countries worldwide. No disagreement nor diverging ideas were noted on D1

conclusions and recommendations. The numerous comments received are now being analysed by the SESAR team and a D1 feedback report will integrate all inputs as a D1 supplement for consideration in further work, to be published by the end of October.

Ongoing work

The kick-off for the work leading to the second milestone deliverable, D2: ATM Performance Targets, was held on 12 July. The delivery of the D2 report is planned for 6 December.

It will be recalled that D2 is to provide:

- an outline “vision” of the future air transport industry and the role of ATM within it;
- a set of objectives for changes to improve overall performance in ATM;
- a comprehensive set of performance targets and requirements to be met in the short, medium and long term;
- a definition of what constitutes “best practice” in support of ATM;
- an indication of which ongoing initiatives and programmes are already aligned to meeting the declared objectives and can contribute to meeting the performance targets in the short term.

D2 will combine the output from D1 with the future aspirations and expectations of the industry as a whole, with a view to shaping the ATM vision and developing the performance requirements which it must meet.

D2 will be presented during a Stakeholder Forum scheduled to take place on 24 January 2007 in Geneva.
Brussels, 12 September 2006

The Board of ACI EUROPE has appointed Olivier Jankovec as Director General with immediate effect. He succeeds Roy Griffins, who retired in August after a robust leadership of the organisation since 1 December 2004.

(ACI press release)

On 9 September 2006, G. Vassura military airport in Rimini (Italy) was the venue for a celebration of the 50th anniversary of its Telecommunication and Flight Assistance Service.

The ceremony was attended by over 200 military air traffic controllers, CNS and MET experts working for the Unit, as well as representatives of Italian civil and military authorities, including the Italian military representative of the EUROCONTROL Provisional Council, Major General Antonio Pilotto.

“Rimini military airport, which is open to civil traffic, provides a very good example of air traffic management integration”, said Major General Pilotto. “Here, military personnel provide air traffic services, aeronautical information services as well as MET services to both civil and military airspace users, whether they are flying GAT or OAT.”

This Unit provides air traffic services to other airports, both civil and military, located within the area of responsibility of the Approach Control Unit, called Romagna APP, also located at the airport. These include the military airport of Cervia, the civil airports of Forli and Falconara, and three secondary airports (Fano, Lugo di Romagna and Ravenna), used essentially by GAT.

In the course of the last 10 years, Romagna APP has handled approximately 10,000 flights per year (military and commercial IFR flights), not counting the GAT flights operating daily within its area of responsibility.
7 September 2006
Traffic growth for NATS despite national security alert

NATS, the UK’s leading air traffic management provider, saw the number of flights increase in August despite the security alert of 10 August. The company handled 220,408 flights, an increase of 3.1 per cent over August last year. (excerpt from NATS press release)

6 September 2006
Federal Council resolution marks the way ahead

Switzerland will negotiate with France on the creation of a jointly-operated "functional airspace block". This is the conclusion that the Swiss Federal Council reached and announced following its deliberations on the issue. Alain Rossier, CEO of skyguide, welcomes the decision: "We are delighted at the Federal Council's conclusion, which will allow the first concrete steps to be taken in a collaboration within the overall framework of the Single European Sky," he says. "In taking these steps, skyguide and its French counterpart, the DSNA (Direction des Services de la Navigation Aérienne), will adopt a pioneering role in these endeavours. The Federal Council's decision sends a vital and forward-looking signal to Swiss air navigation services, and strengthens skyguide's commitment to a truly European approach to air traffic management issues and concerns."

Following a joint feasibility study, skyguide and the DSNA concluded in July 2006 that a jointly-operated functional airspace block (FAB) made sound sense in every respect, and should be further pursued.

The creation of FABs in Europe is one of the cornerstones of the European Union’s Single European Sky Project, which is intended to enhance the capacity and efficiency of Europe’s air traffic management network. Under the Single European Sky, airspace should no longer be defined by national borders as it has been in the past, but should be organised supranationally in accordance with its users’ needs. (skyguide press release)

7 September 2006
European airline punctuality in 2nd Quarter 2006

The Association of European Airlines has released details of its members’ punctuality performance in the second quarter of 2006.

Intra-European flights recorded a year-on-year worsening in punctuality for the seventh quarter in succession. In all, 20.2% of departures were delayed by more than 15 minutes, compared with 18.1% in the same period in 2005, and 16.6% in each of the two years before that.

All three months of the second quarter similarly showed a year-on-year increase in delay, the highest figure being 22.3% in June.

Of the 27 major European airports surveyed by AEA, Madrid was the most delay-affected, as it had been in the previous quarter, with 28.7% of departures affected. Next was Paris – Charles de Gaulle, followed by the two London airports – with Heathrow slightly ahead of Gatwick – and Barcelona. All had delay rates in excess of 25%.

At the other end of the scale, the least delay-affected airport was Brussels, at 13.8%. It was followed by Geneva and Istanbul, then Helsinki and Vienna. (AEA Press Release – www.aea.be)
On 29 August the Director General welcomed Mrs Nina Vaskunlahti, Representative of Finland to the EU, and Mr Yrjö Mäkelä to EUROCONTROL. Discussions were held on the European Community in EUROCONTROL, SESAR, EASA and security. The programme was concluded with a visit to the Flow Management Operations room.

On 18 July the Director General welcomed the President of the Civil Aviation Office of Poland, Mr Tomasz Kadziolka, and the Head of the ATM Safety Oversight Division at the Civil Aviation Office, Mr Jerzy Lisowski. Messrs Kadziolka and Lisowski were briefed on the main activities of the Agency including its relations with the European Community, regional cooperation, SESAR, ATM safety, the Central Route Charges Office. The programme was concluded with a tour of the Flow Management Operations room.

On 14 July the Director General welcomed the Director General of Civil Aviation of Bulgaria, Mr Georgi Stoyanov, and the Director General of the Air Traffic Services Authority (ATSA) of Bulgaria, Mr Tzvetan Dilov. Messrs Stoyanov and Dilov were briefed on the main activities of the Agency including its relations with the European Community, regional cooperation, SESAR, ATM safety, the Central Route Charges Office. The programme was concluded with a tour of the Flow Management Operations room.

On 29 August a delegation from the Chinese Air Traffic Management Bureau (ATMB), the Chinese Civil Aviation Authority (CAAC) and Chinese industry visited EUROCONTROL. The delegation was briefed on various activities of the Agency including an overview of EATM in Europe and the role of EUROCONTROL, SESAR, technical innovations and implementations such as Mode S, ACAS, CASCADE, LINK 2000+ and FASTI. The programme also incorporated a visit to the CFMU Flight Data Operations and Flow Management Operations rooms.

On 29 September, a delegation from the UK Department of Transport led by Ms A. Godfrey was welcomed by Dr Gerhard Stadler, Director of the General Secretariat, at Headquarters. They were especially interested in the development of DMEAN and the Agency’s business and financial planning.

On 15 September 2006, representatives from 34 African countries visited EUROCONTROL in the framework of the EU-Africa Aviation Seminar organised jointly by the European Commission and the African Union.
On 27-29 June a delegation from the South-East Asia Civil Aviation projects, sponsored by the EU, visited the EUROCONTROL Experimental Centre (EEC), the Organisation’s Headquarters and the Maastricht Upper Area Control Centre. The delegation was briefed on the main activities of the Agency including the strategy and work programme of the EEC with a tour of the simulation facilities, safety and security aspects, SESAR, civil-military issues including the Flexible Use of Airspace, and a tour of the Flow Management Operations room.

On 21 September, EUROCONTROL’s Director General, Víctor M. Aguado, and the Director General of Croatia Control Ltd, Dražen Ramljak, signed a bilateral agreement whereby the Croatian air navigation service provider is to entrust EUROCONTROL with the calculation, billing, accounting and collection of charges for terminal air navigation services on its behalf.