



## Future of air traffic management (ATM) in Europe

### Remarks of Simon Hocquard, Deputy Director General CANSO, to ENAIRE 2019 Annual Day in Madrid on 12 March 2019

Good afternoon and thanks for inviting me to share your day. I listened to the presentation by Joe Sultana with great interest as well as the excellent discussion we have just witnessed on the challenge of ATM capacity in Europe. It is very evident from all the conversations this morning that there is a theme on the need to collaborate and work together across the whole of aviation. Whilst this may have been focused on the short to medium term solutions it is also relevant to the longer term.

#### **Current capacity challenges in Europe**

So, before I talk about the future of ATM in Europe I hope you will allow me the opportunity to give my perspective on the current capacity challenges in Europe.

Anyone who attended the A4E Summit in Brussels last Wednesday; read A4E's new report on delays in Europe; or saw some of the media coverage would get the clear impression that ALL delays are the fault of ATM. Of course I share the concerns of airspace users (who are our customers), aviation stakeholders and political institutions that passengers face increased delays.

But as we all know these delays have various causes such as lack of capacity both in the air and on the ground, in particular at airports; technical problems with aircraft and air navigation equipment ; strikes by pilots, air traffic controllers and other staff; and bad weather.

However, as Joe rightly said, the outcomes are all the same and it is solving these delays that remains the challenge. I feel it is unhelpful for the whole aviation industry for any of us to spend so much time and effort on finding fault and playing the blame game rather than working cooperatively with all stakeholders to: first, understand the reasons for delays; and, second, to work together to address the problems.

We fully acknowledge that there is room for improvement in certain areas but the majority of ANSPs in Europe are performing well. But we rarely hear about that from the airlines, just the problem areas.

#### **CANSO focus on reducing delays**

ANSPs will continue to focus on reducing those delays which are genuinely addressable by air traffic management. In the short and medium term, however, it is difficult in the areas where delays are a problem to increase ATM services to handle extra traffic as there is no new capacity immediately available.

We are also playing our part through new investments, technologies and processes. Our aim is to provide a seamless, uninterrupted, safe service while improving Europe airspace; through building a modern and efficient air traffic infrastructure; and reducing delays whilst controlling costs.

And of course we continue to take steps to reduce delays and improve efficiency, such as collaborative decision-making; air traffic flow management; providing more flexibility for planes to fly their chosen routes through 'free route airspace'; and implementing new technologies and procedures such as time based separation.

However, on their own, these steps will not be sufficient to overcome the anticipated capacity and delay challenges. States and industry partners also have an important role. It is only a coordinated approach across all stakeholders that can create the step changes that are necessary to successfully manage European airspace and deliver the biggest benefits.

All of us working together, whether that is political bodies, associations, States, industry and other stakeholders is needed to ensure Europe's airspace has adequate capacity and is fit for purpose now and in the future.

The step changes that are needed to address the capacity and delay challenges can only be achieved by removing the present constraints to a true pan-European approach to airspace management, with a greater sense of urgency.

States can also help to create the right environment for improved cooperation among all stakeholders in Europe, particularly air navigation service providers, airports and airlines.

### **Future of ATM in Europe**

Turning now to the future, I want to paint a picture similar to that of European Commissioner for Transport, Henrik Hololei, this morning by looking at: the role and importance of aviation in, say, the mid-2030s to Europe; what aviation might look like then in terms of traffic and types of airspace users; and what ATM needs to do now and in the future to prepare for the challenges and demands.

I would particularly like to focus on four areas in my remarks to you today: operations, technology, business models, and people.

But before that, let's look at the economic benefits that aviation brings to Europe's economies. Aviation provides connectivity, access to markets and boosts tourism across Europe. It represents over four percent of Europe's GDP, some 730 billion euros in economic activity. It supports more than 12 million jobs. By the mid-2030s the impact of air transport will have grown to support 18 million jobs (50% more than today) and 1.4 trillion in economic activity (90% increase).

In short, aviation matters but what does this all mean for the aviation industry? How can the industry adapt and grow to enable these future economic and social benefits? And importantly for us in this room today, what does ATM need to do to manage growth in air traffic; new airspace users such as drones, autonomous air vehicles, spacecraft traversing through controlled airspace; new technologies; and the changing demands placed on air traffic controllers.

### **ATM in 2035 - a wish list**

We all love making wish lists, imagining the perfect future. My particular wish is that it is always warm and dry in the summer, snowy and fun in the winter and happiness is a world-wide epidemic, but that's got little to do with why we are here today!

From an aviation perspective I wish that we could guarantee here and now that on a Tuesday in August every flight will arrive on time, with an efficient flightpath and delighted customers. In fact that predictability and consistency is what we as the ATM industry should be striving for.

So when we close our eyes and make that wish for the future of ATM, what will ATM look like in 2035? Of course, safety remains at our core and continues to be our number one priority in 2035, as it is in 2019. But let's turn this around and give our wish instead to our customers – the airspace users and airports. Because if we succeed in achieving their wish, we will have achieved our own. What sort

of experience do we want them to have? Depending on that, we can then build a future for ATM in Europe.

Simply put, ATM's task is to ensure that airspace users can fly from point A to point B, safely, efficiently, consistently, predictably, cost effectively, using the optimal route and altitude and without delays. For the ATM system to support this it needs to be a customer-focused, harmonised and seamless European airspace that is scalable and resilient.

Simple enough? But a lot needs to be put in place to get us from where we are today to where we would like to be and a lot of current barriers and constraints need to be overcome. So let's take a look at what European ATM in 2035 might look like.

## Operations

By 2035 we need to operate more as a network where traffic flows feel seamless to those flying. This requires collaboration across a much wider spectrum than we currently have today. It does not mean giving "control" over to other entities but to operate as one rather than operating as many doing their own thing. I do not believe that sovereignty will be a blocker in the future as an example.

Planning decisions will be taken holistically rather than in national silos; ATM really is a team game rather than an individual sport. Many of you will have heard me say that great things are rarely achieved by one individual, and truly memorable things are often achieved by working with others. This is will be no different for ATM. Whether this is sharing data across SWIM networks, taking a less than optimal local decision to benefit the network, assisting others in providing the service expected by our customers and so on.

We will see further refinements to current operational measures that improve capacity, shorten routes and flying time and save emissions such as airspace change, continuous descent and climb operations, collaborative decision-making, air traffic flow management, performance-based navigation, and flexible use of airspace, as already mentioned by all military colleagues.

The full potential from operational initiatives is not always currently achieved due to competing requirements (e.g. safety, environment, economic, capacity). However, these are all sound operational measures that may or may not still be around in some form in 2035 but in addition there will be a host of others, based on the latest satellite-based, data-driven, artificial intelligence-enhanced technologies.

And talking about technology....

## Technology

While the planes that are being built today will still be around in 2035, I forecast that air traffic management will have changed beyond all recognition. This is partly down to the development of new technologies. These new technologies are already transforming ATM performance and will form the foundations for ATM in 2035.

The opportunities offered by big data will enable more efficient operations based on actual performance and greater cooperation across the industry, recognising the security aspects as highlighted earlier.

This year sees the introduction of space-based ADS-B air traffic surveillance, which will enable surveillance in oceanic and remote areas not currently covered and allow us to safely reduce separation distances, improving capacity.

This will create changes with information/data providers entering the ATM market. Heritage service providers will buy data rather than building their own national infrastructure leading to cost savings and efficiencies.

Other technological advances include VOIP via satellites, digitisation of air traffic control towers and system wide information management (SWIM). Automation enables planes to fly closer together safely and ATM to build capacity. Artificial intelligence or AI will progressively replace today's unique human input in dynamic decision making, for example in optimising airport collaborative decision-making.

Who know what further technological advances will have been made by 2035 but these technologies already point the way to a digital, data-driven ATM system with a high degree of automation and machine learning.

SESAR plays a key role in developing new technologies for ATM. We need to ensure that ANSPs take full advantage of the opportunities offered by SESAR and that funds are made available to invest in these new technologies.

### **Business models of ANSPs**

New technologies have the potential to lower the cost of entry for organisations that wish to provide air traffic services. And perhaps by 2035 we will see new suppliers providing elements of air navigation 'as a service'.

Greater competition in ATM, the separation of regulation from service provision and privatisation or corporatisation of ANSPs looks like the natural market-driven, necessary and right way forward.

The aim is for providers of ANS to be treated as normal businesses with the opportunities to make investment decisions, free from relying on government budgets and having to compete with government departments such as health and education.

However, we do need to build an environment that accommodates a range of business models – from corporatised to fully privatised – and recognises the need for local flexibility. One size does not fit all.

This will require effective consultation across industry stakeholders in the execution and governance of activities related to service provision. ANSPs will need to have increased flexibility to innovate, cooperate or deliver services beyond their national boundaries, building on examples such as A6 and iTEC amongst others.

ANSPs will use virtualisation and common services to unlock more resilient ways to deliver services through industrial partnerships.

## **People**

People remain incredibly important in this industry. New technologies are not only transforming air traffic management performance but also changing the role of air traffic control staff and the different skills they require now and in the future. We are seeing big changes on the horizon so we must make sure they are well prepared and trained for these changes: automation, digitisation and other new technologies require new skills; new entrants to airspace such as drones require a new approach; capacity constraints and cross-border cooperation to address them requires greater flexibility.

A high level of performance from humans in the system has never been so important. As an industry we are developing new metrics for human performance and new innovative training and skills programmes. We must also look to the future skills pipeline, as by the mid 2030s, the aviation sector is forecast to need a further 620,000 pilots and 125,000 air traffic controllers.

In short, people are our most important asset and we must carefully consider the requirements and demand for this fundamental resource in the future, continuously looking for opportunities to nurture and grow.

All this needs an environment that supports effective dialogue, effective use of manpower and change management including: a shift from a geographical sector-based approach to ATCO validation to one that is based on systems; changes in training regulations to more fully utilise the simulation technology to maximise training efficiencies across Europe; enhanced opportunities for increased mobility or cross-border service provision; and an effective process for managing change which secures benefits from innovation and automation in service provision while enabling the maintenance of high social standards at a lower cost.

## **Social dialogue**

For all this to work, it is vital fully to involve staff, employee organisations and unions.

The introduction of remote digital towers in Sweden has been a textbook case study of how early involvement led to the successful acceptance of the new technology by staff. Apart from getting their buy-in, their insights based on experience were invaluable.

There are of course strikes from time to time, and the ATM industry is as keen as airlines and airports to do everything we can to avoid these strikes. Last week A4E issued a report identifying 33 strikes between 2015 and 2017. Some 60% of these were in France accounting for 74% of strike days. While the focus is on the five countries where strikes occurred, we have to remember that in those three years there were 31 other European ANSPs that had no strikes, including ENAIRE.

Strikes do significantly impact aviation, and I am sympathetic to the need for ensuring continuity of overflights as much as possible and implementing cooperation mechanisms to minimise any service disruption. My sincere hope is that between now and the mid 2030s we will be able to develop social dialogue to such an extent that strikes will be few and far between. Perhaps separation of regulation and service provision will help.

## **Conclusion**

I can see and think that ENAIRE's inclusive approach is to be commended. The demonstrable benefits of working with all stakeholders is easy to see and I am particularly grateful for the initiatives

being put in place this summer and the efforts that are being made with its neighbour DSNA – well done.

This networking approach FOR the network is the right way forward. Operational strategic decisions will need to be made for the greater good.

Yes, technology is a significant and essential part of continuing to ensure safety now and in the future. For example SWIM is reducing the cost of investing in national infrastructure.

But we must not forget our people. We will continue to be a people-based industry for a while yet.

Business models will change and I believe market forces will drive that according to local and national needs.

These changes need to be, and in my opinion, will be, supported by simplified output-based regulation and not on inputs as it is today.

Underlying all of this is cooperation and effective partnership across all stakeholders: ANSPs, airlines, airports, military and manufacturers. Aviation is a team game and therefore requires a team effort.

I started off by talking about the flak we have been getting from airlines and their associations. While some of their concerns are justified and we are doing everything we can to address them, I really do hope that by 2035 we will all be working constructively together on solutions rather than people spending valuable time producing lengthy, one-sided reports on the alleged failings of industry partners.

ENAIRE is actively working on this already, and is setting the benchmark. Perhaps if more do the same and follow this lead and if we get all this right we will build an ATM system fit for the future.

Thank you.