



Remarks of CANSO Director General, Jeff Poole, to the CANSO Global ATM Operations Conference in Madrid on 9 March 2017

Welcome to the CANSO Global ATM Operations Conference 2017. I would particularly like to welcome from China, Mr. Che Jinjun Director General of the Air Traffic Management Bureau (ATMB), and his colleagues. I look forward to his keynote address on China's Civil Aviation ATM Modernization Strategy.

With one of the highest air traffic growth rates in the world and one of the largest airspaces, ATMB faces formidable challenges. Many of these challenges require solutions that can only be optimised through close cross-border collaboration with neighbouring ANSPs and using best practices in operations which this operations community provides. CANSO, as the global association of ANSPs, provides a platform for Members to achieve this sort of cooperation by learning and working together and sharing best practice. We will be seeing good examples of this over the next few days during the Conference. We very much hope to welcome ATMB to the CANSO family very soon.

Game Changers in ATM Operations

The theme of this year's conference is 'Game Changers in ATM Operations'. We are seeing a number of developments and new technologies that are changing the industry's approach to air traffic management or ATM. These include: the extraordinary possibilities of unmanned aircraft systems, but also their challenges; the advent of commercial space travel and reusable launch vehicles; the impact of automation; the possibilities offered by artificial intelligence; space-based surveillance; digitisation and remote air traffic control (ATC) towers.

In addition to these game changers in ATM operations, the industry is constantly improving and refining its tried and tested techniques, technologies and processes, such as performance-based navigation, air traffic flow management and collaborative decision making.

In my remarks to day, I would therefore like to explore just some of these game changers; what they mean for the ATM industry; and how together we will prepare for the future. I will also look at some of the developments in our current and future operational measures that are making airspace more efficient and better harmonised.

Changing users of airspace

Unmanned aircraft systems or UAS are one of the biggest game changers of modern times. UAS are known by a number of different names including drones, RPAS, UAV etc. They operate in conventional airspace as well as below 500 feet, which is where the vast majority of recreational and commercial delivery ones will operate.

UAS offer an exciting opportunity to change the way people, businesses and State organisations do things. They are here to stay. We therefore welcome the UAS industry as new members of the aviation family.

But how can UAS safely operate without being a threat to civil aviation? We have to rethink some of our traditional approaches to air traffic management. One promising approach is the idea of UAS Traffic Management or UTM, an infrastructure to support safe operation. This is a relatively new concept, and UTM is developing in a largely uncoordinated way with different organisations working on various proposals. However, this should not happen in isolation from the existing air navigation services system, so CANSO is seeking active collaboration between manned aviation stakeholders, regulators, UAS manufacturers and companies developing UTM.

We strongly believe that this will help facilitate understanding of what UTM is; how it will work; and how it will integrate with ATM. One of the main challenges is how to reconcile two communities operating under very different cultures and business models. Working together offers opportunities for all stakeholders but we do need to leverage proven technologies and communication and interoperability standards rather than reinventing the wheel.

Technology developed for UTM systems could potentially be used to enhance existing ATM systems and technologies and could lead to the next performance breakthrough. And the UAS community could learn from the integrated safety management framework that has been developed so carefully in ATM over many years.

We must also recognise that access to any airspace should be determined by capabilities. We need a step-by-step approach that builds progressively (but quickly) with near-term deliverables. And we must always focus on a performance-based approach.

That said, our main concern and our driving priority must always be safety, particularly appropriate safety at boundaries or buffer zones between what might be termed UAS airspace and the airspace controlled by ANSPs.

Automation and artificial intelligence

The ATM industry is increasingly using automation, bringing safety, operational and commercial benefits. It enables planes to safely reduce separation minima and ATM to build capacity by: taking responsibility for traditional core controller functions such as separation assurance through conflict probes and conformance monitoring; driving efficiency through advanced flow management; and sequencing tools; and optimising airport throughput (using arrival and departure management).

In the future, automation will provide global real time and predictive decision-making, accounting for a wider range of safety and efficiency needs; fully utilise the capabilities of airborne technology, which is matched and harmonised with increasingly advanced ground-based automated systems; improve safety by providing robust separation assurance and monitoring capability; increase efficiency through more complex decision-making, flow management and en-route and airport optimisation in predictive and real time solutions.

We are on the cusp of a new technological age where artificial intelligence or AI will play an increasingly important role. AI will be a key component in developing fully autonomous and agile systems as it progressively replaces today's unique human input in dynamic decision-making. For example, we are likely to see AI being used in optimising flow management and airport collaborative decision-making (CDM).

Even if it is not in our sights at present, we will likely see other sectors such as the UAS industry and those developing UTM, fully embracing AI so we need to make sure AI is firmly on our agenda so we do not get left behind.

Other game changers

I do not have time to go into detail today on all the other game changers but would like to mention them briefly. Next year we will see the introduction of space-based ADS-B, which will enable surveillance in oceanic and remote areas not presently covered. Digitisation in remote towers will improve connectivity through the ability to cost-effectively manage traffic at remote and lesser used airports. And improved aeronautical information systems will enable ANSPs to safely handle the growth in air traffic.

All these game changers will enable us to harmonise systems, processes and traffic flows without reference to national borders or even land based equipment. They are changing the game for air traffic management and offer huge opportunities.

The challenge is persuading a traditional, human-centric and sometimes change-averse industry to take full advantage of these opportunities and embrace change. And an equally big challenge is persuading ICAO and regulators to move fast enough to keep up with the rapid pace of technological developments.

That is why CANSO advocates performance-based regulation, where it is up to us how we meet the regulatory and safety requirements rather than regulators laying down detailed and prescriptive rules on every new technology that comes along.

Implementing performance-based navigation (PBN)

In addition to these game changers in ATM operations, the industry is constantly improving its tried and tested techniques, technologies and processes. CANSO and its Members have been working with industry partners to implement performance-based navigation or PBN.

One good example is in the Latin America and Caribbean region. Last year, CANSO, IATA and ICAO agreed eight routes for upper airspace across the region that harmonises an efficient PBN route structure. But to keep the momentum on PBN moving forward, more PBN experts need to be trained; we must have the financial resources to make PBN a reality; and we must ensure that we plan for the future of PBN.

On this latter point, two weeks ago CANSO launched [*Performance-Based Navigation for ANSPs: Concept 2030*](#), to support Members as they prepare for, or continue with, PBN implementation. This document provides a vision of PBN from an ANSP's perspective, to the year 2030. It describes current and future PBN-related technologies and services that will impact ANSPs; identifies potential barriers and impediments to successfully implementing

PBN; and highlights capabilities and resources which ANSPs might wish to consider. By determining the future state of PBN, this document assists CANSO Members and others with their strategic planning, and to prepare for the PBN environment of 2030.

Air Traffic Flow Management

Another important initiative is air traffic flow management (ATFM) which, combined with collaborative decision making, is essential for managing and operating safe, efficient airspace. It helps regulate air traffic to avoid exceeding airport or air traffic control capacity, ensuring that available capacity is used efficiently. CANSO continues to help Members roll out ATFM and CDM across the regions.

In Asia Pacific, CANSO is working closely with regional ANSPs and IATA on a sub-regional ATFM system known as the Distributed Multi-Nodal ATFM Network to manage air traffic flow in the region. Last year, the first phase, which involved airport constraints, was successfully carried out through a one-year operational trial with ANSPs from China, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore and Thailand participating. Other ANSPs from Cambodia, Laos, Myanmar and Vietnam participated in the operational trial as observers.

One particular segment of the trial concerned 112 flights at Changi Airport, Singapore, resulting in a reduction in airborne holding time by six minutes. This represented aggregated fuel savings of Singapore \$100,000 (around EUR 66,000). This year, in phase two, the project is focusing on ATFM measures resulting from constraints in any given volume of airspace.

Another excellent CANSO ATFM initiative is CADENA – the CANSO ATFM Data Exchange Network for the Americas. Its objective is to champion the effective use of ATFM in the Latin America and Caribbean region and encourage the sharing of operational information between ANSPs and stakeholders for a safer, seamless airspace. It has real potential to improve the safety, efficiency, cost effectiveness and environmental sustainability of air traffic management in the region.

Environment

PBN, ATFM, CDM and the other initiatives to improve efficiency also help the aviation industry, particularly airlines, reduce its emissions. But we can always do more and ANSPs can take steps to reduce the emissions for which they are directly responsible, such as those from the facilities they own or manage

Last week, CANSO published a new guide, [*Air Navigation Service Provider Carbon Footprinting: A Best Practice Guide*](#). This guide motivates ANSPs to incorporate environmental considerations into their everyday operations and building management. It focuses on how ANSPs can take steps to assess and manage their own greenhouse gas emissions. I strongly commend this guide to CANSO Member ANSPs and encourage all to measure their carbon emissions as a crucial first step in identifying and delivering environmental improvements.

Conclusion

In conclusion, CANSO is now just half way through Vision 2020, its strategic framework for the ATM industry. As the ATM operations community, you have done a fantastic job in achieving the operations deliverables of Vision 2020 to date. Much remains to be done and I look forward to working with you on all of that for the next three years. But it is time to lift our sights to beyond Vision 2020 and we made a very strong start at the CEO Strategy Summit on Monday 6 March, where we considered how the ATM industry might evolve.

Game changers such as UAS, automation, digitisation and space based ADS-B are already changing the game for the ATM industry. Doing things in ATM the way we have always done them is no longer an option. We need to embrace change and make full use of new technology. I am pleased that CANSO and its Members recognise this and I hope that my remarks have given you a flavour for the excellent work that the CANSO operations community is doing to ensure we harness the opportunities, as well as ensuring that we are prepared for change.