THE ATM INDUSTRY MEETS IN MADRID
World ATM Congress 2013

Inspired collaboration in the Indian ocean

Ed Sims
A new model for service delivery

PLUS: Frank Brenner Eurocontrol Director General, FAA proactive safety management, AN-Conf/12 report, GBAS precision approach, Asia-Pacific Centre of ATM Excellence, plus the latest ATM news and comment.
Honeywell—addressing ATM challenges today for clearer and more efficient skies tomorrow.

With the International Civil Aviation Organization (ICAO) predicting that air transportation is set to double in the next 20 years, and with increasing pressure on airspace, the words 'you’re cleared to land' are becoming even more valuable to pilots, airlines, passengers and air navigation service providers alike. Honeywell is an active participant in both the NextGen and SESAR programs and we are leading the way in developing technologies for the modernisation of the ATM system. Our innovative solutions, such as the SmartPath® Ground Based Augmentation System (GBAS) and our next generation Flight Management Systems which will enable Performance Based Navigation and Time Based Operations, increase airport access and capacity, improve routing efficiency and reduce operating costs, making a more intelligent and effective ATM ecosystem possible today. Honeywell ATM solutions are available today to meet the evolving needs of government agencies, aviation customers and airline passengers across the globe. With Honeywell, you’re cleared to land.

Honeywell

Honeywell’s SmartPath® Precision Landing System is the only GBAS system to have been certified in both Europe and the U.S. For more information visit aerospace.honeywell.com/ATM

©2013 Honeywell International Inc. All Rights Reserved
CONTENTS

IN THIS ISSUE

COMMENT
5 The World ATM Congress in Madrid offers an opportunity for change says Jeff Poole, CANSO Director General.
14 Teri Bristol, ATO Deputy Chief Operating Officer describes the FAA’s proactive safety management strategy.

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

PEOPLE
8 Ignacio González, Aena Director of Air Navigation, welcomes delegates to World ATM Congress in Madrid and calls for commitment to performance improvement.
11 Frank Brenner, Eurocontrol Director General says tougher European performance targets call for a network response.
18 Ed Sims, Airways New Zealand Chief Executive introduces the System Operator concept that has led to financial and performance improvement.

FEATURES
16 ATM is undergoing a major restructure in response to the Single European Sky.
17 Maurice Georges, CANSO EC3 Chairman, details strategic action points for European ANSPs.
20 Inspired collaboration is behind the introduction of user preferred routes over the Indian Ocean and Arabian Sea.
24 Industry agrees future priorities at the 12th Air Navigation Conference.

TECHNOLOGY/OPERATIONS
22 CANSO’s Operations Standing Committee is involved in collaborative projects involving airports, airlines and ICAO.
26 Commercial adoption of satellite-based approach aids sees legacy systems under review.

FOCUS ON
33 World ATM Congress 12-14 February 2013 IFEMA, Feria de Madrid, Spain, agenda and conference programme.

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

Airspace No. 20
ISSN number 1877 2196
Published by CANSO, the Civil Air Navigation Services Organisation
Transpolis Schiphol Airport
Polaris Avenue 85e
2132 JH Hoofddorp
The Netherlands
Telephone: +31 (0)23 568 5380
Fax: +31 (0)23 568 5389
Editorial content:
Louise Loven
louise.loven@canso.org
Advertisement Manager: Gill Thompson
gill.thompson@canso.org
Telephone: +44 (0)1273 771020
Design: i-KOS
Telephone: +44 (0) 7928 2280
Web: www.i-kos.com

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 2013
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.
CANSO was established because it was clear that ‘business as usual’ was not a sustainable position for the ATM industry. In its 15 years CANSO has come from a group of eight ANSPs to its current shape – 75 ANSP members, controlling more than 85% of the world’s traffic and 77 associate members, a large share of the industry’s suppliers. And we continue to grow.

But what is the point if we do not make a difference, if we do not change the current reality and add value through improved performance? Or, to take to heart the theme our Conference at The World ATM Congress – if we do not take the current reality, augment it, and make the ANSP reality fit to face the future. That is why we are in Madrid. We will start to drive that process and make the difference, together. The Conference has been designed to not just be talk, but to take positive, measurable steps towards that future. The exhibition will showcase all that the global ATM industry has to offer. The demonstrations and presentations will make the future real.

Our stakeholders intend to tell us some hard truths, set some tough challenges but also to indicate what they are prepared to do to help us change. We will learn from other industries what they had to do to deliver projects, to overcome the hurdles and change. The working sessions will focus on the key points our stakeholders will raise. Each session will be asked to specifically address them. Next year, when we meet again in Madrid, I will ask you to score how well we have done to respond to them.

Change is in the air in Madrid. World ATM Congress will be at the heart of the essential discussions on performance and change management that are necessary in ATM. Change is also in the air in CANSO. Since joining the organisation in December, I have been talking to members and to our stakeholders. I am delighted with the support and encouragement I have received.

The day before World ATM Congress, CANSO Members will meet at the CANSO CEO Conference to review the work that has been carried out so far by the Executive Committee and CANSO’s Standing Committees and Regions in putting together a long-term strategy: Vision 2020. It is a remarkable effort and it shows the strength of the organisation that the strategy is being developed by the entire membership, together, both from the top down and from the bottom up. The new Vision will then be finalised in the coming months for approval at the CANSO AGM in June.

For too long others talked about ATM and others controlled our destiny. We are changing that and it is clear that the World ATM Congress is a key element in the future of CANSO and the entire ATM industry. In Madrid, the industry is organising its own Congress, on its own terms, to talk about the things that most need to be discussed. And there is indeed much to discuss – the demand for air services and the need for safe and reliable management of the airspace will continue to grow together.

We cannot meet that growth, safety and performance challenge by doing what we have done so far, even if we do it faster. We need a new approach. SESAR and NextGen are only two examples of the work that has been done to make the ATM industry able to meet the demands it will face. But I firmly believe that technology is only part of the story. What about the political, institutional regulatory issues? What about the ANSP business model? What about our culture?

Are we ready to face those truths?

That is what the WATMC is about, and why it is so important not just for CANSO, not just for ATM, but for the air transport industry. For too long, the air traffic management industry has had a reputation for talking about change but not changing. This year things are changing. Welcome to Madrid. Welcome to the World ATM Congress.

Welcome to the future.

Jeff Poole
CANSO Director General
The conclusion of the ICAO 12th Air Navigation Conference (AN-Conf/12) in Montreal in November 2012 saw agreement on a draft revised Global Air Navigation Plan (GANP) that will guide industry planning and implementation activities over the next two decades. More than 1,000 delegates from 120 Contracting States and 30 International Organisations attended AN-Conf/12 to achieve consensus on the next steps to achieving an interoperable, seamless and global air traffic management system for international civil aviation. CANSO played a key role in the process by presenting working papers that were incorporated into the draft recommendations, and by representing a credible global voice for air traffic management on topics ranging from enabling technology to improved standards-setting, policy-making and regulatory practices.

For the first time, the GANP includes a timeline for which future improvements can be implemented by States in accordance with their needs. The Conference unanimously endorsed the Aviation System Block Upgrades (ASBUs) framework introduced by ICAO to set goals in terms of operational improvements on a consensus-driven basis. CANSO contributed to the ASBU framework and guidance material for implementation and will continue to be part of a collaborative process involving all aviation stakeholders to see that operational improvements are carried out in line with global performance improvement criteria. The ASBUs allow for development at regional and sub-regional level to also align with wider interregional goals of optimising capacity and improving flight path efficiencies.

Members of the Middle East ANSP, Airspace Users and Stakeholders Engagement (MEUSE) group have agreed to be the regional platform for raising awareness and facilitating the introduction and implementation of Airport-Collaborative Decision Making (A-CDM) the Middle East Region. Saudi Arabia’s General Authority of Civil Aviation (GACA) will lead this activity and has volunteered Jeddah Airport as the A-CDM Pilot Project. Three A-CDM workshops are planned in 2013, with the first taking place in June.

The European Commission (EC) has formally approved the Network Strategy Plan (NSP) for the period 2012-2019 prepared by Eurocontrol. The EC has also appointed the chairperson and voting members of the Network Management Board. The Network Manager, a function carried out by Eurocontrol, is responsible for developing, maintaining and implementing the NSP. The aim of the NSP is to set objectives for all actors in the network, which will ensure that the performance targets defined under EU regulation 691/2010 can be achieved. All stakeholders are required to put in place concrete actions to implement the objectives set out in the NSP.

The NSP, which is consistent with the European ATM
Master Plan, defines strategic objectives to be achieved during the first reference period 2012-2014 (RP1). It also sets out operational drivers for the second reference period, 2015-2019 (RP2). The NSP will be updated by the end of 2013 to take account of technological, institutional and economic developments where appropriate and once the performance objectives of RP2 are known.

INDUSTRY SUPPORTS LATIN AMERICAN DEVELOPMENT

A Joint Declaration on Airport and Air Navigation Service Infrastructure signed in December 2012 supports development of transport infrastructure in Latin America. CANSO came together with the Airports Council International (ACI), ACI-Latin America and Caribbean (ACI-LAC), the Latin American and Caribbean Air Transport Association (ALTA), and the International Air Transport Association (IATA) to urge Latin American and Caribbean Governments to develop an appropriate transport infrastructure to adequately meet the needs of the industry, now and in the future. The five aviation associations call on the region’s governments to facilitate timely infrastructure development, provide effective regulatory oversight, encourage sustainable development, and reinvest aviation revenue.

A JOINT RESPONSE TO RUNWAY EXCursions

Runway excursions are a persistent problem and their numbers have not decreased in more than 20 years according to ICAO. The Flight Safety Foundation has said that runway excursions are the most common type of aviation accident, accounting for up to 33% of accidents over the last 16 years. Eurocontrol issued a European Action Plan for the Prevention of Excursions based on input from ANSPs, airspace users, airport operators, airframe manufacturers, professional associations and the European Aviation Safety Agency (EASA) in January 2013. The Action Plan is a deliverable of the European Aviation Safety Plan (EASp) and the content reinforces the need to comply with ICAO provisions for the safety of global aviation. Central to the recommendations is the uniform and consistent application of ICAO provisions. Any organisation conducting runway operations is invited to review and prioritise the proposed recommendations. “This action plan is the perfect example of a joint European effort to develop a common and coordinated response to a well-known problem. It is now time that we conclude the planning and start the implementation. We will save no effort in getting the risk properly reduced,” said Jacques Dopagne, Director Network Management at Eurocontrol.

SHORTLIST FOR IHS JANE’S AWARDS 2013

The final shortlist for the IHS Jane’s ATC Awards 2013 includes 28 entries from ANSPs, equipment suppliers, partnerships and joint projects. The Awards celebrate the technical developments, product innovation, safety and efficiency initiatives that result in real savings for airspace users. Winners are announced on 11 February 2013 during the CANSO ATM Dinner, held at the Melia Castilla hotel in Madrid before the inaugural World ATM Congress, operated by CANSO in association with ATCA. Around 70 nominations were assessed by the judging panel, which includes experts from the Federal Aviation Administration (FAA), Eurocontrol, CANSO, the International Air Transport, Association (IATA), the International Federation of Air Traffic Controllers Association (IFATCA) and IHS Jane’s.

Operational Efficiency Award:
• Airways New Zealand - Southern PBN Implementation project
• DECEA Brazil - Operational PBN implementation for the Brasilia and Recife terminal control areas
• FAA – Re-Categorisation of aircraft separation rules at Memphis International
• Midwest ATC Services – Afghanistan RVSM and RAS

Environment Award
• Airports Authority of India (AAI) – INSPIRE User Preferred Routes
• GE Aviation, LAN Airlines, CORPAC and DGAC – Green Skies of Peru PBN
• LFV, Swedenia, SAS, GE Aviation, Rockwell Collins – AIRE Green Connection
• Nav Canada – oceanic ADS-B coverage

Enabling Technology Award
• Airways Australia, Metron Aviation – Implementation in Australia of the Metron Harmony ATM system.
• Frequentis, DFS – The integrated controller working position (CPW)
• NATS, Lockheed Martin, Altran – Predictive iFACTS controller tools
• PANYNJ, Saab Sensis – The Ground Management Program (GMP) at New York JFK

European ATM Award
• Eurocontrol Maastricht Upper Area Centre (MUAC), Royal Netherlands Air Force – virtual centre for civil/military data sharing
• Eurocontrol Network Manager Helping – ANSPs to implement the new ICAO-mandated FPL2012 flight plan format by 15 November 2012
• Eurocontrol, SESAR JU – Update to the European ATM Master Plan
• ESSP – Launch of the EGNOS Safety-of-Life Service for aviation

Service Provision Award
• Airservices Australia, Quintiq - Air Traffic Control Fatigue Risk Management System
• DFS – Electronic Sector Manual with iPad functionality
• FAA ATO – Proactive Safety Management strategy
• NATS – Handling UK air traffic during the 2012 Olympics

Innovation Award
• Airellant – 3D Holographic Radar for wind farm clutter
• C Speed – LightWave Radar for wind farm clutter
• JSC IANS – Prototype Wake Vortex Flight Safety System
• Searidge Technologies, AirIT – Virtual Ramp Control System

Technology Development Award
• Frequentis – SmartStrips Datalink Services for departure clearance/en route CPDLC
• Honeywell Aerospace – SmartPath GBAS entry into operational service
• Raytheon Company – Automation surveillance data fusion
• UFA Inc – ATVoice voice recognition and response.

For the most up-to-date industry news go to: www.canso.org/ATMnews
In the current economic situation, the responsibility we have as managers pushes us to consider innovative measures which can lead to a substantial change in the current model of service provision.

First of all I want to give you, delegates and visitors, my warmest welcome to Madrid, host of the World ATM Congress, Aena´s home and a cosmopolitan and friendly European city. It has so much to offer by way of culture, gastronomic and leisure activities which I am sure you will enjoy and will match your expectations.

As you know, Aena is a public entity attached to the Ministry of Development, and one of the leading names in air traffic management and the provision of CNS/ATM services. Furthermore, Aena also manages 47 airports and 2 heliports in Spain and 27 airports overseas.

During last year in Aena we have made a significant effort to cut down on costs. As a result, our fees in 2012 (one year ahead of our plan), have been rated below the average of the five major European states, to become the second cheapest in Europe. For the period 2009-2012, the fee was reduced in Spain by around 15% in nominal terms and more than 20% in real ones. Around €80 million of savings for the airlines have been produced in 2011 and 2012, compared to 2010 values.

Furthermore, while the number of aircraft movements in Spain is decreasing due the current worldwide economic situation, the fees for 2013 have even been frozen. This will potentially turn into a revenue decline for Aena but will surely ease the economic burden for our customers. In this context, the only way to balance the equation is the optimisation of operational costs. We are already undertaking this through both a better use of resources and a rigorous review of investments. Only projects which show high functional real benefits, that is, value for money, are being approved. The application of these measures has already led us in 2012 to obtain optimal financial results with a positive EBITDA.

In terms of operational performance both our determination to gain in efficiency, and the strong commitment of our professionals, has led us to reduce the delays in Spanish airspace in 2012 by 70% compared to the same season the previous year. In addition, the safety indicators have increased by a significant 40%.

At present, our priority is to continue improving efficiency to adapt ourselves to a changing business environment, in constant development, which calls for a continuous evolution of the provision of our services. Consequently, innovative changes to the current model of service provision, whose application could lead to a substantial transformation of the current concept, cannot be disregarded. This is especially critical in Europe, where the European Commission is tackling a new package of SES measures for the implementation of the Functional Airspace Blocks and the introduction of market principles to those air navigation services which, by nature, are monopolies, such as en route and approach control.

During this period of change we all are aware CANSO is playing a key role, both in Europe and globally, in the information, coordination and consolidation of the industry’s position, as the voice of the Air Navigation Service Providers.

At this point, I wish to reaffirm Aena’s commitment to CANSO, with its participation and contributions, not only to CANSO Global and CANSO Europe, but also to CANSO Latin America and Caribbean, where we firmly believe CANSO should also play an essential function in the evolution and development of the air navigation services provision in the region.

I want to conclude by making special mention to the great enthusiasm and expectations which we, all CANSO members, have for this our event, by the industry for the industry, which has now become a reality.

Finally I congratulate the CANSO people who behind the scenes, in such a short time, have been able to organise this great event. Please accept my most sincere acknowledgment to all of them.

I look forward to meeting you all in Madrid.
To optimize air traffic efficiency, take a digital approach.

In the transition to digital air traffic management, GE is leading the way with our Aeronautical Information Management Services. Our high-resolution, traceable satellite imagery provides ICAO-compliant eTOD and airport mapping databases to facilitate interoperable aeronautical data exchange and improved system efficiency.

Join the digital revolution at booth #1104.
Commitment is a BIG word at Frequentis. A commitment to air safety and those who manage it. A commitment to innovation and cutting-edge solutions. A commitment to the responsibility that comes with a market-leading reputation earned through decades of successful ATM projects. We bring you world-beating expertise, a strong user focus and the experience gained from installing more than 20,000 operator positions in over 100 countries. As a result, our solutions meet your performance and operational objectives while protecting your investments. That’s why 80,000+ users rely on our systems.
Single Sky goals move closer
Tougher European performance targets call for a network response

Frank Brenner, Director General of Eurocontrol, believes there are a number of pan-European solutions available to member States to help them achieve Single European Sky goals.

The future of Air Traffic Management (ATM) in Europe is very firmly centred on the Single European Sky and at its heart is the Performance Scheme. This is a radical shift in thinking - moving towards having clear targets, plans to meet those targets and then monitoring the results to check that they are being achieved.

We are now in the second year of RP1 – the first reference period covering 2012-2014 – and the targets for RP2 (2015-2019) are already being debated. Even now, it is clear that the European Commission intends that this second set of targets should be even more challenging.

But who has responsibility for the targets? Who is it that runs the risk of infringement proceedings if they are missed? You might think it would be the ANSPs but in fact the responsibility lies with the States. This is not an easy task, as can be seen currently with the cost target. This target, based on the unit rate charged to aircraft operators for ATM services, is for a reduction of 3.5% per annum (in real terms) over the three years of RP1.

Since the RP1 targets were set, European economic forecasts have significantly worsened, resulting in a downturn in the forecast traffic. In turn, this makes the task of reducing the unit rate even harder – as there are fewer flights for the largely fixed costs to be spread across. We can expect the task for RP2 to be just as difficult.

The States cannot just hand on the responsibility for the target to the ANSPs. The costs underlying the unit rates come from a variety of sources, not all of which are controlled by the ANSP, such as the National Supervisory Authority, CAA/Ministry of Transport administration and the weather service. The split varies from country to country but, for Europe overall, national ATM represents about two thirds of the costs, with communications, navigation and surveillance accounting for about a sixth. Five per cent of the costs come from meteorological services while the central network costs – including Eurocontrol – are less than eight per cent.

So the States have a challenge: how to find the overall savings and how to apportion the cuts. Do they just implement them on a pro rata basis or is there scope for being more discriminating in how they do this? This challenge is of course complicated by the fact that some organisations have already reduced their costs. Eurocontrol, for example, has not increased its budget since 2008 at all, not even to reflect inflation.

There is also the overriding need to maintain safety. Europe has an excellent safety record and it is imperative that this is not jeopardised. So we all do need to be careful as we look at how ATM can become more efficient.

It is increasingly evident that we cannot expect the creation of the Functional Airspace Blocks to make a significant financial contribution in RP1. The FABs (which were intended to be a key tool in starting to address the fragmentation of European ATM) do now exist but, so far, there is little or no contribution to the performance scheme through the effects of synergy. It is also clear that there are significant operational, political and cultural difficulties in realising these expected (and needed)
There are concrete savings to be made by centralising services, perhaps €150-200 million per year

synergies. However, there is the potential for other efficiencies, both at FAB and at network level.

This is particularly true if we consider the deployment of the SESAR projects. There are some 300 of these. There are many – we estimate up to 90 – that could be implemented at a FAB level. We have also identified about 10 projects that could be, indeed should be, deployed on a pan-European basis.

I say ‘should be’ because there are real benefits in doing so. Here is an opportunity to start to reduce the inefficiencies caused by fragmentation. Take Aeronautical Information Management as an example – a key part of the SESAR operational concept. Why should each ANSP have its own system in its basement, with all the cost, duplication and compatibility issues that arise? We are confident that there are concrete savings to be made by centralising services; for the ten already identified, perhaps as much as €150-200 million per year. To put that number in context, the ANSPs currently make investments of about 1 billion euro each year.

In fact, we could expect even greater benefits from centralised services, taking into account capacity increases, flight efficiency, data quality etc. It is important to remember that reducing route charges is just one way in which the ATM industry can help cut the costs of airspace users. Reducing delays and saving fuel can make an even larger contribution to their bottom line, as well as generating an environmental benefit.

Other potential centralised services include: 4D trajectory flight profile calculation for planning purposes; advanced flexible use of airspace support services; management of common network resources (such as transponder code and radio frequencies); and PENS, the pan-European Network Service. PENS is already established as a shared service but it could be extended in scope and could cover the whole of Europe.

Of course, the concept of shared services is not new; services such as route charges and central flow management have been operated by Eurocontrol for many years and with considerable success. For example, we could not imagine going back to a situation where each individual ANSP operated its own charging system. It would be hugely inefficient, both for the ANSPs and for the aircraft operators.

We have also seen real efficiencies from services such as PENS, ARTAS (ATM suRveillance Tracker And Server) and EAD (the European AIS Database). In the case of EAD, the service is provided by a commercial entity under a contract with Eurocontrol. Over the 10 years of the EAD service, this arrangement has provided significant economies of scale while at the same time ensuring that the process is open to effective competition, including to consortia involving one or more ANSPs. It is fair to say that this model has actually opened the market for the participation of ANSPs in the provision of a service outside their national borders – indeed, on a European scale.

Eurocontrol’s pan-European nature is also a real help in providing the critical mass to achieve this. Our membership is much wider than that of the EU; in fact, we expect to be welcoming Georgia as our fortieth member in the next few months. Our role as Network Manager also helps as the SESAR operational concept is much more network-centric and it will be vital to have effective communication, cooperation and coordination across Europe if we are to realise the efficiencies we need.

Eurocontrol already does a huge amount to help bring about the Single European Sky and I am proud to have been appointed as its Director General, working in close cooperation with the ANSPs as partners. I feel that we can and should do even more to help our members achieve the levels of performance demanded by airspace users and by the European Union. The concept of centralised services cannot solve all ATM’s problems but it is a valuable and worthwhile step towards overcoming the challenges that our industry faces.
TopSky-ATM Solutions.
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

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

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

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 150 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
Safety Management Systems are being embraced across many industries and organizations that have realised the limits of merely fixing things after they break.

At the FAA’s Air Traffic Organization, we see Safety Management Systems (SMS) as the largest and most significant improvement in the last 30 years in the way air traffic control risk and safety performance are managed in the US. The results have led us to join with our partners in CANSO to promote its expansion and benefit through global collaboration.

The FAA can thank the International Civil Aviation Organisation (ICAO) which, starting in 2001, required member states to establish an SMS for air traffic control and navigation services. The shift was important because historically, the FAA and other air navigation service providers have focused on the outcome of incidents, rigorously examining the chain of events after the fact. In contrast, a SMS aims at the root cause of safety risk by collecting and analysing large amounts of data, setting priorities on what needs the most urgent attention, adopting corrective actions, measuring the performance of the corrective actions and then starting the process all over again.

As we like to say; “We measure our success by what we fix”. The goal is to proactively address hazards long before they jeopardise safety and then do something about them.

The FAA’s previous focus on the outcome of incidents has led to an impressive safety record – 99.998% of all FAA operations occur completely according to procedure. With the addition of these Safety Management System initiatives, the FAA is now able to identify precursors to risk rather than just reacting to specific incidents. This system has allowed for the identification and elimination of hazards long before they grow into major safety incidents. One of the key instruments the ATO has used to achieve this goal is what we call the Top 5: a list of the five hazards that contribute to the highest risk in the National Airspace System. After mitigating the Top 5 for 2012 with 19 specific corrective actions, we recently released our Top 5 for 2013.

The latest Top 5 shows the range of issues that have been identified: Recovery, or not quickly re-establishing separation after its loss; failing to issue traffic advisories or safety alerts; failure to monitor initial departure headings, with communications being transferred before the right headings are ensured; similar-sounding call signs; and conflicting procedures. The latter refers to operations where facility letters of agreement and standard operating procedures are in conflict with the published arrival and departure procedures, which increases the likelihood of incorrect pilot readback and actions.

Key to the Top 5 and the effectiveness of all elements of the Safety Management System is data collection. We are collecting more data, collecting it from a broad variety of sources, and collecting it with critical information provided by our workforce.

The FAA is collecting 10 times more data than in the past. Part of that is the result of new technology that gives us an entirely different perspective on risk in the NAS. One example of new technology is the Traffic Analysis Review Program, or TARP, which tracks air traffic operations at 176 facilities. The Comprehensive Electronic Data Analysis Reporting programme, CEDAR, also gathers manual and electronic occurrence reports. Perhaps the most pivotal shift has been in our ability to gather data from frontline employees who have the best view and excellent recommendations on how to address risk. This has contributed to a significant change in our safety culture, largely attributed to our Air Traffic Safety Action Program, ATSAP, which has become the largest aviation voluntary reporting programme in the world.

A closer look at ATSAP shows the value of wide participation - raising the awareness of issues that might otherwise never have been discovered, and opening the door to speedy resolution.

ATSAP allows controllers to report risks without fear of reprisal. It is a confidential, non-punitive reporting programme for all air traffic controllers and managers. More than 58,000 reports have been filed, and 160 serious safety risks have been identified and mitigated. About 80 percent of the reports describe specific events, and the rest provide insight into policies, procedures and equipment issues. The results of these reports include improving phraseology to improve pilot awareness of runway construction, removal of trees degrading radar signals, and identifying an automation system glitch that was routing unauthorised flights through restricted airspace.

More than 60 percent of our air traffic controllers have submitted at least one ATSAP report, showing how thoroughly our frontline colleagues see this as an effective way to cut risk. And the programme is growing: 300-350 reports are now filed each week and there was a 7.5 percent increase in the number of ATSAP reports from 2011 to 2012. Additionally, we have a Confidential Information
Sharing reports show how important it is to realise that an effective Safety Management System does not depend just on numbers or new technologies to collect and analyse data. It also requires a cultural shift. Everyone in the organisation needs to embrace the new approach, from top executives to front line personnel.

Joseph Teixeira, the ATO’s Vice President of Safety and Technical Training, talks about the need to change the culture to embrace correction. We must make it safe for people to acknowledge that there are issues that need to be resolved. Then, there must be a willingness to provide resources and empower people to make corrections. And third, he says, you must reward the people who do all of that. At the FAA, ATSAP and T-SAP are the best examples of the success of these strategies.

Of course, the FAA is just one air navigation service provider pursuing the transformation possible through Safety Management Systems. Their growth and promotion is also under way among other CANSO members, both as individual air navigation service providers and through collaboration within CANSO itself.

The CANSO Safety Standing Committee’s meeting in Cape Town, South Africa this past November was one demonstration of that group’s value, generating a detailed agenda for concrete action in areas that include effective use of the CANSO SMS Standard of Excellence – a way to measure Safety Management System progress. The Safety Standing Committee’s workgroups will meet in the first quarter of 2013 to keep the momentum going on that goal and many others. CANSO’s SMS Implementation Guide lays the groundwork for members grappling with the earlier stages of an SMS. The developing SMS Evolution Guide will point the way for mature air navigation service providers, charting practices such as safety-by-design - looking at safety before a new system is designed.

These efforts just scratch the surface of how CANSO helps show its members how to implement and measure the success of a Safety Management System.

All of these efforts are aimed at one goal: to proactively identify risk and take action to reduce it, long before any error produces a safety risk. Because if you’re late in safety, you’re too late.
**Europe’s new ATM structure**

ATM is undergoing a major restructure in response to the Single European Sky initiative

The Single European Sky (SES) is reforming European air traffic management (ATM) in order to meet future capacity and safety needs through several tools: improved safety, optimised airspace based on operational needs; optimised performance of ANSPs; and a new technical environment with interoperable equipment. The SES is also changing Europe’s institutional framework through the European Commission’s (EC) increasing competency in ATM. This has to be reflected in a new role for European Member States and Eurocontrol. CANSO fully supports this.

**Improving safety**

The EC created the European Aviation Safety Agency (EASA) in 2004 as the regulatory arm of the EC, to prepare European safety rules for the aviation industry. In 2009, the Commission extended EASA’s competence to include ATM-related safety issues such as the licensing of air traffic controllers (ATCO), and the new requirements for ANSPs and competent authorities in charge of safety oversight. The basic set of rules was finished in 2011 followed by detailed requirements which are due to be issued soon as draft proposals, for comment. Through a group of experts, including CANSO specialists, EASA will analyse all the comments, prepare answers, and deliver its final proposal to the EC.

The process is about the setting-up new and more detailed requirements for ATM safety and these rules will have to be updated as often as necessary. EASA has therefore also the task of rule maintenance, either upon its own initiative or upon the proposal of the Safety Standards Consultative Committee, made of representatives of aviation stakeholders directly impacted by the EASA regulatory framework. The number of rules prepared by EASA is increasing, and likewise the required contribution and resources provided by CANSO. In response, CANSO is currently reshaping its task forces.

**Improving performance**

One of the pillars of the SES second package delivered in 2009 is to optimise air navigation services’ performance for safety, environment, capacity and cost efficiency.

A regulation adopted by the European Commission in 2010 lays down the details of the new performance scheme. The performance scheme defines binding European-wide targets and national/Functional Airspace Blocks targets for fixed reference periods. The aim is to drive ANSPs towards being more efficient and responsive to traffic demand, with the view of improving the overall ATM network performance. The first reference period started in January 2012 and runs until the end of 2014. The EC intends to reinforce the scope of the performance scheme during the second reference period (2015-2019) and has issued draft proposals revising the regulatory and charging scheme for release in February 2013. CANSO contributed actively to this work, and has already begun to work on target setting for the next reference period.

**Improving technology**

Today’s air traffic management uses technologies and operational concepts developed in the 1950s. Sustainable air traffic growth demands a completely new set of technologies, and in 2004 the EC launched the SESAR research programme to bundle European ATM research and development to create the new generation ATM system. The SESAR Joint Undertaking is preparing the European ATM Master Plan which describes the necessary operational improvements and technologies. The deployment of SESAR carries a price tag of €30 billion and needs to be carefully managed to ensure synchronised implementation of ground and airborne technologies. CANSO ANSPs are fully engaged in this process, together with airlines and airports. It is this stakeholder involvement, along with access to public funds, which is crucial to SESAR deployment.
Europe agrees strategic actions

Maurice Georges, Chief Executive Officer, DSNA, France, is leading closer cooperation within Europe

I took over as Chairman of the European CANSO CEO Committee (EC3) from Massimo Garbini, ENAV Director General, in the second half of 2012, after a time of a complete reorganisation of the European working structure. Adapting to the evolving environment under the Single European Sky, we have realigned our internal ways of working to be more responsive. We are consistent in our message, while being flexible and proactive so as to influence developments efficiently, to the benefit of our members.

A clear set of strategic objectives was defined for 2012, covering a five-year cycle until 2016 which will guide the work of the CANSO European region (EUR) over the next few years. These objectives will be reviewed every year and will be adapted as necessary. Our strategic objectives are tailored to the needs of the region and will be connected to the CANSO global objectives of Vision 2020, now under development.

A complete work plan has been established based on these strategic objectives. This allows for optimised proactive planning of the necessary work, and the resources available, through the EUR secretariat and the members. Consequently we have transformed the EUR working structure from a number of standing working groups into a set of flexible task forces with clearly identified terms of reference and time lines.

Like the strategic objectives, the work plan and the task forces, their need and membership, are reviewed annually and adapted as necessary.. The back bone supporting all this is a well equipped and working EUR secretariat, keeping things together and aligned, also linked to the CANSO global activities.

EC3 priorities from 2013:
- Getting the performance right: the response of the EUR ANSPs to the EU Performance Scheme
- Getting SESAR deployed under the management leadership of the operational investors
- Getting the institutional framework in Europe right: reduce legal impediments, streamline the legislative structure and simplify the institutional landscape – with reference to EASA, Eurocontrol and the SJU
- Connect Europe to the global CANSO work and with neighbour regions
- Intensify the cooperation with our business partners, mainly the airspace users and the airports
- Continue to be the trustworthy and reliable voice of European ANSPs

This new structure has raised the EC3 to a higher strategic level of guidance for the CANSO EUR region, while the CANSO European Coordination Committee (CECM) under the EC3 is the owner of the work plan and manages its fulfilment. The detailed work is done through the task forces under the CECM management and coordinated and supported through the EUR secretariat.

The challenges in Europe for ANSPs are multiple. When the European Commission launched the Single European Sky initiative in the late 90s it was clear from the outset that ANSPs had to prepare for a long, critical and intensive transition process. CANSO was the right platform to provide a single ANSP voice to the outside world, especially to the European institutions. More than 10 years later the European landscape for aviation and specifically for ATM has changed dramatically:

- Functional Airspace Blocks have been formed, combining several ANSPs on cross border cooperation activities, laid down in State agreements.
- The interoperability between the different ATM systems and constituents is becoming closely defined to optimise the interaction between the different ATM players.
- ATM research and development is bundled in SESAR to provide the appropriate technological platform necessary to support European aviation growth in the global environment.
- Safety matters are focused at the European Aviation Safety Agency.
- The human factor has been identified as an important element in supporting this change.

CANSO members are intensively engaged in shaping the whole change process. We are dedicated to deliver service – safe, performance-oriented and efficient. And we need an institutional structure which allows us to do our business in the solid way the aviation sector requires. There remains a longer journey ahead of us, and we cannot go it alone. We need to work with our business partners, our customers and the entire aviation stakeholders. I am proud to guide CANSO Europe, together with my EC3 Vice-Chair Diyan Dinev, through these next two years. I am confident that with the strong support of our members and in good cooperation with our business partners we will achieve our goals.
Ed Sims, Chief Executive Airways New Zealand shares his strategy to double revenue and triple profitability over the next 10 years.

As I settled into the role of CEO of Airways New Zealand, I quickly discovered that even being a great technical and operational service provider brought no assurances about the strength of our business model or our revenue streams. Similarly, and in common with other ANSPs and essential infrastructure providers, the focus on delivering 100% operational integrity today was a huge distraction to thinking about the capital investment required to guarantee similar service levels over the next 20 years. It also distracted us from thinking about creating a business that would thrive through a period of potential game-changing technological and customer change.

So within the first four months of my tenure I asked the Airways Board to approve a transformational project to review the role Airways would play as a leader within the aviation industry. We called for volunteers to an unknown, uncharted and uncertain programme. Over 10% of Airways’ 750 staff volunteered. We called the project MANA, the New Zealand Maori word for passion and spirit – in a world of acronyms it also handily stood for Making A New Airways.

The response from staff included comments like: "I believe that Airways was genuinely a world leading ANSP for some years but we stagnated and others have caught up, and in some cases overtaken us, in fields that we were once right out in front. ..... I would like to be part of the process to start listening, learning and leading again.”

We took a unique approach. No external consultants were used. The entire strategy and organisation design was created by existing, front-line staff. The focus was on transformation for growth, not cost savings. Communications was crucial, and each MANA team member spent a day a week in the business briefing their colleagues and seeking feedback on ideas and options. What followed for the MANA project team was an intensive period of research, involving discussions with over 40 innovative organisations from within New Zealand and around the world. They concluded that if Airways didn’t solve customers’ problems someone else would. They said that customers’ needs are often not being met, airspace and runway congestion are significant problems internationally and that sustainability concerns will continue to influence the operation of aircraft.

It was proposed by the MANA team and agreed by the Executive and the Board that Airways should combine its air traffic control, air navigation and surveillance, engineering and maintenance and project management activities, under one large profit and loss driven business unit called System Operator.

System Operator business unit

The System Operator is a business unit of Airways that started on 1 July 2012. It is one of three business units, the other two being Global Services, an entrepreneurial and profit motivated organisation designed to commercialise product offerings throughout the world and Shared Services, which delivers services to the System Operator and Global Services to ensure Airways meets its financial management, governance and legislative requirements.

The System Operator is uniquely designed around customer requirements. All activities begin with the customers’ needs. The structure has four key functions reporting in to a System Operator general manager.

The structure of the System Operator enables the structured implementation and undertaking of activities from the customer (on the left) to delivery (on the right). There is a single point of delivery whether it be technical or operational. The SO model embeds a similar commercial approach to ATM services that our customer airlines apply to their travelling customers.

To ensure the transformation of Airways could happen, 19 new roles were created. Over 1,000 people from New Zealand and around the world applied for the roles. They were filled by eight high calibre internal applicants and 11 external applicants.
Who benefits?

Too often in transformation efforts, objectives become blurred, over-complex and overlook the "What's in it for me" first principle. We keep our focus simple – to double revenue, triple profitability and to add up to 200 more high quality roles to our organisation over 10 years.

Airways is a state-owned corporation required to return both a dividend and results above our cost of capital to our shareholders in the New Zealand Government. The anticipated growth profile of the business drives both improved returns and increased dividend payments over ten years. In addition, the structure provides a greater range of career options for staff and capacity to move around the business. With a planned growth of 200 roles there will be enormous opportunities for existing and new staff. Furthermore, the System Operator structure allows commercial airlines, airports, the GA community and our Defence customers to remain at the heart of our planning processes.

In a relatively small market we know that the business transformation to System Operator has been successful when our customers tell us directly about the difference our new model makes to their business. To achieve this, a series of customer and service-focused projects were launched. At Wellington International Airport Limited, Airways embedded a senior staff member within the management team for two days a week for 90 days. Nine pain points were identified such as procedure design assistance for the Northern Runway Extension, and facilitating agreement with all parties to progress the new Wellington Airport Control Tower. All nine pain points were resolved. The trial secondment proved so successful that it is continuing as a paid service. Steve Sanderson, Chief Executive Officer, Wellington International Airport Limited, said: “Having an Airways dedicated person embedded in our airport has played a huge part in the collaboration of our two companies when working on joint projects. Exploring best solutions, dealing with contentious areas immediately, and consequently a reduction of time, cost, and faster delivery is making a real noticeable difference.”

At Auckland International Airport Limited, the focus areas included contingency and virtual tower options, procedure development agreement, and contributing to their 10-20 year plan development including second runway expansion. Judy Nicholl, GM Aeronautical Operations for the Airport says that the biggest difference so far is that Auckland International has an insight into the priorities for Airways, and Airways understands Auckland better also. Is it working? “Definitely.”

A review of the quality and costs of production in engineering and maintenance showed that 98% of the improvements required at the beginning of the project were achieved and it was implemented under budget. Relative to 2009 costs Airways is saving just under NZD1 million a year in the running of the maintenance operations. Airways’ Head of Engineering and Maintenance Peter O’Regan says: “From a functionality perspective I would now stack it up against anything on the planet in terms of the smarts that it gives us. That’s my idea of success.”

Financial results improved by 90% over the first year of implementation with continued positive indicators for the current financial year.

But I’ll leave the final word on whether the transformation has been successful to one of our key customer groups representing the general aviation sector. Irene King, Chief Executive, Aviation Industry Association of NZ said: “The Aviation Industry Association of New Zealand and Airways New Zealand have always had good customer relations. Well, the new team have turned it up another notch. They now have an outwardly focusing customer support team which means we are actually treated as customers and not as “handcuffed” users of Airways’ products and services. For those who use Airways’ services because they are participants in a system that also has IFR traffic, this change in service performance levels has been a revelation. They, at last, have someone to talk to and someone who understands and can deal with the issues they face. We may not have choice to go elsewhere but we have a customer service which emulates the best you will see in our airline businesses.”

The System Operator is one of three core business units.
Inspired collaboration

The introduction of user preferred routes in the Arabian Sea and Indian Ocean is cutting fuel use and reducing carbon emissions

The Indian Ocean Strategic Partnership to Reduce Emissions (INSPIRE) is a collaborative network of partners and peer organisations across the Indian Ocean and Arabian Sea region dedicated to improving the efficiency and sustainability of aviation. Initially founded by three ANSP partners in 2011: Airservices Australia, Air Traffic and Navigation Services (ATNS) of South Africa and Airports Authority of India (AAI), the partnership has grown to includes dozens of participants working together to support green routes. INSPIRE was chaired by AAI during 2012 when User Preferred Routes (UPRs) were introduced for the first time over the Indian Ocean and Arabian Sea.

As early as 2011, the original partners planned four INSPIRE green flights to demonstrate best practices for reducing emissions, including UPRs in the Mumbai flight information region (FIR) carried out by AAI in July 2011. The flights were successful in demonstrating a reduction carbon emission of 73,000 kgs. Encouraged by this success, and a working paper presented by IATA in its second meeting in Cape Town South Africa, the INSPIRE team adopted UPR implementation as a key initiative in its work programme.

A User Preferred Route (UPR) during the oceanic phase of flight is defined as a lateral profile developed for each individual flight by the flight operator. These lateral profiles are customised in order to meet the specific needs of the aircraft operator for that flight, such as fuel optimisation, cost-index performance, or specific mission requirements. The INSPIRE team adopted an initiative of establishing a UPR zone in the Arabian Sea and Indian Ocean region in relatively low density traffic areas, clear of the busy traffic flows across the Bay of Bengal. The User Preferred Route Geographic Zone identified by INSPIRE spans 15 FIR and the three ICAO regions. These include APAC, the MID East and the AFI and extend over approximately 13 million n miles square of Arabian Sea and Indian Ocean.

In order to plan for the establishment of the UPR zone, the INSPIRE team met in Cape Town, South Africa in November 2011 and agreed upon a five-phase approach to implementation comprising: data analysis, paper trials, operational trials, post trial analysis, and UPR Geo Zone. AAI took lead and initiated the first two phases of trials in Mumbai FIR. The data analysis and paper trials conducted by AAI in collaboration with IATA demonstrated the feasibility of UPRs in this zone.

A teleconference of INSPIRE partners in April 2012 proposed the paper trials be extended to include coordination between different FIRs for wider study and analysis. AAI developed the standard operating procedures in collaboration with IATA, and began paper trials in May 2012. The trials also required coordination with Colombo, Male, Melbourne and Seychelles FIRs and were used to simulate airline requirement in live traffic. They indicated feasibility of UPRs in the wider UPR zone.

An AAI working paper presented to the INSPIRE partners in May 2012 recommended operational trials start in June with four UPR flights every week, progressively increasing to the end of the year. The proposal was accepted by the INSPIRE working group and AAI developed standard operating procedures for UPR trials in collaboration with IATA. Aircraft flying UPRs were required to be RNP10 and FANS1-A equipped. After the groundwork was done and preparations completed by all airlines and ANSPs for the operational trials, a unanimous “Go” decision was taken by all the partners to launch operational trials on 28 June 2012. After six months of meticulous preparation, the UPR initiative in the Arabian Sea and Indian Ocean region began.

By the end of November 2012, 425 flights had participated in the UPR operational trials. The ANSPs took special precautions to ensure that the UPR flights did not affect the safe, orderly and expeditious flow of other air traffic flying on promulgated ATS routes. The UPRs enabled airlines to plan
flight tracks avoiding adverse weather en route, and this was
quite important safety aspect during the monsoon season
over Indian Ocean and Arabian Sea. IATA coordinated with
the airlines and collected environmental data for more than
100 flights which is detailed in the table below.

The INSPIRE UPR trials programme in Arabian Sea Indian Ocean
region has so far saved 302 tons of fuel and the equivalent of
953 tons of carbon emissions according to AAI. As the UPR
programme progresses further, a conservative estimate for
10 UPR flights for a day across the region will result in carbon
dioxide emissions savings of 10,000 tonnes per year.

INSPIRE partners met in December 2012 and having analysed
the results, decided upon the following course of action
in order to establish an Arabian Sea Indian Ocean UPR
Geographic Zone:

- Five days a week UPR trials until the end of March 2013
  (to be extended as required)
- ANSPs to complete safety assessments and approvals
- A standard template of AIP to be drafted which all ANSPs
  will use for concurrently promulgating UPR Geo Zone for
  the portion of their respective FIRs
- A teleconference at the end of March would agree the date to
  establishing the UPR zone, anticipated at the end of
  June 2013
- The INSPIRE working group will meet in May 2012.

In addition, AAI submitted a working paper to the Air Navigation
Commission of ICAO for endorsing the establishment of UPR
Geo Zone in Arabian Sea and Indian Ocean region on behalf of
INSPIRE that was widely accepted and supported at the ICAO
AN-Conf/12 held in Montreal in November 2012.

The User Preferred Route is a significant step in reducing
emissions during en route phase of flights. The proposed
Arabian Sea Indian Ocean UPR Geographic Zone encompassing
airspace from three ICAO regions would be a remarkable
achievement for INSPIRE. The most striking feature has been
the cooperation and collaboration amongst 25 organisations
(ANSPs and airlines) spanning three continents and two oceans
towards the common objective of reducing carbon emissions
and promoting seamless airspace management.

### INSPIRE operational trials

<table>
<thead>
<tr>
<th>Period</th>
<th>Trials Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2012</td>
<td>weekly 2 flights</td>
</tr>
<tr>
<td>July 2012</td>
<td>weekly 4 flights</td>
</tr>
<tr>
<td>August 2012</td>
<td>1 day in week: Monday (weekly 9 flights)</td>
</tr>
<tr>
<td>September 2012</td>
<td>2 days in a week : Monday and Thursday (weekly 21 flights)</td>
</tr>
<tr>
<td>October 2012</td>
<td>3 days in a week : Monday, Wednesday, Thursday (weekly 31 flights)</td>
</tr>
<tr>
<td>November 2012</td>
<td>4 days in a week : Monday, Tuesday, Wednesday, Thursday (weekly 40 flights)</td>
</tr>
</tbody>
</table>

### INSPIRE: a growing partnership

Some 25 organisations spanning three continents have
joined INSPIRE since it was first established in 2011. Besides the INSPIRE founding members – Airservices
Australia, Air Traffic and Navigation Services South Africa
and Airports Authority of India – partners include the
ANSPs of Sri Lanka, Maldives, Seychelles, Mauritius,
Reunion, Madagascar, Kenya, Ethiopia, Somalia, Sultanate
of Oman, Abu Dhabi Department of Transport, Abu Dhabi
Airports Company (ADAC), Dubai Air Navigation Services
(DANS) and the United Arab Emirates General Civil
Aviation Authority (UAE GCAC). In addition, nine airlines
participate in INSPIRE activities including: Emirates
Airlines, Etihad Airways, Cathay Pacific Airlines, Singapore
Airlines, Qatar Airways, Ethiopian Airlines, Kenya Airways,
South African Airways and Virgin Australia.

### IATA data collected for 100+ flights

<table>
<thead>
<tr>
<th>Period</th>
<th>Data available for flights</th>
<th>CO₂ emissions (Tons)</th>
<th>Time savings (HH:MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2012</td>
<td>7</td>
<td>31</td>
<td>1:02</td>
</tr>
<tr>
<td>July 2012</td>
<td>14</td>
<td>41</td>
<td>1:05</td>
</tr>
<tr>
<td>August 2012</td>
<td>34</td>
<td>86</td>
<td>2:42</td>
</tr>
<tr>
<td>September 2012</td>
<td>31</td>
<td>26</td>
<td>0:58</td>
</tr>
<tr>
<td>October 2012</td>
<td>21</td>
<td>55</td>
<td>1:28</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>240</td>
<td>7:15</td>
</tr>
</tbody>
</table>
The turning of the new-year has brought change to the CANSO organisation. The roadmap that started with Imagine 2010 has progressed through Waypoint 2013 and we are developing the next generation of CANSO strategy through our Vision 2020 exercise. The continued effort to move from talking to doing has increased CANSO’s stature and influence in the global aviation community and we stand shoulder to shoulder with our industry partners in collaboration as we move smartly towards air traffic management harmonisation and interoperability.

The CANSO Operations Standing Committee (OSC) annual working group meeting in December 2012, hosted by Airservices Australia in Brisbane marked the retirement of David Maynard as OSC programme manager and start of my tenure. The OSC is comprised of five working groups including: Environment, Aeronautical Information Management (AIM), ATM Services Harmonisation, Operational Performance and Collaborative Airspace, and reported two particular success stories in 2012. The implementation of the ICAO Flight Plan 2012 initiative in November required a great deal of preparation and communication across several aviation stakeholders over several years. A subgroup of the ATM Services Harmonisation Group lead by Brendan Kelly of UK NATS and Anthony Coul of Jeppesen worked in collaboration with ICAO and IATA to communicate expected benchmarks, gather readiness status and to develop an ICAO Coordination Centre, contributing to successful implementation. The ICAO Air Navigation Conference (AN-Conf/12) was another opportunity for CANSO and the OSC to help shape the next Global Air Navigation Plan. CANSO Director of ICAO Affairs Eugene Hoeven and Assistant Director Bernard Gonsalvas led a team that presented 10 working papers to the conference almost all of which involved the OSC. Adoption of many of these papers by the conference is described in a separate feature on pages 24-25 of this issue.

Meanwhile the Environmental workgroup continues to work in collaboration with IATA, ICAO and CANSO members to influence policy on environmental issues such as noise and carbon emissions with several publications expected in the first half of 2013. The ATM Services Harmonisation workgroup is actively engaged with CANSO membership and industry partners through its Flight Efficiency and Performance Based Navigation subgroups, and the Collaborative Airspace workgroup has been a leading participant in the ICAO civil/military workshop road-show. The Unmanned Aircraft subgroup will be a major player as this topic develops. The AIM workgroup has been instrumental in the development of ICAO policy and the Operational Performance workgroup continues to work on establishing baseline ANSP performance measurement criteria usable across the broad range of CANSO membership. Along with the established workgroups, the OSC is deeply involved in several collaborative efforts outside of the work programme of the committee. These special projects provide CANSO the opportunity to work directly with recognised international aviation organisations such as ICAO, IATA and ACI on targeted activities such as Airport-CDM, ADS-B and development of an Air Traffic Flow Management guide.

The next major event on the OSC Calendar is open to all. The Global ATM Operations Conference takes place on February 14-15, at the NH EuroBuilding in Madrid Spain. The theme this year is “Delivering the future – Vision 2020” and the objective is to ensure those attending understand how the OSC has been working on behalf of CANSO membership and how we see the way forward. In addition to the OSC reports, this conference will permit those in attendance to hear from prominent industry representatives on how they see the future of aviation. Several international organisations are participating in a panel addressing the outcomes of AN-Conf/12 and will discuss their contributions, expectations and next steps.

It is an exciting time to be involved in aviation. Changes are coming faster than the industry can integrate them into the system and the spirit of collaboration between stakeholders to address these challenges is at an all-time high and CANSO is playing a leading role.
THAT’S WHAT WE CALL AN OPERATIONAL ADVANTAGE.

Give your operational team the leverage they need from ground to air with NAVCANatm tower automation products integrated with Searidge Technologies’ innovative collaborative surface management solutions.

Manage the skies with improved safety and efficiency with the NAVCANsuite integrated tower systems. Our leading edge electronic flight strips, fused real-time surveillance system, and automated air traffic management tools offer fast, reliable access to critical airport, tower and terminal information at a simplified workstation. Then, get a clearer view of aircraft and vehicles on the ground with the integrated Searidge intelligent video solutions. The video display, with radar-like tracking, improves visibility in movement and non-movement areas of the airport and clearly identifies targets, allowing your controllers to operate with a high degree of confidence.

The result is an innovative ATM technology solution that gives you the operational advantage.

NAVCANatm.ca/Searidge

Visit us at the World ATM Congress 2013, Booth 826
More than 1,100 delegates from over 130 countries attended the 12th Air Navigation Conference (AN-Conf/12) in Montreal in November 2012. ICAO’s once-a-decade event agreed the future path of air traffic management, set out in the Global Air Navigation Plan (GANP). It also introduced a new concept, known as Aviation Systems Block Upgrades (ASBUs), which allow for development of implementation plans at regional and sub-regional levels, aligned with interregional and global goals.

The ASBU framework has been under intense development for more than a year. It provides a pathway for operational improvements over a long-term planning horizon. The unique construct builds on contributions by all aviation stakeholders and provides States for the first time with a timeline for which future improvements can be implemented seamlessly in accordance with their needs.

ICAO reported resounding State and industry agreement on the revised GANP and ASBU framework. It expects them to be endorsed by States during the next Assembly, 24 September to 4 October 2013. President of the Council of ICAO Roberto Kobeh-González said the meeting had largely met expectations: “The primary goal of the 12th Air Navigation Conference was to ensure coherent and harmonised ATM modernisation and implementation in order to keep air transport safe, reliable and efficient. Several States and regions have already embarked on their own efforts to begin addressing these issues with the latest in technologies and procedures, but it was clear that the global aviation system needed to adopt a standardised global solution to ensure optimised efficiency and investment certainty for all players.”

He also highlighted the need for a more dynamic, multi-disciplinary and project-oriented approach to developing standards in view of the growing complexity of the air navigation systems, the pressure to do more with less, and the requirement to accelerate processes.

“Establishing clear operational objectives may sound easy but it requires a significant advance effort on behalf of our entire community to realise this Conference’s success,” added ICAO Air Navigation Bureau Director, Nancy Graham. “What’s important now is that we get to work on the 140 new work items the Conference established for ICAO.”

**CANSO leadership**

CANSO, by presenting a credible global voice for air traffic management service providers, played a key role in the Conference. It submitted working papers that were incorporated into draft GANP recommendations, and papers on topics ranging from enabling technology to improved standards-setting, policy-making and regulatory practices. CANSO Director ICAO Affairs Eugene Hoeven said the event was the culmination of 10 months of hard work, teamwork and focus.

The event demonstrated a level of cooperation not experienced previously as ANSPs, airlines, airports and regulatory agencies came together to determine the best way forward to improving interoperability and harmonisation of the global ATM system.

CANSO will continue its involvement in a number of work items that will shape the structure and content of the individual Block Upgrades and related guidance material. For example, there is considerable work still to be done to define the next generation data link capability that is due to be in place by 2015. CANSO has established a data link forum and supports development and validation of an internationally agreed common technical definition.

Similarly, CANSO has embarked on an industry-wide initiative to examine policy choices such as the concept of ‘Best Equipped, Best Served’ to enable the adoption of new technologies and procedures. The group is due to deliver some guiding principles during the 6th Air Transport Conference in March 2013 that will help shape ICAO policy guidance for States on the practical steps that can be taken to speed up ATM modernisation.

**Future priorities**

AN-Conf/12 considered the development of standards and recommended practices (SARPs), regulatory requirements, procedures and enabling technology associated with the aviation system block upgrades (ASBUs). ICAO is to create a SARPs development plan for the ASBUs, provide guidance and practical assistance to States, regions and sub-regions when they decide to implement individual blocks or modules of the ASBUs, and establish a group and improved mechanism for interregional cooperation to ensure harmonisation of ATM.

This was part of Agenda Item 1, which supports the concept of ‘One Sky’ for international civil aviation. CANSO contributed a working paper on the ASBU framework, and the conference recommended that the guidance material on business case analysis be completed and financial policies in support of the efficient acquisition and implementation of global air navigation services infrastructure and aircraft equipage be formulated.

Agenda Item 1 also supported CANSO’s Vision for a Global Data Link System for ATM, as outlined in the CANSO working paper. The conference recommended that ICAO organise a multi-disciplinary review of air traffic control communication requirements and that States anticipate and accelerate
the migration of air traffic management communication systems towards more efficient technologies. The conference also recommended that States ensure that air navigation service providers and aircraft operators involve airport operators from the outset of PBN procedure implementation so that they may consult fully with local communities in order to avoid adverse noise impact.

Agenda Item 2 featured a special ASBU module on remote tower services and requested this be extended to cover the full spectrum of remote air traffic services. CANSO plans to ramp up its own work on CDM and flow management, two key elements of the Memorandum of Cooperation signed with Airports Council International in July 2012.

Interoperability and information sharing was addressed in Agenda Item 3, which called for globally interoperable system-wide information management (SWIM). The conference recommended ICAO take further steps to develop a global SWIM concept, and CANSO has already started working with industry partners and stakeholders on concept definition and technical standards. This agenda item also saw agreement to proposals for the phased implementation of an advanced flight planning and information sharing concept known as Flight and Flow – Information for a Collaborative Environment (FF-ICE).

Collaborative air traffic management featured in Agenda Item 4 which addressed capacity and efficiency. In addition to improvements in civil/military cooperation and sharing of the airspace, this item also acknowledged that availability of globally harmonised provisions for remote-piloted aircraft systems (RPAS) was essential to facilitate development of required technologies and certification methods to permit the operation of RPA in non-segregated airspace and at aerodromes. This recommendation was in direct response to CANSO’s working paper on the Resource Implications for the Integration of RPA, which requested that provisions for the integration of RPA into the ATM system be a high priority item in the ICAO air navigation work program. CANSO is increasing its involvement in Unmanned Aircraft study group activity ahead of the ICAO RPAS Symposium in April 2014.

Future development

CANSO’s working paper entitled Addressing the Impediments to Global ATM received wide support, although States had some issue with ANSP management being empowered to take decisions independent of political interference. Nevertheless, the conference recommended that States and the regional planning and implementation groups (PIRGs) develop action plans to address the identified impediments to ATM modernisation as part of their ASBU planning and implementation activities. It also recommended that ICAO develop, together with industry and stakeholders, an engagement strategy to address the economic and institutional impediments to implementation of the aviation system block upgrades.

The Conference agreed that human performance should be considered as an essential element in the systems approach and that there was a need to take into account human capabilities and limitations to more effectively address safety priorities when designing new technologies, systems and procedures.

AN-Conf/12 demonstrated widespread commitment to global goals, and a level of cooperation rarely seen amongst aviation stakeholders. In addition to well-researched working papers presented by organisations such as CANSO, IATA, ACI and others, Europe spoke with a common voice to represent the interests of 44 individual states. While plenty of work remains to be done to reach agreement on the GANP during the 38th Session of the ICAO Assembly in September, the process has taken industry collaboration to new heights and CANSO is among those leading global consensus-building.
Time for a new approach

Commercial adoption of satellite-based precision approach aids sees legacy systems under review

The world’s first commercial satellite-based precision approach was completed by an AirBerlin flight into Bremen, Germany, using a Honeywell SmartPath Ground Based Augmentation System (GBAS) in February 2012. It was a milestone in Europe’s air traffic management history and a major step towards the reinvention of how to handle approach and landing guidance.

Traffic numbers continue to grow. In the Middle East and India, that growth is significant. That means the need to increase airport capacity and throughput at major hub airports is set to increase further. The arrival of satellite-based precision landing is important and timely.

The world’s major airports currently rely on tried and tested Instrument Landing System (ILS) technology to provide precision approach guidance down to the runway threshold in near-zero visibility (Category III). The ILS is effectively two sub-systems; a localiser, situated at the end of the runway providing lateral guidance, and a glide slope antenna, located at the side of the runway to provide vertical guidance. These antennas transmit radio beams that are received by ILS receivers onboard approaching aircraft and are used to determine whether the aircraft is off-centre, or approaching too high or too low.

This standard has remained the primary method of approach and landing guidance at commercial airports since the 1960s. However, it is based on principles dating as far back as the 1930s. While technology has evolved over time, the operating limitations of an ageing ILS concept continue to hold back airport growth, argues Honeywell Aerospace Senior Manager Pat Reines. Reines is business development leader for the company’s SmartPath GBAS precision landing systems.

Reines argues that the ILS radio signal can be subject to interference and limits new ground infrastructure in the vicinity of an airport. Bad weather and terrain can have an adverse impact, for example sloping or uneven terrain can lead to signal reflections creating an uneven glide slope. Similarly, taxiway capacity can be limited by short-holding necessary to avoid taxing aircraft from blocking and disturbing the ILS signal.

While these challenges restrict airport capacity from an infrastructure perspective, there are other issues with ILS says Reines. Due to the complex nature of the station and antenna arrays, installation and maintenance can be time-consuming and expensive, particularly as an ILS installation is limited to managing a single straight-in approach path at one end of a single runway. Aircraft are required to line up ahead of final approach and single-file down the ILS glide slope as though they were flying through the neck of a bottle.

Satellite-based solutions

GBAS is a relatively new alternative to ILS. GBAS augments Global Satellite Navigation Systems (GNSS) signals to make them accurate enough and safe to use for precision approach procedures. The ground equipment includes four GNSS reference receivers, a GBAS computing facility and a VHF data broadcast transmitter. This ground equipment is complimented by GBAS avionics installed on the aircraft. The GBAS ground facility receives positioning data from GNSS satellites, computes error corrections and satellite health information and broadcasts the necessary information out to all GPS Landing System (GLS)-equipped aircraft transitioning from en-route to terminal airspace twice a second. The result is positioning accuracy of less than 1 metre down to 200ft (Category I) regardless of terrain, obstacles and climatic conditions.

As well as the benefits of improved accuracy, a GBAS broadcast is omni-directional, which means it is not subject to the same levels of interference as ILS. It is also capable of providing 26 approaches, including final approach segments for Required Navigation Procedure (RNP) approaches and continuous descents, across all airport runways simultaneously. This adds to ATC flexibility and enhances airport capacity.

Honeywell’s SmartPath technology is the only certified GBAS available today, with operational certifications from the FAA since 2009 and Germany’s Bundesaufsichtsamt für Flugsicherung (BAF) since 2011. As well as the accuracy benefits and increased throughput GBAS brings, SmartPath can also yield economic savings for airports too. As a result of the reduced ground infrastructure and increased reliance on software, Honeywell argues SmartPath can bring maintenance savings of up to USD400,000 per airport, per year, over ILS.

Honeywell has demonstrated the benefits of GBAS for Category I precision approach guidance at more than 25 airports around the world. As well as the operation of SmartPath at Bremen, the system went live at Newark Liberty International, New Jersey in September 2012 while further SmartPath
installations at Sydney International, Australia and Houston George Bush Intercontinental in the US are expected to become operational in 2013. GBAS is also in use in Latin America, where SmartPath is installed at Galeão–Antonio Carlos Jobim International Airport, Rio De Janerio, Brazil. The unit is currently undergoing tests to support operations in the unique ionospheric conditions experienced in locations in very close proximity to the equator. Testing and certification of the Rio system is expected to be completed in 2014.

As the momentum of SmartPath installations picks up at the airport, so too does GLS equipage onboard the aircraft. GBAS-compatible Multimode Receivers (MMR) are available for most mainstream commercial aircraft, and come as standard forward fit equipment on Boeing 787 and 747-800 aircraft and Airbus A380 - A380 hardware is equipped as standard, with activation optional for a fee.

**A culture of change**

According to Honeywell, one of the biggest hurdles facing GBAS is not one of technology or even financing, but of the difficulty in bringing together multiple stakeholders and pressing for a culture of change. For GBAS to progress from its current position as an early adopter technology, an acceptance of change is required among all stakeholders, not only up to the point of installation, but in the subsequent operational model.

Airport authorities and ANSPs need to engage with regulators and primary airlines, with the help of their suppliers, to build a business plan for GBAS that defines objectives, timelines and metrics of success for all parties concerned. Only then can the desire to change be driven forward.

In the meantime, Honeywell is working on developing its GBAS solution to provide sufficient integrity and accuracy to support Category II and III precision approaches, down to 50ft decision height. The company is confident it can extend the algorithms to meet the higher performance requirements within the next three or four years.

With the first GBAS installations now certified and flying commercial traffic into major airports, Reines is confident the momentum will build to drive universal acceptance of a new approach at the world’s high growth airports.
GroupEAD Europe S.L.  
A success story working on outsourced operational services

History of GroupEAD Europe S.L. began in 2001. At that time EUROCONTROL contracted GroupEAD to provide a centralized service on the EUROCONTROL owned European AIS Database (EAD). Full operation started about two years later in mid-2003 based on a contract period of five years.

Since then and after winning the call for tender for the 2nd service provision GroupEAD runs the EAD for nearly ten years now. Based on this contract GroupEAD – on behalf of EUROCONTROL – provides several services to users of EAD, as there are Static Data Operation (SDO), International NOTAM Operations (INO), Published AIP Management (PAMS) and a 24/7 Service Desk (SD). As well GroupEAD provides Training Services for EAD Users.

When GroupEAD saw light of day as a private and autonomous operating company, it was particularly founded and structured for this task.

GroupEAD Structure

One key aspect of GroupEAD structure is its focus on operation. This is reflected by the fact that more than 85% of overall staff of GroupEAD is purely operational comprising of Operators, Supervisors and two Operation Managers. It is also shown by the lean structure of the company, which – being the fourth layer – is headed by one CEO.

The rest of the staff is organizing and managing the contractual obligations GroupEAD has to fulfill, especially with respect to Quality Management, Training and AIM Development.

All administrative tasks, needed to run a company, with the exception of two secretaries are outsourced!

This pure concentration on core business makes GroupEAD most efficient and effective. The lean structure allows extremely high flexibility and low reaction times.

GroupEAD Locations

To provide the centralized services on EAD, GroupEAD runs two premises. One is located in Madrid-Torrejon, and the second is in Frankfurt.

Both premises are identical in work positions and structure and under normal conditions work load is shared. The structural redundancy allows one premises to take over full operation in case of need.

Having premises in two different countries makes the services of GroupEAD also more immune to outside factors, e. g. local strikes etc.

GroupEAD Quality & Performance

Since the beginning GroupEAD committed itself to a very high level of quality and performance. This commitment is reflected by the acquirement and continuous renewal of ISO 9001 certification, the installation of a KPI-System with monthly reporting and the application of a bonus/malus system based on quality and performance results.

Regular customer surveys and feedback inquiries complete this approach. Additionally EAD data consistency reviews are regularly performed by GroupEAD for an improved and assured quality of services delivered.

The EAD Service is continuously monitored by EUROCONTROL through Key Performance Indicators showing a continuous yearly GroupEAD performance over 99.5%. 

GROUP EAD EUROPE S.L.
The achievement of high quality and performance is a result of GroupEAD internal tools, procedures and of course the staff.

**GroupEAD Staff**

Staff of GroupEAD has different aeronautical background. They are qualified by a combination of a full set of EAD Training Courses and extensive “On the job Training” (OJT) in EAD Operations. Each fully trained operator is able to work any operational position, thus increasing the flexibility needed for a 24/7 shift operation.

Staff of GroupEAD is multicultural and multinational. Meanwhile 16 different nationalities are represented, some of them even from overseas.

The extraordinary high satisfaction level GroupEAD achieved in training proves the rightness of this approach.

**GroupEAD Productivity & Cost**

GroupEAD was able to increase its productivity for the service within the past years. With almost the same amount of human resources the number of NOTAMs operated increased between 2005 and 2012 from 400,000 up to over 700,000, the static data operations from 50,000 to nearly 70,000 and the service desk activities from 1,800 to 5,000.

Considering each activity as one service unit, the cost per service unit was reduced by overall more than 1/3 during the same time period.

Training of a huge variety of aviation staff like AIS/ATC/Aerodrome personnel is the third major pillar GroupEAD activities beyond EAD Business are based on. Tailored and customized training courses are available on clients’ request.

The portfolio of GroupEAD activities includes even more aspects of AIS / AIM and the share of activities is continuously increasing.

**GroupEAD A Success Story**

When GroupEAD entered the field of operating a centralized service on behalf of EUROCONTROL ten years ago, there was the conviction that it could work, that it will work.

Now, ten years later it proved that the idea worked and is still working.

From GroupEAD perspective EAD is a huge success and is a key factor in AIS/AIM meanwhile even beyond European borders. GroupEAD is really proud to be part of this.

A number of factors contributed to this success:

- Clearly defined and dedicated tasks avoiding interpretations and misunderstanding
- Client oriented and simple structure with minimum overhead and allowing flexible reactions
- Operating 24/7
- Dedicated KPI Structure with frequent evaluation and bonus/malus system motivating to “go the extra mile”
- Highly skilled and motivated multinational team being able to work each position thus offering diversification and flexibility
- Trainer being always close to operational knowledge and experience ...

... and last but not least having the courage and ambition to take over the challenging task of operating a centralized service on an international level.
Singapore creates international research centre

A new Asia-Pacific Centre of Excellence aims to address ATM solutions that are harmonised at the global level

Singapore is building on its strengths in aviation to become a Centre of Excellence for air traffic management (ATM). The initiative was launched by the Minister for Transport Lui Tuck Yew in September 2012 for the development of ATM technologies and solutions to support the growth of air transport in Singapore and the Asia-Pacific. With the region’s air traffic expected to triple by 2030, these technologies and solutions will be needed to achieve greater capacity and maintain high safety and service standards.

Singapore aims to build a self-sustaining ATM eco-system in the country, comprising local and international ATM and aviation entities, industry players, and academia, generating ATM knowledge and expertise, and developing ATM capabilities and solutions to meet the unique requirements of Singapore and the region. The Civil Aviation Authority of Singapore (CAAS) has set up a Centre of Excellence for ATM Programme Fund (CEPF) of S$200 million for a period of 10 years to provide seed funding for the establishment of research institutes and think-tanks and the conduct of research and development activities in the area of ATM. The CEPF is managed by a new dedicated programme office.

Singapore is already home to the regional headquarters of IATA, CANSO and the US Federal Aviation Administration (FAA), and more aviation stakeholders are attracted to the busy metropolis. By the end of 2012, CAAS had sealed four foundational collaboration agreements with leading American and European organisations, detailed below, which will set in motion a wide range of joint activities, including research and development, test-bedding and validation of ATM concepts. These include ways and means to maximise airspace capacity, optimise aircraft operations and enhance air navigation services, operational and human performance.

A Statement of Intent with FAA identifies areas of FAA-CAAS ATM cooperation such as research and development activities to advance ATM modernisation, sharing of information, knowledge and expertise to improve operational performance in the provision of air navigation services; sharing of best practices, and proof of concept to demonstrate and validate new ATM concepts. In a separate Memorandum of Understanding with MITRE, CAAS and MITRE have agreed to cooperate in ATM research and development initiatives and projects with an emphasis on improving safety, security, efficiency, capacity and environmental aspects of Singapore and the Asia-Pacific region’s aviation operations and infrastructure. The agreement also includes sharing knowledge and technology in the areas of ATM, safety and regulation issues; and the availing of resources to establish the required capabilities and infrastructure that support ATM research and development in Singapore.

A Memorandum of Cooperation with the Single European Sky ATM Research Joint Undertaking (SESAR JU) follows a Letter of Intent signed in February 2012 and includes the sharing of information, knowledge and expertise; cooperation in activities, notably under ICAO; proof of concept to demonstrate and validate initiatives undertaken collaboratively; and collaboration in development activities to realise their respective ATM modernisation programmes. The Memorandum gives Singapore the opportunity to partner with more than 125 members and associate partners who are all established ATM entities in the SESAR JU consortium.

Another Memorandum of Cooperation signed with Airbus ProSky includes collaboration in research and development, in particular coordination of initiatives and projects and their execution; participation in joint projects of common interest, including proof of concepts, demonstrating and validating new operational procedures and systems; cooperation in activities to explore, develop and evaluate new ATM concepts...
and systems for enhancement of ATM efficiency; and sharing of technical knowledge in terms of ATM, safety and regulation issues through workshops and exchanges.

CAAS has also established close ties with local stakeholders. For example, CAAS and Nanyang Technological University (NTU) will be formalising an agreement to establish an ATM research institute in Singapore in early February 2013, which will contribute to national and regional ATM modernisation through research and development efforts. The partnership also includes developing high quality human capital needed to support the Centre of Excellence for ATM. “A fast-rising research-intensive university, NTU is contributing its research expertise through the School of Mechanical and Aerospace Engineering, one of the world’s largest mechanical engineering schools. The School’s faculty is currently working on research projects related to human factors in air traffic control and ATM,” said Professor Chua Chee Kai, Chair, School of Mechanical and Aerospace Engineering, NTU.

Other agreements are in place, such as the Memorandum of Cooperation signed with UK NATS (services) in May 2012 to collaborate on and develop solutions addressing emerging ATM challenges. CAAS is also in talks with the US National Aeronautics and Space Administration (NASA) and the German Aerospace Centre DLR to identify areas of mutual cooperation.

CAAS says Singapore is fast becoming the nexus of ATM research and development work as it enters into partnership and collaboration agreements with various organisations in response to the demand for ATM solutions in the region. The forging of international links contribute to the aviation community moving collectively towards global ATM solutions. CAAS Director General Yap Ong Heng told Airspace magazine: “We are very encouraged to see our Centre of Excellence for ATM initiative drawing both national and international interests. Forging strong collaboration with key aviation partners on research and development, test-bedding and validation in Singapore to develop ATM concepts, technologies and solutions will contribute to modernising ATM in the Asia-Pacific and to ATM harmonisation and interoperability across regions in line with the ICAO Aviation System Block Upgrade (ASBU) framework.”

Singapore Changi Airport connects with more than 200 cities around the world.
Find your next job in Air Traffic Management

www.canso.org/atmjobs

CANSO’s ATM Jobs Board is an online search tool dedicated to job opportunities in Air Traffic Management. It has been developed by the industry for the industry.

Subscribe to receive the ATM Jobs email alert at www.canso.org/subscribe

Advertising discounts available to all CANSO Members.
## 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 – 10.15:</td>
<td>World ATM Congress Opening - World ATM Congress Exhibit Hall</td>
</tr>
<tr>
<td>10.15 – 10.45:</td>
<td>Official Conference Opening</td>
</tr>
<tr>
<td></td>
<td>Peter F. Dumont, President and CEO, Air Traffic Control Association (ATCA), Jeff Poole, Director General, Civil Air Navigation Services Organisation (CANSO), José Manuel Vargas, President, Aena, Ignacio González Sánchez, Director Air Navigation, Aena</td>
</tr>
<tr>
<td>10.45 – 11.15:</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 - 12.30</td>
<td>Session One: The Aviation Industry Leadership Forum 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 CEO, Airlines for America (AAA)</td>
</tr>
<tr>
<td></td>
<td>Angela Gittens, Director General, ACI World</td>
</tr>
<tr>
<td>12.30 – 14.00:</td>
<td>Lunch Break in World ATM Congress Exhibition</td>
</tr>
<tr>
<td>14.00 – 14.30:</td>
<td>Towards a Transformed ATM Environment - The View from Europe - Matthew Baldwin, Director of Air Aviation and International Transport Policy in DG Transport and Mobility (MOVE), European Commission</td>
</tr>
<tr>
<td>14.30 – 15.00:</td>
<td>Towards a Transformed ATM Environment – the View from America - The Honorable Michael Huerta, Administrator, Federal Aviation Administration</td>
</tr>
<tr>
<td>15.00 - 15.30:</td>
<td>Networking Break</td>
</tr>
<tr>
<td>15.30 – 17.00:</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></td>
<td>Ricardo Génova, Director of Flight Operations, Iberia</td>
</tr>
<tr>
<td></td>
<td>Patrick Goudou, Executive Director, EASA</td>
</tr>
<tr>
<td>17.00 – 17.15:</td>
<td>Closing of Day One, Peter F. Dumont, President and CEO, ATCA</td>
</tr>
<tr>
<td>17.30 – 19.00:</td>
<td>Reception in 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 – 10.45:</td>
<td>Towards a Transformed ATM Environment - The View from Eurocontrol - Frank Brenner, Director General, Eurocontrol</td>
</tr>
<tr>
<td>10.45 – 12.00:</td>
<td>Session Three: Taking Control of the New Reality – Delivering Complex Projects</td>
</tr>
<tr>
<td></td>
<td>Steve Fulton, Technical Fellow, GE Air Traffic Optimization Services</td>
</tr>
<tr>
<td></td>
<td>Pierre Bonnal, Senior Project Engineer, CERN</td>
</tr>
<tr>
<td></td>
<td>Todd W. Zarfos, Vice President of Engineering for Commercial Aviation Services and Senior Chief Engineer of Support, Boeing Commercial Airplanes</td>
</tr>
<tr>
<td>12.00 – 12.30:</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12.30 – 13.00:</td>
<td>Guest Speaker: What Football Can Teach Us About Dealing with Change</td>
</tr>
<tr>
<td></td>
<td>William Gaillard, Senior Advisor to the UEFA President, UEFA</td>
</tr>
<tr>
<td>13.00 – 13.30:</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 – 15.00:</td>
<td>Lunch Break in World ATM Congress Exhibition</td>
</tr>
<tr>
<td>15.00 – 16.15:</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, Irish Aviation Authority</td>
</tr>
<tr>
<td></td>
<td>Micilia Albertus-Verboom, Director General, DC-ANSP</td>
</tr>
<tr>
<td></td>
<td>Bob Poole, Director of Transportation Policy, Reason Foundation</td>
</tr>
<tr>
<td>16.15 – 16.45:</td>
<td>Networking Break</td>
</tr>
<tr>
<td>16.45 – 18.00:</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 and CEO, Thales ATM Inc.</td>
</tr>
<tr>
<td></td>
<td>Klaus-Dieter Scheurle, Chairman and CEO, DFS Deutsche Flugsicherung GmbH</td>
</tr>
<tr>
<td></td>
<td>Marc Hany, Chief Operating Officer, Airbus ProSky</td>
</tr>
<tr>
<td></td>
<td>Ed Sims, Chief Executive Officer, Airways New Zealand</td>
</tr>
<tr>
<td></td>
<td>Ramon Tárrech, ATM Vice President, Indra</td>
</tr>
<tr>
<td>18.00 – 18.15:</td>
<td>Conference Conclusions &amp; Way Forward, Jeff Poole, Director General, CANSO</td>
</tr>
</tbody>
</table>
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

- Aeronautical Radio of Thailand (AEROTHAI)
- Aeroportos de Moçambique
- Air Navigation and Weather Services, CAA (ANWS)
- Air Navigation Services of the Czech Republic (ANS Czech Republic)
- Air Traffic & Navigation Services (ATNS)
- Airports and Aviation Services Limited (AASL)
- Airports Authority of India (AAI)
- Airports Fiji Limited
- Airservices Australia
- Airways New Zealand
- Angkasa Pura I
- Austro Control
- Aahir AS
- AZANS Azerbaijan
- Belgocontrol
- Bulgarian Air Traffic Services Authority (BULATSA)
- 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)
- DSNA France
- Dutch Caribbean Air Navigation Service Provider (DC-ANSIP)
- ENANA-EP ANGOLA
- ENAVA S.p.A: Società Nazionale per l’Assistenza al Volo
- Entidad Pública Aeroportos 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 (GACA)
- Hellenic Civil Aviation Authority (HCAA)
- HungaroControl Plc. Ltd. Co.
- Israel Airports Authority (IIA)
- Iran Airports Co
- Irish Aviation Authority (IIA)
- ISAVA Ltd
- Kazakhnaviairsts
- Kenya Civil Aviation Authority (KCAA)
- Latvijas Gaisa Satiksme (LGS)
- Letóvě preváděžkové Služby Slovenskej Republiky, Štátny Podnik
- Luchtverkeersleiding Nederland (LVNL)
- Luxembourg ANA
- Maldives Airports Company Limited (MACL)
- Malta Air Traffic Services (MATS)
- NATA Albania
- National Airports Corporation Ltd.
- National Air Navigation Services Company (NANSC)
- NATS UK
- NAV CANADA
- NAV Portugal
- Navair
- Nigerian Airspace Management Agency (NAMA)
- Office de l’Aviation Civile et des Aéroports (OACI)
- ORO NAVIGACIJA, Lithuania
- PNG Air Services Limited (PNGASL)
- Polish Air Navigation Services Agency (PANSA)
- Prithivia International Airport JSC
- PT. Angkasa Pura II (Persero)
- ROMATSA
- Sakaeronavigacija Ltd
- S.E. MoldATSA
- SENEAM
- Serbia and Montenegro Air Traffic Services Agency (SMATSA)
- Serco
- skyguide
- Slovenia Control
- State Airports Authority & ANSP (DHMI)
- State ATM Corporation
- Tanzania Civil Aviation Authority
- The LFV Group
- Ukrainian Air Traffic Service Enterprise (UKSATSE)
- U.S. DoD Policy Board on Federal Aviation

Gold Associate Members - 14

- Abu Dhabi Airports Company
- Airbus ProSky
- Boeing
- BT Plc
- FREQUENTIS AG
- GE Air Traffic Optimization Services (GEO) Group
- ITT Exels
- Lockheed Martin
- Metron Aviation
- Raytheon
- SELEX Sistemi Integrati S.p.A.
- Telecommunications Corporation, ESD
- Thales
- ATCA – Japan
- ATECH Negocios em Tecnologia S/A
- Aviation Advocacy Sarl
- Avibit Data Processing GmbH
- Avitech AG
- AZIMUT JSC
- Barco Orthogan GmbH
- Blooz Allen Hamilton, Inc.
- Brüel & Kjær EMS
- Comsoft GmbH
- CGH Technologies, Inc
- Abu Dhabi Department of Transport
- Dubai Airports
- EADS Cassidian
- EIZO Technologies GmbH
- European Satellite Services Provider (ESSP SAS)
- Emirates
- Entry Point North
- Era Corporation
- Etihad Airways
- Guntermann & Drunck GmbH
- Harris Corporation
- Helios
- Honeywell International Inc. / Aerospace
- IHS – Ingeniería De Sistemas S.p.A.
- Indra Navia AS
- Indra Sistemas
- INEGO
- Inmarsat Global Limited
- Integra A/S
- Intelecon Technologies Inc.
- International Aeronautical Systems (IANS)
- Irdium Communications Inc.
- Jeppesen
- JMA Solutions
- LAID Aktiengesellschaft
- LEMZ R&P Corporation
- LFV Aviation Consulting AB
- Micro Nav Ltd
- The MITRE Corporation – CAASD
- MovingDot
- New Mexico State University Physical Science Lab
- NLR
- Northrop Grumman
- NTT Data Corporation
- Project Boost
- Quintiq
- Rockwell Collins, Inc.
- Rohde & Schwarz GmbH & Co. KG
- RTCA, Inc.
- Saab AB
- Saab Sensis Corporation
- Saudi Arabian Airlines
- SENASA
- SITA
- STR-SpeechTech Ltd.
- TASC, Inc.
- Tetra Tech AMT
- Washington Consulting Group
- WIDE

Silver Associate Members - 62

- Aedae Inc.
- AIRNO

Lighter areas represent airspace covered by CANSO Members

Correct as of 16 January 2013. For the most up-to-date list and organisation profiles go to www.canso.org/cansomembers
There’s still more to see.

We’ll be back in 2014

World ATM Congress 2014

Operated by CANSO in association with ATCA

4 – 6 March 2014 Madrid, Spain www.worldatmcongress.org
More information at www.worldatmcongress.org
imagine the future of ATM

fewer delays, better performance, lower emissions.

Airbus ProSky is committed to shaping the future of global Air Traffic Management, working side-by-side with ANSPs, airports and airlines to build a truly collaborative system with greater capacity, efficiency and sustainability for all stakeholders. Together, with our portfolio of intelligent ATM solutions, air traffic flow management, performance-based navigation, surface management and groundbreaking research and development capabilities, that future begins today.

www.AirbusProSky.com

tomorrow's sky, today.