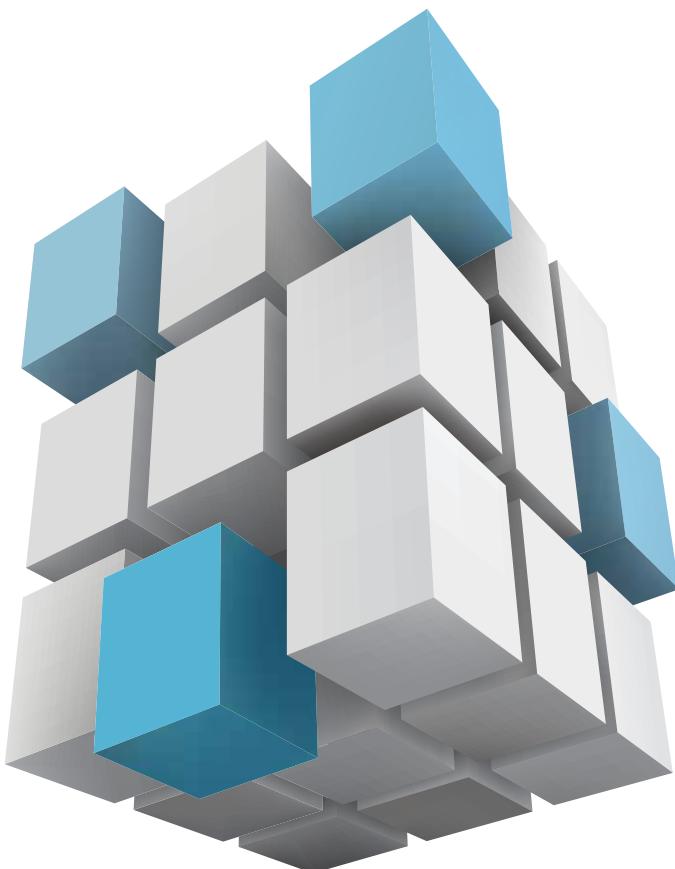




INTERNATIONAL CIVIL AVIATION ORGANIZATION



GLOBAL ATM OPERATIONAL IMPROVEMENTS

ICAO's Block Upgrades
chart a course to a new
era of harmonization

WHAT STATES ARE SAYING:
BRAZIL, CANADA, CHINA

ACI, CANSO AND IATA
ON POLICY PRIORITIES

MARION BLAKELY:
INDUSTRY PERSPECTIVES

CHRISTIAN SCHLEIFER-HEINGÄRTNER:
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STATE PROFILE SPECIAL FEATURE:
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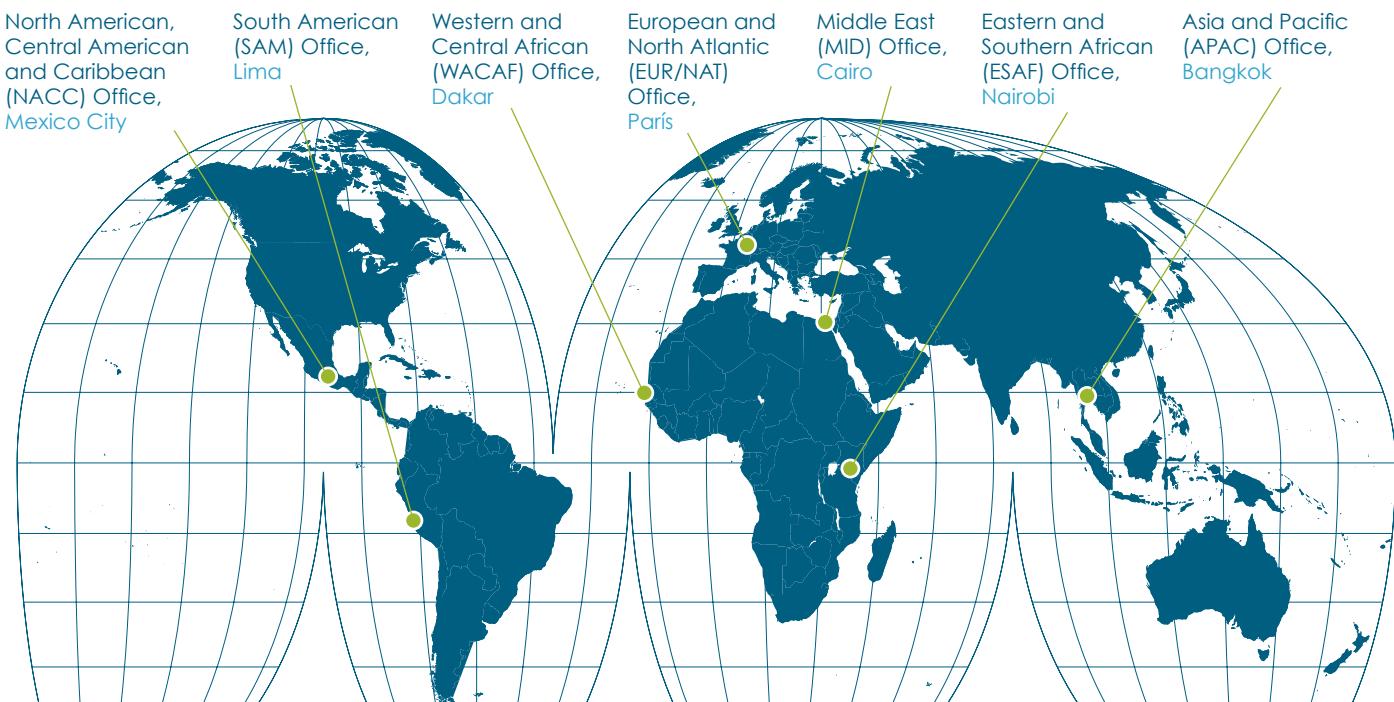
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Roberto Kobeh González, President of the Council of ICAO

CONSENSUS-DRIVEN PROGRESS



The Twelfth ICAO Air Navigation Conference (AN-Conf/12) is aviation's next critical milestone as our community seeks to realize the vision of an interoperable, seamless and global air traffic management system.

At AN-Conf/10, in 1991, we agreed to move from a ground-based to a largely satellite-based air navigation system. At AN-Conf/11, in 2003, we endorsed a new global air traffic management operational concept.

AN-Conf/12 seeks endorsement of a new strategy supporting these previous advances, reflected in ICAO's revised Global Air Navigation Plan (Global Plan). The proposed revision of this document builds on the achievements of its earlier editions by formalizing clear and consensus-driven operational benefits under what has been termed the 'Block Upgrade' methodology.

Recognizing the diverse traffic densities and operational challenges that characterize the global ATM landscape, ICAO has developed the new Block Upgrades based on a systems-engineering approach. It organizes the sector-agreed target operational benefits on the basis of their projected availability timeframes (Blocks) as well as the precise technologies and procedures needed to support and realize each (Modules).

Many of the technologies and procedures needed to realize Block 0 benefits are already being utilized in the world's high density airspace environments. Those States with lower-density airspace at present, but which project significant growth and capacity demand over the coming decades, will now be able to look to Block 0 and select the appropriate Modules needed to manage their growth, safely and efficiently. States not expecting as much growth will have the flexibility to wait until their operational profile evolves before pursuing similar modernization.

This type of flexible system makes it much simpler for States to review their specific operational characteristics and anticipate which precise technologies and procedures they will need to set in place.

The need for this type of strategic approach was recognized by the 37th Session of the ICAO Assembly in 2010, which directed the Organization to focus on the global needs for airspace interoperability, while maintaining its emphasis on safety and meeting capacity demands.

In the ensuing period, specifications of the Block Upgrade concept have been circulated among States for comment and were then reviewed at the Global Air Navigation Industry Symposium in 2011. They were also the subject of international workshops and presentations in every ICAO region, where useful feedback was garnered and a number of specifications were modified and improved.

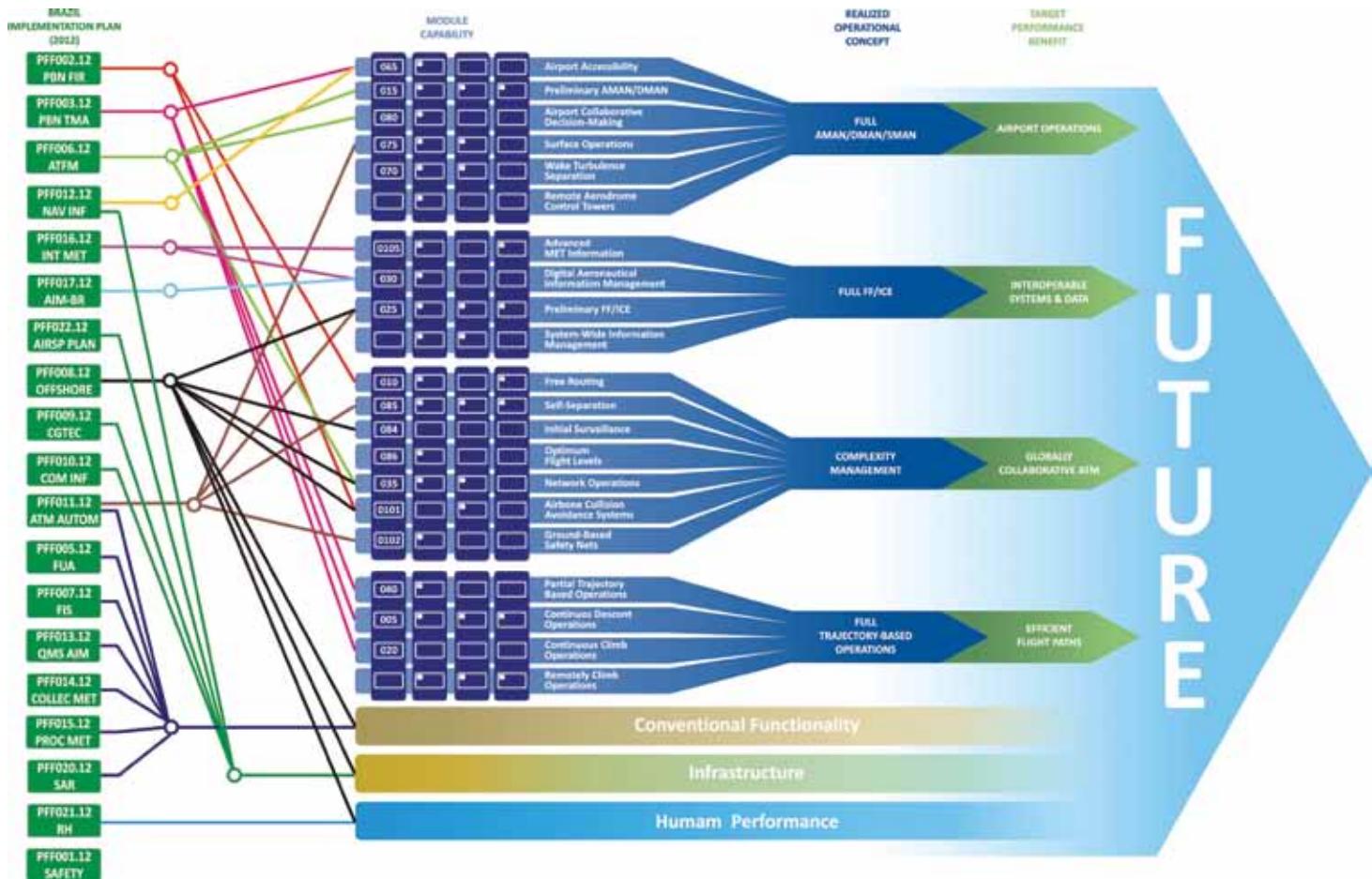
A major innovation of the Block Upgrade strategy is that we are now more collectively defining the results that current and future technologies must meet. By establishing these operational goals on a consensus basis, we will be able to

This type of flexible system makes it much simpler for States to review their specific operational characteristics and anticipate which precise technologies and procedures they will need to set in place.

realize a framework that puts innovation at the service of aviation, providing States and industry with the planning and investment certainty which is so critical in an era of ever-tightening budgets.

The Planning and Implementation Regional Groups (PIRGs) will play an important role by supporting each region through the decision-making processes to align their regional air navigation planning with the Block Upgrade methodology. This is particularly important as ICAO will begin to publish an annual *Air Navigation Capacity and Efficiency Report* in 2014 which will measure our collective global progress.

You will note from other stories included in this edition of the *ICAO Journal* that several States and key members of the air navigation service provider community have already begun to map their ATM plans against the Block Upgrades and the revised Global Plan. We appreciate this advance endorsement and are confident that a similar level of support will be evident as AN-Conf/12 begins its important deliberations. ■



PROVIDING A COMMON BASELINE FOR GLOBAL, REGIONAL AND NATIONAL PLANNING



MARCO AURÉLIO
GONÇALVES MENDES
General-Director, DECEA



For Brazil's Department of Airspace Control, DECEA, the process of mapping its Air Navigation Services (ANS) initiatives against ICAO's aviation system Block Upgrades is important because it will provide a "common language" among global, regional and national plans which will, in turn, promote interoperability and global harmonization of the future aviation system.

DECEA is an organization of the Brazilian State, subordinate to the Ministry of Defense and to the Brazilian Air Force, and responsible for the strategic control of the country's airspace, both in the civil and military areas.

"All services that require a high degree of technology, manpower and research related to the management of the Brazilian airspace are provided by DECEA,"

explained Marco Aurélio Gonçalves Mendes, General-Director, DECEA. "Those tasks require continuous training and development of human resources for the planning and implementation of ANS, as well as the deployment of infrastructure and maintenance of its ATS Units."

Mendes says the evolution of DECEA's approach flowed from the second edition of the Global Air Navigation Plan (GANP) for Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) systems. Aligned with those parameters, as well as lessons learned from all activities performed by DECEA, the Brazilian ATM Operational Concept (OCD) was developed in 2008 and became the main planning reference to define objectives for ATM evolution in Brazil.

"Derived from that OCD, which was revised in 2011, our ATM Evolution Plan – named SIRIUS – was established on the basis of 21 performance-based programmes and ANS initiatives that were defined with a great deal of interaction with airlines, general aviation (GA) users, airports, the Brazilian Civil Aviation Agency and other stakeholders which represent the national aeronautical community," said Mendes.

SIRIUS is now being shaped by the draft Fourth Edition of ICAO's Global Air Navigation Plan (Global Plan), which introduces the concept and framework of the aviation system Block Upgrades along with the roadmaps for CNS, Information Management (IM) and related avionics requirements necessary to realize a global Air Navigation system.

"The revised Global Plan will be presented officially to the ATM community during the 12th Air Navigation Conference (AN-Conf/12), but DECEA decided to start the mapping between SIRIUS and the Block Upgrades in advance, even before the conference," said Mendes.

Mendes says the mapping process will not only provide a "common language" among its various plans, which will promote interoperability and global harmonization, but also provide better guidance for SIRIUS's programme managers since they will be able to apply all the references that have been completed for the Block 0 modules – standards, procedures, operational approvals and business cases – directly into their projects.

"Airlines, GA and airports, among other stakeholders, will also take advantage of this mapping since they will be able to correlate SIRIUS ANS initiatives to the Block Upgrade modules and consequently understand the roadmaps for the expected enablers. These in turn will promote a better technology investment plan," said Mendes.

Over recent months, the programme managers of the 21 ANS initiatives of SIRIUS were assigned to identify all the modules

of Blocks 0 and 1 that are required in their areas of operational performance and verify to what extent they are correlated.

"This is an on-going process that will lead to a mapping document which will be used during a transition phase between the current version of SIRIUS and its revision, expected for the second semester of 2013," said Mendes.

In terms of the AN-Conf/12 – and beyond – Mendes says DECEA is a supporter of the Block Upgrade methodology and his team is now looking ahead to finalize the mapping process. Work will then start on the adjustments to DECEA's operational concept document and its implementation plans to the end of 2013.

"Those adjustments will take into account that, although the Global Plan has been designed to achieve worldwide harmonization, it is not intended for all Block modules to be applied everywhere," said Mendes. "It is our intention to use a 'think global – act local' planning concept and work within the GREPECAS PIRG to identify modules that should be applied nationally or regionally, where the specific operational requirement or corresponding benefits exist.

"SIRIUS will be as closely aligned to the aviation system Block Upgrades as possible and implemented in a timeframe that gives us the maximum performance improvement while maintaining the safety of the airspace," he added. ■

ABOUT DECEA

The Department of Airspace Control (DECEA) is responsible for the management of all the activities related to the safety and efficiency of the Brazilian airspace control. Its mission is to manage and control the air traffic in Brazil's area of responsibility as well as to provide the telecommunications and surveillance services in order to guarantee its sovereign airspace defence. It provides ATS to an area of responsibility bigger than the sovereign airspace and provides the infrastructure (detection and telecommunications means) to the Brazilian Airspace Defense Command.

As the main organization of the Brazilian Airspace Control System (SISCEAB), DECEA plans and approves the deployment of equipment and systems and oversees technical and operational organizations responsible for activities related to SISCEAB.

DECEA provides services such as Aeronautical Information System (AIS), Air Traffic Management, Aeronautical Cartography, Search and Rescue, Aeronautical Meteorology, Information Technology, Flight Inspection, and Aeronautical Telecommunication.

A PRACTICAL, FLEXIBLE FRAMEWORK FOR MODERNIZATION, CUSTOMER BENEFITS & GLOBAL INTEROPERABILITY



LARRY LACHANCE, Assistant Vice President, Operational Support, NAV CANADA



Canada's civil air navigation services provider, NAV CANADA, supports ICAO's intent in developing the aviation system Block Upgrades and believes they can facilitate customer and stakeholder discussions by providing a commonly understood platform and a framework for progress towards the goal of global interoperability.

"This was an opportunity for us to align some of our ongoing initiatives and also plan for the future based on the Block Upgrades," said Larry Lachance, Assistant Vice President, Operational Support, NAV CANADA. "We mapped our activities to Blocks 0, 1, 2 and 3 from our own business planning. This has allowed our employees to understand our alignment with international efforts."

The modular framework is particularly conducive to the Company's initiatives and programmes. For example, the NAV CANADA Air Navigation System Plan, which was published in spring 2012, outlines short and near-term initiatives to modernize the Canadian Air Navigation System to meet customer requirements.

In this document, the Block Upgrades proved to be an effective way to portray the Company's plans in a variety of different areas. Their dynamic nature will allow the implementation of Block Upgrades to be adapted when game changing developments such as ADS-B through LEO satellites emerge, providing new opportunities for benefits.

For NAV CANADA, this mapping process allows for the assessment of a range of initiatives in the context of modernizing the Canadian ANS and improving service to customers, while also simultaneously enabling an assessment from both the macro and micro levels.

"The Block Upgrades' multidisciplinary approach to capacity and efficiency investments sets modular targets in an incremental framework to facilitate planning. This quickly allows us to identify areas where we may have gaps or initiatives that need further development," said Lachance.

Lachance points to optimization of approach procedures using Performance-based Navigation (PBN) as a good example of the Block Upgrade planning benefits.

A couple of years ago, NAV CANADA embarked on major changes to be able to respond to customers with regard to demands for RNAV [Area Navigation] approaches, LPV [Localizer performance with vertical guidance] approaches and RNP [Required navigation performance] procedures.

This was consistent with the Block 0 timelines which included optimization of approach procedures including vertical guidance. "We were actually able to

implement some of these changes prior to the established timelines," Lachance said.

One of the most significant benefits of the Block Upgrades, is how the approach will permit more effective collaboration with customers and other ANSPs, based on a common language and agreed upon direction. Lachance says the Block Upgrades also set the framework for stakeholders to speak a similar kind of language when it comes to sharing information.

"If I'm talking about airborne separation, there are multiple initiatives but they're all captured under the term 'airborne separation'. So everybody is in a better position to understand what I'm talking about and we can zero in on the issues, rather than spending time defining terms and language. In other words, we are now equipped with a common technical language, common definitions and well-thought-out timelines," he said.

The terms of reference regarding factors such as Datalink in Block 0 help focus discussion among international stakeholders.

"Underneath that particular module [Improved Safety and Efficiency through the initial application of En-route Datalink] is a wide range of potential initiatives that would involve not only the customers, but aircraft manufacturers, operators, the pilot community, ANSPs, the ATM system and so on. This framework helps brings all these people together under one umbrella," said Lachance.

As for the future, NAV CANADA plans to continuously upgrade and update its plan in line with the Block Upgrades and perhaps discuss a reporting system to reflect achievement on each of the modules under each of the blocks.

"It would be quite interesting for us to try to map this going forward and, at the same time, report on progress in line with the Block Upgrades through ICAO," said Lachance.

To facilitate and aggregate these reporting activities by States, and in conjunction with its adoption of the Block Upgrades, ICAO will also begin releasing an Air Navigation Report in 2014 where these types of results will be compiled on a global basis. This will allow the Organization to measure the extent to which global harmonization is being achieved based on transparent operational metrics.

"To date we have mapped our existing plans," concluded Lachance. "Our next focus will be dialogue with our customers on prioritization and an analysis of where our plans may need augmentation in some areas. We will also continue to closely pursue the opportunities presented by emerging technologies to advance the Block Upgrades." ■



ABOUT NAV CANADA

NAV CANADA coordinates the safe and efficient movement of aircraft in Canadian domestic airspace and international airspace assigned to Canadian control. Through its coast to coast to coast operations, NAV CANADA provides air traffic control, flight information, weather briefings, aeronautical information, airport advisory services, and electronic aids to navigation.

ANS facilities include seven area control centres and 41 control towers. The Company also operates 58 flight service stations and eight flight information centres. These facilities are supported by a network of over 1,000 ground-based aids to navigation located across the country.

MEETING UNIQUE AVIATION DEVELOPMENT CHALLENGES WITH AN INNOVATIVE APPROACH



WANG LIYA, Director General of Air Traffic Management Bureau, CAAC



ICAO's aviation system Block Upgrades provide an excellent approach to defining the evolution of future ATM systems in States and regions all over the world, according to Wang Liya, Director General of the Air Traffic Management Bureau (ATMB) of the Civil Aviation Administration of China (CAAC).

The Block Upgrades' development coincides with a period of rapid development in China's civil aviation sector. After nearly three decades of growth, the Chinese aviation industry now ranks as the second largest air transport system in the world and forecasts call for continued robust growth over the next 15 to 20 years.

However, industry growth brings many challenges and Wang says a "comprehensive overhaul" – in terms of technology and vision – is needed to meet China's civil aviation demands, support an integrated transportation system, keep pace with the worldwide growth of aviation and contribute to the development of international civil aviation.

"The CAAC put forward its 'Strategic Concept for Building a Strong Nation of Civil Aviation' in 2010, setting out its vision for civil aviation development in China and its implementation roadmap till 2030 in which the air traffic management system constitutes an important element," explained Wang. "At present, based on the general framework of the Strategic Concept, we have established a development plan for the near-term, while mid-term and long-term planning is underway."

At the same time, the CAAC recognizes that it is essential for China to maintain the harmonization and interoperability of its ANS system with other States, particularly in light of the move towards development of a global ATM system, as originally described in the Global ATM Operational Concept (ICAO Doc 9854).

"Block Upgrades provide excellent guidance and a set of tools for the evolution of future ATM systems in States and regions all over the world," said Wang. "They also provide a uniform reference and a platform for coordination which is important for realizing global harmonization and interoperability."

Wang noted that the strategic development framework of China's ATM system is compliant with the principles advocated by ICAO.

"We decided to map our strategic plan and some initiatives that are underway against the Block Upgrades to ensure harmonization and interoperability between China and the rest of the world in terms of ATM systems," he added.

The process is not without significant challenges.

China's ANS is a large organization with many stakeholders and strategic development is a complicated process. A special working group, consisting of relevant departments inside ATMB, has been established. Since many

Block Upgrade modules are not just related to ATM systems, a submission has already been made to the CAAC to establish a special working group with a wider representation of system stakeholders, in order to more effectively share data and coordinate on key issues.

"At present, we are mapping the initiatives that have already been included in the '12th Five-Year Plan' for ATM development," said Wang. "These initiatives are being mapped against operational improvement measures in Block 0. We have already accumulated valuable, practical experience with respect to the technological and operational improvements included under Block 0."

The next step, according to Wang, is an analysis of international and domestic development which, in turn, will help define CAAC's long-term and mid-term objectives and establish an overall development roadmap.

"At that point, we hope to be able to incorporate modules from Block Upgrades 1, 2 and 3 into the plan," said Wang.

However Wang emphasized the unique challenges which China faces in developing a strategic plan for the country's ATM system, due to his State's particular requirements and constraints.

"For example, based on the State's development strategy for the west, air transportation in Western China will be given priority for development as a leading initiative," explained Wang. "At the same time, we have to deal with uncertainties, such as the change of airspace policy, which makes forecasting and planning difficult. ICAO's Block Upgrades will be helpful in this respect."

Wang said the Block Upgrades will also be helpful in terms of providing both flexibility and interoperability for States.

"At AN-Conf/11, ICAO put forward the concept of a global, integrated ATM operational approach and provided a uniform vision for all aviation stakeholders," he said. "The Block Upgrades reflect ICAO's advocacy of harmonization and interoperability and will have the same impact at the technical level as the operational vision which was rolled out at AN-Conf/11."

The module structure of the Block Upgrades simplifies collaboration among high-level planners, added Wang.

"The flexibility that comes with the modules is beneficial to stakeholders with common interests and performance expectations," he said. "The implementation of some operational improvements included in the Block Upgrades may vary from one place to another. States and regions with diverse operational environments, such as China, may need more detailed cost-benefit assessments and coordination among stakeholders to facilitate implementation."



Though there are challenges in reconciling some aspects of the Block Upgrade process for China's ATM development plan, there are also strong common objectives.

"Most modules can be implemented and applied in China," said Wang. "However, operational improvements through the Block Upgrades cannot cover all issues which need to be dealt with in the course of the development of ATM systems in China. Therefore, while applying the Block Upgrade modules, we shall also develop other operational improvements based on the specific requirements and constraints of China, taking into account the need for harmonization and interoperability in the evolution of international civil aviation. We will also provide information to ICAO to add value to the Block Upgrade process and are willing to share our experience in implementing Block Upgrade modules."

Wang recognized the fact that ICAO's APAC Office has already carried out substantial preparatory work such as: establishing a seamless ATM planning group for research and formulation of a regional plan; holding a symposium on Block Upgrades; introducing Block Upgrades; and providing training to Asia-Pacific countries.

"China has participated in these initiatives and we have already set up a special working group to carry out studies on the Block Upgrades and the strategic development plan of China's future ATM system, thus enhancing our participation and support," added Wang. "We believe that the Block Upgrades will be adopted swiftly at AN-Conf/12, as they embody the collective wisdom and efforts of the international civil aviation community to advance the technological improvement of future navigation systems." ■

STRATEGY INTO PRACTICE

Reviewing ACI, CANSO and IATA policy viewpoints as the operator community looks toward the implementation of Block 0 capabilities on a harmonized global basis



ANGELA GITTENS
ACI Director General

ICAO JOURNAL: AS CERTAIN BLOCK UPGRADE MODULES BECOME IMPLEMENTED MORE COMPREHENSIVELY, INCREASING OVERALL SYSTEM AND RUNWAY CAPACITY, HOW WILL AIRPORT OPERATORS RESPOND TO THE NEED FOR ADDED GATE AND PARKING INFRASTRUCTURE TO MANAGE THESE INCREASES IN TRAFFIC?

Angela Gittens: Airports will do their utmost and what is within their power to finance and expand physical infrastructure to meet increases in passenger and cargo traffic. Airports will also work to ensure that existing infrastructure is utilized in the most efficient way possible.

UNDER PROPOSED COLLABORATIVE DECISION-MAKING FRAMEWORKS FOR THE AIRPORT ENVIRONMENT, DOES ACI ANTICIPATE ITS OPERATORS HAVING TO ENSURE TERMINAL-BASED FACILITATION SOLUTIONS ARE IN PLACE TO COMPLIMENT THE FLIGHT AND APPROACH TIME SAVINGS BEING ANTICIPATED?

Absolutely. The key to collaborative decision making is collaboration. This applies both within the airport and extends to terminal-based facilitation, as it does to our external aviation partners.

WILL ACI BE LOOKING TO SUPPORT ITS MEMBERS WITH COST-BENEFIT RESOURCES THAT AID IN DETERMINING WHEN A PARTICULAR PERFORMANCE CAPABILITY SHOULD OR SHOULD NOT BE IMPLEMENTED?

Yes. Cost-benefit for Airport Collaborative Decision Making is part of our project. For other capabilities in the Aviation System Block Upgrades, airport operators are not directly involved. Therefore, ACI would not be involved in the business case nor in the provision of resources.



JEFF POOLE
CANSO Director General



ICAO JOURNAL: HOW WOULD YOU ANSWER THE CONCERN THAT THE BLOCK UPGRADE CONCEPT ONLY REPRESENTS NEXTGEN AND SESAR?

Jeff Poole: These two large scale ATM modernization programmes, as well as a number of others, identified the need for global harmonization and interoperability, and they were the starting point for many of the Block Upgrades and their associated modules.

However, the Blocks and modules have been socialized globally and input has been requested and received from aviation stakeholders. This input and the collaborative work that has gone into the Block Upgrade framework is what has shaped the solutions as they are defined today. CANSO has participated directly in this work. We also have to remember that the Blocks and modules are not mandated: rather, their implementation is to be supported by a business case at the local, regional and global levels.

WHAT ASPECT OF THE BLOCK UPGRADE CONCEPT THAT MAKES YOU THINK IT CAN BE SUCCESSFUL IN MEETING TOMORROW'S AVIATION CHALLENGES?

The Block Upgrade concept represents the first time that all aviation stakeholders – regulators, standards-setting organizations, operators, service providers, solution providers and manufacturers – have come together right from the initial stages of the development process to delivery of the Block Upgrade framework and updated Global Air Navigation Plan. It has been a truly collaborative process. Importantly, with participation comes buy-in and ownership, which will be key to actual implementation of the associated Blocks and modules.

WHAT ADDITIONAL WORK NEEDS TO BE DONE SO THAT ANSPS CAN MOVE FORWARD WITH THE SEEMINGLY 'HUGE' TASK OF ATM MODERNIZATION, HAVING THE CONFIDENCE THAT THEY ARE MAKING THE RIGHT DECISIONS?

There is an effort underway to author a Needs and Dependency Analysis (NDA), which will offer a number of variables for ANSPs to consider before moving forward with implementation.

These variables range from complexity of operations, to expected traffic growth, to interfacing with neighbouring FIRs, etc. A generic Cost Benefit Analysis (CBA) is also being developed that will help ANSPs in the decisions they will have to make. And finally, a Minimum Path is being developed that will list all Block Upgrade modules and capabilities as Essential, Desirable, Specific and Optional. This will help ANSPs to determine which of the modules/capabilities need to be considered for implementation and in what sequence.

“We have to remember that the Blocks and modules are not mandated: rather, their implementation is to be supported by a business case at the local, regional and global levels.”



GUENTHER MATSCHNIGG
IATA Senior VP, Safety,
Operations & Infrastructure

 **ICAO JOURNAL: INFRASTRUCTURE FINANCING MECHANISMS, ESPECIALLY RELATING TO USER CHARGES, WILL BE A KEY ISSUE FOR AIRLINES AS THE FUTURE AIR TRAFFIC MANAGEMENT SYSTEM BECOMES ESTABLISHED. WHAT WOULD IATA SEE AS A BEST-CASE SCENARIO IN THIS REGARD?**

Guenther Matschnigg: Infrastructure financing should follow ICAO policies on charges contained in Doc. 9082 especially advanced, transparent and substantive consultation with users. Financial incentives in combination with operational incentives can also be used to facilitate the implementation of a system which has been agreed as essential to enhance capacity and efficiency.

General considerations for the use of financial incentives include:

- A justifiable cost benefit assessment of the new technology before moving forward.
- Financial incentives to aircraft equipage need to be evaluated against competitive distortion.
- Financial incentives through lower charges should be available to all "most capable" users.
- Financial incentives must be published and of a transparent nature.
- Financial incentives should not be cross-subsidized through other users but rather result from lower operational / capital costs at the ANSP (cost-based).
- Financial incentives must be time limited and followed by a mandate for the new technology.

WHY IS IT IMPORTANT TO AIRLINES THAT THE CONCEPT OF 'BEST EQUIPPED, BEST SERVED' BE RESPECTED AS NEW SYSTEMS AND CAPABILITIES COME ONLINE THROUGH THE BLOCK PROCESS?

It is important to properly assess the implementation of this concept. It should follow an incremental path which allows the right amount of incentive and drive towards a more efficient system, while minimizing penalties to the less equipped. We're hoping to see related policy discussed at the 12th Air Navigation Conference and the 6th Air Transport Conference next March, then ultimately moved to the 2013 ICAO Assembly.

Internal airline processes leading to equipage decisions are governed by benefits accrued. Other than mandated equipage, investments will be made only on those that can offset their cost over a reasonable period.

WILL PROPER ADHERENCE TO THE BLOCK UPGRADE PROCESS AND TIMELINES HELP THE SECTOR AVOID THE STATE-BY-STATE OR REGION-BY-REGION EQUIPAGE MANDATES THAT CURRENTLY FORCE OPERATORS TO IMPLEMENT PIECemeAL TECHNOLOGY SOLUTIONS?

In fact, global interoperability is the cornerstone for the ICAO Block Upgrade System.

The Block Upgrades were created as a set of functionalities to meet the global needs for an efficient ATM system, taking advantage of current equipage while enabling a globally interoperable evolution.

The Block Upgrade system, if adhered to, will in fact avoid creating a patchwork of technological solutions that negatively impacts safety and airline economics.

We don't expect all regions to be implementing all Blocks in the same timeframe but we do urge them to do so accordingly when the operational requirement arises. ■



Sixth Worldwide Air Transport Conference

Sustainability of Air Transport

ICAO Headquarters, 18–22 March 2013

The 2013 ICAO Air Transport Conference will be a critical gathering of government policy makers and major aviation stakeholders on the future direction of international air transport regulation and strategic planning for the aviation sector.

Under the theme 'Sustainability of Air Transport', the Conference will address key issues, develop policy guidance and map out an action plan for ICAO and its Member States to build a more harmonized and efficient global regulatory framework. This event will be a significant milestone in the progress toward the sustainable economic development of air transport.

The steps to be taken in the process towards the effective implementation of this regulatory action plan will be addressed through, among other considerations, the funding aspects of infrastructure and the financing challenges of the air transport system as a whole.

A special one-day Pre-conference Symposium, on 17 March 2013, will provide participants with essential background on key issues to be addressed, and possible solutions which will facilitate the subsequent Conference deliberations.



For information and updates please visit: www.icao.int/meetings/atconf6

SYMPOSIUM GALVANIZES STAKEHOLDER SUPPORT FOR IMPLEMENTING PERFORMANCE-BASED NAVIGATION

 Performance-based Navigation (PBN) has taken a major step forward following ICAO's recently-completed PBN Symposium. Strong stakeholder collaboration, shared commitment to approvals and procedures and, above all, a firm focus on producing measurable results were key factors in the event's success.

The four-day Symposium (16 October -19 October) brought together over 300 participants from the aviation industry including: international organizations, aircraft manufacturers, Air Navigation Service Providers (ANSPs), airlines, regulators, ATC system manufacturers, avionics designers, air traffic controllers, pilots, the military, aeronautical information companies and instrument procedure designers.

All of ICAO's Regional Offices were also represented and the Symposium was open to students in aviation studies. Through the comprehensive programme, which included professional presentations, expert panel discussions and solution-focused workshops, participants acquired important information on PBN implementation initiatives and lessons learned.

In her opening remarks, Nancy Graham, Director of ICAO's Air Navigation Bureau, stated that, "implementation of PBN is presently the global aviation community's highest



Captain Alan Stealey, Divisional Senior Vice President, Flight Operations at Emirates Airlines, makes the introductory key-note address at the ICAO Performance-based Navigation Symposium and Workshops held at ICAO Headquarters, Montréal. Over 300 participants attended.

Air Navigation priority, mainly due to the significant safety and efficiency benefits it brings."

"The theme of the Symposium was 'Expediting Implementation Together', mainly because we wanted participants to focus on the challenge of solving barriers to implementation and working together to accelerate implementation," said Erwin Lassooij, ICAO's PBN Programme Manager. "It's a message which all participants embraced and the symposium succeeded in generating momentum – which we intend to build on."

This theme was further supported by Capt. Alan Stealey, Divisional Senior Vice President of Flight Operations, Emirates Airlines, who served as the Symposium's keynote speaker. Stealey emphasized the need for all stakeholders to understand PBN and to work together as an industry to make it happen. He also notably stressed that, "we need to make sure that regulation does not get in the way of PBN implementation."

Throughout the workshops and sessions, more than 50 speakers and moderators covered a multitude of topics including operations approval for regulators and aircraft operators, airworthiness approval for manufacturers, airspace design for the ANSPs and procedure design for the procedure design organizations. PBN involves a very large cross-section of the aviation industry and that's why the programme included so many diverse speakers and two targeted workshops.

NEW PBN GUIDANCE MATERIAL

New guidance material issued at the Symposium includes:

- Doc 9613 – Performance-based Navigation Manual – 4th edition
- Doc 9997 – PBN Operations Approval Manual
- Doc 9992 – Manual on the use of Performance-based Navigation (PBN) in Airspace Design
- Doc 9931 – Continuous Descent Operations (CDO) Manual
- Doc 9993 – Continuous Climb Operations (CCO) Manual

All participants at the PBN Symposium - as well as the 12th Air Navigation Conference - received the PBN iKit, which provides stakeholders with essential information, practical documentation and guidance material on PBN in relation to their area of expertise.

The PBN Symposium also signalled a milestone in terms of documentation, with the publication of a new PBN manual and several other manuals which effectively make PBN implementation primed and ready for the aviation system Block Upgrade programme.

Perhaps the biggest challenge at present is facilitating the necessary coordination and collaboration among all the stakeholders who are involved with PBN implementation. ICAO sought to address this by producing a special PBN *iKit*, or implementation kit, for all the Symposium participants. It will also be made available at the 12th Air Navigation Conference.

The *iKit*, which is available in an interactive HTML 5.0 format (on a memory stick for participants and on the PBN website for those who could not attend) organizes all the ICAO documents and associated implementation steps to provide the main stakeholders (executives, regulators, ANSPs, aircraft operators and manufacturers) with essential explanatory information, practical documentation and guidance material on implementing PBN in relation to their area.

In addition, ICAO endorsed instrument procedure design organizations at the Symposium. The intention here was to indicate to States those specific Organizations that can help them with varying aspects of their PBN implementation.

Over the course of the four-day event, the Symposium also highlighted some of the successes and best practices in PBN implementation. ICAO and its partners have been reaching out to all stakeholders to assist them in this regard through symposia, regional seminars and workshops involving ICAO and the FAA, as well as Eurocontrol, development of on-line training courses and the provision of additional guidance material. As well, ICAO has joined with IATA to deploy PBN GO Teams to provide immediate face-to-face assistance to States, supporting both understanding and implementation of PBN.



ICAO and its partners have been reaching out to all stakeholders through symposia, regional seminars and workshops involving ICAO and the FAA, as well as Eurocontrol development of on-line training courses and the provision of additional guidance material.

QUOTABLE PBN: SYMPOSIUM SPEAKERS IN THEIR OWN WORDS

"Implementation of PBN is presently the global aviation community's highest Air Navigation Priority, mainly due to the significant safety and efficiency benefits it brings."

- Nancy Graham, Director, ICAO Air Navigation Bureau

"We need to make sure that regulation does not get in the way of PBN implementation."

- Capt Alan Stealey, Divisional Senior Vice President of Flight Operations, Emirates Airlines

A case in point is the United Arab Emirates, where six or seven ANSPs worked with a Go Team and developed a national, integrated plan. This process was very much indicative of the kind of success which has been replicated in other regions.

ICAO Regional Offices have supported the process by updating regional plans and are in various stages of implementation. For example, the ICAO Flight Procedure Programme (FPP) office in Beijing has demonstrated great success in expanding knowledge and understanding of PBN in the Asia/Pacific Region and contributed to several implementation projects. During the Symposium it was also indicated that, building on this success, ICAO is in discussion with DGAC France about supporting the establishment of an FPP-like project in Africa.

The South American Region (CAR/SAM) is another example of good recent progress, with the CAR region finalizing a project plan for PBN implementation and the SAM region implementing a new RNAV5 route network.

As for ICAO's post-PBN Symposium objectives, Lassooij says the focus remains squarely on meeting deadlines for implementation, particularly concerning instrument procedures with vertical guidance for all instrument runway ends. Implementation of Continuous Climb/ Descent Operations (CCO/CDO) are also priorities, as both of these initiatives afford significant environmental benefits.

"The Symposium was a great success, mainly because the right people got together and discussed how to collaboratively move forward," concluded Lassooij. ■

For more information about ICAO PBN: www.icao.int/safety/pbn

For more information about the Performance-based Navigation (PBN) Symposium and workshops: www.icao.int/meetings/pbn-Symposium

MEETING THE CHALLENGE OF COST-EFFECTIVE, COORDINATED AIRSPACE



ABOUT MARION C. BLAKEY
Marion C. Blakey is Chairman of the ICCAIA and President and Chief Executive Officer of the Aerospace Industries Association (AIA) which currently chairs ICCAIA.



The International Coordinating Council of Aerospace Industries Associations (ICCAIA) is an active stakeholder in the ICAO Block Upgrade process, representing the global manufacturing community and advocating interoperability, harmonization and universal standards.

The Council represents industry associations in the United States, Europe, Japan, Brazil, Russia and Canada and provides an avenue for the world's aerospace manufacturers to contribute their expertise to the development of international standards and regulations.

The ICAO *Journal* recently interviewed the Council's Chairman, Marion C. Blakey, about the ICCAIA's perspective on the Block Upgrades, the role of the ICCAIA during their development, and the goals being sought at the upcoming 12th Air Navigation Conference (AN-Conf/12).

ICAO JOURNAL: FROM YOUR PERSPECTIVE AS THE HEAD OF A GLOBAL ASSOCIATION OF AEROSPACE MANUFACTURERS, HOW WOULD YOU CHARACTERIZE THE POTENTIAL OF THE ICAO BLOCK UPGRADES AND THE IMPORTANCE OF THE UPCOMING AN-CONF/12?

Marion Blakey: This is a great moment to seize and a great opportunity to address the challenge of cost-effective, coordinated airspace improvement on a global scale, with two main dimensions to consider.

The first is that we now have insight into how modules can be organized to help stimulate operational incentives through the Performance Improvement Areas. This will help the different regions that are planning for airspace development to understand the safety, performance, financial and environmental benefits their investment will initiate.

The second important aspect is the benefit of individual modules in ensuring a cost-effective, harmonized approach to change. By sharing the technical elements, procedures, operational approvals and certifications, we develop a core understanding of how each implementation can optimize performance and minimize cost.

DO THESE BENEFITS APPLY ACROSS THE BOARD?

The process has similar benefits for ground automation and airborne systems. While we realize that each airspace is unique, we must ensure that we have a common approach to realize the economies of scale with respect to system design and development. We must be mindful that many States will face challenges but ICAO is proposing – and investing resources in – a way forward. Of course, a complex transformation like this, especially a global transformation, is always a little harder and takes a little longer than we think. However, if States work together through ICAO and the Block Upgrade framework, we feel the process will go much more smoothly.

“ICCAIA sees the ICAO Block Upgrades as the initiative that will facilitate interoperability and thus allow manufacturers to provide these more cost-efficient solutions where only minor local adaptations are required”

HOW DOES THE BLOCK UPGRADE FRAMEWORK FIT INTO THE ICCAIA’S PRIORITIES AND THE ONGOING WORK OF ITS COMMUNICATIONS, NAVIGATION AND SURVEILLANCE/AIR TRAFFIC MANAGEMENT (CNS/ATM) COMMITTEE?

That depends on which member you ask, as some companies will have to make more effort than others to accommodate this new idea. However, we are building on recognized concepts. Key to this is Performance-based Navigation (PBN) and the work done for Automatic Dependent Surveillance – Broadcast (ADS-B). We are also working to ensure that, in the future Blocks, we can harmonize data communications. However, perhaps most importantly, we are also realizing a new framework that will improve decision making through improved information sharing.

Through the Block Upgrades, we are working to integrate a global vision of System Wide Information Management (SWIM) in support of Collaborative Decision Making (CDM), where airspace managers and planners share their information with users to improve the planning and pre-flight processes. Ultimately they will be able to share timely information with airspace managers, pilots, and airline operational centres. These are core concepts that will allow us to enable improved safety, capacity, efficiency, flexibility, and environmental responsibility, all at reduced cost.

DO YOU FEEL THAT THE ICCAIA’S MEMBERS WERE SUITABLY CONSULTED AS ICAO DEVELOPED THE BLOCK UPGRADE METHODOLOGY?

Industry has been involved at both the executive level, through the Challenge Team, as well as at the technical and operational levels, through the Technical Team. When ICAO first presented the concept to us, many of the basic decisions on general content and the types of operational improvements being sought were made. Still, we undertook the tasks of assuring appropriate timeframes, dependencies and enablers.

This collaborative process has brought together the leaders from the global community to share thoughts, concepts, as well as lessons learned from early implementations. It also ensures that, as the vision develops for the future, there is balance in the team from an implementation perspective. We need to ensure that what we see as a globally-capable system is one which we can build and share with all regions, users, operators and regulators in a way we can implement.

HOW WILL THE BLOCK UPGRADE APPROACH HELP YOUR MEMBERS WITH RESPECT TO THEIR RESEARCH AND INVESTMENT STRATEGIES OVER THE COMING DECADES?

Manufacturers closely monitor where trends in ATM needs are moving in order to focus and optimize efforts. In today’s challenging environment, we can no longer afford to expend our resources exploring the vast array of options for bringing about a global solution to deliver increased capacity and efficiency. The ICAO Block Upgrades provide the direction that will help steer the research and the investment.

Our members will invest in research where they see the strongest business case for that investment. If the ICAO Member States commit to the Block Upgrade framework, it will be the guidepost for manufacturing strategies for decades. This would include planning for manufacturers’ R&D activities, as well as allowing us to formulate more reliable business plans. That’s a real game-changer compared to how things advanced in the past.

ASSUMING THAT THE BLOCK UPGRADES AND NEW ICAO GLOBAL PLAN ARE ENDORSED AT AN-CONF/12, HOW WILL THAT IMPACT YOUR ASSOCIATION MEMBERS OVER THE NEAR AND LONG TERM?

The solutions proposed have the potential to bring the world together in a harmonized way over the long-term (near-term impact will be minimal). Having a common vision is key. Taking that to the next level and having common definitions, implementation detail and agreed-to safety, performance, as well as environmental benefits, ensures that we establish a cost-effective way of moving forward. ICCAIA sees the ICAO Block Upgrades as the initiative that will facilitate interoperability and thus allow manufacturers to provide these more cost-efficient solutions where only minor local adaptations are required.

Only time will tell if the regions adopt the recommendations and implement them in a timely manner. The various regional technical committees and Planning and Implementation Regional Groups need to ensure that their neighbours embrace this concept of change. ICAO can only offer a framework. It is up to the various sovereign nations to implement the changes as proposed. ■



Photo courtesy of ©Vanda D'Alonzo

DATA SHARING AND SAFETY INITIATIVES TO BENEFIT FROM ICAO/ACI MEMORANDUM



A Memorandum of Cooperation (MoC) between ICAO and Airports Council International (ACI) sets the stage for the sharing of data and provides momentum for engaging more and more airports to pursue the highest possible levels of safety.

The MoC was signed in June 2012 by ICAO Council President, Roberto Kobeh González and ACI Director General, Angela Gittens. The objectives of the MoC include:

- Supporting the development of the ACI Airport Excellence (APEX) in Safety Programme, designed to help airports worldwide to identify and address safety vulnerabilities
- Joint technical assistance projects
- The regular exchange of safety-relevant information and data and mutual access to databases
- Exchanging experts and providing training
- Promoting regional cooperation

"ICAO and ACI have a long history of cooperation. The Memorandum provides a framework for enhanced cooperation between our two organizations and reflects ICAO's continuing efforts to take a more action-oriented approach to promoting safety," said Kobeh González.

"Our expectations of the MoC are already being delivered," said Gittens in a recent interview. "It helps us improve processes for exchange of information and for discussions which, in turn, give us a better understanding of ICAO's objectives and how we might work together in the future particularly in terms of implementation and, crucially, making a difference on the ground."

According to Gittens, one of the key benefits of the agreement is a "clear association" with ICAO which helps engage governments on the safety process at all levels, in particular with the roll-out of ACI's Airport Excellence (APEX) in Safety Programme. APEX provides assistance for ACI members to improve their level of safety and compliance with ICAO Standards and Recommended Practices (SARPs).

"For example, at the African Safety Ministerial meeting in Abuja in July 2012, the meeting concluded that ACI's APEX Programme was part of the solution to meeting Africa's safety targets," said Gittens. "It is unlikely that this would have happened without the MoC."

At the same time, the MoC assists ACI in feeding back information to ICAO to give guidance on areas where international policy needs to be developed.

"If, in our APEX analyses, we see common areas where airports are not consistently implementing ICAO guidance we can recommend to ICAO that this be updated to make it clearer, or to amend it if necessary, to bring it up to date," said Gittens.

Gittens said that, in the months since the Memorandum was signed, ACI has already seen a great deal of interest from airports.

"We see the need for greater collaboration on economic regulation, passenger rights and security."

"We're very proud of this programme and we hope to ramp up to have 100 airports on board by 2015"

"One of the things that airports have consistently asked for is assistance in preparing for certification so this MoC helps them prepare," she said. "We have really struck a nerve in terms of what airports and States have been looking for. We're very proud of this programme and we hope to ramp up to have 100 airports on board by 2015."

Gittens says the MoC builds on the collaborative template between ICAO and ACI which is already evident in other initiatives from the Airport Management Professional Accreditation Programme (AMPAP) started in 2007 to a newly-signed Letter of Agreement with ICAO's Technical Co-operation Bureau (TCB) on training.

Looking further ahead, Gittens envisages even more collaboration with ICAO in a number of areas.

"We see the need for greater collaboration on economic regulation, passenger rights and security. In particular, we will work on the development of next-generation screening which will be an important outcome from the ICAO High-Level Aviation Security Conference," added Gittens. ■

ABOUT APEX

Airport Excellence (APEX) in Safety Programme provides assistance for ACI members to improve their level of safety and compliance with ICAO Standards and Recommended Practices (SARPs). Through a Safety Review performed on-site, the ACI Safety Review Team will identify safety gaps, as well as draw an action/implementation plan for the Host Airport to address these vulnerabilities. ACI will also assist the Host Airport throughout the implementation phase by providing support, training and access to a global network of expertise.

STATES' COMMITMENT TO TARGETS DRIVING AVIATION SAFETY INITIATIVES IN AFRICA

 Aviation safety in Africa is on a path of continuous improvement with a series of action steps, timelines and measurable targets flowing from the Abuja Declaration adopted by African ministers responsible for civil aviation.

Some 250 participants representing 38 States and 15 international organizations attended the watershed conference in Abuja, Nigeria in July 2012, adopting a declaration which, among other initiatives, supports "the effective implementation of the ICAO Global Aviation Safety Plan (GASP), the Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan) and the AFU Cooperative Inspectorate Scheme (AFI CIS)."

"We succeeded in having all the ministers of transport make commitments for aviation safety by adopting a declaration on aviation safety and, for the first time, we have specific targets with timelines and an action plan to ensure that those timelines are achieved," said Dr. O. Bernard Aliu, Chairperson of the Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan) Steering Committee and Representative of Nigeria on the ICAO Council. "So now we have a document by which we can measure progress."

"The Abuja Declaration is to be submitted to the next Assembly of Heads of States and Government of the African Union," said Meshesha Belayneh, ICAO Regional Director, Eastern and Southern Africa (ESAF) and Secretary of the AFI Plan Steering Committee. "These are important steps which will enable African States to harmonize their efforts to address the compelling need to continuously improve aviation safety in Africa."

Noting the importance of air transport in the economic development of Africa, the ministers of transport reaffirmed the need to implement national, regional and continent-wide strategies on aviation safety. Furthermore, they have agreed that the African Civil Aviation Commission (AFCAC) should monitor the implementation of the targets to ensure that decisions are put into effect.

"This is a clear indication that the ministers are giving aviation safety a high priority," added Belayneh.

Aliu says the context of the Abuja Declaration is perhaps as important to understand as the action plan itself. He emphasized that the commitment of transport ministers is key to success.

Aliu said it is vital for ministers to bring the issue of aviation safety to the highest level in their respective countries and he stressed the positive outcomes of continuous aviation safety improvement as a way of building support and success.

"If you have good safety records, it means you have more flights, it means you have growth, it means you have a higher contribution of aviation to your GDP, so it is not only a technical issue it's an issue of economic development," he said. "If we are able to achieve that understanding, I believe the States will put more emphasis on aviation safety measures and they will understand the role it has to play in terms of economic development."

While much has been accomplished by stakeholders in Africa, there remain vulnerabilities and weaknesses in terms of overall safety performance. According to most recent ICAO regional accident statistics (2010), Africa has the highest regional accident rate - although it also accounts for the lowest percentage of global traffic volume (3%) of scheduled commercial traffic. Lack of capacity, insufficient resources and other factors are often cited as the main reasons, but a lack of information and hard data about these disparities has traditionally been a big handicap in developing a continent-wide plan and measurable targets.

"The creation of Regional Safety Oversight Organizations (RSOs) and the decision of the ministers to take measures to support these RSOs as a means of developing State safety capabilities will improve the overall performance of African States in complying with ICAO Standards and Recommended Practices (SARPs)," said Belayneh. "During the Abuja Ministerial Conference, AFCAC was also mandated to monitor the implementation of the Plan, Targets and the Declaration. In my view, this will give African States the opportunity to see what effect their decisions have on aviation safety in the continent."

The Plan objectives mainly focus on reducing the African accident rate to be in line with the global average in three years and establish effective and independent regulatory oversight systems. In order for this to be achieved, two important conditions have to be met: having a sufficient number of qualified aviation professionals and providing adequate financial resources.

"The lack of qualified aviation professionals and the difficulty in retaining the small number of available ones are serious problems

in Africa," added Belayneh. "These two shortcomings affect the ability of the regulatory bodies in many African States to properly play their oversight roles."

Against the backdrop of these challenges, ICAO continues to play a proactive role.

"ICAO continues to be the forum where Member States can resolve issues and that must continue," said Aliu. "In 2007, the Organization established the African Plan and my expectation is that ICAO will continue to assist States with implementation and continue to give guidance to States because many of the States may have the political will but they may not have the know-how and they may not have the expertise."

Aliu says ICAO can also serve as a coordinating mechanism for all the other activities that are ongoing, either at the level of multilateral relationships or between stakeholders. An excellent case in point is the IATA and ICAO AFI 2012 Aviation Safety Summit in May 2012, hosted by IATA in Johannesburg in partnership with many stakeholders and focusing on five achievable tasks: adoption and implementation of an effective and transparent regulatory oversight system; implementation of runway safety measures; training on preventing loss of control; implementation of Flight Data Analysis (FDA); and implementation of Safety Management Systems (SMS). Those tasks will significantly improve safety in Africa by end of 2015 and are part of the AFI Strategic Improvement Action Plan.

"There is a lot of optimism and momentum," said Aliu. "We've been encouraged by the AFI plan, established regional safety oversight organizations and are setting up regional accident investigation organizations. And there are initiatives that are already functioning and doing well – like the East African Community Civil Aviation Safety and Security Oversight Agency (CASSOA), the Banjul Accord Group Aviation Safety Oversight Organization (BAGASOO) and various COSCAP Projects."

One particularly innovative programme is the AFI Cooperative Inspectorate Scheme developed with the collaboration of ICAO through the AFI plan and managed by AFCAC. This programme pools resources for inspectors in Africa and they are trained together, take refresher training and are available to member States as a resource for their safety oversight responsibilities.

"It ensures that, if the State does not have an inspector, it can ask some inspectors to come and help by working with officials," said Aliu. "That programme has also been integrated into the Action Plan that ICAO has put in place to help some States in addressing these corrective action plans arising from the audits."

The Abuja Declaration galvanizes stakeholder support across the aviation industry in support of safety. It endorses the Airports Council International (ACI) Airports Excellence (APEX) partnership to improve airport standards. In addition, IATA is implementing its

A TARGETED STRATEGY

Proposed aviation safety targets for Africa include:

Progressively reduce the African accident rate to be in line with the global average by the end of 2015:

- reduce runway related accidents and serious incidents by 50% by the end of 2015;
- reduce controlled flights into terrain (CFIT) related accidents and serious incidents by 50% by the end of December 2015.

The Africa Strategic Improvement Action Plan calls for the:

- establishment of independent and sufficiently funded civil aviation authorities;
- implementation of effective and transparent safety oversight systems by all African States;
- completion of an IATA Operational Safety Audit (IOSA) by all African carriers;
- implementation of accident prevention measures focused on runway safety and loss of control;
- implementation of Flight Data Analysis (FDA);
- implementation of Safety Management Systems (SMS) by all service providers;
- certification of all International Aerodromes by the end of 2015.

Operational Safety Audit (IOSA) for all African carriers. IOSA, which is a requirement for membership in IATA, includes standards that provide a baseline Safety Management Systems (SMS) assessment.

"Global standards such as IOSA are a proven way to improve aviation safety," said Guenther Matschnigg, IATA Senior Vice President, Safety, Operations and Infrastructure. "In 2011, Africa-based operators on the IOSA registry had an accident rate of 1.84 per million flights, which is close to the world IOSA average of 1.73. By comparison non-IOSA operators in Africa had an accident rate of approximately five times higher."

The challenge now is to focus on the outcomes articulated in the Abuja Declaration.

"The key milestones from now until 2015 are to assist States in resolving all identified significant safety concerns, increase the effective implementation of the critical elements, strengthen regional safety oversight organizations and regional accident investigation agencies," said Belayneh. "Those are the main targets."

"There is an appropriate focus being paid to aviation safety in Africa which is important to our future," added Aliu. "The global aviation system is one system and anywhere where there is weakness in the system, we all have a responsibility to help and assist in resolving those issues." ■

FORUM

LEADING ICAO'S AIR NAVIGATION COMMISSION IN SUPPORT OF BLOCK UPGRADES

Flexibility and Collaboration are key elements of the aviation system Block Upgrades according to Christian Schleifer-Heingärtner, President of the Air Navigation Commission (ANC). These two tenets have been the basis for the ICAO development of the rolling 15-year planning horizon, three-year review cycle and technology roadmaps that support the operational modules, and will continue to form the basis of the successful implementation of the Block Upgrade methodology as it is incrementally applied to ATM modernization.

Schleifer-Heingärtner has led the ANC, the ICAO Council's technical advisory body comprising 19 independent experts, through the detailed processes culminating in the 12th Air Navigation Conference (AN-Conf/12) in November 2012. With every step along the way, he and his colleagues in the ANC

have emphasized the importance of making the systems engineering inherent in the Block Upgrade approach more understandable to ICAO's Member States. This is critical, particularly in terms of technical and human resources planning and investment, says Schleifer-Heingärtner.

"I think it is vital for us to explain to stakeholders what we're trying to achieve," he said. "This is not a huge, overarching system which everybody has to follow in precisely the same way, but rather a flexible approach based on actual operational needs. The modules ICAO has developed define the necessary technologies and procedures and, more importantly, their capability to improve operational performance."

The term 'Block Upgrade' resonates for Schleifer-Heingärtner and he emphasizes that the Blocks themselves are merely target timelines and that the important work has been on the details of each module and the related performance capabilities that will become available over time. "Simply stated, there is no need to do anything until States or Regions identify an operational problem they wish to solve," explained Schleifer-Heingärtner. "But, if and when they face an operational problem and then identify a module that will best address the issue, it becomes a matter of strictly following the module – including the associated technology and procedures' requirements. Such an approach is expected to increase global convergence over time because, if the same module specification is always implemented (regardless of the geographical location or implementation date), global interoperability will ultimately be enhanced."

Schleifer-Heingärtner also emphasized that a module should be able to stand on its own and bring benefits, either independently or in conjunction with other modules, but always as a function of a State's, or even simply a particular facility's, unique needs.



ABOUT THE AUTHOR

Christian Schleifer-Heingärtner was unanimously appointed by the Council of ICAO as President of the Air Navigation Commission (ANC), the Organization's technical body. His mandate began on 1 January 2012.

Since 2009 nominated by the ABIS group and elected first Vice-President in 2011 before being appointed ANC President. He is an Avionic Engineer, Pilot and Flight Test Engineer; he holds a valid Avionic maintenance license as well as a commercial pilot license.

“I think it’s vital for us to explain to stakeholders what we’re trying to achieve. This is not a huge, overarching system which everybody has to follow in precisely the same way, but rather a flexible approach based on operational need.”

“For example, if at a specific airport you need to accommodate more traffic during peak hours, you could consider reducing spacing between aircraft,” he explained. “There are different possibilities for achieving this, one of which could be adjusting wake turbulence separation criteria. But this, in turn, may require installation of additional systems at the airport or require new air traffic management capabilities.”

The implementation of other modules, like Performance-based Navigation (PBN), on its way to 4D trajectory operations bring increased efficiencies. However, Schleifer-Heingärtner points out that these modules bring with them requirements for equipment, training and new infrastructure - as well as the inherent challenges of handling a variety of aircraft with different equipage in the same airspace.

“It’s important that these matters be considered comprehensively so that all factors are adequately addressed and the ultimate goals of increased safety, capacity and efficiency are achieved,” he said.

Schleifer-Heingärtner also noted that stakeholders need to commit to a degree of global harmonization to advance key aspects of the Block Upgrades.

“If we agree on data communication, we should also agree on which format of data communication goes forward as an industry, together,” he said. “We call this global implementation a minimum path for the world and here there needs to be global collaboration to make this initiative harmonized and interoperable. Harmonization and interoperability are the two vital factors, as always, and ICAO has traditionally done a very good job along the way achieving this level of consensus.”

Taken as a whole, Schleifer-Heingärtner views Block Upgrades as a modernized approach to future air traffic management, affecting aircraft, ground infrastructure, satellite-based services, operations and aerodromes. It is an approach founded, above all, on flexibility and global collaboration.

“To achieve the goals we’ve targeted, it’s important that we understand the needs of the States and the needs of the industry,” said Schleifer-Heingärtner. “In that respect, the 2011 Global Air Navigation Industry Symposium (GANIS) was essential as a preparatory consultation where industry was able to tell us what they have developed as of today and what types of technical solutions they expect to be able to provide down the line to facilitate much-needed ATM modernization programmes.”

He pointed to runway overruns as a case in point.

“Aircraft manufacturers are already developing – or have developed – systems to give pilots a better basis for decision making regarding possible runway overruns,” he said. “If we are working in this area, we need to use what’s already been developed. We should standardize what’s available but ensure that it’s one standard (rather than one solution) which can be used globally so that different manufacturers can choose a solution for their applications and there is no interference with the economics of the market. This is a very important consideration and why it’s so important that we work together with industry.”

In a broader context, Schleifer-Heingärtner sees all the initiatives underway as a foundation for a longer-term target: 4D trajectory-based operations – where the ATM system will be able to analyze and accurately predict future situations based on four-dimensional parameters.

“Navigating in four dimensions essentially means knowing exactly at what point in space you are, at precisely what time, and where you will be next,” he said. A move from the present ATM model (where the present location of the aircraft is known) to a trajectory-based management concept (where the future location of the aircraft is also known) is fundamental to increasing the safety and efficiency of flight paths.

“With that information I can prepare for my traffic sequence, I know exactly what kind and disposition of traffic I have to expect and I know when it will be arriving in my airspace. From the perspective of the Commission, that’s the future, and that’s the way I’m hoping ICAO Member States decide to go,” he added. ■

NEWS IN BRIEF



UN IMPORTS PKD COUNTRY SIGNING CERTIFICATE

On 10 October 2012, the United Nations imported its Country Signing Certificate Authority (CSCA) in the Public Key Directory (PKD). The Import Ceremony was held in the ICAO PKD Operations Room in the presence of Thomas Hanley, Chief, Travel and Transportation Section and ICAO Officers, in order to testify that due diligence is followed and to safeguard the integrity of the certificate delivered to ICAO.

The United Nations are the first non-State entity to submit a Country Signing Certificate Authority (CSCA) root certificate to ICAO, and by doing so they will enable the validation of its eUNLP and facilitate the border crossing of UN civil servants.



Thomas Hanley (center left), Chief of the United Nations Travel and Transportation Section, upon joining the ICAO Public Key Directory (PKD). Hanley is seen here with Steve Berti, Chief of the ICAO Security and Facilitation Policy (SFP) Section, as well as UN's Elizabeth O'Rourke (left), and ICAO's Christiane Demarkar (right).

WORKSHOP ON PREPARATIONS FOR THE 12th AIR NAVIGATION CONFERENCE

A workshop took place in Nairobi (13-17 August) focusing on the aviation system Block Upgrades methodology and use of the ICAO Fuel Savings Estimation Tool (IFSET). The objective of the workshop was to enhance the knowledge base of civil aviation professionals of States of the ICAO ESAF Region in the planning and implementation of air navigation systems. This was designed to support States in their preparations for participation in the AN-Conf/12.

The participants gained an improved understanding of the Block Upgrade planning and implementation approaches and use of IFSET for estimating fuel efficiency and environmental benefits for the operational improvements. They were able to relate the ongoing regional and national air navigation planning with the 18 Modules of Block 0. They also noted that, as part of the transition to the Block Upgrade methodology, the AFI Air Navigation Plan and the National Air Navigation Plans would need to be modified as necessary.

Fifty-four participants from 15 States of ICAO's Eastern and Southern African Region and one State of ICAO Western and Central African Region, namely: Angola, Botswana, Burundi, Djibouti, Ghana, Kenya, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe, as well as the Civil Aviation Caretaker Authority for Somalia (CACAS) participated in the workshop.



ICAO SECRETARY GENERAL SUB-REGIONAL OFFICE TOUR – BEIJING

As part of his tour of the States presently being considered as host nations for the planned ICAO Asia-Pacific (APAC) Sub-regional Office, ICAO Secretary General Raymond Benjamin met recently with Chinese State Councillor Ma Kai in Xinhua.

During the meeting, Ma said China hopes to boost exchanges and cooperation with ICAO and play a more active role in promoting aviation safety in northeast Asia.

"ICAO attaches significant importance to its cooperation with China and is happy to it playing a bigger role in promoting aviation in the region," noted Benjamin. In terms of regional impacts, the European Union (EU) is expected to be hardest hit during 2012 as

it continues to deal with sovereign debt and austerity burdens. The Asia/Pacific, meanwhile, is expected to perform strongly in 2012 with regional GDP at PPP growing over 5.8 per cent and air traffic growth climbing by 8 per cent.

Looking further forward, current expectations see a 4.3 per cent annual GDP at PPP growth rate for the world economy over 2013–2014, with world air traffic growth projected to expand by 6.0 and 6.4 per cent, respectively.

**Purchasing Power Parity (PPP) is an economic theory linking currency exchange rates to prices paid for goods and services in any two countries.*

FLIGHT PLAN 2012 COORDINATION WORKSHOPS/MEETINGS IN THE AFI REGION

The ESAF and WACAF Regional Offices conducted four Flight Plan Coordination Workshops/Meetings (FCWMs) in Addis Ababa, Ethiopia; Nairobi, Kenya; Johannesburg, South Africa; and Dakar, Senegal; between April and May 2012, in support of the implementation of the new ICAO Flight Plan format that becomes effective on 15 November 2012. The participating States/ANSPs agreed on specific actions of coordinated implementation-readiness, shared experiences and agreed on mutual support.



In attendance were 143 officials from the Civil Aviation Authorities (CAAs) and Air Navigation Service Providers (ANSPs) of Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Djibouti, Dem. Rep. Of Congo, Ethiopia, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea Conakry, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saudi Arabia, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, and Zimbabwe; the Somalia (CACAS); as well as ASECNA and Roberts FIR.





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Executive Director
CAM - Macau International Airport Company Ltd.
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Executive Vice President
Dallas/Fort Worth International Airport

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Nor Azlina Mohd Isa, IAP
General Manager
Planning & Development
Malaysia Airports Holding Berhad



"AMPAP provided me with an opportunity for meeting, interacting and networking with other airport professionals around the world. The programme has also equipped me with the skills to deal with various barriers in management styles, leadership concepts, languages and cultures."

Robinson Misitala, IAP
Managing Director
National Airports Corporation Limited - Lusaka, Zambia



"Globalization is happening too fast, airport executives in order to be successful in this new environment have to overcome the existing barriers in management style, language and cultural barriers. I can see the harmonization of all these areas as an AMPAP success."

Lia Ricalde, AMPAP Associate
Aerodromes & Ground Aids Regional Officer
ICAO Regional Office, Lima, Peru

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State profile

Malaysia





“Malaysia accords one of its highest priorities to aviation and is firmly committed to the continued strengthening of the aviation sector”

Y.B. Dato' Seri Kong Cho Ha
Minister of Transport, Malaysia



AN OVERVIEW

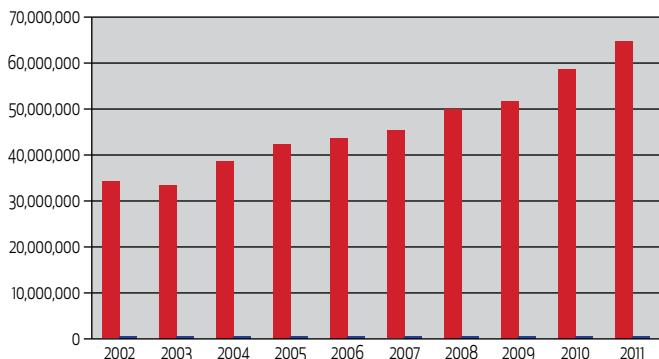
Malaysia is one of the most globalized economies in the world. The country is the world's 23rd largest global exporter and the 24th largest trading nation. Aviation plays a major role in bridging Malaysia to the global market through aviation-facilitated trade, expanded export markets and increased tourism. Aviation in Malaysia is a key sector of business and commerce. The country's increasingly industrialized, export oriented and tourism dependent economy, combined with a demand for fast delivery of just-in-time components for high value products, makes the country dependent on air transport.

MALAYSIA – A VITAL HUB IN THE ASIA PACIFIC REGION

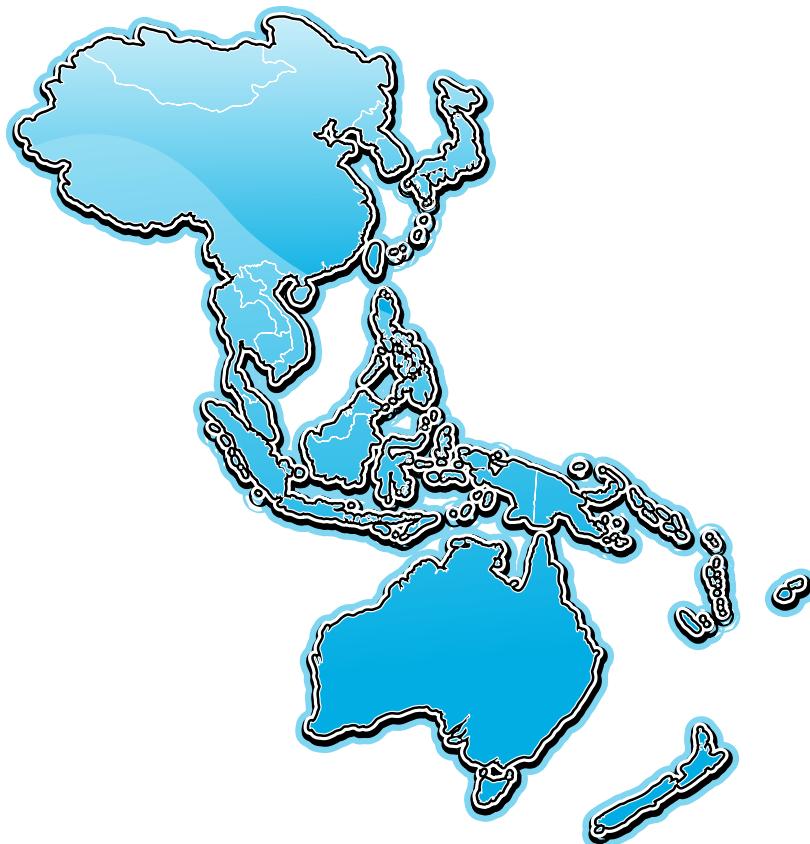
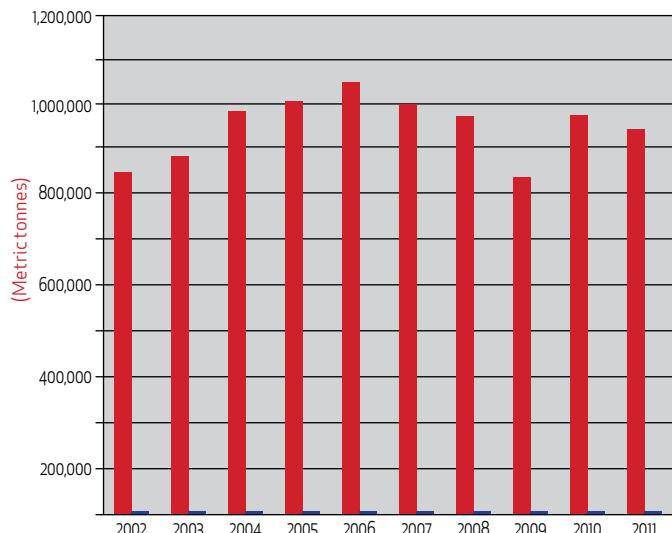
Malaysia's emergence as an important player and vital hub in aviation in the Asia Pacific Region is primarily due to a clear aviation policy and strategic development objectives. Malaysia's liberal aviation regime, sustained investment and supply driven aviation infrastructure, compliance with ICAO's Standards and Recommended Practices (SARPs), long-term planning, recognition of new growth sectors, as well as international collaboration and partnership, have contributed to Malaysia becoming an important player in aviation and the nation becoming a vital hub in the Asia Pacific Region.

AVIATION STATISTICS

Total Passenger Movements 2002-2011



Total Cargo Movements 2002-2011



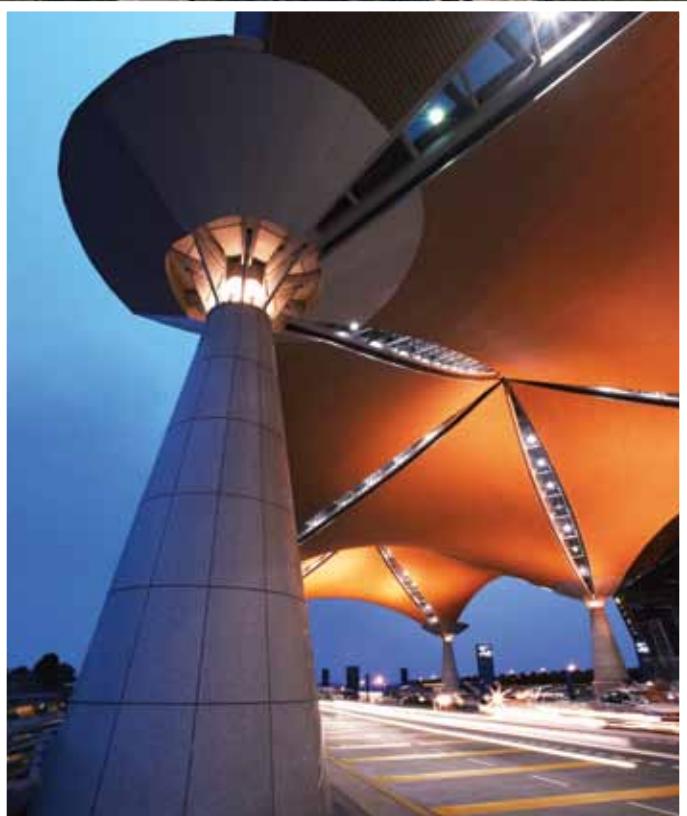
MALAYSIA AVIATION ACHIEVEMENTS, ACCOMPLISHMENTS AND INDICATORS

Malaysia's success as an aviation nation, its achievements in aviation and accomplishments in the air transport industry and aviation-related activities, are outlined as follows;

- In 2011, Malaysia was ranked 19th in the world in terms of freight tons carried and 20th in terms of passenger kilometers performed on scheduled flights.
- To increase accessibility and promote air travel, Malaysia has a liberalized air transport policy. Malaysia has concluded air services agreements with 96 countries of which 18 are open skies in nature. Currently 67 foreign airlines operate to Malaysia.
- Malaysia recorded strong growth in passenger traffic and freight volume over the last ten years. Total passenger traffic was 65,347,220 in 2011 compared to 59,064,726 in 2002. Freight volume was reduced from 924,794 metric tons in 2010 to 905,277 in 2011.
- Malaysia has a modern airport system, one of the most advanced in the region. Malaysia's airports comprise 6 international, 16 domestic and 87 airstrips.
- Malaysia's main gateway, the Kuala Lumpur International Airport or KLIA, is an eco-friendly airport. It handles Airbus 380 operations. The airport has sufficient capacity for facilities to handle up to 100 million passengers per annum.
- Malaysia's national carrier, Malaysia Airlines (MAS), holds a lengthy record of service and best practices excellence. MAS flies to 46 international destinations across six continents and is one of six airlines worldwide to be accredited a 5-star Airline status by Skytrax.
- Malaysia has been a pioneer and leading example of success in low cost air travel in the Asia Pacific Region. Malaysia's Air Asia is Asia's first and largest low-cost carrier. Air Asia is the World's Best Low-Cost Airline for 2009, 2010, 2011 & 2012.



Aerial View Of The Kuala Lumpur International Airport (KLIA)



- Recognizing the low cost carrier model, Malaysia provided supporting infrastructure and, to cater to future growth, a new low cost carrier terminal with a capacity of 45 million and a third runway will be operational at KLIA in 2013.
- Due to its strategic location, Malaysia is a major player in the air route structure of the region. Malaysia continuously modernizes its air traffic management systems.
- FAA's recognition through the Bilateral Aviation Safety Agreement (BASA) and a Category One rating in the FAA's International Aviation Safety Assessment (IASA). The Malaysia/US BASA was the first in Asia and the fifth in the world.
- Malaysian-designed and manufactured Eagle 150 series and SME MD-360 light aircraft have been exported to the United States, Australia and New Zealand.
- Malaysia is also one of the pioneer States in the Asia Pacific Region to have implemented safety management systems at 5 international and 9 domestic airports in compliance with safety programmes and Annex 14.

COMMITMENT

Department of Civil Aviation

The Department of Civil Aviation or DCA is the civil aviation authority for Malaysia and is dedicated to promoting the safe and orderly development of civil aviation. Its core functions are to regulate civil aviation. DCA works closely with all stakeholders on compliance with ICAO Standards and Recommended Practices (SARPs). In addition to regulatory oversight, the Department licenses air operators, aerodrome pilots, airworthiness engineers and air traffic controllers. DCA is also a service provider for air navigation and calibration services.

Safety and Security

Malaysian aviation authorities are committed to an oversight system with the highest standards of safety and security. The country has in place a proven safety and security oversight structure. The oversight structure is continuously monitored and assessed and is in compliance with ICAO Standards and Recommended Practices (SARPs).

Malaysia's accomplishments in safety and security audits under the Universal Safety Oversight Audit Programme (USOAP) in 2005 and the Universal Security Audit Programme (USAP)

in 2011 demonstrated the effectiveness of Malaysia's national aviation safety and security oversight systems and programmes. A comprehensive legal framework, modern equipment, trained personnel and new programmes are elements that contribute to Malaysia's track record on safety and security.

Liberalization

Given its significance to the global economy and national development, Malaysia spares no effort to ensure that the civil aviation industry is resilient in facing challenges. Specifically, Malaysia promotes a liberal aviation policy to stimulate aviation activities and generate economic growth. Malaysia's liberal air transport policy has facilitated trade, expanded export markets and boosted tourism. Progressive liberalization began in the early 1990s with special emphasis on the cargo sector. Currently, 67 foreign carriers operate to Malaysia largely due to a liberal aviation policy. To date, Malaysia has concluded air services agreements with 96 countries, of which 18 are open skies in nature, and the nation is well poised to meet the challenges of liberalization and a more competitive environment.

A liberal aviation policy also contributes to the growth of home grown carriers. Malaysia's national carrier, Malaysia Airlines (MAS), flies to 46 destinations across six continents. Malaysia is also a pioneer and a leading example of success in low-cost air

travel in the Asia Pacific Region. Malaysia's Air Asia is Asia's first and largest low-cost carrier. Air Asia was also recognized as the World's Best Low-Cost Airline for 2009, 2010, 2011 & 2012.

CONTRIBUTIONS

Skilled Aviation Personnel

There will always be a need for more aviation professionals to manage and maintain a global air transport system. Malaysia accords a priority to training and the availability of competent aviation personnel. Training programmes in the country have been harmonized to fulfill the industry's requirements for many more skilled personnel especially air traffic controllers, security personnel and pilots.

The Malaysian Technical Cooperation Programme or MTCP is an international technical cooperation programme which shares Malaysia's development experiences with developing countries. Since 1984, more than 358 aviation personnel from 61 countries have been trained in fully sponsored courses. In addition, 904 participants from 52 countries have received aviation security training at the ICAO accredited Malaysia Airports Training Centre. Malaysia is committed to expand its human resource training programmes in aviation with the aim of promoting a cooperative and collaborative environment with ICAO in addressing the challenge of continued availability of skilled aviation personnel.

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Malaysia Airlines Airbus A380



Aerial View Of The Satellite Building, KLIA



Regional Aviation Security Conference,
Kuala Lumpur, 11 – 13 January 2012



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Enhanced Cooperation

Malaysia has actively participated in, and contributed its expertise to, the various forums of ICAO particularly at the Asia Pacific level. Malaysia seconded auditors, on a long term basis, to support the ICAO USOAP. An auditor from Malaysia also participated in ICAO USAP missions. Malaysia has made voluntary financial contributions to support environment-related activities. Malaysia's active participation and financial contribution to regional initiatives, such as COSCAP-SEA, CASP-AP and CAPSCA, have enhanced safety, security and mitigated the spread of communicable diseases through air travel. Since becoming a Council Member in 2007, Malaysia has hosted ICAO Conferences and Meetings. These include the 45th Conference of DGCA, Asia and Pacific Regions, World Routes and ICAO World Bank Development Forums, the 65th IATA Annual General Meeting as well as COSCAP-SEA and CAPSCA Steering Committee Meetings.

Regional Aviation Security Conference, Kuala Lumpur, 11 – 13 January 2012

Malaysia hosted the Regional Aviation Security Conference in Kuala Lumpur from 11 – 13 January 2012. The Conference was a commitment to strengthen aviation security and protect civil aviation in the Asia Pacific Region and further contributed to a world wide solution to the problem of terrorism aimed at international aviation. The Conference adopted a comprehensive strategy to systematically improve passenger and cargo security.

Council of ICAO

Malaysia was first elected to the Council of ICAO in 2007. Elected again in 2010 by a wider margin, the nation has taken on an active and prominent role in the Council and its many Panels, Committees and Working Groups. In addition, Malaysia actively collaborated with other Council members to advance the Strategic Objectives of the Organization and to improve its governance.

Through actively participating in Council deliberations and supporting Council policies and initiatives to promote safety, security, efficiency, environment and rule of law in international civil aviation, Malaysia continues to work towards meeting the demands and challenges ahead and building a better future for all Contracting States.

CONCLUSION

The Malaysian civil aviation industry is expected to register continuous growth over the next decade. The Malaysian Government will continue to monitor and nurture the aviation industry. Proven policies of a liberal aviation regime, sustained investment in infrastructure and services, compliance with ICAO Standards and Recommended Practices (SARPs), as well as international collaboration, will be fine-tuned and new strategies formulated as Malaysia aspires to be a leading aviation nation.

Among the new strategies proposed, is the formation of the National Aviation Council. The Council, comprising all aviation stakeholders, will ensure the sustainable development of civil aviation. ■



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ICAO ONLINE



The screenshot shows the ICAO website homepage. At the top, the ICAO logo and name are displayed, along with a "United Nations Specialized Agency" badge. The main navigation menu includes "About ICAO", "Meetings & Events", "Information", "Data & Tools", and "Employment". A large banner image of the Earth is visible. Below the banner, a "Latest News" section highlights "Flight MTSO Systematic referencing at ICAO" and "US Imports P-6 Country Signing Certificate". A "Upcoming Meetings & Events" section lists the "Performance-Based Navigation (PBN) Symposium and Workshops" (Montreal, Canada) from 21-25/05/13 and the "Seminars Meeting of the Executive Council" (ICAO, Montreal, Canada) from 23-24/05/13. A "About ICAO" section provides an overview of the organization's mission and structure. A "Contact Us" section at the bottom includes links for "Email", "Feedback", "Report a Problem", "Business and Economic Change", "Data Privacy and Safety", and "Meetings and Workshops".

ICAO website

www.icao.int

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Stay in touch with ICAO Communications and follow the latest news and announcements.

The screenshot shows the ICAO Communications Twitter profile (@ICAOPRESS). The profile features the ICAO logo and the text "ICAO Communications @ICAOPRESS". It includes a link to the ICAO Communications website (<http://www.icao.int/Newsroom/ICAO.aspx>). The Twitter interface shows a "Follow ICAO Communications" button, a "Sign up" button, and a "Follow" button. The profile has 35 tweets, 3 following, 1,288 followers, and 90 lists. A sidebar on the right provides information on how to follow ICAO Communications and links to the ICAO Communications website and YouTube channel.

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