Brave New World: 
Transforming air navigation services

ASIA-PACIFIC SPOTLIGHT: 
CANSO’s New Regional Office
Customer perspective
– Cathay Pacific’s Owen Dell
ADS-B in the South China Sea

PLUS
Dieter Kaden, Philippe Rochat, Letter from America
and much more from the world of ATM
Safety and efficiency are the two biggest priorities in our business — and we know the same is true in yours.

How are we meeting today’s challenges and preparing for a busier and more fast-paced future?

By using powerful, innovative air traffic management technology developed by our own engineers and air traffic controllers.

And, we’re proud to say that these operationally proven systems have been selected by other international ANS providers to meet their own air traffic management needs.

These products provide fast, reliable access to critical air traffic control information, and the integration, manipulation and distribution of data across the system. All of our air traffic management systems are supported by comprehensive training programs and lifecycle maintenance.

At NAV CANADA, we know how important efficiency, safety and costs are to your operation. Our ATM Technology Solutions are designed to meet these demands - today and tomorrow.

For more information on our air traffic management systems visit ATM Technology Solutions at www.navcanada.ca
Ensuring the safety of our skies starts with integrated solutions, and the right partner to deliver them. At Raytheon, we understand the broad range of challenges that are impacting the airspace management industry. We’re delivering advanced solutions to meet these challenges head on, from start to finish, from take off to touch down. So those who monitor the skies can act with assurance to increase airspace capacity over our skies, and keep those skies safe.
Many of you will by now be familiar with the fact that following our March EGM, CANSO has agreed to focus on three major policy areas – Safety, Environment, and Business Transformation. But what is Business Transformation, and what is CANSO doing to facilitate it? These questions are explored more fully throughout this issue.

For example, our CEO Column comes from someone who could be regarded as the father of the Business Transformation agenda, Dieter Kaden of DFS. Our main Feature article looks at how CANSO will tackle BT, and we also explore issues around airspace sovereignty. As you will read, Business Transformation covers a huge array of issues, but perhaps the most difficult transformation of all will be the need to focus on serving society. That means fewer delays, greater capacity, and better environmental performance, all without compromising safety. And anything which can progress that agenda should be advocated. Anything which puts barriers in the way of improving aviation should be dismantled, whether it is outdated regulations, ancient technology and procedures, antiquated governance, or obstructive politics.

Because we live in a world where we are surrounded by the complexity of the aviation system, we sometimes pat ourselves on the back and congratulate ourselves on our achievements, which in the context of where we were 60 years ago, are considerable. But society does not compare with 60 years ago, but with 6 months ago. The flying public, facing delays and rising costs, and concerned about the environmental impact of flight, is looking for visible improvements now. The flying experience has sadly become, more often than not, a wearisome chore, and as industry leaders of aviation, we cannot allow this to be the case. All of us in the world of ATM must redouble our efforts if we are to be successful in playing our part in improving the system.

ANSPs have a great track record to point to in delivering a good service to society. Now with CANSO’s Business Transformation project leading the way, we can write the next chapter in the future of aviation.

Chris Goater
Editor
Environment

AVIATION INDUSTRY SIGNS CLIMATE CHANGE DECLARATION

• Industry agrees to target carbon neutral growth as a first step
• Calls for governments to assist

At the third Aviation Environment Summit in Geneva during April, the aviation industry made a significant step towards becoming a fully sustainable industry.

Representatives from the major trade associations; ACI, CANSO, IATA and ICCAIA, along with the major funding members of ATAG, including Boeing and Airbus, signed a declaration on climate change, committing the aviation industry to achieving carbon-neutral growth, and aspiring to carbon-free flight.

The historic commitment means that for the first time there will be significant pressure between aviation peers to succeed with planned environmental improvements. Individual organisations are encouraged to also sign the document, and a number of ANSPs have done so. For CANSO, the Declaration was signed by Alexander ter Kuile and Greg Russell of Airservices Australia, standing in for CANSO Chairman Ashley Smout.

Commenting on the Declaration, ter Kuile said: “ATM has a vital part to play in achieving these commitments, and CANSO has already recognized this by making environment one of its top three priorities. The challenge for ANSPs, along with the rest of the air transport industry, is to put in place a detailed plan for reaching our goals.”

Highlights of the industry commitments to action on climate change

We, the undersigned aviation industry companies and organisations declare that we are committed to a pathway to carbon-neutral growth and aspire to a carbon-free future.

To this end, in line with the four-pillar strategy unanimously endorsed at the 2007 ICAO Assembly, we will:

1. push forward the development and implementation of new technologies, including cleaner fuels;
2. further optimise the fuel efficiency of our fleet and the way we fly aircraft and manage ground operations;
3. improve air routes, air traffic management and airport infrastructure; and
4. implement positive economic instruments to achieve greenhouse gas reductions wherever they are cost-effective.

We urge all governments to participate in these efforts by:

1. supporting and co-financing appropriate research and development in the pursuit of greener technological breakthroughs;
2. taking urgent measures to improve airspace design including civil/military allocation, air traffic management infrastructure and procedures for approving needed airport development; and
IATA ANNOUNCES EAGLE AWARDS

IATA has announced the winners of their Eagle Awards for 2008. The winners of the ANSP Eagle Award are:

1st place – Airways New Zealand
Honourable mention – Papua New Guinea Air Services

IATA’s Director General and CEO Giovanni Bisignani said: “Airways New Zealand focuses on the needs of its customers, not just within its own area but also in seeking regional solutions with neighbouring ANSPs… (it) has a good consultation process and its charges are reasonable. Airways New Zealand is delivering global improvements in route optimisation, operational efficiency, safety and cost efficiency.” He also praised Papua New Guinea Air Services Ltd for significant improvements in governance, financial and operational terms in the past three years.

CANSO ANNOUNCES IMAGINE 2010 SUPPORT

CANSO has revealed that a number of senior and emerging talents from ANSPs around the world have been seconded to support the Imagine 2010 programme. The leaders of the three main policy areas – Safety, Environment and Business Transformation – are respectively, Richard Schofield (NATS), Adam Phelan (Airservices Australia) and Gudrun Held (DFS). Mary Summers has also been seconded by the FAA to continue work on global benchmarking.

A number of other ANSPs have offered support, including PANSAs and Sakaeronavigatsa. NATS and Airservices Australia are also offering additional personnel time. The detail of the work programmes is being finalised and will be debated at CANSOs AGM in Madeira in June.

CANSO’s Director of Industry Affairs Samantha Sharif commented: “I am delighted by the response of the membership to our request for greater member commitment. The fact that such a wide range of talent and experience will be working on the Imagine 2010 projects bodes well for the success of CANSO’s agenda.”

CANSO OPENS NEW ASIA-PACIFIC OFFICE

CANSO has formally opened its Asia Pacific Regional Office at the Singaporean Aviation Academy. Mr Hai Eng Chiang, formally Deputy Director General and Director Air Traffic Services with CAAS, will lead the office. The launch coincided with the 3rd Asia Pacific ANSP Conference, jointly organised by CANSO and IATA, and hosted by CAAS, the Singaporean ANSP.

CANSO’s second Regional Office, following on from the long established European office in Brussels, will co-ordinate and assist the work of ANSPs in the Asia Pacific region, and focus on key issues such as pushing for the implementation of ADS-B over the South China Sea (see article on page 19).

CANSO Director of Asia-Pacific Affairs, Hai Eng Chiang, said “I am delighted that CANSO members have agreed to support the work of this office to help deliver real improvements to ATM in the Asia-Pacific region. The projects we will focus on will be instrumental in creating the effective and efficient aviation system that this region will need in the future.”

CANSO News
Sharing the airspace is an art

Unified & efficient ATM Services.
We are world leading in the creation of greener, safer and more cost-efficient flights. North European ANS Providers remain dedicated to making airspace a growth market. Our mission is to promote border-free collaboration in the air, based on stringent standards of efficiency, environmental sustainability and quality.
The CEO column
Dieter Kaden

Business Transformation is not about commercialisation, but about how ANSPs should act

CANSO Imagine 2010 identifies three main themes to be followed during the next years. Safety and environment are essential parameters governing our activities. Business transformation does not necessarily sound that familiar. Indeed, some people argue that air navigation service provision is not a business – therefore, nothing to transform!

Let me state the contrary: without transforming our services into a business we will not be able to provide a safe and sustainable air navigation service at an affordable price. Firstly, business transformation is not necessarily about commercialisation or privatisation. It is about the way we act, our behaviour, it is about our vision and the objectives we set. Do we orient our services according to the requirements of our customers? Are we capable to adjust our organisations and processes to a changing environment? Are our technologies and operational procedures up to date? Is each of our organisations and its staff prepared to deal with changes enabling co-operation or even integration with other ANSPs? Can we successfully compete in those segments of ATM where competitive elements are introduced?

Much can be done and even more needs to be done by ourselves. Many changes, however, need to be embedded in changes in the regulatory and institutional framework. A key principle CANSO pursued from its foundation more than ten years ago is the clear separation between service provision and regulation. While separation has been introduced in many States there is still a lot to be gained by changing the institutional set-up for service provision, regulation and supervision. What is a recognised principle in many nations will need to be applied also at the level of international organisations.

The recognition of CANSO as an observer-organisation in ICAO certainly is an important step. CANSO members now have to use this new opportunity. In other words, they have to transform their business how to deal with ICAO. ICAO itself is asking how to adjust in order to cope with accelerated speed of change. The normative and regulatory system of ICAO standards and recommended practices needs to support new technologies and procedures. Is the traditional way of developing standards fast enough to be ready in time for the implementation of NextGen, SESAR and other future systems? Do we need the same degree of standardisation as for today’s systems in order to ensure safety and interoperability in the global air transport industry?

I could continue putting questions to the readers of the new CANSO magazine but I think these are enough tasks which need to be dealt with under the heading of business transformation. Let us continue working together in CANSO to find the right answers and then promote these in our organisations and our environment.

Let’s transform our services into a business – for the benefit of our customers!
A lack of leadership at the highest levels is hampering the reform of US ATM

At this moment the United States is deeply entrenched in its political season, it is the most interesting Presidential primary race in memory... and it affects the air traffic control community.

As we stand on the cusp of change in air traffic control, we are seeking the best path to transform an inadequate and antiquated air traffic system and we are faced with a myriad of hurdles to overcome. As many of us have learned from our experiences, leadership is the essential driver for successful change. Ten years ago the U.S. Congress passed legislation that created a five-year term for the FAA administrator. The intent of Congress was to provide consistent leadership by removing the administrator of the FAA from political turmoil and bridging between two four-year Presidential terms. Now, ten years later, when we need the leadership more then ever, we are sitting and waiting for a new FAA administrator, and it appears we wait in vain. The current acting administrator will not be confirmed and in fact no other Republican nominee for the position will be confirmed, as the Democratic Senate waits to see who will win the Presidency in November.

So, while the FAA waits for leadership, bureaucrats hold back, trying to wait out the current administration, thinking that the path forward must be redefined by the next administrator. Without leadership the government career employees are slow to initiate or continue programs that could create a significant increase in the forward speed of the FAA’s next generation air traffic control system (Next Gen). As system delays continue to grow and the U.S. begins to lumber through its summer thunderstorm season, there is no relief in sight to the status quo, and time is not on the side of the FAA. Look at the Joint Planning and Development Office (JPDO) created by Congress in 2002. The JPDO mission was to develop a comprehensive plan to transform the air traffic control system by the year 2025. Six of those twenty five years or about twenty-five percent of the allotted time is gone and the U.S. still has no integrated implementation plan. The JPDO continues to be disconnected from the Air Traffic Organization (ATO) and is without the authority to make any significant moves forward. It is obvious that the ATO will have to reorganize and integrate the JPDO to try to recover the lost opportunities of the past six years. By the time you read this the ATO may have announced some of the organizational changes, but will they be the right changes and will they go far enough? I will look forward to discussing these changes in a future column; let’s hope they provide an integrated structure that can implement a highly complex program like Next Gen.
So is all lost? Maybe not. While the FAA tries to recover from the slow start and disjointed structure there are some glimmers of hope that can lead to success. The ATO’s new Chief Operating Officer (COO) is an apolitical career appointee, and he appears to have the mind set and capability to fill the leadership vacuum. Let’s hope he can create a more productive organization and encourage the reticent staff to increase the pace of Next Gen. He should present solutions to the next administrator to correct the JPDO and the Air Traffic Organization’s lack lustre performance on modernization. This is where the ATO can take a page from their European colleagues. Now is the time for the FAA to develop the planning stage that lays a foundation for the implementation of the Next Gen program. The historical strengths for the U.S. are its ability to move quickly when it chooses to implement change and the fact that the airspace in America is homogenous. With this ability to move quickly you wonder why the FAA can’t move on the necessary changes. There are some weaknesses that have been offsetting the strengths. One is the FAA’s failure to implement large scale integrated programs. The FAA’s failures have always been because of the lack of fixed requirements and integrated planning. The European Union, because of its airspace and individual sovereignty issues among member states, must plan and negotiate extensively and do not have the luxury to move forward with disconnected requirements or a disjointed program. In effect, Europe’s weakness is its strength. The timing is right to share between the two “air traffic centres of gravity,” each can share their methodology and learn from each other. This is not the time for competition; it should be the start of cooperation.

### My concern is that in their environment today, the FAA is internally focused and holding back on international efforts

One program that should be the perfect example of cooperation between the Americans and the Europeans is the Atlantic Interoperability Initiative to Reduce Emissions (AIRE). The intent of AIRE is to reduce aviation’s effect on the environment. The theory is to reduce transit time over the North Atlantic tracks and lower fuel burn. This program brings together aircraft manufacturers, airlines, industry equipment suppliers, and multiple government entities. AIRE was spearheaded by the European Commission, Eurocontrol and the FAA and it has great potential to improve oceanic efficiency, air traffic capacity, reduce environmental pollutants and create a true platform to develop interoperability for the future systems. It addresses the impact of ground delays, noise and pollution to local communities, advanced approaches such as continuous decent arrivals (CDA) and trajectory optimization in the oceanic environment. If AIRE is to move from a research and development program to operational implementation it must be well executed and have strong support from the governmental partners. My concern is that in their environment today, the FAA is internally focused and holding back on international efforts waiting to see if these cooperative programs will be supported by the next administrator. In the mean time their European partners are moving forward on the goals for capacity improvement, interoperability and good environmental policies.
As he moves from the FAA’s London office to a posting in Brussels, Christopher Barks reflects on an eventful three years in the UK, and the prospect of putting the American view across to the EU.

You know what they say about time flying. I suppose that expression holds special meaning in aviation. As I approach my third and final year as the FAA representative at the US embassy in London, I can hardly believe it is time to move on. In mid-July, I will leave London to assume the position of FAA senior representative in Brussels, coordinating policies and programs with counterparts in the EU institutions and the BeNeLux countries.

I arrived in London 10 days before the July 7, 2005 bombings in which 53 commuters were killed. What amazed me was the absolute resilience of the British people. By the end of the work day, they were back on the public transport system.

While transportation, including aviation, has continued to be dogged by security threats over the past three years, nothing can compare to the steady drubbing aviation has taken in the British press over concerns about its environmental impact. My greatest challenge has been to try to promote a harmonized, cooperative approach over unilateral measures. The US has made enormous strides in improving aviation efficiency and works closely with UK and European counterparts to share best practices and promote common approaches. The work of the CANSO Environment Working Group, on which I represent the FAA, is just one example of global cooperation. However, this message of successful cooperation is often lost on the press, which seems always to love a negative story.

During my tenure in London, it has been a privilege to engage in cooperation and information sharing with the FAA’s regulatory, ANSP, and government counterparts in the UK and northern Europe. Together, the US and Europe represent over half of the world’s international aviation, and what we do, together or separately, has a tremendous impact.

I look forward to continuing to make a small contribution to this important cooperative work when I arrive in Brussels. It is more critical than ever, as aviation policy and regulation is consolidated in Brussels, that we continue to pursue interoperability and where possible harmonized regulations and requirements, and that we share resources and best practices in addressing aviation safety and environmental challenges.
As we move past the midway point of 2008 it is clear that it may go down as a watershed year for aviation. Oil has reached triple figures, with some experts anticipating a spike which could take it to $200 a barrel. Environmental pressures have mounted, with new taxes levied in the UK and Netherlands, and politicians calling for more effective emissions trading schemes at both the EU and UN level. A credit crunch has made it very difficult for ailing airlines to agree new lines of credit. In this economic environment, airlines, fighting to stay profitable and facing these challenges, are scrutinising ANSP performance as never before. Industry watchers expect the pressure to be on ANSPs to adapt to this new reality, to seek organisational and operational efficiencies, and to deliver optimum flight profiles for aircraft operators.

CANSO members, recognising that they are facing an unprecedented business environment, responded with an EGM in March 2008, at which they unanimously approved a new programme called ‘Imagine 2010’ that puts the transformation of air navigation services at its heart. Imagine 2010 focuses CANSO activities for the next three years on three key objectives; Safety, Environment, and what CANSO refers to as ‘Business Transformation’. The three objectives encapsulate the need to deliver improved safety and traffic growth, optimum flight profiles to support the mitigation of aviation’s impact on the environment, and the structural reformation that is required to achieve the new ATM concept for the years 2020 and beyond.

…the ICAO Global Concept cannot be obtained without a co-ordinated and fundamentally ‘transformed’ approach to ATM

Out of the three Imagine 2010 programmes, ‘Business Transformation’ is the key programme for the future of ATM. But what does Business Transformation mean, how will it be achieved, and what improvements will it bring to the aviation system? Alexander ter Kuile, CANSO’s Secretary General, has been a champion of the Business Transformation objectives throughout his time at the organisation. He is clear on what the term means for ANSPs: “Business Transformation refers to the need to transition Global ANS to a whole new paradigm, institutionally, regulatory, technologically and operationally, and in terms of ANSP development.”

Ter Kuile believes that with the adoption of the Imagine 2010 project, CANSO members have collectively agreed to drive the changes that need to be enacted across the board to achieve the reform to the system. “Those that lead the way on delivering the ATM system of the future will prosper. That is why members have tasked CANSO with co-ordination of the Business Transformation programme.”

Fuel prices are up 45% compared with a year ago, and that’s big news… it will kill some airlines...

— Andrew Harrison, Easyjet CEO
**The Four Key Elements of Business Transformation**

**Institutional change**

It is clear that a future ATM environment requires a modern view of the institutional arrangements on which today’s ATM is built. These new arrangements range from some of the legal basis on which ATM depends, to the very mindset of State authorities towards a global systems view. Policy makers need to view aviation from a pure systems approach and not from a narrow and outdated domestic outlook. The whole culture at State level needs to change.

CANSO members will develop views on best practice in the institutional design of ATM (meaning what State functions and powers must be in place at a national, regional and global level, and with what powers) to be able to support a future network-centric ATM system.

**Regulatory reform**

Another key aspect of BT is to support states in their adoption of the most appropriate regulations to achieve a harmonised and optimised performance of ANS. CANSO, together with its fellow international associations, has developed a position on “better regulation” which is a view on how States should go about drafting and consulting on new performance-based regulations.

CANSO hopes to identify what ANS regulations are most effective best practice and should be adopted worldwide. A key element in this work will be to impress on States that they need to incentivise system performance to focus on service delivery instead of regulatory compliance, which often results from the current prescriptive regulations for ATM.

**ANSP development**

CANSO members fully recognise that they need to be part of the change management process, and with the adoption of the Business Transformation programme the ANSPs have agreed to intensify their efforts to co-operate on creating a best practice management handbook for ANSPs. This will range from the best possible governance structure to corporate culture, training, finance, management procedures etc. The aim will be to give ANSPs a culture of innovation and performance improvement, with a focus on delivering value.

**The technological & operational revolution**

Clearly one of the most important aspects of Business Transformation will be to support the ATM community in the transition to new generation ATM systems and the new procedures that are part of the future operational concept, such as Next Gen and SESAR.

CANSO members recognise that it is only through intense and committed co-operation in the operational procedures and technology field that they can deliver the seamless airspace that is foreseen in the ICAO global concept.

Following the separation of regulation and service provision, CANSO unites all operational players of the ATM community – ANSPs, airlines, technology providers, ATCOs and engineers – to jointly agree on the global standards and procedures that a future system needs.

**CANSO’s plan of action**

To deliver the BT programme CANSO has created a new position of Director of Business Transformation. Gudrun Held, of DFS, has been seconded to work for CANSO exclusively on this issue. Within the CANSO Secretariat Gudrun will be responsible for the planning and execution of the Business Transformation programme, both globally and at a regional level, since Business Transition contains generic global elements that need to be addressed in addition to more specific activities that cater to the regional needs of the various continents. Gudrun will be supported by various workgroups that are dedicated to developing clear visions on the future institutional, regulatory, ANSP and tech/ops needs of the ATM system. Currently the Business Transformation programme foresees a series of global and regional workshops that culminate in a Business Transformation conference to which all stakeholders will be invited.

“As the global voice of ATM, CANSO has to view Business Transformation from a global perspective” says Gudrun. “We have to develop policies that reflect and meet the specific demands of a particular region. Thinking globally and acting regionally is the principle on which CANSO’s Business Transformation work programme will be founded.”

Gudrun has developed a ‘Transformation Map’ (see right) which sets out the four key BT elements against a timescale that goes beyond 2020. The example shown is for Europe, and already contains some examples of the milestones which need to be reached. The challenge will be to populate each segment with deliverables, not just for Europe, but for ATM worldwide.

“The key to success is and will be the continuous and committed involvement of ANSPs, starting from their CEOs and including all employees” adds Gudrun, but she remains very optimistic that the required commitment exists. “The fact that this BT project has been approved unanimously by all 84 members of CANSO shows how dedicated they are to its delivery” she says. “CANSO cannot change the ATM world on its own, but the commitment of its members to leading the way for change cannot be questioned.”
Gudrun Held’s Business Transformation principles:

- ‘Business’ is not a synonym for “commercial business”
- ‘Business’ describes how we work, and in what kind of framework we operate
- ‘Transformation’ in the true sense of the word means, if the environment in which we operate changes, what does this mean for us?
- ‘Environment’ means everybody and everything which influences the way we work and which causes us to act or react

The key to success is and will be the continuous and committed involvement of ANSPs

Building the future

Today’s combination of pressures facing aviation is starting to create fundamental changes in the makeup of the industry. Old certainties and practices will be swept away. ANSPs may not be as much in the commercial firing line as their colleagues in the airlines and airports, but they have just as much responsibility to lead the transformation of the industry so that it can continue to transform the lives of millions of people who have never the chance to fly before. Safety, capacity, environment, costs – all separate challenges with interconnected solutions. CANSO members know that only through a concerted and co-ordinated response will ANSPs be able to play their part in delivering those solutions. They also know that transforming the way the aviation system works will not happen unless they are equally committed to transforming themselves. It is a challenge that will test CANSO’s new resources and member commitment to the full, but the prize is considerable. “We all know what the future air navigation system could look like, but without CANSO members leading the way, it cannot happen” comments ter Kuile. “But we must build on strong fundamentals, and we are putting in the concrete foundations which will enable us to build the ATM system of the future.” That system will not be built in a day, but with CANSO members in the driving seat it looks like construction has commenced.

Example of a transformation map for European ATM
What are the key ATM issues that airlines in the Asia-Pacific Region would like to see addressed?

The objectives of the ANSPs stem directly from ICAO and centre on providing a safe, orderly and expeditious service. Airlines also want a safe, orderly and expeditious service, at a reasonable cost, so we share a common goal with the ANSPs.

Generally speaking the provision of ATM in the Asia-Pacific Region is safe; however in several areas it is far from orderly or expeditious. The reasons for this lack of “efficiency” are related to both the competency of the air traffic controllers and the robustness and level of sophistication of the technical facilities.

The Asia-Pacific Region is characterised by a wide disparity of ATM service provision – from leading edge to very basic. An example of the basic level would be a location where frequent communication outages may see aircraft crossing an entire FIR without any air-ground communication and when there is communication it is not easy to understand the air traffic controllers.

It is obvious that a situation like this sharpens the focus on basic safety rather than efficiency.

The key issues airlines would like to see addressed are, firstly, the provision of a safe service – to achieve this each ANSP must have a minimum level of air traffic controller competence and technical integrity. We are unfortunately not totally there yet in this Region.

Secondly, airlines want to see some real efforts towards providing an efficient service. Again, the Region is characterised by a wide disparity with some ANSPs demonstrating world’s best practice and others lagging well behind. To airlines, an efficient service means the consistent application of ICAO minimum separation standards – for example, if the ICAO minimum separation on final approach for a certain classification of aircraft is 4NM then that’s what airlines expect, not 7NM or greater as happens at some locations. Airlines want ANSPs to actively strive to meet the ICAO minima requires a robust ANSP infrastructure – both human and technical.

Efficiency also means straightening routes, streamlining procedures etc. Again there is much work that can be done in this area. By simply straightening (i.e. realigning) the routes between Singapore and Hong Kong and between Singapore and Taipei an average of 5 minutes flying time per flight could be saved. When you consider the density of operations on both these trunk routes the size and importance of the potential savings become obvious.

Why do you view efficiency as second only to safety and why do you place pressure on ANSPs to be efficient?

There are three reasons. The first is the basic business imperative. Airlines want to stay in business and the bottom line (no pun intended) is that the less fuel that is burnt the lower the operating expenses will be. This is, however, far more significant than just “helping airlines remain profitable”. Aviation is a major contributor to local, regional and global economic stability and growth. With the current record fuel prices,
ensuring efficiency in this key economic sector becomes ever more important. ANSPs have a key role to play here. The second reason is the environment – a whole subject in itself. Suffice it to say that aviation is coming under increasing pressure to do more to protect the environment and ANSPs are going to have to play a major part in this. Quite simply they hold the key to a major area of emissions abatement.

The third reason is because we are customers. We pay a lot for ANSP services – the Cathay Pacific budget this year just for ATC Charges is around USD300M. Anybody who pays for a service has a right to expect that the service will be delivered according to their needs and airlines’ needs are clearly defined in the ICAO provisions. Yet with some ANSPs we pay for little or no service. To offer an analogy, we order a service by submitting a flight plan. We therefore have a legitimate expectation that the service will be delivered in accordance with the ICAO provisions. When it’s not it is essentially no different to asking a builder to build you a bathroom but he goes ahead and builds you a kitchen – would you pay? Of course not, but airlines have to pay regardless of the type and quality of service delivery. Even if the service is unsafe we still pay. Does this seem right? Only one ANSP has ever waived its charges for non-delivery of service.

In summary, the key issues that we would like to see addressed are the maintenance of a safe service delivery and far more emphasis on an efficient service delivery.

What are the airlines doing themselves to tackle these issues? What do you want to see ANSPs doing about them?

In order to address these issues (safety and efficiency) we work with IATA, ICAO and individual ANSPs very closely. Most issues cross more than one FIR and therefore ICAO leadership is essential. Most ANSPs are prepared to look at issues within their own airspace but (for generally understandable reasons) not much interested in what happens elsewhere. What we would seek from ANSPs is more willingness to take onboard the ICAO initiatives and work much faster to implement them. Currently we work in terms of many years to implement major, and sometimes even minor initiatives. As an example, the formation of the FANS Central Reporting Agency for the Bay of Bengal has been underway for eleven years with hopefully an end nearly in sight. Contrast that relatively minor (but important) undertaking with the revised route structure from Asia to Europe that was implemented under the EMARSSH Project – a truly massive project that was achieved in around eighteen months with great co-operation from all concerned. Unfortunately that speed is a rarity. We all must work faster.

Is the institutional and regulatory environment ready to cope with the expected growth in aviation in the Asia-Pacific region? If not, what needs to be done?

Yes and No. Again the wide disparity of sophistication in ANSPs means that in some States the institutional and regulatory framework exists and in others a lot of work remains. This is difficult work too as the less sophisticated ANSPs generally come from the lesser developed economies where more basic issues usually take the spotlight. I often wonder what
I would do if faced with a choice between funding education and health care or modernizing a civil aviation infrastructure – not an easy issue. However, this is an area where IATA can help and there are many forms of assistance and mechanisms available.

There is also something that can be done which we are currently not doing in the Asia-Pacific Region. This is where the vision, shared by CANSO and IATA, of a unified airspace and unified service provision really does make sense. It is entirely feasible and possible for even the least developed economies to arrange for the provision of ATM by an external party. This type of service provision over the High Seas is relatively straightforward. It is even possible over sovereign territory and is fully compliant with ICAO provisions.

Why not then, for example, have a single service provider for the Bay of Bengal or the South China Sea or any other area where there is a disparity of service provision?

What can CANSO achieve for ANSPs and airlines in Asia-Pacific? What role should we be playing in the region?

CANSO has the potential to represent and support ANSPs in the same manner that IATA represents and supports airlines. It has been a long time coming but with the recent establishment of the CANSO Regional Office in Singapore I hope we are on the verge of seeing CANSO become a lot more visible, involved and effective in the Region.

Apart from being a far more efficient way of interfacing with the customers on cross-FIR issues, it must surely make sense for the individual ANSPs, in exactly the same way that airlines benefit from collective representation by IATA, which simply provides resources, knowledge and skills that smaller airlines cannot sustain.

What benefits do you think will accrue from the CANSO-IATA ADS-B supporting project which will shortly launch in the region?

One of the keys to dramatically improving efficiency in the Region is the need to implement a suitable form of surveillance. The fact is that the only real way to manage airspace efficiently is to provide air traffic controllers with a cross-FIR networked picture of the traffic – therefore a need for some form of surveillance. ADS-B is a very promising cost-effective surveillance technology that has the potential to revolutionise the way ATM is delivered.

The benefits are simple – the ability to provide an efficient service to ICAO minimum separation standards at a relatively low cost.

The project is also very important in that it showcases the service providers and the customers working jointly. Going back to the bathroom example, the best results always come from a joint (i.e. supplier, customer) design process.
CANSO-IATA push for implementation of ADS-B in South China Sea

With the pressure on aviation performance and capacity in the Asia-Pacific region increasing as demand for air transport continues to rise, CANSO has responded by launching a new Asia-Pacific Regional Office to help co-ordinate the ANSP response to this challenge. The first major programme the office will deliver is a joint project with IATA to promote, facilitate and endorse the implementation of ADS-B and sharing of ADS-B data between ANSPs within the Asia/Pacific region.

"Initial studies have indicated that the South China Sea region could benefit in the short term from enhanced efficiencies supported by ADS-B surveillance" says CANSO’s new Director of Asia-Pacific affairs, Hai Eng Chiang. "Based on a sample of traffic figures through the South China Sea during September 2007, a 6% reduction in fuel consumption would equate to an overall saving of $1 million USD per month. For every reduction in fuel consumption, there is also the corresponding reduction in emission of pollutants."

Data sharing agreements offer improved system safety through the provision of level/route adherence monitoring and reduced ATC Coordination errors across common airspace boundaries. Furthermore the implementation of Transfer of Control agreements will enable “seamless” separations between FIRs.

In 2002, ICAO designated ADS-B as a “Key Priority” for implementation within the Asia/Pacific Region. IATA Policy is that ADS-B “is the preferred surveillance technology to replace radar for the air transport industry”. Airlines can expect a return on their equipment investment in terms of safety, efficiency and the increase of airspace capacity. Currently in excess of 40% of international aircraft are equipped with ADS-B.

In September 2007, following a proposal from Indonesia, Malaysia, Singapore and Thailand, ICAO established a Working Group for a sub-regional cooperation programme in South-East Asia for the implementation of ADS-B and related data-sharing arrangements across FIR boundaries. ICAO agreed that the South East Asia Sub-regional ADS-B implementation Working Group would be established “to develop the terms of co-operation and an implementation plan for near-term ADS-B applications in the sub-region”. States involved in the Working Group include Australia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, with IATA and CANSO as observers.

The co-ordinated implementation of ADS-B in this area would provide more efficient routing and operations as well as increased airspace capacity at a time when forecast traffic levels are likely to exceed existing ATS system capacity.

Objectives of the joint project

In view of the potential benefits from ADS-B implementation in the region, CANSO and IATA will enter into a joint co-operative partnership.

The objective of the joint CANSO - IATA co-operation is to add value to the work of ICAO (and agreed third parties) by working with stakeholders to:

- Identify priority air routes and areas for ADS-B deployment;
- Identify supporting infrastructure and other capabilities required to facilitate radar like separation and provide advice to ensure synergy with “end to end” planning;
- Advise ANSPs and facilitate a collaboration of activities;
- Assist in the development of ADS-B policy, guidance material and service performance standards, and communicate such material to relevant stakeholders where necessary;
- Assist in the development of standards and practical requirements, as a basis for system acquisition/Request For Tender.
Promote and facilitate ADS-B surveillance data sharing arrangements among ANSPs, including helping to address potential data risk and legal liability management issues;

Monitor, and where appropriate contribute to, the development of ICAO’s position on ADS-B certification;

Promote harmonisation of the Certification process amongst ANSPs by advising what other ANSPs have done to achieve operational certification;

Advise on the risk/benefit of various ADS-B service acquisition options to States;

Share the cost / benefit cases for ADS-B against both non-radar airspace and SSR.

Ensure appropriate consultation with airspace users to enable optimisation of operational benefits.

Working together

CANSO’s Secretary General Alexander ter Kuile is clear that the Organisation has entered a new phase with its increased visibility in the Asia-Pacific region: “This is a great example of how CANSO will be seeking to create value for our members and drive improved performance in the ATM system,” he says. “CANSO will be working together with our members and stakeholder groups to derive real operational change.”

“Under this framework, CANSO and IATA will co-operate closely in the ICAO regional ADS-B planning and implementation process through active participation in relevant meetings such as those of the ICAO ADS-B Study and Implementation Task Force and its South East Asia Sub-regional ADS-B implementation Working Group,” agrees Chiang. “A challenge for the partnership will be to keep up the momentum so that the Working Group can establish, monitor and deliver concrete outcomes according to agreed timelines.”

ICAO has undertaken a number of ADS-B planning and implementation activities over the last 5 years. However, there is little if any operational benefit currently being delivered as a result of all this activity. As the ADS-B sites and the pace of ADS-B implementation are ultimately decided by the States/ANSPs under the auspices of ICAO, the role of CANSO and IATA would be to promote, co-ordinate and help drive its implementation. This joint project aims to rectify that situation by focusing on the delivery of operational benefits as soon as possible. It will be a tough target for CANSO to meet, but if it succeeds, then the benefit to the organisation, as well as to aviation in the Asia-Pacific region, will be immense.

Tech Point – ADS-B

ADS-B is a low-cost, high-resolution surveillance capability that works through the broadcast of aircraft position, identity, altitude and velocity information – as derived from the onboard GPS and avionic suite.

The installation of ADS-B ground stations and an associated ADS-B network can represent significant savings against enroute radar. On-going costs can also be much reduced. A recent report published by the Australian Department of Transport and Regional Services indicated that ADS-B ground stations can be bought and commissioned for approximately one-tenth of the cost of enroute radar.

Direct operational benefits through ADS-B data sharing among ANSPs and provision of surveillance coverage with supporting ATM infrastructure over existing radar gaps may include reducing separation minima, leading to an increase in airspace capacity, more optimal routes, and less restrictions at FIR boundaries; more optimum flight levels, reducing fuel burn; enhanced safety through improved situational awareness, and improved environmental performance from reduced track mileage.
9/10ths of the law: Sovereignty and ownership of the skies

With airlines calling ever more insistently for ATM to become more efficient, the finger of blame is increasingly being pointed at the complex arrangement of national airspace boundaries in the sky. Inefficiencies are said to result from a fragmented network hampered by individual state control – and the reason given is usually that states are unwilling to give up their ‘sovereignty’ over their airspace.

Reducing the fragmentation of airspace is increasingly being seen as the answer to reducing the environmental impact of air transport, improving capacity, and reducing delays. But, despite many of the technological barriers to more efficient routes having been overcome, progress has remained slow. Undoubtedly, this is because the division of air traffic control into FIRs under individual national control has prevented a redistribution of airspace along more efficient lines. This ‘challenge of sovereignty’ will have to be tackled if we are to successfully improve ATM.

To begin with, it is important to note that although ‘Sovereignty of the State’ is a fundamental principle of international law, the term is usually understood and interpreted in a political sense, with different applications depending on context and intention. The notion of ‘sovereignty’ is dynamic, and evolves on the basis of the balance of national interest.

In respect of aviation, sovereignty refers to the ownership of airspace; in other words, the exclusive competence of States to exercise their legislative, administrative and judicial powers within their national airspace. However, air navigation services require a global, seamless, delivery-focused model, based on performance rather than national borders. For this to materialise, all stakeholders need to reach a fully developed understanding of the meaning of national sovereignty; consistent with present and future political, economic and social realities.

In short, states need to recognise that ‘pure’ sovereign control of their notional airspace might not be in their overall national interest, nor is there any legal impediment to creating a more flexible interpretation of the concept of sovereignty.

A new approach to sovereignty

Since the traditional approach to airspace sovereignty is currently being regarded as a significant block to airspace reform, CANSO’s Legal and Policy Committee was charged with investigating the issue. Their report identified six key points that needed to be recognised and acted upon if a more flexible interpretation of sovereignty was to be implemented.

1. Sovereignty is not incompatible with the delivery of cross-border service provision
2. States’ obligations under Article 28 of the Chicago Convention are regulatory in nature
3. Delegation of services is an act of sovereignty
4. Liability considerations must be taken into account
5. Incentives to ensure performance should be introduced
6. National security and military concerns must be addressed

Sovereignty is not incompatible with the delivery of cross-border service provision.

CANSO’s global vision for the future of air navigation services recognises that sovereignty remains a fundamental, valid and legitimate principle. It also supports the view that the delivery of cross-border service provision is not incompatible with the notion of States’ sovereignty. However, it is true to say that a number of concessions from the notion of ‘pure’ sovereignty, as it might be understood in a political sense, will be needed if airspace design is to become more efficient.

States’ obligations under Article 28 of the Chicago Convention are regulatory in nature, and do not force states to provide ANS.

National sovereignty is closely connected to the definition of States’ obligations under Article 28 of the Chicago Convention. Crucially, the text and spirit of Article 28 does not oblige States to provide air navigation services over their territory themselves. Article 28 prescribes that, when and where States elect to provide facilities and services to support international air navigation, these facilities and services must comply with ICAO’s Standards and Recommended Practices. States’ responsibilities are essentially of a regulatory and supervisory nature: States are required to take appropriate measures to ensure compliance in respect of safety and operational efficiency.

Delegation of services is an act of sovereignty

National sovereignty cannot be delegated. But the responsibility for the performance of functional responsibilities, such as the
provision of air navigation services, can be transferred to third parties. States retain full freedom to designate a third party service provider, be it a national or foreign entity. A delegation to a foreign organisation is not an abandonment of sovereignty; sovereign competences are not impacted. On the contrary, it is an act of exercise of sovereignty. The delegating State prescribes the conditions under which the delegation is agreed, and the delegation can be reverted at any time. The delegation of the provision of air navigation services then becomes a political decision, rather than a legal issue. The political decision has to be weighed on the basis of the national interest. The emotional need to ‘protect’ one’s airspace, and the practical challenges of relinquishing total control while retaining overall supervision, must be balanced against the prospects for better airspace design, permitting greater capacity, safety, punctuality, and environmental performance.

Liability considerations

When delegating the functional responsibility for service provision to a foreign entity, the delegating State retains a residual liability under Article 28 of the Chicago Convention. However, that liability is limited to the obligation to ensure that the service delivery activity is properly regulated, the service provider duly certified, and that adequate and effective supervision is exercised. Therefore there is no impediment in the Chicago Convention to states delegating air navigation services. Ensuring performance

The regulatory framework itself establishes overall safety and efficiency standards, the compliance with which is monitored through supervisory measures. Performance is measured against safety, operational efficiency, cost-effectiveness and environmental criteria. Incentives to improve performance can be introduced by a variety of means. The regulatory framework itself establishes overall standards, for example on safety, efficiency and environment, the compliance with which is monitored through supervisory measures. In addition, delegation arrangements based on time limited contractual Service Level Agreements, which include clear Key Performance Indicators, constitute a powerful incentive to perform. Failure to meet the performance criteria will result in a loss of the State mandate.

Addressing national security and military concerns

One central preoccupation of States in respect of cross border delegation of services relates to the need to ensure permanent monitoring of national airspace for national security purposes, and to be able to respond to security or military threats at any time. The civil ANS provider must be able to support the appropriate military authorities in this task. The security and military risks are primarily mitigated through solid and comprehensive co-ordination procedures agreed between military authorities and the ANS provider. Further, delegation agreements which include clear KPIs in respect of civil-military co-ordination also act as incentives for the service provider. Finally, delegation agreements will always include a provision reserving the right for the delegating State to withdraw the delegation at any time with immediate effect in the event of a crisis or serious threat to national security.

Other network industries, such as telecoms and energy provide numerous examples demonstrating that effective measures can be implemented to reassure States that their military and security interests are not compromised through cross-border service delivery arrangements.

Mature understanding

Examples of successful cross-border service provision exist in all regions of the world e.g. mutual delegation between the USA and Canada, delegation from Tonga & Samoa to New Zealand, various delegations in Europe from and to Finland, France, Norway, Sweden and Switzerland and so on. A mature understanding of national sovereignty, aligned with the political, economic and social realities of the present and future global environment, will significantly improve the performance (safety, operational efficiency, cost-effectiveness and environment) of the ANS system worldwide.
Is a more flexible approach to sovereignty meaningless without ANSPs also adopting a more performance-based mindset?

You are right to assume that a more flexible approach to sovereignty is meaningless without the ANSPs also adopting a more performance-based mindset, if you understand that such a mindset would lead them to redefine their respective geographical markets if this can serve the overall performance of the system. It is clear that it is not only the States who are hiding behind the notion of sovereignty, but also the ANSPs who often find it quite convenient that their parent authorities take a very conservative attitude in this matter.

What does CANSO need to do to help make our vision of a flexible interpretation of sovereignty happen?

CANSO needs to market the message through all possible channels available, and at all levels. Written communications such as this article in ‘Airspace’ will be very useful. Statements in ICAO, Eurocontrol and EC meetings will also serve the purpose. What is important is to bring the message beyond the internal circle of the converted.

Do you think the leadership on this issue will come from ICAO, or is it more likely to emerge through bilateral agreements or initiatives such as Single European Sky?

Leadership is likely to come from the European institutions, since they have more teeth than ICAO and have already shown more concrete intentions to make it happen. But in an activity where the institutional framework has traditionally followed practical developments rather than shaped the industry, it is stakeholders such as the ANSPs and the airlines who have the greatest potential to force changes to happen. But for this to happen, ANSPs must be genuinely convinced.

Is it going to take a crisis in the aviation system before politicians are prepared to adopt a more flexible interpretation of airspace sovereignty? Or are you optimistic that they will see the light before a crisis occurs?

Strong pressure will be required, but not necessarily in the form of a crisis. I personally believe that the first steps will take the form of co-operative joint arrangements, rather than hard competition, because such arrangements allow states to take measures to take a more flexible approach to sovereignty, at a relatively low cost.
How do you think the aviation and environment debate is going at the moment?

I think it is going in the right direction. We are not just responding defensively to criticism, but we are now proposing solutions and positioning ourselves as a responsible industry. We’ve set ourselves specific goals and targets.

But do you think these messages are getting through?

It depends on where the critics are from. In the UK and some other parts of Northern Europe we have not yet got through to them, but critics in other parts of the world – yes I believe we are addressing their concerns. The UK has made aviation an ‘easy target’ and whatever we say it will remain so, but they are attacking us for what we represent or symbolize, not for what we are – so as an industry our response should not focus on the UK approach. We need to be honest and address the question of our growth, and the fact that we are growing because the demand is there.

Are you optimistic about the industry’s response to the environmental challenge?

Yes, I’m optimistic because we have realised the challenges we face and how difficult those challenges are. Achieving carbon neutral growth will not be easy. But we have taken a first step – and we needed a good target – a step towards a completely carbon neutral industry in the long run.

Where do you think the main area of progress will be?

I think that the biggest strides could well be in fuel. I believe that 2nd and 3rd generation biofuels could be an important part towards a medium term solution. But one of the challenges is that we do not yet have a homogenous position on the timeframe for these targets.

Why is that the case? Do you think that some parts of the world are slower to recognise the environmental challenge?

Well we live in different societies around the world. For example we cannot expect aviation in Africa not to be affected by social and economic pressures. The answer is to find global solutions to avoid discrepancies that penalise one sector over another. And within aviation we must find a solution that would prevent big players from getting a competitive advantage, just because they are based in developing countries.

What should be the next steps for ATAG and the enviro.aero campaign?

We need to build on April’s very successful Environmental Summit and Summit Declaration by turning this into harmonised concrete targets and timeframes, and to put these into action. We must be in step with the new post-Kyoto/Bali discussions on a global emissions framework. For enviro.aero, I think it is very important that we adapt our communications with the evolution of the action plan, and to try to establish a dialogue with the NGO community.
What should be the role of ATM in the environment debate? What part should ANSPs (and CANSO) be playing?

It is pleasing to note that the ATM sector is part of the debate and keen to get involved in the global effort. CANSO’s involvement in that has been extremely positive. ANSPs have a difficulty because although they can do some things, they need the support of their governments to do more. At least half – probably more – of the infrastructure improvements lie in the hands of governments. To make these improvements depends on political will, and clear political action is needed. Other players need to support ANSPs to influence their governments to take this action.

Do you think other aviation sectors could do more to help ANSPs in this?

Well it is important that we speak with one voice, as this ensures a unified message and helps to get our messages across. We could probably do even more lobbying. We have a framework now, because the Summit Declaration made the onus on governments very clear.

Do you have a final message for CANSO members regarding the work of ATAG?

ATAG is a great instrument, and we are very pleased to have CANSO’s support. We act and interact together and work in partnership with others, and no other aviation group does that on such a global scale. I was especially pleased to hear Alexander’s comments in the first session of the Environment Summit; his views are very much in tune with what ATAG is all about. I have had a wonderful time at ATAG and working with the enviro.aero group, and I am delighted that we have Paul Steele taking over. He is a great guy with great experience and I’m sure he will look forward to CANSO’s continued support.
SITA has been delivering IT applications and services to airlines, air navigation service providers and airports globally for almost 60 years. That’s why SITA is the technology partner of choice for the community, helping CANSO to realize the vision of a global seamless air navigation system.

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The Canadian ANS is the second largest in the world, with pilots facing some of the harshest climate and most unforgiving geography anywhere. In such an environment, the air transportation network needs to be innovative, combining a skilled workforce with the most advanced systems available.

Together, NAV CANADA employees handle more than 8.5 million IFR flights a year and share responsibility – with NATS in the UK – for the North Atlantic, the world’s busiest oceanic airspace.

NAV CANADA was formed in 1996 with the pledge to transform the country’s ANS:

• by enhancing safety, in part through ending the inherent conflict of interest between safety regulation and service delivery;
• by modernizing the system through timely investments in technology, equipment and infrastructure;
• by dealing with understaffing, air traffic inefficiency and problems with technology project delays and cost over-runs;
• and by putting in place a strong financial foundation with a cost management focus, without taxpayer support of any kind.

**Governance and change**

In essence, NAV CANADA was the vehicle chosen by stakeholders to make the changes necessary to deal with these multiple challenges, and its governance structure was and is seen as critical to the change process.

NAV CANADA is a non-share capital corporation, financed through the public bond markets. But from a notional standpoint, the Company’s customers behave very much as shareholders. The $1.2 billion they pay every year in service charges is one measure of their investment in the Company.

By the same token, the degree to which service charges are reduced, consistent with safety and service, is a measure of their return on that investment.

The NAV CANADA Board comprises 10 appointees from the four founding members of the Company: air carriers (four members); general and business aviation (one member), for a total of five appointed by customers; as well as government (three members); and bargaining agents (two members).

There are four independent directors appointed by the Board as a whole, and the President and CEO. This Board structure ensures that no one stakeholder group has a majority, and that no single view dominates.

Furthermore, the strong customer presence on the Board has been an important factor in ensuring that the Company stays true to its original purpose.

John Crichton, NAV CANADA President and CEO, notes that the company’s customers operate in one of the most hyper-competitive industries in the world.

“I have been pointing this out in employee meetings over the last few years, while at the same time emphasizing that our status as a monopoly supplier puts even greater pressure on us to perform, because no-one likes monopolies.

ANSP customers must deal with mounting fuel costs, environmental pressures, demanding customers of their own, and an industry in the throes of transformation. Customers of all ANSPs are plainly aware of our importance to them, and they have become blunt about telling us what they expect,” Crichton says.
“They expect us to provide safe and hassle-free air traffic services today, and to take advantage of opportunities to make tomorrow’s global ANS safer, more efficient, more affordable and more environmentally friendly than ever.”

Two examples of how NAV CANADA is tackling this challenge are described in the sidebar “The Future Starts Now”.

Excellent safety track record

If the past decade is any indication, the future should be a promising one for NAV CANADA.

Since 1996, NAV CANADA has enhanced safety, with IFR-to-IFR losses of separation declining from about 1.36 per 100,000 air traffic movements, to 0.75 per 100,000 in 2007. The vast majority of these were technical infringements with no risk of collision.

Delays down, efficiency up

Over the past decade and especially in the last five years, NAV CANADA has also had some success in reducing flight delays related to the services it provides.

When its air traffic management initiatives are combined with expanded surveillance, area navigation and other initiatives such as comprehensive airspace reviews, the company estimates that the Canadian ANS is generating well over $100 million a year in fuel savings for its customers.

This amounts to an equivalent reduction in annual greenhouse gas emissions of 424,000 metric tonnes of CO₂ – the equivalent of removing 92,000 passenger vehicles from Canada’s roads and highways.

NAV CANADA has recently begun publishing performance metrics on its corporate web site, covering safety, service, air traffic trends and staffing. “Providing this information, updated monthly, fulfills a commitment to our customers and CANSO colleagues, and is an expression of our commitment to being open and transparent,” Crichton says.

Since 1996, the Company has restructured the business side of the Canadian ANS – generating hundreds of millions in cumulative savings by reducing administrative headcount, closing regional offices and re-engineering key processes.

Cost management continues through consistent control of headcount (at around 5,300 employees) and ongoing process improvement such as its recent move to regional delivery of controller and FSS training.

NAV CANADA’s efforts were rewarded in the last two years as it reduced its customer service charges on two occasions, passing along over $50 million in annual savings to its customers in the process. Since they were fully introduced in 1999, Canadian service charges have tracked well below inflation – by 16 percentage points. And they are approximately 30 per cent below the level of the air transportation tax they replaced.

Investments

While maintaining a focus on cost control, the Company has invested in system renewal from day one – more than $1.2 billion since 1996.

In addition to the recent “over the horizon” investments in surveillance and communications described in the sidebar, the Company continues to achieve significant improvements in safety and efficiency through the design and development of Air Traffic Management systems.

One example is the Extended Computer Display System (EXCDS), which is operational at more than 30 towers, flight service stations and area control centres across Canada and internationally.

Technology Solution

EXCDS is also operational at four towers in the UK, mostly recently London-Heathrow, and the new control tower built by Naviair in Copenhagen, “as a result of our efforts to offer our ANSP colleagues access to this innovative technology solution,” says Crichton.

He describes EXCDS as a proven ‘game changer’, eliminating old paper-based processes, reducing the level of voice
The Future Starts Now

For NAV CANADA, the future starts now. New initiatives are charting its direction as owner and operator of Canada’s Civil Air Navigation Service – new initiatives that it hopes will help give its customers that extra edge they are always seeking.

ADS-B Deployment

Later this year, ADS-B will go operational over Hudson Bay in the Canadian North, bringing surveillance coverage for the first time to 250,000 square nautical miles of airspace. Tens of thousands of flights a year use this airspace, which is part of the high-traffic corridor linking North America with destinations in Europe and Asia.

Based on more flexible and efficient routing, total fuel savings are estimated at $10 million a year once most aircraft are ADS-B equipped.

Multilateration

Also going operational in 2008 are two Multilateration (MLAT) systems in British Columbia, providing radar-like surveillance coverage in two high-volume traffic areas.

Says President and CEO John Crichton: “ADS-B and MLAT are good examples of next-generation surveillance technology. They represent an important juncture in the Company’s ongoing efforts to modernize the Canadian ANS, and will be a key.

Communications, improving flight data accuracy and reducing costs in the process. “As NATS and Naviair have recognized and taken advantage of these benefits – avoiding their own duplicate development costs in the process – so we hope that other ANSPs will also take advantage of this proven, scalable tower/terminal flight data system.”

CAATS

Also close to full deployment across the country is the Canadian Automated Air Traffic System (CAATS). The system is now operational at area control centres in Moncton, Gander, Winnipeg and Montreal, with the latest Operational Readiness Demonstration (ORD) now fully underway in Toronto.

CAATS is the Company’s most complex modernization project. Once fully operational, it will be the ANS backbone flight-data processing system for a generation, offering key safety, efficiency and time-saving improvements.

Economic Horizon

Says Crichton: “Systems like CAATS are helping to prepare NAV CANADA for a future in which customers are even more demanding than they are today – a future in which slower growth, higher energy costs, environmental pressures and technological change are only some of the challenges we will all likely face.

“Being ready for that kind of future is especially important as the world economy once again enters a period of uncertainty, with potential negative impacts on the aviation business.”

Despite recent healthy air traffic growth, past experience has taught NAV CANADA that it needs to be ready to respond to any negative impacts should the need arise. For that reason, the Company is taking a cautious approach in its budgeting process, keeping the lid on costs and going forward with more conservative growth assumptions.

But NAV CANADA’s CEO remains optimistic, due to the Company’s strength “on the ground”, so to speak. “We have the kind of people that most other Companies would give their eye teeth to be able to hire, train and develop. Our people are the key to our success. We have the people to take this Company into a future that seems to be both uncertain and full of promise at the same time.

“I am confident in their ability to face challenges as they arise, while doing what they have always done – meet and exceed our customer’s competitive expectations, no matter what.”

ADS-B is more accurate and reliable than conventional radar and, at about one-tenth the price, it is less costly to procure, operate and maintain. That makes ADS-B a modern, cost-effective way to provide the considerable benefits of surveillance coverage.

In 2007, NAV CANADA installed five ADS-B ground stations and three high-powered VHF transceivers along the Hudson Bay shoreline. The ground stations will relay flight data to controllers from aircraft that are ADS-B equipped. The transceivers will ensure direct voice communications (DCPC) between controllers and pilots.

Boosting efficiency still more across the region, NAV CANADA has also installed 15 other VHF transceivers in the North, expanding DCPC capabilities throughout the entire Canadian land mass and adjacent seas.
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 80% 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.

JOINING CANSO
The membership of CANSO is drawn from a wide range of ANSPs and companies involved with the delivery of air traffic services. Membership offers them the chance to network formally and informally, exchange best practice, and contribute to CANSO Workgroups, delivering the standards and policies that will drive the future development of Air Navigation Services.

Full (ANSP) Membership is open to all ANSPs, regardless of whether or not they are autonomous of their government. Associate members can apply for either Gold or Silver status, which brings differing levels of event and advertising discounts and access to CANSO Workgroups. All members get a free listing in the CANSO Yearbook, and have access to the Global ATM Net, an extranet that is the hub of CANSO’s activities, and home to an extensive member database.

For further information on joining CANSO, please contact Marc-Peter Pijper on +31 (0)23 568 5380 or email marcpeter.pijper@canso.org

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Who We Are and What We Do

Red area illustrates airspace controlled by CANSO members
Proven Multilateration and ADS-B Surveillance Solutions


Era was selected in the vast majority of competitive procurements worldwide in the past year for multilateration and ADS-B solutions.

Era successfully delivered over 20 systems on 5 continents in the past year for the world’s leading air traffic control and airport operations organizations.

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Air traffic demand will more than double in the near future, which makes the need for a new Air Traffic Management system more critical than ever. The time to act is now. At Boeing, we’re already working with aviation leaders around the world to create a network enabled system that is higher capacity, safer, more secure and far more efficient. Pilots, controllers, airlines and security personnel will exploit precise information made available through an integrated network to make rapid decisions with high-performance results. It’s the kind of solution you expect from a leader in network-centric operations. It’s the kind of solution you expect from Boeing.