FROM INNOVATION TO SOLUTION

Editorial





Claude Chêne, Executive Director SESAR Joint Undertaking

C During my short time at the SESAR Joint Undertaking (SJU), I have seen plenty of convincing evidence that SESAR is already having a transformative and positive impact on the Air Traffic Management (ATM) industry. In visits to validation platforms and demonstration exercises, and in speaking to operations experts, I have witnessed the commitment, energy and determination of SESAR members to develop solutions that are relevant for use and that have a real potential to boost Europe's ATM performance, both now and in the future.

I am not alone in my conviction that SESAR is a research and development (R&D) powerhouse for ATM in Europe. In this edition, Siim Kallas, Vice-President of the European Commission and Commissioner for Transport, strongly shares this view and describes the factors that he feels determine SESAR's success. Mr Kallas reveals his impressions as to how the SESAR Programme

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can grow in ambition in the future, and how it can provide an R&D stepping stone towards synchronised deployment.

A proven vehicle for accelerating the operational acceptance and the subsequent industrialisation of the SESAR solutions are the Programme's demonstrations. That is why the SJU launched a new call for demonstration activities at the end of 2013, and plans to make large-scale demonstrations a core focus of Research and Innovation in the SESAR 2020 Programme. A feature in this edition provides an overview of SESAR's approach to demonstrations and the projects that have been funded to date. It also looks in detail at just two SESAR Demonstration Projects, one on the use of Collaborative Decision Making (CDM) to improve airport operations (DFlex), and another on the integration of Remotely Piloted Aircraft Systems (RPAS) in coastguard rescue operations.

The old saying that 'No man is an island' comes to mind when thinking about R&D in Europe and the need to work together to overcome fragmentation. Since the very start, SESAR has seen the added value of bridging ATM silos (our islands) through the creation of a strong network of members, partners and participating stakeholders. This edition's member profile, featuring the French ANSP, DSNA, clearly illustrates how the involvement of different actors can bring unique savoir-faire to the SESAR table. Enjoy the read.

Claude Chêne, Executive Director, SESAR Joint Undertaking

Opinion

A look back into the future



Siim Kallas, Vice-President of the European Commission and Commissioner for Transport, reflects on the progress the SESAR Project has made since its launch and gives his views on SESAR's future as it continues to deliver results from its R&D activities, which are ready to be brought to market.

Your term as Commissioner for Transport has spanned the definition and development phases of the SESAR Project, and the upcoming launch of its deployment, which will run in parallel. In that time, what would you say are the Programme's key achievements and how do you feel having helped shape these milestones?

Since it was set up in 2007, the SESAR Joint Undertaking has managed Europe's most complex R&D Programme. In itself, this is a massive achievement – and it is even more impressive given that SESAR has now started to provide smart solutions to the aviation industry.

Today, we can proudly say that SESAR has both challenged and made a positive contribution as to how R&D in ATM is done in Europe. For me, it has been a great honour to have been part of that journey.

SESAR has provided a steady stream of innovative tools and ways for the European aviation industry to tackle various problem areas, through its use of simulations, prototypes, shadow mode, live flight trials and larger demonstrations. SESAR has both challenged and made a positive contribution as to how R&D in ATM is done in Europe

Thanks to its cooperation with international partners such as the United States, Japan, Mexico and Singapore countries with which Memorandums of Cooperation have been signed - SESAR has made sure that its concepts and technologies are aligned with other ATM modernisation programmes across the globe.

None of these achievements would have been possible without industry's commitment, effort and active participation. This is the true engine that drives the programme forward, because it is without doubt the members and partners that are the main factor behind the success of the SESAR Joint Undertaking and its Programme.

I am confident that SESAR 2020 will provide Europe's aviation sector with many more forward-looking ways of tackling and solving problems. In turn, this will create new business opportunities to benefit Europe's society and wider economy. It is why I believe that what SESAR produces and provides is not only vital for the Single European Sky (SES) to achieve its ambitious goals, but also for us to achieve the Europe 2020 growth strategy for a smart, sustainable and inclusive economy.

Considering that SESAR is a European Programme with global ambition, what steps should be taken to further reflect this geographical scope?

With 70% of flights in the European Union crossing national borders, the entire European continent needs to be involved if we are to successfully secure the degree of innovation that Europe needs. We should also not forget the ambitious target set out in the Flightpath 2050

vision for aviation: 90% of passengers within Europe to complete their journey within four hours! This is an initiative that I fully support. To make it a reality, it needs the involvement of every Member State and everyone else involved. It no longer makes any sense to modernise air traffic control systems on a local or national basis.

So I am in favour of expanding involvement in the Programme, not only by increasing its geographical scope, but also by attracting a broader range of companies – from large multinationals to SMEs and academic institutions. SESAR needs the support and expertise of a diverse range of participating parties so that the next generation of ATM systems and operations can be collectively developed and shaped.

How do you see SESAR actors' role and remit evolving as we enter the deployment phase?

SESAR deployment is an essential step towards full SES implementation. It has to be timely, synchronised, coordinated and fully integrated in the SES context and structure. This is the only way that deployment will contribute effectively towards achieving the SES performance objectives.

SESAR provides the appropriate environment and structure for moving R&D onto deployment. The European Commission, which coordinates SES instruments, aims to facilitate deployment at the following levels: political, the Deployment Manager (DM) and the deployment projects.

Ultimately, no matter how impressive they are, the solutions provided by SESAR very much depend on the industry's ability to proceed with their implementation in a timely and synchronised way. They can therefore be supported by EU legislation that make SESAR standards mandatory in European airspace and airports. Standardisation will be needed, for example, to exchange 4D information between aircrafts and the ground so the information flow is controlled systematically. The same will be true for System Wide Information Management (SWIM), which will need to

make sure that its data exchange format is properly standardised.

Since the DM will be responsible for defining, developing, executing and maintaining the SESAR deployment programme, its role is crucial – and I am delighted to see industry's commitment to play a major part in this.

The first common Project, the Pilot Common Project (PCP), should cover the essential operational changes that SESAR has identified as being sufficiently mature and needing to be deployed Europe-wide within the 2015-2017 timeframe. The SESAR Joint Undertaking will continue assisting the Commission to set up future common projects, given that it has the fullest overview of the maturity of new ATM technologies that result from the R&D Programme.

It is imperative that all parties involved in the aviation sector - airlines, ANSPs, airports, suppliers and manufacturers, but also the military - play a clear role in SESAR deployment. Deployment needs to be linked with the performance scheme, Functional Airspace Blocks, and the Network Manager so that meaningful and logical ways can be found for working together.

SESAR has created the change in European ATM that demonstrates its ability to deliver benefits and deployable solutions

SESAR has created the change in European ATM that demonstrates its ability to deliver benefits and deployable solutions. I will be proud to hand over this jewel of a Programme to my successor as European Transport Commissioner and will urge him or her to remain committed to SESAR so that we maintain today's momentum into the years ahead.

Focus on SESAR Demonstrations

Modernising ATM operations is not an easy task. It requires the active participation and constructive cooperation between a wide range of industrial and operational stakeholders. This is where SESAR Demonstration Projects come in. These unique collaborative initiatives unite the skills and innovation capabilities of Europe's ATM community in order to demonstrate a steady stream of enhanced technologies and procedures ready for deployment.

Before being considered mature enough for deployment, every SESAR technology and procedure is validated in a focused set of operational environments at the local or regional level. This is known as the Release Process. The need for wider SESAR Demonstration Activities was identified right from the start of the Programme in order to show, on a larger scale, the benefits of the SESAR Solutions in day-to-day operations. This in turn builds confidence about SESAR outcomes among a broader set of stakeholders in the ATM community.

Showcasing SESAR benefits

Against this background, a range of stakeholders from airspace users, air navigation service providers, the manufacturing industry and airports work together on collaborative Demonstration Projects for a period of typically 24 months. These Projects aim to demonstrate the benefits of SESAR concepts locally and, through a rippling effect, to the entire ATM community. By enabling such a process, SESAR can prove the benefits of its solutions more extensively and secure the buy-in from the key stakeholders involved. Demonstrations are also seen as a very powerful vehicle with which to engage operational users and authorities in SESAR and thus to identify any remaining technical and operational obstacles before initiating full deployment.

The SESAR Programme currently has **27 on-going SESAR Demonstration Projects**, consisting of live trials, some running across Europe and the North Atlantic, which are co-financed by the SESAR Joint Undertaking: There are currently 27 on-going SESAR Demonstration Projects, which are co-financed by the SESAR Joint Undertaking

- ✤ Nine projects have an environmental focus, aiming to show that aircraft emissions can be reduced through better flight management. These are part of the third round of projects funded within the Atlantic Interoperability Initiative to Reduce Emissions (AIRE) programme, a joint initiative of SESAR and the US Federal Aviation Administration (FAA). Bringing together 31 airports, air navigation service providers (ANSP) and airline partners in 14 geographical locations, this latest set of projects builds on the successes and insights gained through the previous series of AIRE demonstration flights and aims to raise the performance bar further. To date, AIRE has run more than 10,000 green commercial flights using new procedures, resulting in fuel savings of up to 1,148 tonnes. These collaborative efforts are concrete proof that it is possible to fly more environmentally-friendly trajectories today with commercial flights using current technologies.
- A further nine projects aim to showcase the benefits of first SESAR solutions in day-to-day operations on a larger scale. The purpose of these projects is to increase the operational exposure of the benefits of SESAR solutions, identified through the SESAR Release process, and accelerate their acceptance by the wider ATM community in order to promote their merit for industrialisation. These projects therefore focus on the introduction of several new technologies and improvements in one or several operational focus areas, and involve 15 airlines, five airports and 18 other aviation partners in 25 geographical locations.



* The remaining nine projects focus on the integration of Remotely Piloted Aircraft Systems (RPAS) into European ATM. With 38 different partners from eight different countries, these projects aim to incorporate existing SESAR R&D, as well as, cover some of SESAR's focus areas, such as Airborne Spacing and Separation, Integrated Controller Working Position, Surface Planning and Routing, and Business and Mission Trajectory. Both optionally-piloted and completely remotely-piloted systems will be participating in these projects, using various types and sizes of RPAS, such as rotary wing, motor gliders, and light observation aircraft from both the civil and military sectors. The demonstrations started in the last guarter of 2013 and are expected to run until the first quarter of 2015.

Sharing best practices

SESAR prides itself for the strong momentum for change that it has developed over the years, in which ATM stakeholders are keen to share their experiences and knowledge. Proof of this willingness to learn from one another was seen at workshop held in Lisbon at the end of November 2013. Over 40 experts, representing more than 60 organisations, working together on demonstration activities in Europe and the North Atlantic, participated in the workshop where they shared and reviewed preliminary results and discussed how to further improve the approach to demonstrations. These exchanges are particularly important given that Large Scale Demonstrations will be a key component of the SESAR 2020 Programme.





The final results of these on-going projects will be gradually published from 2014, but their preliminary results already indicate that on more than 5,000 commercial flights, involving over 20 air operators, significant performance gains can be achieved on flights within Europe, as well as flights between Europe and North America, Latin America or Africa. These performance gains cover a wide range of key performance areas, including customer satisfaction (through smoother flights and punctuality), environmental efficiency, air navigation service provision productivity, safety and capacity. Furthermore, some of the projects are also taking advantage of and complementing results achieved by other European initiatives, such as Clean Sky.

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Scaling up collaboration through a new call for demonstrations

Accelerating the operational acceptance and the subsequent industrialisation of the SESAR solutions - in particular those paving the way for the changes included in the European Commission proposal for the Implementing Regulation on the establishment of the PCP - will support the implementation of the ATM Master Plan. Demonstrations will therefore be a major focus of the SESAR Programme as it moves forward towards the deployment phase.

In order to further enhance the commitment of bridging R&D towards deployment, and to further build confidence in SESAR solutions, a new Call for Proposals covering SESAR Demonstration Activities for the period 2014-2016 was launched at the end of 2013¹. This time, SESAR is calling for larger projects to pave the way for the deployment of the PCP, specifically solutions targeting small and mediumsized airports, as well as global interoperability.

The SESAR Joint Undertaking will provide more information on this call and will showcase further results from this increasingly significant portfolio of SESAR demonstration activities at the upcoming World ATM Congress, during a workshop on 5 March 2014.

By working together on SESAR Demonstration Projects, the European aviation community is proving that the first SESAR solutions for the future ATM system are both operational and ready for industrialisation.

¹ http://www.sesarju.eu/about/procurement

SESAR in depth: DFlex

Providing greater flexibility to airspace users on departure



Like a dozen other European airports, including Frankfurt and London Heathrow, Paris-Charles de Gaulle (CDG) implements Airport CDM. This means that all actors involved (airport operators, aircraft operators, ANSPs, handlers, Network Manager) work together more efficiently and transparently in a collaborative spirit. DFlex, a SESAR Demonstration Project, co-funded by the SESAR Joint Undertaking, aims to take the Airport CDM concept to another level by introducing a new collaborative pre-departure sequence management system.

Airport CDM allows for the improvement of airport operations with a particular focus on turnaround and pre-departure sequencing processes. It also enhances en-route sector planning. Within this context, each departure flight receives a departure time called a Target Start-up Approval Time (TSAT) on a "first-scheduled, first-served" basis. The DFlex Demonstration Project aims to go one step further by demonstrating enhanced flexibility in the Collaborative Pre-Departure Sequence (C-PDS) process currently in operation at Paris-CDG, allowing flight reordering based on an airline's business requirements.

In other words, the objective of DFlex is to provide airlines with greater flexibility to deal with disruptions,

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which normally lead to departure delays or cancelled flights. The first operational improvement is to allow an airline to reorder its departure flights according to its operational or commercial requirements. DFlex also aims to achieve further operational improvements, such as enabling an airline to use a departure slot belonging to a flight that the airline had previously cancelled. Live trials will be performed at Paris-CDG in order to validate this slot substitution. By upgrading the Airport CDM, DFlex will offer airlines the ultimate CDM experience.

Project stakeholders

The three main stakeholders in the project - Aéroports de Paris, Air France and Direction des Services de la Navigation Aérienne (DSNA) - have been joined by: Hop!, Delta Air Lines, FedEx, Eurocontrol, Airbus Prosky/ Metron Aviation. Enlarging the circle of stakeholders involved will:

- Create more opportunities for departure flexibility within a group of airlines (HOP! and Delta Air Lines), and extend the experience to other aircraft operators such as FedEx.
- Ensure that what is developed at Paris-CDG is aligned with the SESAR concept and can be applied at any European airport using CDM, as well as American CDM airports (Delta Air Lines, FedEx, Metron Aviation).

Timeline and planning

The first operational improvement was developed in the first quarter of 2013, with an assessment of commercial flights taking place from April 2013. The second operational improvement was developed in the fourth quarter of 2013, with an assessment of commercial flights taking place from December 2013.

Results

To date, the DFlex trials have not had to deal with any disruptions due to snow or other bad weather conditions. However, they have encountered and handled other types of disruptions that typically lead to departure delays and cancellations. The benefits of the DFlex concept were clearly seen during a number of incidents. For instance, in May 2013 it helped avoid a curfew and more than two hours of delay due to a runway closure, allowing around 30 passengers to make their connecting flight without any further disruptions.

In June 2013, flight delays were halved (11 compared to 20 hours) thanks to DFlex. In addition, around 10 long-haul flights were able to depart on time, while other flights had an initial departure delay of around 80 minutes. In December 2013, departure delays for 40 flights was reduced because the airline was able to use the departure slot of a departing flight that the airline had previously cancelled.

Lessons learned

DFlex is very promising in the case of disruptions, since it reduces the loss of revenue for airlines and mitigates passenger dissatisfaction. The risk of destabilising the departure sequence is very low as the number of DFlex flights at any given time is limited and any DFlex action requires careful analysis from the airline's Operational Control Centre.

Considerations for implementation

The DFlex operational improvements are still under evaluation, but could already be used in operations with commercial flights for the airlines involved in the project.

Other airlines have expressed their interest in using the operational improvements brought about by DFlex. As a result, work is underway to make these operational improvements available to other airlines operating at Paris-CDG. In 2014, the project will further disseminate the benefits of DFlex among aircraft operators and other CDM airports.

For more information about the DFlex project, contact Laurent Renou at <u>larenou@airfrance.fr</u>

Some Air France examples of savings achieved through use of DFlex in disrupted situations (preliminary results)							
Date	Number of reordering	Total delay before reordering	Total delay after reordering	Dflex Benefits			
May 28	3	182 min	125 min	31% fewer delays 1 curfew avoided 30 pax made connecting flights			
June 11	2	128 min	59 min	54% fewer delays 2 long-haul flights depart on time			
June 12	9	1,273 min	541 min	54% fewer delays 3 medium-haul flights cancelled 7 long-haul flights depart on time			

SESAR in depth: AIRICA

Remotely Piloted Aircraft Systems to the Rescue!

Today, coastguard services are carried out by aircraft that are manned with on-board operators. However, Remotely Piloted Aircraft Systems (RPAS) technology and related sensor suites have now reached a level of maturity that can provide real added value to e.g. coastguard operations, notably through quicker deployment, greater autonomy and the use of smaller aircraft. For these reasons, several government services have expressed interest in replacing (a part of) their fleet with RPAS applications.

This is where the AIRICA project (ATM Innovative RPAS Integration for Coastguard Applications) comes in. Over the course of the next two years, the project will show the feasibility of using RPAS for coastguard activities in non-segregated airspace. The AIRICA project is one of nine RPAS projects that have been selected for co-funding by the SESAR Joint Undertaking, with the goal of demonstrating the feasibility of integrating RPAS into normal air traffic by 2016.



Closing the gaps

By performing coastguard operations previously executed by manned aircraft in the North Sea area in real time, AIRICA aims to address remaining operational and technical gaps regarding the integration of complex RPAS operations into non-segregated airspace.

The envisaged coastguard operations will take place Beyond Visual Line Of Sight (BVLOS) and will involve (low-level) flights in different airspace environments. Following take-off from an airport, the Remotely



Piloted Aircraft (RPA) will fly towards the targeted area over the North Sea, perform its mission and fly back to the same airport.

During this mission, the RPA will cross several different classes of airspace, where it will encounter different types of traffic. This means that the RPA must be equipped with appropriate sensors and on-board Detect and Avoid (D&A) capabilities in order to identify and deal with such traffic. For the purpose of this demonstration, a D&A system based on active Mode S interrogation and received ADS-B signals will be implemented and tested.

To optimally integrate RPAS operations with other traffic at the airport, the project will make use and test the feasibility of a Simultaneous Non-Interfering (SNI) concept for RPAS operations.

To meet acceptable levels of air traffic controller workload, the demonstration will also assess a system that provides controllers with detailed live information about the RPA's waypoint route navigation.



Innovation

Up until now, the majority of unmanned aircraft have not been equipped with D&A equipment, but given the envisaged coastguard operations and the non-segregated environment in which they will be performed, on-board D&A capabilities are essential. As part of the AIRICA project, D&A equipment will be integrated based on experience from an earlier project performed at the National Aerospace Laboratory (NLR), where a range of D&A functions have been developed, implemented, tested and demonstrated. The RPA will be equipped with an ADS-B transponder for detecting and locating other aircraft. It will also be equipped with a combination of active systems capable of interrogating Mode S transponders. The signals will be processed on board the RPA, but will also be sent to the Remote Pilot Station (RPS). When the Remote Pilot does not take appropriate actions, the RPAS will automatically take evasive action.

Expected outcomes

The aircraft used for the demonstration will be a manned, optionally-piloted auto-gyro based on the ArrowCopter AC20 from FD-Composites. While the standard configuration is a two-seater, for this demonstration the optionally-piloted version will be configured as a single-seater.

The project will replicate a common coastguard operation in the North Sea area. This is an interesting demonstration zone consisting of nature reserves and areas of economic activity with daily low-level helicopter flights to and from oil rigs. The purpose of the demonstration is to show that the seamless integration of RPAS in non-segregated airspace is possible using relatively simple D&A system functionalities and straightforward communications with AirTraffic Control (ATC), with little or no impact on airport operations.

When performing surveillance operations within the mission area, the RPAS will be under the control of the ATC. A payload camera will be used to track (simulated) targets of interest. (Intended) intruders will be manned aircraft that will fly at a safe distance and/or be separated by altitude, but close enough to trigger an on-board action by the RPAS.

The remote pilot will have full control over the aircraft and will be the pilot-in-command. During the flight trials, a safety pilot will be on board to take over in case a safety issue (e.g. an unexpected system failure) requires their action. Data links will be used to provide the information exchange with the ATC.

Project partners

The AIRICA project involves four project partners:

- Netherlands Coastguard (NLCG)
- ✤ National Aerospace Laboratory (NLR)
- ✤ Glasemann Systems
- Commando Lucht Strijdkrachten (CLSK/RNLAF)

For more information about the AIRICA project, contact Jos.Stevens@nlr.nl

Member's profile



SESAR's "Savoir-faire": A view from the French Air Navigation Service Provider



DSNA (Direction des Services de la Navigation Aérienne) is the French Air Navigation Service Provider (ANSP) within the national civil aviation authority (Direction

Générale de l'Aviation Civile - DGAC). The French ANSP handles nearly 3 million civil flights annually through 5 air traffic control centres and 81 towers, making it Europe's leading provider of air navigation services.

DSNA has been an avid supporter of SESAR ever since its definition phase. Today, through its membership, the French ANSP actively participates in 56 projects, involving almost 100 of its employees, including operational experts. As leader of the En-Route SESAR work package, DSNA also contributes to projects related to airports, Terminal Manoeuvring Areas (TMA), network and some transversal activities. In addition to its participation in these projects and the Programme's development phase, the French ANSP is also part of the A6 alliance of ANSPs, which seeks to provide a catalyst for the ANSPs' contribution to the modernisation of the European AirTraffic Management (ATM) system.

Validating the work undertaken in SESAR is a major focus of DSNA's membership. A validation platform at Paris-Charles de Gaulle airport, which integrates prototypes provided by Thales, is extensively used by the French ANSP to validate enhanced capabilities for airport surface management, such as integrating Departure Manager (DMAN) and surface routing functionalities. Both of these are key features of the proposed Pilot Common Project (PCP), the first set of ATM functionalities ready for synchronised deployment. Paris-Charles de Gaulle is also hosting on-going validation activities on Runway Status Light (RWSL). Through this validation work, key safety benefits for airport surface operations are expected. DSNA will continue to actively participate in SESAR validation exercises.

Keen to innovate and improve operational performance, DSNA has implemented Coflight, the new Flight Data Processing System, ready for i4D, offering highly advanced functions such as gate-to-gate flight data processing, interoperability functions with other technical systems for the exchange of flight plan data, and data link capabilities. Three validation exercises have already made use of Coflight, including an exercise on the SESAR concept of Flight Object Interoperability, and others are under preparation focusing particularly on Free Route validation – the latter has also been identified as an important functionality in the PCP. The SESAR work on Free Route is complex as it involves a high number of projects and the further definition and validation of key Free Route functionalities.

The benefits for DSNA's participation in SESAR became all the more apparent thanks to two validation exercises undertaken in June and December 2012 within the Programme. These resulted in a new, more efficient arrival procedure at a high altitude that was subsequently put in place one year later in Paris ACC for integrating inbound flights to Paris-Charles de Gaulle using the "Point Merge" operational concept. The procedure implemented in Paris uses a merge point located approximately 40 NM from the airport. When traffic



CSNA fully supports the extension of the SESAR Joint Undertaking, and will be active contributor to the definition of the SESAR 2020 programme

density is high, the air traffic controller instructs the pilot to fly on the arc until they are instructed to turn inbound to the merge point when the right spacing from the preceding aircraft has been attained. Here the airspace required a complex re-design since the merge points and the arcs flown by aircraft are much bigger.

With Point Merge, aircraft are already in the right landing order when leaving the point merge arc. Compared to a normal procedure, this allows the aircraft to remain at higher altitude for longer and descend on a continual path at a later stage to the initial approach fix, which greatly decreases noise. The system also results in greater flight efficiency, since more flights can be managed simultaneously while they are in continuous descent, even during heavy traffic periods. These benefits have been validated by SESAR and are now clearly visible for inbound flights to Paris-Charles de Gaulle airport.

For DSNA, SESAR is the best place to ensure industry involvement in new concepts and functionalities. It is also the right vehicle to facilitate the harmonisation of practices, procedures and technologies between various actors, and to bring new functionalities to the level of maturity required for deployment plans. Over the course of 2014, DSNA will continue to actively participate in SESAR validation exercises. Already planned is the validation of SESAR's Extended Arrival Manager (XMAN)



concept, which will be assessed in live trials between Reims UAC and London, using a SWIM-based service.

Given the diversity and complexity of the airspace that it manages, DSNA also takes part in a number SESAR Demonstration Projects, which it sees as important opportunities to make progress on operational concepts and procedures within a live and larger traffic environment. Interesting results have been obtained from projects, such as FAIRSTREAM (FABEC ANSPs and AIRlines in SESAR TRials for Enhanced Arrival Management), which aims to pave the way for the use of Target Time of Arrival (TTA), instead of calculated take off time (CTOT). The DSNA SESAR teams are also involved in activities of the Functional Airspace Block Europe Central (FABEC), such as Free Route, XMAN and networks, in order to ensure consistency and to facilitate SESAR deployment in the FABEC airspace.

There is still some way to go to modernise Europe's ATM, which is why DSNA fully supports the extension of the SESAR Joint Undertaking and will be active contributor to the definition of the SESAR 2020 programme. DSNA expects that SESAR 2020 will ensure a smooth transition from the current Programme, taking advantage of all management and structural improvements achieved since the start of the SESAR JU.

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