GLOBAL AMBITION

ICAO navigation conference calls for alignment

Single European Sky:
Parliament loses patience

Jeff Poole
CANSO incoming director general is focused on delivery

PLUS: WATMC conference agenda, Dieter Kaden urges structural change in Europe, Teri Bristol explains FAA operations, solving best equipped best served, a new tower display, plus latest ATM news and comment.
Transforming the air traffic management (ATM) system is essential for improving safety, efficiency and the environment around the globe. Boeing is fully committed and uniquely qualified to help make ATM transformation a reality. It's the right time and Boeing is the right partner.
IN THIS ISSUE

COMMENT

11 Nancy Graham, Director of the ICAO Air Navigation Bureau explains the changes underway within ICAO in response to the demands of a global aviation market.

16 A report by European MEP Jacqueline Foster urges faster progress towards a Single European Sky.

18 Europe is in urgent need of structural change says Dieter Kaden, retiring CEO of DFS Deutsche Flugsicherung.

ATM NEWS

6 The latest ATM news and developments from around the world.

PEOPLE

8 Jeff Poole, incoming Director General of CANSO sees the organisation playing a central role in bringing the industry together.

20 Teri Bristol, newly appointed Deputy Chief Operating Officer of the FAA’s Air Traffic Organisation and member at large of the CANSO Executive Committee.

FEATURES

12 CANSO calls for alignment in several key areas as industry representatives gather at the ICAO twelfth Air Navigation Conference in Montreal this month.

TECHNOLOGY/OPERATIONS

24 Tower controllers test out a new SESAR prototype integrated Controller Working Position (iCWP).

26 An achievable approach to implementing ‘Best equipped, best served’ is put forward by Gary R Church of Aviation Management Associates.

INSIDE CANSO

28 Boni Dibate, CANSO Director Africa Affairs explains the priorities for the region.

30 Launch of the World ATM Congress conference agenda reveals a world-class line up of speakers.

33 Samantha Sharif, CANSO Director General (Interim) comments on CANSO’s progress in 2012.

The CANSO Executive Committee

APC3: Asia-Pacific CANSO CEO Committee
EC3: European CANSO CEO Committee
MEC3: Middle East CANSO CEO Committee
LAC3: Latin America and Caribbean CANSO CEO Committee
AFC3: Africa CANSO CEO Committee

The entire contents of this publication are protected by copyright, full details of which are available from the publishers. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any other means, electronic, mechanical, photocopying, recording or otherwise, without prior permission of the publishers. The views and opinions in this publication are expressed by the authors in their personal capacity and are their sole responsibility. Their publication does not imply that they represent the views or opinions of CANSO and must not be interpreted as such.

The reproduction of advertisements in this publication does not in any way imply endorsement by CANSO of the products and services referred to herein.

© Copyright CANSO 2012
Safety and flight Economy passes through us.
November sees a once-in-a-decade event, the ICAO Air Navigation Conference. As important as that would normally be, this ANC will discuss the once-in-a-generation introduction of Airspace Block Upgrades, or ASBUs. For CANSO this is an important event.

At the last ANC, CANSO did not have observer status at ICAO and did not have the right to put forward papers. How things have changed in the last decade!

This year, CANSO will put forward no less than 10 papers, on matters of most importance to our membership, the air navigation service providers. We are actively engaged in shaping the agenda of our industry. That is where we need to be.

In addition to setting out what each of the papers say, our coverage of ANC12 includes CANSO’s exhortation that there be timely and rigorous implementation of the changes the ANC will agree. We need all of the industry to work together to make sure that we can meet the demands being made of us. We cannot afford to let that point be forgotten.

Our papers show the aviation world that CANSO and its members are engaged and ready to partner with those that seek to improve our industry for the sake of the travelling public. We could not afford to miss the opportunity ANC12 represented and I am delighted to note that we are playing an active role in shaping our own industry.

A special tribute needs to be paid to the members of our three Standing Committees who worked on these papers. I know how much work was involved. Our Montreal office too worked hard in getting those papers prepared. These papers serve as a model for how, as an industry, we can make ourselves heard, and make a difference.

It is not only vis-a-vis ICAO that there is change within CANSO. We have new members of the Executive Committee and of course a new Director General. This edition of Airspace, which coincides with the ANC 12 looks at some of these changes as well.

Finally, it is with great pleasure that I can say that this edition also includes the official release of the World ATM Congress Conference agenda. I am sure that you will agree with me that it is a remarkable agenda, with incredible speakers, committed, as indeed the conference and congress is, to the industry leading its own development.

Within ICAO, within the industry, and within CANSO, change is in the air.

Samantha Sharif
CANSO Director General (Interim)
EUROPE URGES ACTION ON SINGLE EUROPEAN SKY

Members of the European Parliament (MEPs) adopted a resolution on October 23, 2012 to hasten implementation of the Single European Sky (SES). Parliament urged the Commission to put pressure on member states, including possible sanctions, to meet their SES obligations.

The MEPs said national air traffic control spaces in Europe urgently need to be merged so as to clear congestion, boost safety, reduce flight times, delays and fares, create jobs and cut carbon dioxide emissions. “We have to have proper, efficient use of airspace and 21st century technology for traffic management available to avoid the consumer having to pay twice: in time and in price”, said Jacqueline Foster, the UK MEP who drafted the resolution. “Defragmentation of European air space is unacceptably slow.” she said during the plenary debate, calling on member states for “greater urgency in order to avoid possible safety and operational risks with increasing traffic flows.”

Member states signed firm commitments in 2009 to merge their national air control spaces into nine Functional Airspace Blocks (FAB) by 4 December 2012 and to evolve progressively towards a single European sky. However, only two such blocks are ready, in the Scandinavian skies and over Ireland and the UK. To speed up the process, MEPs call for performance indicator schemes to be implemented and asked the Commission to adopt a top-down approach by proposing new legislation, including possible sanctions and, where necessary, EU funding.

The Commission estimates that the full and swift deployment of the Single European Sky Air Traffic Management Research (SESAR) technology would lead to the creation of 328,000 jobs and cut carbon dioxide emissions by some 50 million tonnes. Passengers and airlines would benefit from cost reductions as congestion would be relieved, flight times would be cut by some 10 per cent on average and cancellations and delays would be halved.

CANSO HOSTS ITS FIRST SAFETY EVENTS IN AFRICA

The first CANSO Africa Region Safety events took place in the first week of November in Cape Town, South Africa, sponsored by the Air Traffic and Navigation Services (ATNS) Company of South Africa. The meetings were officially opened by CANSO Director General (Interim), Samantha Sharif, in the presence of the South African Deputy Minister of Transport, Sindiswa Chikunga.

The six-day series of events attracted more than 300 global delegates. Sharif said: “As the global voice of air traffic management and the global partner in leading the improvement of air traffic management, safety and efficiency, CANSO is honoured to be leading the performance agenda with our members in the Africa region - focussing on the priorities for Africa of improving runway safety, safety management systems implementation and an effective safety culture.”

The events included the first African CANSO/ICAO Regional Runway Safety Seminar, the first CANSO ATM Operations Seminar/Workshop in the region, and the CANSO annual Global ATM Safety Conference which brings together ANSP safety directors from around the world to exchange knowledge, information and best practices on aviation safety issues.

“There is a need to learn from accidents and incidents through safety ‘investigation’ so as to take appropriate action to prevent the repetition of such events. In addition, it is important that even apparently minor occurrences are investigated, in order to prevent catalysts for major accidents. Safety analysis and ‘investigation’ is a necessary and effective means of improving safety, by learning the appropriate lessons from safety occurrences and adopting preventative actions. It is therefore important that an environment exists where occurrences are reported; the necessary processes are in place for investigation and for the development of necessary preventative actions such as re-training and improved supervision” said ATNS Board Chairperson, Captain Mpho Mamashela, during his opening address.
A key objective of ICAO/ CANSO African Regional Runway Safety Seminars is to promote the establishment of targeted and multidisciplinary Runway Safety Teams (RSTs). Presentations by air traffic controllers, ANSPs, airport and airline operator, industry manufacturer, aircraft pilot and regulatory communities all provided important viewpoints and information supporting this process.

**LATIN AMERICA FOCUS ON SAFETY**

CANSO held its annual CANSO Latin America & Caribbean Conference in September 2012, kindly hosted by DGCTA of Argentina. The Conference theme, ‘Transforming ATM Performance’ builds on the previous year’s theme of: “Working Together for Safer Skies”, underlining that safety is still an important point of focus and goal in the region.

The conference was immediately followed by the CANSO ATM Safety Seminar which addressed the key issues of Safety Management Systems (SMS) implementation; safety policy best practices; the importance of a strong safety culture; identification of hazards; and the introduction of different metrics and data collection practices. CANSO also showcased two new publications: the CANSO Safety Management Systems (SMS) Implementation Guide, and the SMS Evaluation Guide which are due to be published in November.

The publications will focus on the managing, measuring and continuous improvement of SMS. Javier Vanegas, CANSO Director Latin America & Caribbean Affairs, said: “During the past two years CANSO has made a tremendous effort to meet the needs of the region, using actions rather than words. To further our advances and truly see these changes take off we need to collaborate with each other.”

**EUROPE UPDATES**

**MASTER PLAN**

Europe’s Single Sky modernisation is taking further shape with the update of the European Air Traffic Management Master Plan. This is the newly agreed strategic plan providing technological and operational roadmaps to all aviation stakeholders. It allows for timely, coordinated and efficient deployment of new technologies and procedures in the timeframe to 2030. Its content has been aligned with International Civil Aviation Organization’s Aviation System Block Upgrades (ASBU), in order to secure global interoperability and synchronisation. Key features of the new Master Plan include a revision of the performance objectives contributing to SES’ high level goals. In the first of three change steps, SESAR will contribute to: -2.8% in fuel efficiency; -6% in cost efficiency; -40% in accident risk per flight hour; +27% in airspace capacity.

The Master Plan also features clear scheduled roadmaps of required technical changes, for all stakeholders. The time-based roadmaps also include necessary air/ground deployment synchronisation dates. The Master Plan also focuses on a series of operational changes deemed ‘essential’ to best deliver performance benefits to one or more operating environments, i.e. airport, en-route, terminal manoeuvring area, and the network. This allows stakeholders to focus their efforts on a manageable set of necessary changes to reach the Single European Sky high-level goals. These essential operational changes are grouped around six key areas which will evolve through three steps up to 2030. They include moving from airspace to 4D trajectory management; traffic synchronisation; network collaborative management and dynamic/ capacity balancing; system wide information management; airport integration and throughput; and conflict management and automation.

**PORTUGAL AND BRAZIL SIGN AGREEMENT**

Nav Portugal and the Department of Airspace Control (DECEA) of Brazil signed a Letter of Intent during the CANSO Latin America Caribbean Conference in September 2012. Cooperation between the two air navigation service providers includes the continuous exchange of technical and operational information in the areas of ATM, R&D, AIS, SAR, CNS and ATFM. Both organisations have a long lasting tradition of cooperation and this latest agreement serves to deepen the civil and military cooperation between the ANSPs of both countries. The agreement was signed by Luis Coimbra, CEO of Nav Portugal, and Air Brigadier Marco Aurelio Mendes, DECEA Director General.

**GLOBAL SECURITY ENDORED BY ICAO**

Over 700 senior security officials and ministers from 132 ICAO Member States and 23 international organisations concluded a High-level Conference on Aviation Security (HLCAS) in September, agreeing on a number of measures to enhance aviation security worldwide.

Highlighting the importance of a more coordinated global response to evolving terrorist threats and the need to make the provision of aviation security less of a burden for industry and passengers, the conference endorsed strategies and action based on international cooperation, improved information-sharing and proactive approaches. “Through improved collaboration, we are far better prepared to anticipate, detect and counter the multiple evolving threats posed by modern terrorism,” affirmed Raymond Benjamin, Secretary General of ICAO. “Equally important, by sharing data and best practices more comprehensively and leveraging the latest technological innovations, we can minimise the adverse consequences of security on the air transport industry.”

Besides their agreement on the transition to a risk-based, collaborative global framework, conference delegates agreed to establish processes for identifying and handling high-risk air cargo and protecting supply chains. They will also be implementing tighter measures to address potential threats posed by airport, airline and cargo sector personnel.

Recognising the importance of leveraging the latest in innovative technologies and processes, the Conference delegates called on ICAO to convene a dedicated aviation security technology symposium in 2014. They also endorsed a blueprint for monitoring States’ compliance with resources to assist those in need of assistance.
Jeff Poole, named as the new DG of CANSO on 1 October this year, is not wasting any time in getting to grips with his new role. His official start date, originally January next year, has been moved forward to coincide with the start of ICAO’s twelfth Air Navigation Conference (AN-Conf/12) in November. “CANSO has an important role to play and it is vital that it does it well. That is why I am delighted to be starting my tenure as DG at AN-Conf/12 at ICAO’s headquarters in Montreal,” said Poole in his first interview with Airspace since accepting his new position.

“AN-Conf/12 is vital to the ANSPs and to the ATM industry more broadly” Poole said. “AN-Conf/12 in particular will set a baseline for service and technology delivery for the future. For CANSO’s members it will provide a strong indication that that we are continuing to head in the right direction.”

That is very relevant for CANSO. The Executive Committee has announced that it has launched a process to define and agree a new strategy for the organisation, Vision 2020. Poole is looking forward to that process. “It will give me a good chance to listen to the members and to work with them to find the appropriate course for the association. That said, to me, the real issue for CANSO’s future is delivery.”

“The importance of the WATMC is also very clear. This is the industry working for the industry; leading the thinking of the industry and working together to understand what we can do today, what we will be able to do together in the future. That is broader than the CANSO membership, it is the entire industry. It is very inspiring.”

Speaking to Airspace before taking his new role, Jeff Poole was delighted by the positive reaction he had after his appointment was announced. “I am still responding to the messages of goodwill and support. It has been amazing.”

Before his appointment to CANSO Poole worked for IATA for eight years, and for all but the last year or so of that, as Director Industry Charges, Fuel and Taxation, he was responsible for liaising with various parts of the aviation industry on fees and charges. This included en-route and terminal charges.

That had the inevitable result that he spent much of his time working closely with ANSPs, not just on their charging practices but also on how best to deliver improved performance and cost efficiency. “What always impressed me about the ANSPs was that no matter how
AN-Conf/12 is only the start of a new chapter for this organisation. We need to follow through and deliver

hard the business negotiations over fees and charges might be, personal relationships always remained strong and friendly. I have made a lot of good friends with those in the ANSP community," he said.

Those friendships meant that by the end of his tenure, a number of collaborative agreements between CANSO and its member ANSPs and IATA and its members had been signed. That was a very positive development in what can be a difficult relationship.

That familiarity with the industry and its players will stand Poole in good stead, "It means that I understand much of the business pressures and strains the ANSPs are facing, and more importantly, I know very well what their customers, the airlines, want and need from them. I am looking forward to being able to build bridges between the various parts of the industry. This has to be a partnership, not ships passing in the night."

The Chairman of the CANSO Executive Committee, Paul Riemens agrees: "I am very happy with the appointment of Jeff Poole as Director General," he said. "Jeff’s experience was built up through many years of working for the industry and he will take CANSO to its next level."

For Poole, the role of CANSO in rising to the next level is clear. "It has to lead the transformation of the ATM industry," he says. "CANSO has to be ahead of the game; pro-active to change; responsive to customer requirements; decisive. An early task is to make sure that we have the secretariat resources we need and that we deploy them to deliver as well as possible. We need to be sure that we are the right size and shape for the future. Coming from another industry trade association that has been through great change with a focus on delivering benefits, I have some useful background and ideas to contribute.

Poole’s career is aviation through and through. Born in England, his first role in air transport was at British Aerospace (now BAE Systems). He then moved to Airbus, where he worked on the A3XX (now the A380) and in the procurement area as Senior VP for Procurement Strategy and Services. That experience stood him in good stead at IATA, where demanding that industry suppliers and partners gave value for money was the name of the game. His last year at IATA was in the senior role of Director of Government and Industry Affairs.

“My recent background provides an ideal prelude to the role of CANSO DG,” Poole remarked. “The aero-political aspects required to transform the delivery of ATM should not be underestimated. I fully appreciate that point and have been lucky enough to work in the area, and to know many of the relevant players. That will be helpful.

“But for the customers, the airlines, as well as the military and the other airspace users such as business aviation, it is all about value. Value for the money they are being asked to spend. If the airlines understand that the ATM industry has a clear view of the goal and the steps that need to be taken, you will find that they will be very supportive.

“Which brings me back to the role of CANSO. Once we agree what our Vision is – and as I said, that is an important part of my first six months in the organisation – we need to understand what we need to do to get there, and more importantly, what we, as CANSO, as an association of members, as an industry, needs to be able to deliver. And then we need to deliver it.

“To do that, CANSO must develop a strong presence and a strong profile,” according to Poole. “Much of the work of a trade association is stakeholder management. We know the stakeholders but to meet their expectations will require well-orchestrated involvement of all of the CANSO members as well as CANSO itself. We need to be seen to be performing responsibly and maturely.”

The significance of Poole starting his work with CANSO at AN-Conf/12 is also a tribute to his current employer, IATA, Poole notes. “IATA understands that this is an important meeting for the entire industry. They have agreed that I should be there on behalf of CANSO.

“AN-Conf/12 is an ideal platform,” Poole thinks. “My start date with CANSO has been chosen deliberately. It is appropriate that CANSO takes its rightful place in the industry in an ICAO meeting as important as AN-Conf/12. But it is only the start of a new chapter for this organisation. We need to follow through and deliver.”
Taking Off in Madrid
Don’t Get Left Behind | Register Today

12-14 February, 2013

CONNECTING THE ATM COMMUNITY | NETWORKING OPPORTUNITIES
19,000 m² EXHIBITION

www.worldatmcongress.org/REGISTER

co-located with
11 FEBRUARY: CANSO CEO CONFERENCE | CANSO ATM DINNER & JANE S. ATC AWARDS
14 - 15 FEBRUARY: CANSO GLOBAL ATM OPERATIONS CONFERENCE
www.canso.org/events
The new ICAO
Driving a smarter, more responsive standards body

Nancy Graham, Director of the Air Navigation Bureau explains the changes underway in response to the demands of a global aviation market

The International Civil Aviation Organization (ICAO) is changing. We are doing so in order to better align our purpose and our processes with one of the most dynamic and fastest growing industries in the world.

Given the global economic situation and the strains being felt both here in ICAO and in every government and organisation we deal with, it simply isn’t tenable to plan and work on the basis of business-as-usual anymore. We are addressing these issues by consolidating and coordinating our big events in conjunction with other stakeholders, and by creating globally-accessible online tools where our community can measure air transport progress based on real numbers, in real-time. These are the first steps in a process that will see further rationalisation being implemented as things proceed.

With respect to accountability instruments, we are producing an annual Safety Report and an annual Air Navigation Report that consolidate monitoring and analysis work in these areas on an ongoing basis. These conclusions form the basis for tactical adjustments to our Safety and Air Navigation work programmes each year. The larger, policy-level changes required are based on Council review and agreement and Assembly endorsement for new budget allocations/revisions.

We’re also forging more and more partnerships with other organisations, not only with groups who are directly involved with aviation, but with bodies like the Universal Postal Union and World Customs Organisation, who are working with us directly on new air cargo security provisions and capacity-building.

The activities of these types of organisations are directly impacted by our work and our Secretary General has made it very clear that it is long overdue that we begin to cooperate more effectively with them. Our states are still, and will always be, our most important customers, but industry is being encouraged by us to play a much more active role in ICAO today.

Another important step is the restructuring of our Regional Offices and regional activities in line with our new priorities. ICAO’s Regional Aviation Safety Groups (RASGs) will be performing high-level coordinating roles around the world, as will our Planning and Implementation Regional Groups (PIRGs) in the air navigation area. In addition to this, our Regional Officers will now be engaging more actively with states that are not meeting their obligations under the Convention.

Aviation can similarly expect serious changes to the look and feel of the Safety and Air Navigation Global Plans. They can look to those documents as the primary drivers of much that we do. The community can also expect to have access to a vast amount of the civil aviation data ICAO compiles, and to be given proprietary tools so that everyone can analyse it on a customisable basis.

I’d like to end by looking ahead to the Twelfth Air Navigation Conference (AN-Conf/12), as this is an important level where ICAO and CANSO interact.

Our revised Global Air Navigation Plan and the systems-engineering Block Upgrade approach it presents are expected to be widely endorsed. CANSO and other aviation community members can basically look now to Block 0 as the new best practice for 2013, with a fifteen year planning horizon added to it.

Endorsement of this strategic planning at AN-Conf/12 will provide an unprecedented degree of investment certainty for states and industry as we begin to modernise the global air navigation system. As CANSO and its members are well aware, this modernisation is absolutely necessary if we’re to manage the expansion of capacity that is needed while maintaining or improving on our enviable safety record.

Importantly, the Block Upgrades also provide our Member States with a practical, flexible and transparent opt-in approach to global harmonisation. We simply could not have come up with this without the input and consensus we forged with industry players.

Very simply, a new world is emerging and aviation has to change with it. We cannot simply double the size of every major airport and airline to take care of the expansion in traffic that is projected in the coming decades. We have to get really smart, really lean, and really good at working together to find the right solutions.

That is what we’re changing toward in ICAO today. It is a challenge, to be sure, but I am very grateful for the positive feedback and helpful advice that has been coming in as we continue to evolve to better serve our states and the aviation community at large.
ICAO Air Navigation Conference 12
CANSO calls for alignment in key areas

The ICAO Twelfth Air Navigation Conference (AN-Conf/12) in Montreal in November 2012 aims to endorse a strategic global air navigation plan that will guide future planning and implementation of operational improvements through the introduction of new technologies and operational concepts. What’s new for this once-in-a-decade event, is that ICAO will be looking for endorsement of a new construct, known as the Aviation System Block Upgrades (ASBU), which provides a new way of developing standards and identifying and systematically implementing operational improvements over a long-term planning horizon. Delegates are expected to agree specific block upgrades and their associated modules that start with baseline capabilities and performance available today, through ATM improvement programmes that span the next decade and beyond.

CANSO supports AN-Conf/12, and the ASBU proposals, but there are a number of issues that remain to be clarified. These are important to CANSO members. The organisation has submitted ten papers to put its positions forward and these are summarised below. The papers were prepared by working groups of the Standing Committees, with a final review by the Policy Committee.

As important as each of these papers are, there is an over-arching issue that CANSO will be advocating very forcefully at the meeting in Montreal.

Timely implementation
CANSO expects its members will commit to the ASBU framework with requisite investment and implementation milestones as part of a globalised system that meets the demands for safety, capacity, efficiency, predictability and environmental stewardship for end-to-end flight. However, modules cannot be of the same priority nor have the same criteria for implementation consideration. Therefore ICAO through its member states and regional groups must determine the criteria and implement a process to inform what is globally representative for harmonisation, including ICAO’s minimum expectations, what and when it is required, and the best practices and lessons learned on implementation from regional and sub-regional processes.

In order to build a global seamless air navigation system there must be regional and inter-regional agreements established to determine implementation of different block upgrade modules. CANSO calls for ICAO to define a process for states and their ANSPs to follow in making this determination, either on their own or as a part of a regional or inter-regional group. As a precursor to any regional agreement, a Needs and Dependency Analysis (NDA) will be required across the blocks as they pertain to that region. If an ANSP were to choose to bypass a single module based on an individual cost-benefit analysis and its associated capability, an NDA will show the impact dependencies of subsequent module capability selection across subsequent blocks in the same thread and across blocks of modules in different threads. Capabilities and services must also be reflected in the domain roadmaps (e.g. air-ground data communication) synchronising the date of technology availability, associated ICAO provisions and a ‘critical mass’ of air/ground capability.

ICAO should complete development of a Cost Benefit Analysis (CBA) and performance metrics that support the development of business cases for implementation. The ASBU programme has several components that reference the use of performance metrics. This includes the development of a relevant business case and the use of the Air Navigation Report Form (ANRF) for reporting and monitoring progress. There are demonstrated examples of how ANSP’s can use existing databases to provide informed trends on ATM performance. CANSO expects to further this effort.
through its existing work programme. CANSO also recognises impediments that exist in the regulatory, social and economic domains to delivery of operational performance improvements that require political will and commitment. Block upgrades will only play their intended role if all stakeholders involved align their activities as envisaged by the ASBU framework.

CANSO expects governments to acknowledge a more mature understanding of sovereignty; one that is synchronised with air transportation of the 21st century. The aviation industry will have to contend with numerous regulations and compliance obligations issued by multiple authorities. Regulators should therefore take into account the cumulative impact of regulations, and eliminate duplication where possible. A legal and regulatory environment that encourages social dialogue and collaborative approaches to labour relations is needed in order to address current and future challenges.

At the economic and financial level, we understand the costs but we do not fully understand the benefits of ATM modernisation. Yet, we expect billions to be invested. ATM modernisation needs to be supported by a solid business case as it will require a significant financial outlay that cannot be easily met by funding through traditional user charges. In a time of sovereign debt crises and credit risk, government funding will likely be limited. Non-traditional approaches to financing need to be explored and that will invariably mean greater involvement of the private sector. Finally, while ownership and organisational form are not critical factors, it is essential to have separation of service provision from regulatory oversight.

### Block Upgrades

The ASBU specifies four levels of improvement designed to enable individual states to participate according to their service needs. Governments and regional organisations are expected to implement block upgrades whenever the need exists, but fully aligned with global performance criteria. Overarching targets such as efficient routes, greener flights and global interoperability are met through a series of operational improvements detailed in the block upgrades to ensure the whole aviation industry moves in the same direction. The main change delivered by block upgrades is the harmonisation of performance improvements. Whereas technical innovation was in the past driven by local development, especially in Europe and the US, there will now be a series of expected outcomes and standards to be taken into account, which can be applied worldwide.

This truly collaborative process involves participation of all aviation stakeholders, with representation from standard-setting organisations, the regulatory community, state and regional ATM modernisation programmes, and the many groups representing the operators, service providers, airports and manufacturers – including CANSO, IATA, ACI, IFATCA, FAA, Eurocontrol, SESAR JU, IFALPA, IBAC, ICCAIA and EASA. ICAO expects to publish a finalised air navigation plan in early 2013, with regular updates every three years thereafter, and aims to launch an ICAO capacity and efficiency report in 2014 that will monitor progress. ICAO expects some US$120 billion to be invested in air traffic management performance improvements over the next decade. If the industry can reach a consensus on what systems to deploy and which delivery milestones need to be met, this new approach to planning and implementation has the opportunity to deliver welcome improvements in efficiency, safety and capacity.

CANSO has been involved from the outset in defining block upgrades and highlighting key ATM performance programmes. The organisation involved all its members in the process of selecting the critical issues they considered need to be addressed. According to Eugene Hoeven, CANSO director of ICAO affairs: “AN-Conf/12 is a once a decade event. It is an opportunity to take some bold steps and show we are serious about improving safety and efficiency in air traffic management. Commitments to harmonisation and interoperability will go a long way in supporting this objective. But, we also need states to do their part by adopting more industry-responsive regulatory practices based on globally-agreed and timely standards and recommended practices.”

### Data link convergence

High up the priority list, CANSO calls for timely implementation of data link in support of seamless and safe global ATM operations. It recommends defining the relevant level block upgrades as soon as possible and calls for standards to define the next generation data link capability to be in place no later than 2015. Even then, it is unlikely a significant population of aircraft and ground systems would be in place before 2023. ANSPs need to begin now to support development and validation of an internationally agreed common technical definition for data link implementation. This definition must be based on operational requirements that are provided in ICAO standards and recommended practices (SARPS).

CANSO has taken action to develop a global vision for data link and provides a forum for obtaining consensus among its members.

### Swimming faster

CANSO supports performance improvement through the application of System Wide Information Management (SWIM). SWIM, however, poses fresh challenges for global standardisation and harmonisation.

To exploit the advantages of SWIM, CANSO encourages closer cooperation between international organisations responsible for standardisation and technical guidance.

The International Organization for Standardization (ISO) is best placed to facilitate the consultation and approval of detailed technical specifications for SWIM, while giving SWIM stakeholders an acceptable level of transparency and participation in the specification process. The expertise and work of regional
The System Wide information Management (SWIM) concept is about connecting the ATM world, ensuring that the various differing pieces of information are made available to all those who need it via interoperable web-based services.

Aeronautical organisations that develop technical guidance for use by regulatory authorities and industry, for example EUROCAE and RTCA, need to be integrated into the global ISO process. Such a high degree of standardisation enabling modular system architecture will not only lead to interoperability, but also to better cost efficiency through lower system procurement and integration costs and thus lower overall system costs.

A key component within SWIM is the transition of aeronautical information systems to a modern digital environment. The future ATM system will rely on the evolution to a net-centric information environment in which ground systems and aircraft will function as a series of nodes that share information and relay their intent through a network of federated systems, supported by a host of standard-compliant and interoperable services running on a multitude of platforms. The transition from aeronautical information systems (AIS) to aeronautical information management (AIM) is the change from traditional paper-based and product-centric AIS to the data-centric and service-oriented AIM that is fully integrated with other information domains in a SWIM environment. The goal of this transformation is more efficient management and rapid dissemination of all information relevant to ATM. Data and information, and their management, is becoming more and more critical for the safety and efficiency of air navigation.

**Best equipped best served**

Inevitably, as ATM modernisation programmes go forward, airspace users will be at various stages in their equipment upgrade programmes and in their deployment of new systems. Some will demand the realisation of benefits from onboard technology that comes with modern aircraft, which can only be attained once the necessary procedures and ground equipment are in place. Others are just as happy to be the last to equip, as they will benefit from both technology improvements and lower unit cost – the last mover advantage.

The way forward to maximise benefits to the overall system is to encourage equipage and deployment as rapidly as possible, while catering to the variety of needs. CANSO recommends revisiting the current principle of ‘first come, first served’, which slows the uptake of more efficient technology and procedures, and examines alternative options. ICAO has previously discussed and acknowledged the need to review the current approach, enshrined in PANS-ATM Doc 4444, and both SESAR and NextGen are proceeding on the assumption that there is a certain amount of flexibility in the application of the current guidelines.

CANSO has been instrumental in the industry-wide study group that is looking into the implications of continuing with “first come, first served” and considers possible alternative approaches. This study group is to report on possible principles and policies to be considered during the 6th Air Transport Conference in March 2013 and deliver to ICAO suitable guidance material on what practical steps can be taken to modify the current guidelines.

**New standards**

Standardisation has to be understood as a strategic activity for securing ATM performance improvements and a key tool for safety, interoperability, knowledge dissemination and promotion of innovation. However, CANSO warns the current process used to develop ICAO standards will not deliver results in a prompt and timely manner. CANSO recommends wider use of industry specifications as a powerful tool for promoting regulatory convergence and advocates more emphasis on the use of industry specifications developed and maintained by recognised standards-making organisations.

CANSO urges ICAO to initiate studies on the necessary evolution of ICAO policies and practices related to SARPs development with a view to concentrating its involvement in core SARPs development.

**Future vision**

In addition to ANC 2012 papers addressing policy and implementation, CANSO members considered issues surrounding airspace operations and management in the future, including the emerging role and increasing importance of Remote-Piloted Aircraft (RPA) and their integration into the ATM system. In the opinion of CANSO, the advent of RPA places ANSPs in a familiar position, that of accommodating new potentially unproven technology. Controllers have historically risen to the challenge to continue to provide access to all airspace users in a non-discriminatory manner, but CANSO recommends that RPAs be elevated in the ICAO prioritisation strategy plan to enable the work to be adequately planned and accomplished, to corroborate with the proposed development of aviation standards for RPA currently underway in RTCA and EUROCAE.

While much of the work surrounding ASBUs has focused on high-level concepts to date, the CANSO ANC 2012 papers set in motion a more practical approach to the ICAO goals of international harmonisation and aviation growth. The organisation has already started down the road towards collaboration and collective effort through its regional and international working groups. CANSO introduced its vision of a global data link system for air traffic management in 2011, and has launched similar initiatives to accelerate development in other areas such as the transition from AIS to AIM, operational performance metrics and air service harmonisation. ANC 2012 provides an opportunity for all stakeholders to become more involved in the process of modernisation and be part of a truly harmonised global ATM system.
Recognising and rewarding excellence in the global ATM industry

Following the successful two year collaboration between CANSO and IHS Jane’s, CANSO, the Global Voice of ATM, and IHS Jane’s Airport Review once again join forces to celebrate excellence in global air traffic management.

The 2013 CANSO ATM Dinner & IHS Jane’s ATC Awards will be held in Madrid on 11 February 2013, relocated with the World ATM Congress, which is operated by CANSO in association with ATCA.

2013 Award Categories

- Operational Efficiency
- Environment
- Enabling Technology
- Service Provision
- Innovation
- Industry
- Contribution to European ATM

To nominate please email theawards@ihs.com
Deadline 30 November 2012

For table sales, sponsorship and further event details, please email Anouk Achterhuis events@canso.org

Registration for the event is required. For details on how to attend, please visit www.canso.org/atmdinner2013
Twelve years in the making, and you might be excused for thinking that plan for a Single European Sky (SES) in the European Union is limping like a biplane with a sputtering engine. For that reason, the European Parliament very much approves of a new ‘Own Initiative’ Report to energise the process by Jacqueline Foster, a British conservative Minister of the European Parliament. Says Foster in an exclusive Airspace interview, “Everybody now realises SES has to move forward.”

By any standard, the 27 European Union nations are lagging in aviation integration at great cost to economies, to airlines, and to passengers. The bills are not only in increased fuel and unnecessary carbon dioxide emissions. They are also in the economic drag that inhibits investment and GDP growth. An oft-cited comparison is the United States with roughly the same airspace as Europe’s proposed SES, as illustrated in the diagram.

Yet a recent report from the EU Commissions’ Performance Review Body, especially set up to review progress and to set targets for the ANSPs, made it plain that there has not been much of that progress at all. Only two of the nine proposed Functional Airspace Blocks (FABs) will meet the deadline to be up and running by early December this year. The now-faltering FABs were seen as a first step towards consolidating 22 systems in 27 national air traffic control organisations. As a result, the Commission welcomed the Foster report. “It opened up the debate,” she says. “We had all the stakeholders – carriers, ANSPs, the Commission, and others – involved to sort out the problems."

Foster carries tremendous clout. She is the aviation spokesperson in the powerful Transport and Tourism committee on behalf of the UK conservatives, which are allied with the European Peoples’ Party, the largest block in the Parliament. However, her July report on “The Implementation of the Single European Sky” specifically avoids laying blame for a delay some put at nearly 20 years since the idea of an SES was first booted around the Commission halls. Even so a number of Member States have lagged in the EU Council of Ministers where the national governments get together.

Despite nominal approval for SES, continued worries about airspace sovereignty, ATC jobs, reserved military airspace and protected national technologies have hampered progress.

To be sure, there is nothing new in the Foster report. She freely concedes that all the data was previously put forth by the Commission. What it does, however, is align the European Parliament into putting aside national differences in order to achieve a single goal: The Single European Sky.

A recent IATA newsletter cites Hemant Mistry, IATA director of Industry Charges, Fuels, and Taxation on the existing problems. Says Mistry, “SES is falling at the first hurdle. There is a lack of commitment from countries and ANSPs to drive real SES benefits.” He continues, “It is especially worrying for European airlines where the high air traffic control unit costs are largely driven by the fragmentation between ANSPs.”

So what are the potential benefits? The Commission’s current research says full deployment of new air traffic management technology under the SES system would lead to a positive impact worth Euros 419 million (approximately US$545 billion), creation of 328,000 new jobs, and a savings of 50 million tons of carbon dioxide annually.

Would full deployment of modern technology and an integrated Single European Sky mean the loss of current employment among air traffic controllers? Foster says not. “I can’t see national governments going away any more than I can see ANSPs disappearing,” she told Airspace. “You are just seeing a change of structure and how they will manage it. Without doubt there will always be a role for national regulators in Europe. It’s about teamwork.”

Foster has the credentials to speak reassuringly about jobs. She began her working life as a flight attendant and was leader in creation of an independent trade union for cabin crews. “Clearly there are one or two countries where air traffic controllers have expressed concern that the SES
will lead to job losses. But moving forward will not entail losses (because) more people are going to fly."

The entire SES is under the aegis of the Single European Sky ATM Research - Joint Undertaking (SESAR-JU) project. Following definition and development, the deployment phase is to start in 2013 and continue to completion in 2020. The aim is efficient management of the 33,000 flights a day in current peak numbers which are growing at an annual clip of 3.5%. Since there is informal but general agreement that Europe is not about to build any more Heathrows, Charles de Gaulles, Schiphols, and the like, efficient ATM management is critical to maximise existing capacity.

The SESAR JU development phase alone cost Euros2.2 billion (US$2.86 billion) shared among the EU’s budget, Eurocontrol’s, and from the private sector. The ultimate target is triple the current capacity to handle flights, a tenfold improvement in safety factors, a 10% reduction in environmental impact, and a 50% cut in air traffic management charges and costs.

The Commission has long promised Euros3.0 billion (US$3.3 billion) in seed money for the next step, issued in tranches over time. But that’s just to leave the gate. Andrew Charlton, managing director of Aviation Advocacy, a Swiss-based consultancy, says, "Ultimately another Euros27 billion (US$35 billion) will have to be magic-ed up." He notes that the Commission has hinted part of overflight and other charges could be reallocated and other incentives can be used to generate more contribution from national governments, other authorities, manufacturers, and carriers.

A key concern for carriers is interoperability with other systems in the US, Russia, and China as well as any requirement for cross-training. The similar NextGen project in the United States started later as a replacement to the existing system and is likely to finish by 2025. In American airspace alone, over a five-year period NextGen is projected to reduce aviation fuel consumption by 1.4 billion gallons (5.3 billion liters), reduce carbon dioxide emissions by 14 million tons annually and save US$23 billion (Euros17.7 billion) in current dollar cost.

Still after long delays there are signs of progress. The Commission is unveiling SES Mark II+, a plan designed to push matters along further. The European Parliament, thanks to Foster, is fully aligned. Eventually the European Parliament, with no technical resources, will also have a say in that package as well. It loves to write detailed specifications and the risk is that if the Mark II+ package is too technical the European Parliament will again be deeply involved in detail. Inevitably they will get ironed out in the arcane EU process called ‘comitology’ used to mediate technical differences in legislation.

Even more important, the carriers and manufacturers are no longer in a race to be last. Several major European carriers are proposing joint implementation on non-competitive matters such as deployment and installation. What the carriers want, the manufacturers will supply. Philippe Eydaleine, the Brussels-based head of EU affairs for Air France, notes newly energised support from Siim Kallas, EU Commission Vice President and Commissioner for Transport, as well as in the European Parliament: “There is a huge consensus that something must be done to achieve the SES,” Eydaleine says.

If in fact there is a breakthrough, there will be major thanks due to Foster. “Airspace across much of the EU is so congested that it faces the prospect of massive gridlock in a matter of years,” she concludes. “We need more efficient and integrated handling of air traffic which would be delivered by the Single European Sky.”
As Dieter Kaden steps down as the CEO of the German ANSP DFS Deutsche Flugsicherung after more than two decades working in air navigation services, he shares his views on the issues most likely to bring about modernisation of European airspace.

As co-founder and former chairman of CANSO, Kaden has made a significant impact on European as well as international developments. In 1993, Dieter Kaden changed the Federal Administration of Air Navigation Services (BFS) into a modern company under private law. “In 1992, when the German government entrusted me with the corporatisation of BFS - which involved turning it into a performance-driven, modern company - we stood on the brink of a new era.” Kaden realised that the company had to be able to meet the requirements of a new Europe preparing to establish a cross-border aviation system. The experience proved useful foundation for subsequent projects including his role as co-founder and later as chairman of CANSO in the years 2000-2004.

CANSO was founded in 1995 by eight CEOs of corporatised air navigation service providers from around the globe. Today CANSO has more than 200 members and is the global voice of ANSPs. CANSO represents the interests of ANSPs worldwide, and is a partner equal to organisations such as ICAO, IATA or ACI. “This development is a fabulous success for all ANSPs,” says Kaden.

A new era for Germany

The volume of air traffic in the skies above Germany rose dramatically from the 1980s onwards, making it one of the busiest airspaces in the world. The BFS did not have enough financial independence or sufficient qualified air traffic controllers to respond adequately to this growth, and was constrained by rigid government structures and rules. Delays were normal, everyday occurrences.

Consequently, the German government took the legislative decision to found DFS Deutsche Flugsicherung GmbH, a German legal form of a limited liability company. The new organisation allowed the ANSP to be more flexible, to pay higher salaries, to become independent of the state budget and to use new investment opportunities. Punctuality improved noticeably as well as safety, which was reflected in lower numbers of aircraft proximities.

An important pillar of the new organisation according to Dieter Kaden, is civil-military integration. “This concept is indispensable to Europe’s goal of establishing a Single European Sky,” says Kaden. “DFS has been responsible for the handling of both civil and military air traffic in peacetime since 1994. What used to be two separate systems has become a single entity. Personnel are employed under a collective agreement and civil servants and soldiers work side-by-side towards the common goals of the company. “All of the parties involved hold the common belief that airspace belongs to everyone, which necessitates handling it in the most economic way possible.”

Kaden led the restructuring of DFS in preparation for a more competitive European market. The company organised its core business in two business units: one responsible for area and approach control operations, and the other for control towers. An additional business unit was established to offer consulting services and sales of systems developed in-house to international markets. The company restructuring was accompanied by a consolidation of control centres from the original six down to four centres. In addition, DFS acquired share interests in other companies and founded subsidiaries to branch out beyond its core business. Today for example, DFS provides aerodrome control services at nine regional airports in Germany via the DFS subsidiary The Tower Company.

“As I see it, technological development is crucial for the future existence of air navigation service organisations,” says Kaden, who before he became CEO of DFS was in the upper management of technology providers including Nixdorf and Philips. “Efficient air traffic control can only deal with the increasing volume of traffic if it keeps up with the latest technological advances,” he adds.

Removing barriers


One example of the new cross-border cooperation is FAB Europe Central (FABEC), which includes the airspace over Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland. With its 5.7 million flights per year, it is the busiest block of airspace in all of Europe. Harmonising
traffic flows, increasing capacity and reducing the number of delays all at the same time and in such a complex airspace is described by Kaden as a project of stellar proportions. He says major progress has already been made at the operational level. The airspace between Germany and the Netherlands has been restructured, the city pairs most penalised from a routing perspective have been optimised, and a new nighttime network has been established. Routes have been shortened and the number of delays reduced.

FABEC partners are currently working on four other large airspace restructuring projects. The “Cross Centre Arrival Management” programme aims to display the information from the arrival management system now being used at large airports simultaneously to air traffic controllers working in the control centres upstream of the airports. This will not happen just within one country but across borders.

"Nevertheless the speed of the changes has been quite slow," says Kaden, confirming the recent criticism of airspace users. "The States have had a hard time disentangling themselves from purely national considerations. Furthermore, the institutional and regulatory frameworks are very different depending on which FABEC country you are in. This complicates cooperation between partner organisations even more."

"There need to be structural changes at a national level which will support the work between the ANSPs in Europe," says Kaden, The first major step initiated by the SES regulations was the institutional separation of operations from regulatory functions. The next step is the corporatisation of the ANSPs.

"This way the ANSPs become more independent of the States and this will help to overcome the often misunderstood concept of sovereignty." Not until this happens can a true consolidation take place as was the original objective of SES. In Kaden's opinion, these changes in structure must take place on a cross-border basis.

"In 2002, we founded the CANSO European Office to consolidate the position of the ANSPs vis-à-vis the newly established regulatory authorities of the states as well as the European Union and Eurocontrol. Then, we were able as ANSPs – without reference to political or international issues – to influence European legislature and the institutional framework." Furthermore, Kaden founded the European CANSO CEO Committee (EC3) and diverse working groups which were "based on mutual trust and personal relationships", and which have had a very positive effect on cooperation within the functional airspace blocks.

Ambitious targets

Another major challenge according to Kaden, is the introduction of performance targets which the ANSPs have had to meet since the beginning of 2012. "Above all, the target related to costs is very ambitious, and not really feasible," warns Kaden. "Growth in air traffic has been considerably lower than the forecasts and that of the previous twenty years, which means that revenues are correspondingly low. This means that more latitude is needed for investments in new air navigation technologies as well as for making the required business decisions in the framework of European consolidation."

Nevertheless, Kaden confirms that the goal is to create performance-driven ANSPs which operate efficiently and safely both in times of economic growth and during downturns. "Economic targets have to be continually examined and adapted to reflect the actual situation. In particular, if you take the example of the economic targets set for the second reference period, it will be interesting to see how the regulators deal with the operational challenges of the ANSPs."

The world of air navigation services has gone through tremendous changes in the past decades. That cannot be denied. What is the outlook for the future? Will ANSPs be able to act more independently from the particular interests of the States? The outgoing CEO of DFS says ANSPs have to respond: "Our air traffic management system continues to become more globally oriented and less nationally oriented. In Europe this is happening with the creation of a common, efficient airspace. On a global level, this is happening with more cooperation and exchange of goods and services – for the benefit of all people and their mobility."
The US supports a collaborative approach to improving the global aviation system

Teri Bristol, Deputy Chief Operating Officer of the FAA’s Air Traffic Organization and recently appointed member at large of the CANSO Executive Committee, shares her perspective on some of the challenges and opportunities facing air navigation service providers.

How do you see your role with CANSO?
It is an honor to join the CANSO ExCom at this pivotal moment for the industry. The ATO is a strong supporter of CANSO, and our collaboration with its members has been a significant opportunity to address key issues of mutual concern and exchange best practices both in air traffic management and aviation safety. We all have challenges, and collaborative approaches to these challenges can result in harmonised solutions. I am looking forward to being a part of those solutions.

Before becoming Deputy COO, you were Vice President of Technical Operations in the ATO, leading a unit with more than 10,000 employees responsible for over approximately 55,000 pieces of equipment. What can you tell us about that role?
It was incredibly rewarding to serve as the Vice President of Tech Ops. This organisation has an impressive diversity of expertise, which is what you’d expect given the vast variety of systems and installations across approximately 8,000 facilities. Their main focus is the delivery of maintenance, monitoring and engineering services in the National Airspace System. Given the advances in NextGen, they are at the forefront of innovation and collaboration. Tech Ops understands the need for collaboration across the agency to modernise and sustain the system efficiently, something that applies on the international scene as well.

What would be your overview of the FAA’s progress in deploying technology?
We’ve made significant progress and will continue to do so. We’re more than halfway to our goal of installing Automatic Dependent Surveillance – Broadcast (ADS-B) ground radios, with over 400 now operational, and we expect 730 deployed by early 2014. We have over 50 products available through the System Wide Information Management System, or SWIM, including Airport Surface Detection Equipment-Model X (ASDE-X), weather products, altimeter settings and pilot reports, and more are in development.

We’re making steady progress on deploying En Route Automation Modernisation (ERAM), the platform that processes flight radar data, provides communications and generates display data to air traffic controllers. ERAM is now operating in some capacity at 11 out of 20 En Route centers, and five of them are using it as the primary technology directing high-altitude air traffic.

This means that the flying public benefits from these new technologies now and in the future.

As the FAA continues to implement these new technologies and procedures, we’re also working to achieve a greater harmonisation of standards, technologies and procedures across international airspace as well.

There are many advances in safety and efficiency developing in the U.S. and globally, but it’s going to require international collaboration and communication to fully benefit from the investments.

How important is international collaboration to the FAA?
Collaboration and harmonisation are very important to the aviation community as a whole. With new technologies
Over 50 products are now available through the System Wide Information Management System (SWIM), including ASDE-X, which tracks aircraft movements on runways and taxiways.

and systems being developed and implemented, it is even more important for us all to work together to truly realise the benefits, efficiencies and increased safety to the international aviation community and the flying public.

Many of the ANSPs’ have similar challenges and changes. And that is why CANSO is so important to us all. Its philosophy of providing a partnership forum between its members and stakeholders from the aviation industry and governmental and inter-governmental organisations provides opportunities for collaboration. The work programmes and initiatives in the Operations Standing Committee, the Safety Standing Committee and the Policy Standing Committee have resulted in the development of several best practices that have served the industry in a more global approach to finding solutions.

Outside of CANSO our biggest harmonisation activity is with the European SESAR programme. The FAA is continuing to work closely on harmonisation issues between NextGen and SESAR under a cooperative agreement with the European Commission. We’re working to identify and find solutions in areas where we need to be more closely aligned. To date, we have started work in 20 work plans ranging from data communications to safety management.

Earlier this year, the ATO entered into a partnership with the European A6 Alliance of service providers to look at best practices and plans moving into the implementation phases of NextGen and SESAR. This includes issues like the engagement of air traffic controllers and technicians in the testing and training for new systems and procedures.

We have a lot that we can learn from each other, and the fact that we’re all CANSO members helps.

The Asia-Pacific region is one of the fastest-growing aviation markets in the world. Many challenges for aviation infrastructure are being created by the increasing amount of traffic coming out of China and India and the launch of many new low cost carriers. So we’re very active in working with current and what we hope will be future CANSO members in that region.

The ASPIRE partnership added eight new environmentally friendly city pairs last year. We’re working closely with China and Japan on the planning for their next generation systems, and we are very excited about the recent signing of a cooperative agreement with Singapore and look forward to working closely with Civil Aviation Authority of Singapore on the development of their Centre for ATM Excellence.

In Latin America, we’re working with the CANSO regional office to sponsor and promote initiatives in performance based navigation, operational benchmarking and safety management. This last point deserves emphasis. The CANSO safety programme has been highly successful in outreach to the different regions. The upcoming Global ATM Safety Conference in Cape Town will highlight the fundamentals of safety management in ATM to a whole new CANSO audience.

Within CANSO, there is an incredible opportunity to work toward success both regionally and globally. As the ExCom Champion for the Operations Standing Committee, I look forward to
ANSPs are banking on increased safety and efficiency from advanced technology, but existing infrastructure, like this VORTAC in Miami, must still be properly maintained.

serving as an advocate, particularly as we continue to address harmonisation opportunities.

Do you see any shared challenges internationally?
There are shared successes and shared challenges, one of which includes ensuring the integrity of the systems we already have. The aviation community needs to find the right balance between new technologies and sustainment of existing systems at their extraordinarily high level of safety and reliability.

This is a challenge for all of us given the construction of facilities and deployment of technology over many decades. There are physical and technical challenges, not to mention simply retaining the expertise that keeps all these systems going.

These issues must not be only on the systems side?
That’s right. Just like some of our key technology, we have facilities that were built in waves and are pushing or exceeding their planned lifecycle. Our Air Route Air Traffic Control Centers were built in the 1960’s, and during 1990-95 we had a major capital infusion for what became the Display Replacement System. So we’re hitting a lifecycle bubble.

The issue can be something as seemingly simple as keeping the chillers going in those facilities so the equipment can keep working (chillers are industrial-grade air conditioning systems). We have redundancy of course—there are four chillers at each Center, and two need to work to keep going. So if one stops working, do we replace the entire system, which is not cheap, or repair it and hope we don’t have to do that all over again?

There are so many pieces we have to properly maintain, things you might think of as mundane—fire protection, fall protection on towers, tower integrity, buried power cables, fuel tanks.

My boss, Chief Operating Officer David Grizzle, says it’s like a roof. You were told it would be good for 15 years. You’ve never had any problems with it. Now it’s been 20 years—do you fix it now or wait until something goes wrong? And by the way, this isn’t just about older systems that are destined to be phased out. Everything that we now have isn’t destined to be turned off. We will rely on legacy systems for years to come.

So what’s the appropriate response?
In the ATO, we’re creating a 10-year NAS sustainment plan – we call it our Get-Well Plan – to correct deferred maintenance on facilities that continue to operate. We have already identified our priorities in this area. And given the fact that we don’t have unlimited funds, we’ll have to decide what to keep, what to repair, what to replace and what to shut off.

We are not going to do that in isolation. We can’t make those kinds of decisions without a comprehensive and pervasive programme of collaboration. Really, that’s true of any of our initiatives, definitely including NextGen and the integration of advanced technology among CANSO members.

Collaboration touches everything, if you want to be effective.

I am looking forward to working closely with the other ExCom members in the upcoming year. All of us, inside the FAA and across CANSO and around the world, have to work effectively together as a team to ensure that new systems and technologies are not just implemented, but that they improve the system for us all.
Find your next job in Air Traffic Management

www.canso.org/atmjobs
Access new functions at less cost
A new open architecture platform finds favour with tower controllers

One of the key goals of the Single European Sky ATM Research Programme (SESAR) is to improve the interoperability of ATM systems at a technical as well as an operational level. For tower working positions, this translates into a more efficient user interface which in turn improves work processes.

The SESAR project 12.05.04 has been working on a prototype which fulfils these demands for an integrated controller working position (iCWP). The ultimate goal is to increase airport capacity and to decrease both investment and operating costs.

While the working position of a tower controller today comprises a multitude of different screens and various input devices, the working position of the future will have a uniform design which can change the display depending on the situation and what tasks need to be carried out. The first prototype has been validated by Eurocontrol, the German air navigation service provider, DFS Deutsche Flugsicherung, and Frequentis.

The iCWP prototype uses the service-oriented system architecture prescribed by SESAR which allows different components and information services to be integrated in any way desired via open interfaces. Thus tailor-made systems can be fashioned for the various tasks that have to be carried out at small, medium-sized and large airports.

The prototype uses open source solutions, which prevents over-dependence on just one manufacturer. To test the feasibility, smartStrips, the electronic flight data system created by Frequentis, was integrated with the Phoenix ground and air situation display of DFS into the iCWP, along with other support and communications modules.

The Phoenix display provides the controllers with an overview of the current situation on the ground and in the air. The Phoenix ATC and A-SMGCS surveillance system alerts the controller about potential conflicts. The tracks displayed are linked to flight plan data which are also available as electronic flight progress strips. In keeping with the open architecture, the iCWP now also has a second alternative flight progress strip system created by DFS called Showtime-TFDPS. Other applications can be seamlessly integrated into the architecture, such as smartTools by Frequentis which supports information and communication systems, or the DFS Weather Server.

Issuing clearances is an important mechanism for managing traffic at airports. In the prototype, clearances are treated as part of flight plan data management. In the future, information entered into the electronic flight progress strip system will be forwarded directly to the pilot via data link, eliminating the need to issue clearances via radiotelephony.

The underlying messaging infrastructure uses existing standards for the exchange of information such as EUROCAE Standard ED-133 for flight plan data (in the future, FIXM) and supplements these with open source exchange formats if the required format does not exist yet.
The integrated controller working position tested open source solutions.

This is part of the research being carried out by those developing the new iCWP concept.

**First validation**

In June 2012, there was a three-day operational validation for the iCWP prototype within the framework of SESAR Release 2. Coordinated and carried out by Eurocontrol, DFS and Frequentis, the validation simulated four different air traffic scenarios at Hamburg Airport. The simulation was conducted at the 180-degree tower research simulator at the DFS Academy in the town of Langen, Germany.

The integrated working positions used for the validation consisted of two interactive pen displays from WACOM. One was used for the electronic flight progress strips created by Frequentis, and the other for the Phoenix ground and air situation display. The pen on the device is all that is needed to make full use of applications; a mouse and keyboard are superfluous.

Two pseudo pilots were in control of the aircraft in the simulation and received and carried out instructions from the controllers using Frequentis’ voice communication application. The air traffic controllers involved in the project have confirmed that the solution seems like one system as the various components are linked so harmoniously.

They commented that it was easy to forget that the iCWP actually is made up of different systems because of its common set of data, the same target selection regardless of the application, and the simultaneous display of information and alerts.

For example, when a target in the ground display is selected, the corresponding flight progress strip is automatically linked with it. Another example is that a safety net alert is displayed simultaneously on the flight progress strip as well as next to the corresponding aircraft target shown on the ground display.

The validated prototype serves as the starting point for further developments. Integrating and testing new components will be quicker and more efficient in the future. Until now, each individual component has had its own user interface which has been linked with other components via common data and selection mechanisms.

The goal in the future is to create a display that can seamlessly change depending on what tasks the controller needs to carry out and which perfectly supports the work process with exactly the right information needed to perform the task at hand. ➤
Best equipped, best served
Gary R Church of Aviation Management Associates puts forward a simple solution

As the Federal Aviation Administration (FAA) attempts to move forward with the modernisation of the air traffic control system known as NextGen, it struggles on ways to encourage air traffic control system users to invest and equip with the latest aircraft avionics systems that can take full advantage of the capabilities that NextGen has to offer. This article offers a simple solution that can be implemented now to start to achieve the promises of NextGen.

Traditionally, those aircraft operators who have been innovators and first adopters of the most modern avionics systems have been disappointed in their attempts to improve their operational efficiency. Many operators who have been equipped with VLF/Omega, Loran, MLS, CPDLC and even early GPS unfortunately did not see the expected return on their investments. Too many promises have gone unfulfilled in leveraging the capabilities that these new technologies had promised to deliver.

These past experiences have made aircraft operators wary of investing in new technologies in support of enhanced air traffic control and related services in NextGen and they now are reluctant to invest in advance of full and proven implementation of FAA-promised air traffic control capabilities, including related policies and procedures. The FAA’s struggle with implementation of performance-based navigation (PBN), such as Required Navigation Performance (RNP) in major terminal areas, is a good example of current challenges for airlines such as Alaska Airlines and Southwest Airlines, whose investments in RNP have yet to be adequately exploited.

The barriers
The obvious question asks what barriers toward modernisation exist and why they have proven so difficult to overcome. While it is the nature of all large bureaucracies such as the FAA to be resistant to new ideas and changes, it is much more basic than that. The FAA’s challenge lies in the nature of work performed by air traffic controllers.

Notwithstanding the high degree of automation in many highly technical fields, air traffic control remains a human centric endeavor where humans must balance a formidable number of variables and priorities to quickly make and execute decisions that affect aviation safety, capacity and efficiency. While growing automation capabilities provide an organisation with enhanced presentation of data and information as decision support tools, the controller must still assess the information available and render conclusions and decisions. There is no ‘autopilot’ for air traffic controllers.

Experience soon teaches air traffic controllers that homogenous operations make their job easier and its execution safest. In other words, the application and use of consistent standards and repeatable procedures, along with routine and similar aircraft operational performance, allows the greatest number of aircraft movements in a safe, orderly and expeditious flow of air traffic in the National Airspace System (NAS).

Mixing different types of aircraft with divergent operating characteristics or mission requirements significantly increases controller workload and the demand for mental processing increases – sometimes dramatically.

Given this background, it would appear the aviation community continues to be locked in the chicken and egg conundrum. You cannot afford to equip without near-term benefits and you cannot achieve benefits in the near-term without equipage.

First come, first served
One way to move forward with NextGen is to develop or adopt policies and procedures that break the traditional paradigms and move forward with innovative thinking and bold action. Sometimes this is not as revolutionary as one might imagine. The greatest innovation of all may be using old means and methods in new and imaginative ways.

Although the FAA has asked many for help in addressing the policies and procedures of “best equipped, best served,” the answers seem unnecessarily elusive. However, it is my belief that, the FAA already has the infrastructure in place to implement “best equipped, best served” without creating new challenging solutions.

The genesis of “first come, first served” comes from the FAA Air Traffic Controller Handbook 7110.65 Paragraph 2-1-4, Operational Priority. It states, “Provide air traffic control service to aircraft on a first come, first served basis as circumstances permit, except...” This is all that is mentioned – no great pronouncement in any other FAA reference. The exceptions to first come, first served provide for (1) aircraft in distress, (2) civilian air ambulance, (3) search and rescue, (4) presidential aircraft, (5) flight check, (6) or aircraft using special identified call signs, (7) air defense aircraft, (8) IFR over VFR, (9) aircraft operating under the North American Route Program identified in the High Altitude Redesign, and (10) diverted flights. It would be an easy editorial change (which does not require rulemaking) to simply expand the exception...
list of Paragraph 2-1-4 of the FAA ATC 7110.65 to include “NextGen equipped aircraft.”

While this procedural change to identify NextGen equipped aircraft to receive priority ATC services is quite simple, the real challenge lies in how these services would be accomplished. It would be impractical for controllers to re-sequence airborne aircraft based on aircraft equipage. In fact, in some major terminals, this effort would no doubt be chaotic and significantly reduce capacity and the margin of safety. However, a simple solution exists – these queues must be established on the ground prior to aircraft departure.

At some airports, simply allowing NextGen-equipped aircraft to pass non-equipped aircraft to or in the departure queue is an acceptable method of re-sequencing departure traffic allowing the NextGen aircraft to depart first. The key is that if the aircraft departs first, it most likely will arrive first providing the needed credit in terms of departure and arrival efficiencies in justifying NextGen equipage.

This approach is actually already used by the FAA in a limited basis through its Traffic Flow Management programmes. The FAA routinely assigns departure clearance times to aircraft prior to departure as it manages demand with capacity at major airport hubs. This same programme can be adapted to manage NextGen equipped aircraft departure times providing the necessary priority out of high-density terminal airports.

The competitive advantage

For those who know the airline industry, they know the strongest motivator for airline investment is to gain competitive advantage, or at least not lose it. There is no consideration of return on investment formulas in these cases. An airline acts to improve passenger services (ie, lowers ticket cost, upgrades seat, provides free internet) and its competitors are forced to respond immediately for fear they will lose market share. As airlines are provided with priority based on NextGen equipage, non-equipped competitors will suffer significant competitive advantage and they will equip quickly as well.

As NextGen equipage rates accelerate in response to competitive disadvantage, the FAA has an opportunity to continue to migrate or change the definition of NextGen equipage without relying on rulemaking action. The FAA can simply add new NextGen capabilities to the definition of NextGen equipped aircraft, such as Trajectory Based Operational Capability (TBO), or replace ADS-B with TBO. This enables the FAA to continue to move forward, well into the future with the latest proven technology without relying on contentious and time consuming regulatory actions.

While an adoption of “best equipped, best served” policies and procedures, as described above, can motivate action, it will not provide all of the NextGen benefits needed in the coming decades.

The 2009 RTCA Task Force 5 was an expression of frustration by the airline industry with the air traffic control system. After a number of years of avionics investments, the potential of these aircraft automation systems to save time and money were seldom if ever exploited by air traffic control. There is an obvious discontinuity to even the most casual observer that while aircraft pilot functions are highly automated the air traffic controller functions are not.

To gain efficiency and capacity, both ground and air must have complementary automation capabilities. This means building automated ATC capabilities, such as precise establishment and maintenance of aircraft spacing along the final approach course using automation aids such as “ghosting” or Relative Position Indicator (RPI).

As NASA has discovered reaching some of the operational limits of the current ATC system, a human can only do so much and work so fast. When an aircraft needs hundreds of small flight path adjustments to maintain a precise pre-defined or coordinated flight path within a few seconds to maximize capacity, only linked air and ground automation systems can accomplish this task. While this is still a few generations away, key informed leadership decisions are needed now to resolve the aircraft equipage issue if we want to push forward with NextGen and beyond.

In conclusion, our proposed approach to “First Come, First Served - Best Equipped, Best Served” is a straightforward step that the FAA could implement now as another step on the path to NextGen.

Reprinted with permission. This article was originally published in the Summer 2012 issue of The Journal of Air Traffic Control.
CANSO’s seven African members agreed to establish a regional office at the start of 2012, and won full support to do so at the AGM in June. The office provides a regional focus for ANSPs, airports and airlines to work together to transform the performance of air traffic management in Africa. The members include Angola, Kenya, Mozambique, Nigeria, South Africa, Tanzania, and Uganda. The interim Chairman is Thabani Mthiyane, acting CEO of ATNS, and the Vice Chairman is Nnamdi Udoh, Managing Director of the Nigerian Airspace Management Agency (NAMA). CANSO Director Africa Affairs is Boni Dibate, seconded from Air Traffic and Navigation Services (ATNS) of South Africa, based in Johannesburg. The regional office officially opened in Cape Town in October 2012.

The first regional meeting in June expressed agreement over the need for closer cooperation between ANSPs in Africa. It also proposed mutual support for the adoption of performance-based navigation (PBN), flight plan 2012, operational procedures and safety issues. Since then, the regional office has been busy with the creation of a work programme and set of priorities for members. The office is also tasked with expanding the membership and promoting the benefits of CANSO membership. This could include initiating collaboration or joint activities with other regions in the future.

In September, the Executive Committee identified three strategic areas for the region’s work groups and standing committees to focus on. They address industry partnerships, cost-effectiveness, and efficiency.

Within the partnership area, the priorities include: runway excursions, introduction of the new ICAO flight plan format, implementation of PBN, establishment of a flight procedure designs office, centralised aeronautical data, missing flight plans, training, and air traffic flow management. In the cost-effectiveness area, the emphasis is on creating value for members, sharing best practice, annual benchmarking, quality assurance and enhanced safety. Finally on efficiency, the focus is on efficiency metrics, stable approaches, slot allocation, delays, and communications. The Executive Committee has started to identify teams which will develop action plans to address these focus areas.

Furthermore, at the African Aviation Conference and Exhibition organised by IATA in Johannesburg in May 2012 entitled: “Africa’s aviation manpower shortage and brain drain” the CANSO Africa office, in partnership with AFRAA, ASECNA, ATNS, AASA, AFCAC, ACI, EASA, and the FAA signed a five point plan to address the brain drain and to tackle training issues.

CANSO is becoming more visible in Africa. We need to work harder in identifying issues where we can bring benefit.
CANSO Africa has a challenging agenda, with a very strong focus on safety. “We aim to improve safety through programmes such as the release of documents that detail Safety Management Systems (SMS) guidelines, and the Runway Safety Initiatives toolkit,” says Boni Dibate. “These are good examples of the value that CANSO brings to members in the region.”

CANSO participated in a Runway Safety meeting organised by ICAO in September 2012, where members discussed several critical areas. These included radiotelephony, phraseology, language proficiency, equipment, aerodrome lighting and markings, aerodrome charts, operational aspects, situational awareness and human factors. The meeting provided an opportunity to showcase the CANSO toolkit on runway incursions and to explain its objectives. Delegates learnt about the importance of collaboration with industry partners, improved education and awareness, and unstable approaches in the context of air traffic control.

At a separate workshop organised by IATA on infrastructure and operational efficiency, CANSO members discussed the establishment of safety oversight organisations at the regional or sub-regional level. Dibate says the organisation can assist ANSPs to improve safety through technical cooperation programmes and making critical needs know to donors and financial organisations.

In addition to supporting implementation of safety management systems, CANSO encourages the exchange of information between ANSPs to promote mutual confidence in the level of aviation safety between ANSPs. “Going forward we will look into collaborative decision making (CDM), Automatic Dependent Surveillance – Broadcast (ADS-B) and PBN in the region and we will continue to market the organisation.”

CANSO Africa also participated in Airports Council International - Africa annual AGM in Zambia in August, where the organisation gave a presentation on ATC challenges and opportunities in the Africa region. “From these activities it is quite clear that CANSO is becoming more and more visible in Africa,” says Dibate. “We need to work harder in supporting the region and in identifying issues where we can bring benefit. These engagements with industry players are living proof that CANSO aims to improve safety.”

CANSO Africa played a prominent role in the African Ministerial Conference in Abuja, Nigeria, in July. The theme of the meeting was Aviation Safety in Africa, and in attendance were ministers of aviation and transport as well as safety technical officials from about 20 African countries. Key topics covered included: improving aviation safety in Africa, implementation of effective and independent regulatory oversight, and a commitment by all the ministers present to an action plan to support all the safety initiatives as recommended by the regional technical meeting on aviation safety.

CANSO members on the African continent include:

- Aeroportos de Moçambique E.P
- ATNS (South Africa)
- Civil Aviation Authority Uganda
- ENANA-EP (Angola)
- Kenya Civil Aviation Authority
- National Airports Corporation Limited (Zambia)
- Nigerian Airspace Management Agency
- Tanzania Civil Aviation Authority
World ATM Congress conference – a compelling event
Airspace unveils the agenda for the industry’s pivotal meeting in Madrid in February 2013

The programme for the World ATM Congress Conference has now been published, and is detailed overleaf. It features the world’s key ATM industry players – who have already confirmed their attendance in Madrid – and have agreed to share their wisdom and insight.

The programme has been developed in a way that addresses a number of issues. First, it is agenda setting. It will look at what the industry is facing and must face. Secondly, it features the leaders of our industry and some outside experts that have directly relevant experience and knowledge that we can benefit from. Thirdly, it focuses on the future and how we get there, together.

This is the industry organising a conference for itself, by itself, about itself and with the aim not of talking but of advancing its agenda. By the industry, for the industry; as both ATCA and CANSO have noted. The World ATM Congress and Conference will allow us to take control of our future.

The conference will start with the keynote address by Roberto Kobeh-González, President of the ICAO Council. He will set the agenda of the conference by addressing the question of “Towards a Transformed ATM Environment”.

This theme will be picked up and amplified by a number of speakers. Matthew Baldwin, the Director of Air Transport at the European Commission and Frank Brenner the new Director General of Eurocontrol will give the view from their perspective on how we start to implement a transformed ATM environment. The Hon Michael Huerta, the acting FAA Administrator has also been invited to share his views on how we bring about airspace modernisation.

In addition, the Director General of Civil Aviation in Spain, Angel Luis Arias Serrano, will also deliver an address on how to regulate in a liberalised environment; a topic of increasing relevance.

The theme of the conference is “Augmented Reality – Towards a Transformed Global ATM System”. To be able to successfully move to the future, we need, as an industry, to do a number of things.

First, we need a reality check. If we are to build a future with our stakeholders and industry partners, we need to understand each other. Collaboration is more than telling others your requirements. It needs a common sense of purpose.

Session 1 asks “What does a preferred ATM partner look like? What do we need from each other?”

In a series of thought-leading speeches, World ATM Congress stakeholders, including Tony Tyler, the Director General and CEO of IATA, Nicholas Calio, the President and Chief Executive of Airlines 4 America (A4A) and Angela Gittens of Airports Council International (ACI) will set out what they think we need to do. Paul Riemens, the Chairman of CANSO will put the ANSP perspective. The session will be facilitated by Nancy Graham, Director of ICAO’s Air Navigation Bureau.

Secondly, we need to ask the question of how we implement the new technology we are working on. There are lessons we can learn from the airlines. It is arguable that the single most important development in aviation was the introduction of extended operation flights (ETOPS). It changed the economics of the airline industry. But the regulatory issues took a decade to be resolved.
Can we afford a decade of delay? If not, what can we do now to start to address these issues?

The question will be addressed by a panel moderated by Patrick Ky, the CEO of the SESAR Joint Undertaking. He will be joined by Alexis Brathwaite, President and CEO of IFACTA and Daniel Weder, the CEO of skyguide, the ANSP of Switzerland and Chairman of FABEC.

The third session looks at the project-management issues we are facing. The implementation of projects such as SESAR and NextGen will be complex. Do we know what we need to do to make them happen? We have turned to others that have delivered large and complex projects to see what we can learn. Steve Fulton, Technical Fellow of GE Aviation will moderate a session of expert project managers with successful, complex projects behind them.

Lyn Evans, responsible for delivering the Large Hadron Collider for CERN, the nuclear research centre in Switzerland will discuss what he learnt from this project.

We then turn to the vexed issue of ANSP cooperation, performance and delivery. Is it a Myth or Reality? This will be a discussion moderated by Jeff Poole, the Director General of CANSO. He will be joined by a number of ANSP CEOs including John Crichton of NAV CANADA, Eamonn Brennan of the IAA and Micilia Albertus-Verboom of DC-ANSP Curacao.

The final panel will look into the future. What will the new ATM Reality be? It asks the question: If it were up to you, what would ATM look like in 2033? Neil Planzer, the Chair-elect of ATCA and a member of the CANSO Executive Committee will lead a thought provoking and free-ranging panel that will include Todd Donovan, President of Thales ATM Inc, Ramón Tarrech, ATM Strategy Director of Indra, Klaus-Dieter Scheurle, the CEO of DFS Germany, Marc Hamy, COO, Airbus ProSky and Ed Sims, CEO, Airways New Zealand.

Finally, given that the conference is in Spain, the home of the current world football champions, and very close to Camp Nou, Real Madrid’s famous ground, it is relevant to ask what we can learn from football. William Gaillard, UEFA’s Director of Communications and Public Affairs will talk to us. Football is facing a number of interesting challenges – the introduction of new technology, a mobile workforce and issues of sovereignty. All of them sound familiar. What are they doing and what can we learn?

**KEY FACTS:**

- **Date:** 12-14 February 2013
- **Location:** IFEMA, Feria de Madrid, Spain
- **Exhibition:** 19,000m² in one hall
- **Conference theme:** ATM – Augmented Reality - Moving to a Transformed Global ATM System
- **Co-located events:** CANSO CEO Conference, CANSO ATM Dinner & Jane’s ATC Awards, CANSO Operations Conference
- **Information & registration:** www.worldatmcongress.org
- **Twitter updates:** @WorldATM_Now

Access the complete conference programme online: www.worldatmcongress.org/worldconference
Augmented Reality: Moving to a Transformed Global ATM System

### TUESDAY 12 FEBRUARY 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00</td>
<td>World ATM Congress Opening Ceremony - World ATM Congress Exhibit Hall</td>
</tr>
<tr>
<td>10.15</td>
<td>Official Conference Opening</td>
</tr>
<tr>
<td></td>
<td>Peter F. Dumont, President and CEO, ATCA, Jeff Poole, Director General, CANSO, Ignacio González Sánchez, Director Air Navigation, Aena</td>
</tr>
<tr>
<td>10.45</td>
<td>Keynote Address Towards a Transformed ATM Environment – Working Together Roberto Kobeh-González, President of the Council, ICAO</td>
</tr>
<tr>
<td>11.15</td>
<td>Session One: The Aviation Industry Leadership Forum</td>
</tr>
<tr>
<td></td>
<td>Reality Check – What our stakeholders need from a transformed ATM system and how we get there together.</td>
</tr>
<tr>
<td></td>
<td>• Nancy Graham, Director of the Air Navigation Bureau, ICAO,</td>
</tr>
<tr>
<td></td>
<td>• Tony Tyler, Director General and CEO, IATA,</td>
</tr>
<tr>
<td></td>
<td>• Paul Riemens, CEO, LVNL, and Chairman of the Executive Board, CANSO</td>
</tr>
<tr>
<td></td>
<td>• Nicholas E Calio, President and Chief Executive, Airlines for America (A4A)</td>
</tr>
<tr>
<td></td>
<td>• Angela Gittens, Director General, Airports Council International (ACI)</td>
</tr>
<tr>
<td>12.30</td>
<td>Lunch Break &amp; World ATM Congress Exhibition</td>
</tr>
<tr>
<td>14.00</td>
<td>The View from Europe - Matthew Baldwin, Director of Air Transport, European Commission</td>
</tr>
<tr>
<td>15.00</td>
<td>Networking Break</td>
</tr>
<tr>
<td>15.30</td>
<td>Session Two: Delivering ATM Reality – Effective Implementation of New Technology</td>
</tr>
<tr>
<td></td>
<td>• Patrick Ky, Executive Director, SESAR JU</td>
</tr>
<tr>
<td></td>
<td>• Daniel Weder, CEO, skyguide, and Chairman, FABEC</td>
</tr>
<tr>
<td></td>
<td>• Alexis Brathwaite, President &amp; CEO, IFATCA</td>
</tr>
<tr>
<td>17.00</td>
<td>Closing of Day One, Peter F. Dumont, President and CEO, ATCA</td>
</tr>
<tr>
<td>17.30</td>
<td>Reception &amp; World ATM Congress Exhibition</td>
</tr>
</tbody>
</table>

### WEDNESDAY 13 FEBRUARY 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.15</td>
<td>The View from Eurocontrol - Frank Brenner, Director General, Eurocontrol</td>
</tr>
<tr>
<td>10.45</td>
<td>Session Three: Taking Control of the New Reality – Delivering Complex Projects</td>
</tr>
<tr>
<td></td>
<td>• Steve Fulton, Technical Fellow, GE Aviation</td>
</tr>
<tr>
<td></td>
<td>• Lyn Evans CBE FRS, former Project Leader, Large Hadron Collider, CERN</td>
</tr>
<tr>
<td></td>
<td>• Todd Zarfos, Boeing Vice President of Engineering Commercial Aviation Services</td>
</tr>
<tr>
<td>12.00</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12.30</td>
<td>Guest Speaker: What Football Can Teach Us About Dealing with Change</td>
</tr>
<tr>
<td></td>
<td>• William Gaillard, Director of Communications and Public Affairs, UEFA</td>
</tr>
<tr>
<td>13.00</td>
<td>Regulation; Liberalisation; Performance Delivery</td>
</tr>
<tr>
<td></td>
<td>• Angel Luis Arias Serrano, Director General of Civil Aviation of Spain, Ministry of Public Works and Transport, Spain</td>
</tr>
<tr>
<td>13.30</td>
<td>Lunch Break &amp; World ATM Congress Exhibition</td>
</tr>
<tr>
<td>15.00</td>
<td>Session Four: ANSP Cooperation – Performance and Delivery: Myth or Reality?</td>
</tr>
<tr>
<td></td>
<td>• Jeff Poole, Director General, CANSO</td>
</tr>
<tr>
<td></td>
<td>• John Crichton, President &amp; Chief Executive Officer, NAV CANADA</td>
</tr>
<tr>
<td></td>
<td>• Eamonn Brennan, Chief Executive, IAA</td>
</tr>
<tr>
<td></td>
<td>• Micilia Albertus-Verboom, Director General, DC-ANSP</td>
</tr>
<tr>
<td>16.15</td>
<td>Networking Break</td>
</tr>
<tr>
<td>16.45</td>
<td>Session Five: The New ATM Reality – If it were up to you, what would ATM look like in 2033?</td>
</tr>
<tr>
<td></td>
<td>• Neil Planzer, Chairman-Elect, ATCA, and Executive Board, CANSO</td>
</tr>
<tr>
<td></td>
<td>• Todd Donovan, President, Thales ATM Inc.</td>
</tr>
<tr>
<td></td>
<td>• Klaus-Dieter Scheurle, CEO, DFS</td>
</tr>
<tr>
<td></td>
<td>• Marc Hamy, COO, Airbus ProSky</td>
</tr>
<tr>
<td></td>
<td>• Ed Sims, CEO, Airways New Zealand</td>
</tr>
<tr>
<td></td>
<td>• Ramón Tarrech, ATM Strategy Director, Indra Sistemas</td>
</tr>
<tr>
<td>18.00</td>
<td>Closing Conference Ceremony, Jeff Poole, Director General, CANSO</td>
</tr>
</tbody>
</table>
I became interim Director General in March 2012. It has certainly been a fascinating and challenging experience. It is a credit to our team that we have continued CANSO’s strong forward momentum unabated. CANSO has been through a turbulent phase but I think this is all part of our growing pains.

We are now going through a step change in our maturity and global reach. I experience everyday first-hand the passion and commitment for CANSO. Quite rightly each of our members has a view on what CANSO should be. The challenge for the leadership team is to convert what can be disparate views into a coherent strategy which delivers for our members but at the same time increases our presence and profile as the global partner, plus grows our revenue streams in a way which allows us to achieve our ambitions without being totally reliant on member fees.

Our global and regional membership continues to grow rapidly; we have reached a new milestone – 150 members. Our events portfolio also goes from strength to strength with record numbers attending our flagship CANSO ATM Summit and AGM in Rome in June and our first CANSO events in our newest region, Africa, in late October.

Our expanding membership has a number of implications. It calls for a broader understanding of what the industry needs from the organisation. It also calls for a better understanding of how the organisation can add value for each member and each of our regions. We have moved from being a membership club to a true industry organisation.

As I reflect on my five years at CANSO, our results have been truly impressive. Not only has our membership more than doubled, we have gone from one region, Europe, to having a regional office and regionally focussed programmes in each region: Middle East, Asia Pacific, Caribbean Latin America and most recently, Africa. It is gratifying to me to see the strength of our regions, with active regional working groups addressing key issues in safety, operations and policy. Different regions can learn a lot from each other, and CANSO is well-placed to provide a platform that allows sharing of best practice and agreement over common goals. There is huge value in sharing the knowledge held within the various CANSO Standing Committees and working groups.

We develop global policies, but in the regions is where implementation occurs. Our regional events range from conferences to tailored practical seminars on, for example, implementation of effective safety management systems, performance-based navigation and collaborative decision making.

Our influence, credibility and global reach has grown exponentially and we are well on our way towards our goal of being a true global partner in delivering seamless air navigation services and shaping our collective vision for the aviation industry. We have achieved official observer status at ICAO and collaborate regularly with ICAO and other key global and regional stakeholders as true industry partners.

At the ATM Summit in June 2012, CANSO, ACI and IATA agreed to coordinate efforts for driving aviation system improvements. The agreement reaffirms our commitment to move from talking to doing, with a clear goal of delivering tangible benefits for all stakeholders within the next 12 months. Common areas of work include increasing the number of airport runway safety teams, identifying synergies between respective work programmes, and consistency in industry messaging.

A key strategic initiative for CANSO is the World ATM Congress which we will launch in 2013. Our ambition with World ATM Congress is to create the premier international ATM event organised for the industry, by the industry, allowing industry to truly take charge of its destiny. The conference theme ‘Augmented Reality - Moving to a transformed global ATM System’ picks up on a need for change, new technology and the need to move to address with the new world order. This will include both from business and operational perspectives. A unique Editorial Board ensures our content remains first class relevant and topical and our exhibition hall is also almost full, with over 120 exhibitors confirmed. This will be a great global stage. We look forward to seeing you there!

Finally, it is my pleasure to welcome Jeff Poole as the incoming CANSO Director General. It is a testament to true industry collaboration that we have been able to work with IATA to ensure that Jeff is able to join CANSO in time to lead the CANSO delegation at this milestone industry event, the once in a decade Air Navigation Conference. I wish him all the very best for the future.
CANSO Members

CANSO – The Civil Air Navigation Services Organisation – is the global voice of the companies that provide air traffic control, and represents the interests of Air Navigation Services Providers worldwide.

CANSO members are responsible for supporting over 85% of world air traffic, and through our Workgroups, members share information and develop new policies, with the ultimate aim of improving air navigation services on the ground and in the air. CANSO also represents its members’ views in major regulatory and industry forums, including at ICAO, where we have official Observer status. For more information on joining CANSO, visit www.canso.org/joiningcanso.

Full Members - 76

- AEROTHAI
- Aeroportes de Mopambiqu
- Air Navigation and Weather Services, CAA (ANWS)
- Air Navigation Services of the Czech Republic (AND Czech Republic)
- Air Traffic & Navigation Services (ATNS)
- Airports and Aviation Services Limited (AASL)
- Airports Authority of India (AA)
- Airports Fiji Limited
- Airservices Australia
- Airways New Zealand
- Angkasa Pura I
- Austro Control
- Avinor AS
- AZANS (Azersian)
- Belcontrol
- Bulgarian Air Traffic Services Authority (EUL, ATSA)
- CAA Uganda
- Civil Aviation Authority of Bangladesh (CAAB)
- Civil Aviation Authority of Singapore (CAAS)
- Civil Aviation Regulatory Commission (CARC)
- Department of Airspace Control (DECEA)
- Department of Civil Aviation, Republic of Cyprus
- DFS Deutsche Flugsicherung GmbH (DFS)
- Dirección General de Control de Tránsito Aéreo (DGCTA)
- DGNA France
- Dutch Caribbean Air Navigation Service Provider (DCANSP)
- DPHN-EP ANGOLA
- ENAV SpA Società Nazionale per la Resistenza al Volo
- Entidad Pública Aeropuertos Españoles y Navegación Aérea (AENA)
- Estonian Air Navigation Services (EANS)
- Federal Aviation Administration (FAA)
- Finavia Corporation
- GCAA United Arab Emirates
- General Authority of Civil Aviation (QACA)
- Hellenic Civil Aviation Authority (HCAA)
- HungaroControl Plc. Ltd. Co.
- Israel Airports Authority (IAA)
- Iran Airports Co
- Irish Aviation Authority (IAA)
- ISAVIA LTD
- Kazaeronavigatsiya
- Kenya Civil Aviation Authority (KCAA)
- Latvijas Gaisha Savienko (LGS)
- Letové opravdová služby (LSS)
- Luchtverkeersleiding Nederland (LVL)
- Luxembourg ANA
- Maldivas Airports Company Limited (MACL)
- Malta Air Traffic Services (MATS)
- NATA Albania
- National Airports Corporation Ltd.
- National Air Navigation Services Company (NANSCO)
- NATS UK
- NAV CANADA
- NAV Portugal
- Navair
- Nigerian Airspace Management Agency (NAMA)
- Office de l’Aviation Civile et des Aéroports (OACA)
- ORO NAVIGACIA, Lithuania
- PNG Air Services Limited (PNGASL)
- Polish Air Navigation Services Agency (PANSA)
- Pristina International Airport JSC
- PT Angkasa Pura II (Persero)
- ROMATSA
- Sakaeronavigatsiya Ltd
- S.E. ModATSA
- SENEAM
- Serbia and Montenegro Air Traffic Services Agency (SNATSA)
- Serco
- Skyguarda
- Slovenia Control
- State Airports Authority & ANSP (DHMI)
- State ATM Corporation
- Tanzania Civil Aviation Authority
- The LFI Group
- Ukrainian Air Traffic Services Enterprise (UKATSSE)
- U.S. DoD Policy Board on Federal Aviation

Gold Associate Members - 13

- Abu Dhabi Airports Company
- Airbut Pročky
- Boeing
- BT Plc.
- FRELMENTSAG
- GroupFair Europe S.L.
- ITT Exelis
- Lockheed Martin
- Metrovion Aviation
- Reykjavik
- SELEX Sistemi Integrati S.p.A.
- Telephonics Corporation, ESD
- Thales

Silver Associate Members - 61

- Adapco Inc.
- ARINC
- ATCA – Japan
- ATECH Negocios em Tecnologia S/A
- Aviation Advocacy Srl
- Axbit Data Processing GmbH
- Avitech AG
- AZIMUT JSC
- BooCo Orthodon GmbH
- Booz Allen Hamilton, Inc.
- Brüel & Kjær SAM
- Comsoft GmbH
- Abu Dhabi Department of Transport
- Dubai Airports
- EADS Cassidian
- EIZO Technologie GmbH
- European Satellite Services Provider (ESSP SAS)
- Emireites
- Entry Point North
- Era Corporation
- Ethic Airways
- Fokker Services B.V.
- GE Aviation’s PSN Services
- Guntermann & Drunk GmbH
- Harris Corporation
- Helles
- HITT Traffic
- Honeywell International Inc. / Aerospace
- ICAO – Ingegneria Dei Sistemi S.p.A.
- Indra Navia AS
- Indra Sistemas
- INECO
- Immarsat Global Limited
- Integra A/S
- Intelsat Technosystems inc.
- International Aeronautical Navigation Systems (IANS)
- Iridium Communications Inc.
- Jeppeisen
- LAIC Aktiengesellschaft
- LEONZ R&P Corporation
- LFV Aviation Consulting AB
- Micro Nav Ltd
- The MITRE Corporation – CAASO
- MovingBot
- New Mexico State University Physical Science Lab
- NILR
- Northrop Grumman
- NIT Data Corporation
- Project Boost
- Quintiq
- Rockwell Collins, Inc.
- Rohde & Schwarz GmbH & Co. KG
- Saab AB
- Saab Sensis Corporation
- Saudi Arabian Airlines
- SENASA
- SITA
- STR-SpeechTech Ltd.
- Tera Tech AMT
- Washington Consulting Group
- WDE

Correct as of 19 September 2012. For the most up-to-date list and organisation profiles go to www.canso.org/cansomembers
ATM. Better decisions deliver better outcomes.

Long-term support?
Offering a complete range of extended services

Safer skies?
Increasing air traffic efficiency makes new solutions essential

Cyber security?
Ensuring data integrity protection against cyber threats is vital

Optimising controller workloads?
Providing integrated technology enables controllers to focus on their primary roles

Greener ATM?
Optimising flight profiles with reduced holding patterns, cuts carbon emission and fuel consumption

Growing aircraft numbers make Air Traffic Management more complex. Thales TopSky-ATM Solutions help to make the skies safer, greener and more efficient. Our industry-leading initiatives, components, systems and services are integral to the SESAR programme in Europe and NextGen in the US. Thales is trusted by key ATM decision makers across 180 nations and an impressive 2 out of every 3 planes around the world land and take-off with the help of Thales.

To learn more about our TopSky-ATM Solutions, scan the QR code or visit thalesgroup.com
HOW DO YOU MEASURE A METRON?

70 MILLION MINUTES
OF DELAYS ELIMINATED

+ 191 MILLION LITERS
OF FUEL SAVED

\[ \mu_i - M_i - \sigma_i \leq \mu \leq M_i + \sigma_i \]

\( = 590 \) THOUSAND METRIC TONS
OF CO₂ EMISSIONS CUT

\( = 7 \) BILLION DOLLARS
OF COST SAVINGS

THE ROI OF ATM
IS MEASURED IN METRONS.

Metron Aviation, a subsidiary of Airbus Americas and member of
the Airbus ProSky Alliance, is the leading provider of Air Traffic Flow
Management (ATFM), surface operations management, airspace design,
environmental analysis and advanced research services for the global
aviation industry. Metron Aviation’s Collaborative Decision Making (CDM)
solutions increase capacity, reduce delays and lower emissions by
harmonizing gate-to-gate traffic flow for industry leaders like the FAA, NAV
CANADA, NASA, ATNS, FedEx, Delta Air Lines and Airlservices Australia.