



FROM INNOVATION TO SOLUTION

SESAR

JOINT UNDERTAKING

magazine



Editorial



Remote Tower Services: No longer a remote dream



Florian Guillermet,
Executive Director
SESAR Joint Undertaking

“ Remote Towers Services are one of several technological and operational solutions that the SESAR Research and Innovation Programme is delivering to the ATM community for deployment. The SJU has been working closely with EASA and other actors to further the concept for uptake. This edition of SESAR magazine looks at how this innovative solution can offer new business opportunities for airports in Europe, where it is too expensive to maintain conventional tower facilities and services, or where such services are currently unavailable.

The benefits presented by this SESAR solution for regional or unserved airports are compelling, believes Olivier Jankovec, Director General of the European Region of the Airports Council

International (ACI EUROPE). In an interview for this edition of the SESAR magazine, Mr Jankovec describes the challenges facing European airports and the keenness with which ACI members, including its larger airports, are exploring Remote Tower Services as a way to future-proof and modernise their facilities and operations.

Of course, the stakeholders concerned by this technological and operational development go beyond Europe’s airport operators. In a special feature in this edition, we hear from various bodies representing regional airlines and service providers, the global air traffic controller community and the Irish Aviation Authority. These opinion pieces show that while perspectives vary, the level of acceptance of this SESAR solution is strong. Several SESAR members have taken the lead in moving the Remote Tower solution from concept to reality. In this magazine, they explain their involvement in this process and steps they are taking to deploy the solution.

The coming together of like-minded partners is key to the delivery of solutions such as SESAR Remote Tower Services, as I think this edition of our magazine illustrates. It is therefore fitting to complete your read with a closer look at a successful SESAR partnership between six major European airports, the SESAR European Airports Consortium (SEAC). Enjoy the read. ”

Florian Guillermet, Executive Director,
SESAR Joint Undertaking

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SESAR: Future-proofing European airports



Olivier Jankovec,
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Olivier Jankovec is the Director General of the European Region of the Airports Council International (ACI EUROPE), the only worldwide professional association of airport operators. ACI EUROPE represents over 450 airports in 44 European countries which handle 90% of commercial air traffic in Europe, welcoming annually over 1.6 billion passengers, 16.7 million tonnes of freight and more than 16 million aircraft movements. In this opinion piece, Mr Jankovec describes the challenges facing European airports, and how remote towers can help particularly smaller or regionally based airports boost their competitive edge.

What are the challenges facing ACI airports in Europe?

European airports have undergone a major business transformation over the past 20 years - from state-run infrastructure providers focused on the needs of national airlines to fully-fledged businesses with a diversified customer base. The creation of the Single European aviation market, the development of low cost airlines, the restructuring of network airlines and the rise of new hubs in Turkey and the Gulf have changed the rules of the game – with airport competition becoming an unavoidable reality. Coupled with slower and more contrasted traffic growth prospects, the immediate challenge for Europe's airports is to boost their competitive position to retain existing traffic and attract new air services. This

implies moving from being mainly Business-to-Business orientated to becoming also Business-to-Consumer driven so as to optimise revenues from passengers and other airport visitors. This also implies a stronger focus on operational efficiency, so as to lower overall visiting costs (airport charges, plus ATC charges) for airlines and ensure increased quality. Over the medium-term, our main challenge remains getting our license to grow and being able to modernise and expand our facilities with new runways and new terminals.

What benefits can Remote Tower Services bring to your members?

Regional airports of a certain size can find it difficult to operate profitably, due to the high fixed costs they face, such as those related to safety, security and maintenance. At smaller airports featuring a tower, we find there is a low utilisation of personnel resources and having these at each air traffic control (ATC) unit has become very costly.

Over the past 6 years, during the economic and financial challenges that airports have had to weather, great effort has been invested in making airports of all sizes as lean and efficient as possible. To attract airlines, regional airports work very hard to keep their airport charges low. However, they can lose their competitive edge if the overall visiting costs become excessive due to high ATC costs.

Remote Tower Services are actually quite an exciting development in this regard, in that the technology can help these airports achieve better cost efficiency and potentially allow them to operate more competitively. Cost benefit analyses clearly show that economic benefits can be gained in terms of more efficient staff utilisation if remote towers are to be implemented and this is something that our members are particularly keen to explore.

For airports that are parts of a national or a multi-airport network group, one of the key opportunities that remote towers allow is shared investment and



SESAR Remote Tower Services Explained!

The SESAR Remote Tower solution enables Air Traffic Control Services (ATS) and Aerodrome Flight Information Services (AFIS) to be provided at aerodromes where such services are either currently unavailable, or where conventional services are too costly to implement.

“ The greatest selling point for remote towers is that they can help future-proof airports vis-à-vis the European air transport network ”

operating costs if an air traffic control facility can be used for more than one airport. For example, some airports in Norway are served by one aircraft stopping at several airports. On such a route airports could easily be served by the same air traffic control facility as the air traffic controller (ATCO) responsible could simply “follow” the aircraft. That’s just one example – there are many others.

ACI EUROPE’s view of the benefits offered by remote tower technology is not limited to regional airports, but can also be advantageous for new airports where Air Traffic Services (ATS) are currently unavailable. Remote towers can also be used as “contingency” towers for larger airports. This is a significant point in their favour when you consider the wide variety of disruptions and crises that can occur at an airport. In this regard, remote towers offer a more cost-efficient solution than building a dedicated contingency tower.

The very fact that remote towers (and remote contingency towers) can, in principle, be placed anywhere is certainly a further point in their favour. But perhaps the greatest selling point for remote towers is that they can help future-proof airports vis-à-vis the European air transport network: it’s the synergy of lower costs, optimised and efficient utilisation of resources and a chance to modernise air traffic control facilities with state-of-the-art technology that makes them so compelling.

How have the airports been involved in SESAR’s development and validation efforts around Remote Tower Services?

When you see the technology in action, the benefits of viewing the airport as a virtual space become clearer. The facility to integrate features such as object tracking and alerting, infra-red vision and digital image magnification all enhance the controller’s situational awareness in low-visibility conditions. Low-visibility procedures - often causing delays - are reduced with a positive ripple effect on the punctuality of aircraft movements. By making more synthesised information available to the controller, there are big wins for safety and operational efficiency.

Isolated areas and regions with low population density have the most to gain – which is precisely why Scandinavia has proved to be an excellent test bed for remote tower services. The trial executed at Bodø in Norway late last year as part of SESAR validation efforts included testing in extreme conditions in Værøy heliport and Røst airport. The results were very promising. In fact, the technology is currently undergoing a certification process in Sweden at two locations and is being further tested in Norway and Australia.

How do you see Remote Tower Services changing airports and air travel in Europe?

Well, I think that for all the reasons already mentioned, remote towers will change a lot in terms of air traffic control at smaller and medium sized airports. Perhaps the most distinguishing physical feature of this development is that over time, some airports will no longer need to have actual towers anymore. However, in terms of its impact on air travel, like all the best new technologies, I don’t expect that the implementation of remote towers will be a very visible development for passengers. The more smoothly things run, the more seamlessly processes can be coordinated, the easier things are for the passenger and the less they think about the systems empowering their journey.

www.aci-europe.org ■

Focus on



SESAR Remote Tower Services to bring benefits to regional aviation



Simon McNamara is the Director General of the European Regions Airline Association (ERA), which represents 50 airlines and 120 service providers including airframe and engine manufacturers, airports, suppliers and service providers from all over Europe. By working together, ERA member companies have become a well-respected and established voice of the industry. In this article, Mr McNamara shares his organisation's view of the SESAR Research and Innovation Programme and the opportunities that innovations such as Remote Towers can bring to regional airlines and service providers.

SESAR is an important strategic Programme for the aviation industry. If implemented as planned it should result in real savings in fuel, fewer delays and more efficient management of traffic. However, it will also require considerable investment on the ground and in aircraft. As such, it is important that a positive cost benefit is achieved for all operators and air navigation service providers that are affected. The European Regions Airline Association (ERA) has been involved in SESAR since the outset as a member of the consortium that worked on the definition phase. The Programme is now moving to a critical phase where the first pilot technologies will be rolled out. However, there are still some questions as to the real benefits of the various technologies. In ERA's opinion, the cost benefits for a number of regional jets and turboprops is still lacking and it will be important to ensure that this is addressed in the next phase of SESAR.

Industry involvement is critical but, equally, as a research and innovation programme, it is important to ensure that any conflicts of interests in the promotion of technologies by manufacturers are avoided. Ultimately, as the users and deployers of the technology, the operator users



Simon McNamara, Director General of the European Regions Airline Association (ERA)

(airlines) and air navigation service providers should drive the Programme and the decision on what is deployed and when. However, in the long term, there is no doubt that technology, through the SESAR Programme, will play a key role in delivering a more efficient and cost-effective ATM system in Europe that will ultimately benefit the mobility of people and goods.

Remote towers are one of the projects that SESAR is working on. There are clear benefits from its implementation in optimising manpower and coverage at remote and regional airports, often where ERA members operate. ERA has not been directly involved in the project, but a number of validation projects are being trialled that have involved operators directly. Remote Tower Services is an exciting technology that will deliver considerable benefits in many cases to ERA members.

Many smaller and regional airports maintain continuous coverage of tower services at their airports both for scheduled traffic, ad hoc flights and emergencies. However, in many of these locations the volume of traffic does not justify the cost of maintaining that coverage. From an operator perspective remote towers should offer the same level of coverage, service and safety that

“ Remote Tower Services is an exciting technology that will deliver considerable benefits in many cases to ERA members ”

a conventional manned tower will provide. However, the support and staffing can be provided remotely and several remote locations can be covered from one location. This can be translated into savings in costs and more efficient delivery of services to operators.

For operators it should be a seamless change and an operator should, in practice, see no real operational impact or change in service level compared to a locally manned tower. The challenge is for the service providers

to ensure the same level of services as with conventional towers. Clearly, safety and proving the safety case both before and in-service is the main priority. However, there is no doubt that the technology is at a stage where this can be achieved and remote towers offer a great solution that is a practical cost saver for the industry.

Given that the first beneficiaries of remote towers will be smaller and regional airports, it makes sense to use the technology first at these locations where traffic is generally lower. However, in the future there is no doubt that the technology has potential for use in more busy and dense traffic areas or, indeed, as a redundancy solution for outages in coverage. Using the technology in less dense traffic situations will be an excellent opportunity to demonstrate the in-service reliability of the concept, allowing any modification to be made before looking at what other applications might be possible. ■

<http://www.eraa.org/>

Focus on



The potential of remote towers for Irish ATM services

The Irish Aviation Authority (IAA) is responsible for the management of Irish controlled airspace, the safety regulation of Irish civil aviation and the oversight of civil aviation security in Ireland. This article gives IAA's view of the suitability of Remote Tower Services for the Irish context but underlines the need to successfully address areas such as costs, operational reliability and safety.



the costs of service provision at a user charge that is sustainable from the customers' perspective. Continuous improvements in optical and other sensor (e.g. RIMCAS) technology are bringing this potential ever closer to fruition but at this time, certification of a remotely operated tower system by any European national regulatory authority remains elusive.

Remotely operated towers offer significant potential to assist air navigation service providers (ANSPs) to reduce and control their costs in line with airline and European Commission expectations without negatively impacting on safety and/or service delivery. This potential is greatest at smaller, less busy regional airports where the volume of traffic is likely to be insufficient to cover

In addition to airports with low volumes of traffic, remotely operated towers may also provide a solution to more efficiently manage night time and other periods of low traffic demand at busier facilities. Provided air traffic controllers can simultaneously maintain ratings for a number of towers, cover for meal breaks and other rest periods, the tower services can be provided remotely operated by significantly fewer controllers at a centrally located tower facility, compared to what



Figure 1: ATCOs working at Cork ATC Tower

would be the case at dispersed locations. It may even be possible, with carefully designed procedures to allow one Controller to be available to simultaneously provide ATM services for more than one low volume airport/aerodrome, subject of course to successful completion of safety assessments and regulatory approval.

Remotely-operated towers could also provide a contingency solution for even the busiest of airports, it would not be an unreasonable expectation that a remote facility relying totally on sensors could provide operational contingency in the event that the Visual Control Tower becomes unserviceable. It is also significantly less expensive than the provision of an additional stand-alone contingency tower.

The IAA currently provides ATM services at three Irish airports, Dublin, Cork and Shannon. With relatively low traffic levels, we see Cork and Shannon airports as being suitable for the provision of ATM services via an operationally proven, regulatory approved, remotely operated tower solution. Starting with night time operations (23:00 – 06:00 local time), experience gained in low traffic periods will allow the extension of the operational window for remotely operated towers at these airports. A remote tower solution may also provide a contingency tower solution for Shannon and Cork.

“In our drive to become ever more cost effective, we’re constantly seeking innovative approaches to enhance our ATM service offering. Remote tower operations are part of the future and it is something the IAA is very keen to exploit. Provided the appropriate safe-guards are in place and we can secure regulatory approval, then we definitely see the potential for deployment at some of the airports under our care,” said **Peter Kearney, IAA Director of ATM Operations and Strategy.**

The remotely-operated tower concept might also offer the potential for the IAA to provide ATM services at other airports/ aerodromes both within Ireland and abroad. More efficient utilisation of resources, both human and technical will allow the provision of high quality ATM services at an affordable price to airports for which such activity would otherwise be economically unsustainable.

The additional revenue from such a project combined with the consequentially enhanced productivity of our staff, would help the IAA to maintain our high levels of service and our very low cost base, something that our customers will certainly welcome.

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The potential of remotely operated towers will, however, only be realised if safety and operational reliability are guaranteed. To this end, early regulatory approval in Europe is required. Additionally, the costs of procurement and installation of the system and other necessary supporting equipment (e.g. Electronic Flight Progress Strip systems) must be sufficiently low to offer a viable alternative to the traditional Visual Control Tower. Operational costs including inter alia, staffing, maintenance and communications (e.g. data lines) must demonstrate a competitive advantage over those of the existing physical visual control tower. Once these critical areas have been successfully addressed, the IAA envisages that the remotely-operated tower will play a vital role in the future of ATM service provision in Ireland and beyond. ■

www.iaa.ie

Focus on



"You are remotely cleared to land": Air traffic controllers' view of Remote Tower Services



For over 50 years the International Federation of Air Traffic Controllers' Associations (IFATCA) has been advocating for a safe, sustainable and efficient air traffic control system, in which the human -

in particular the air traffic controller (ATCO) – is the central component. In total, the Federation represents 140 air traffic control organisations, with a combined membership of over 50,000 air traffic controllers from around the world. This article provides IFATCA's take on remote towers and recommendations to ensure that this innovative solution is developed and implemented based on robust safety and performance standards.

The professional career of an air traffic controller is subject to constant change. In Europe, an air traffic controller will experience on average up to 40 changes a year to his/her working environment. As the professional voice of air traffic controllers, IFATCA's job is to stay at the forefront of change, monitoring the latest developments all over the globe with regard to new concepts and/or technologies¹. In doing so, we offer our members a unique opportunity to stay informed about changes in the farthest corners of the world.

Needless to say, a concept like Remote Tower Services is something that can create a lot of curiosity, expectations and even fears within the ATCO community. From a global perspective, it is important to first understand the

terms and definition of the concept, identifying whether Remote Tower is simply another fad, a marketing sales pitch for an existing concept, or if it is truly the dawn of a new concept. IFATCA has been involved in the work of SESAR since its outset, most notably within Project 6.9.3, which aims to bring the Remote Tower concept from fiction to fact. During this time, we have provided SESAR and its members with an operational sounding board, providing air traffic controllers' analysis like that in "Remotely Operated Control Towers Fact or Fiction?", an article published in our Controller magazine² following the first presentation by LfV Sweden.

At the global level, IFATCA submitted a contribution to the ANC 2012 conference with regard to the future aerodrome concept defined in the International Civil Aviation Organization (ICAO) Block Upgrade B1-81. In doing so, we have invited the member states of ICAO - which envisage introducing a new form of aerodrome control concept - to first and foremost link it to the definition of ATM service delivery level as defined by the ICAO concept (Doc 9854). This is key to better understanding what the impact a remotely-operated tower (or a multitude of them) might have on the service delivery level. While the SESAR Concept of Operations for Remote Tower distinguishes between the different level of services that can be provided, the maturity of the concept is not the same for these different levels. For instance, it is very different to transfer an Aerodrome Flight Information Service (AFIS) to a remotely controlled tower than to a regional airport with a mixed traffic

¹ ICAO, AN-Conf/12-WP/150 Agenda 2 presented by IFATCA

The concept of a remote tower is currently being studied in Europe, Australia and US in order to improve the efficiency of the ATM system. These regional research projects address the possibility to provide aerodrome services from remote locations. They include single – and/or multiple towers, as well as contingency towers. In some of the research projects, remote refers to the use of visual reproduction as well as the use of new electronic (sense) means to enable the air traffic controller to maintain situational awareness.

² The controller, 2nd quarter 2009, June 2009, Volume 48 ISSN 0010-8073

environment and up to 400 landings a day. The service delivery concept should therefore trigger a better understanding of what is required from the future Remote Tower concept. The main point of concern for IFATCA, in particular with regard SESAR's work, is that benchmarks need to be clearly defined and validation exercises are undertaken that take into account the level of service which will need to be offered at the respective airports – regardless of the concept (one remote tower or multiple remote towers).

IFATCA establishes global policies through its dedicated study groups, which serve as professional recommendations to its members. Currently the Remote Tower concept policies proposed for endorsement at the 2014 conference are as follows (Amendment to the current IFATCA policy – see box opposite):

- ✦ ATCOs shall not be expected to provide a Remote and Virtual Tower service for more than one aerodrome simultaneously;
- ✦ Separation standards and procedures for Remote and Virtual Towers shall be developed or adapted and implemented based on a robust safety case and the demonstrated capabilities of the system;
- ✦ ICAO should develop required performance standards for Remote and Virtual Tower systems and sensors.

In conclusion, the Remote and Virtual Tower concept is fast becoming a reality, and it is likely that fully functional examples will be operational in some parts of the world in the near future. Implementation is being driven by

“ Remote and Virtual Tower concept is fast becoming a reality, and it is likely that fully functional examples will be operational in some parts of the world in the near future ”

a combination of motivating factors, including but not limited to, cost reduction/rationalisation, resource centralisation, service enhancement and availability of new technologies.³ One dimension in any change in the ATM environment which we observe at IFATCA are recent court cases⁴ following accidents, which lead to additional challenges for the air navigation service provision when introducing a new concept such as Remote Towers or new aerodrome concepts. There is a need to guarantee redundancy, as an integral part of the air traffic control systems design and operation.⁵ These judgments go beyond what ICAO Annexes indicate as minimum regulatory requirement and the challenge will be for any future Remote Tower operator to be aligned with ICAO in any situation (normal or redundant) and cope with a possible "duty of care" above ICAO Standards and Recommended Practices (SARPS) required by courts. ■

Current IFATCA policy:

Visual observation & new aerodrome control tower concepts

Visual observation in ATM is defined as: Observation through direct eyesight of objects situated within the line of sight of the observer possibly enhanced by binoculars. An Aerodrome Control Tower is a unit established to provide air traffic control services to aerodrome traffic. The tower cab shall be constructed as to provide aerodrome controllers the capability to maintain a continuous watch on all flight operations on and in the vicinity of the aerodrome, as well as vehicles and personnel on the manoeuvring area. Watch shall be maintained by visual observation, augmented by radar or other approved surveillance systems when available. Before any Aerodrome Control Service Concept can be endorsed by IFATCA, the following requirements shall be met:

- The controller shall be provided with at least the same level of surveillance as currently provided by visual observation ;
- The introduction of Aerodrome Control Service Concepts shall be subject to a full safety analysis and relevant safety levels shall be met;
- Contingency procedures shall be in place;
- Controllers shall be involved in the development of Aerodrome Control Service Concepts.

<http://www.ifatca.org/>

³ Technical Operational Committee, Study Remote towers concept, IFATCA 53 WP 92, distributed

⁴ Bezirksgericht Bülach, Urteil 21.8.2007 (Ueberlingen accident), Supreme Court of Cassation (I) 10.12.2010 (Cagliari accident) "a role of guarantor in the protection of « goods »"

⁵ Milano 2001; Ueberlingen 2002



Remote towers at your service

Several of SESAR's members have taken a strong lead in moving the Remote Tower Services solution from concept to reality. In this article, three of SESAR's members explain their involvement in this process, the need for Remote Tower Services and what the future holds for this innovative SESAR solution.



What has been your involvement and experience within the SESAR Programme in developing Remote Tower Services?

✦ **NORACON**, a consortium of nine Air Navigation Service Providers¹, has played a leading role in the development of the remote tower operational concept, expanding on results from previous studies and concretising these within the SESAR Programme. In addition to formulating the Operational Services and Environment Description (OSED) and requirements in collaboration with industry, NORACON members - namely AVINOR and LFV - have invested significant resources and effort in validating the concept on platforms that mimic real operational conditions, assessing both single and multiple operations for Aerodrome Flight Information Services (AFIS) and Aerodrome Control Service (TWR). LFV have also demonstrated the use of Remote Tower Services as an enabler for contingency solutions at larger airports.

✦ **NATMIG, North European ATM Industry Group**, has been developing remote tower prototypes within SESAR through its member SAAB. The maturity of the concept has been demonstrated through the operational validations of these prototypes by NORACON partners. Thanks to the involvement of diverse stakeholder groups across Europe, these validation exercises have also ensured a greater understanding and acceptance of the remote tower concept.

✦ **DFS, Deutsche Flugsicherung GmbH**, the German air navigation service provider, has been actively involved in the development of both single and multiple remote tower services within SESAR. SESAR provides a unique opportunity for Air Traffic Service (ATS) providers to develop a harmonised OSED for Remote Tower Services. While the contributing operational partners provide views on different airport environments and procedures, industrial partners respond by offering technical solutions for reproducing the "out-of-the-window-view" based on an agreed set of operational requirements. All partners benefit from having insight into each other's validation activities, as well as through disclosing ways to overcome remaining obstacles.

What business need do Remote Tower Services answer and who benefits from these services?

✦ **NORACON**: Remote tower and AFIS service provision brings about the means to increase efficiency and flexibility of ATS provision, which is very much needed at small-to-medium airports today, where business margins are currently low. Organisational gains are made possible in areas such as common workspaces, safety learning and training, harmonisation of equipment and methods, which were previously difficult due to geographical constraints. The concept also addresses challenges related to recruiting and maintaining staff in rural areas.

¹ Austro Control and the North European ANS Providers (NEAP), Avinor (Norway), EANS (Estonia), Finavia (Finland), IAA (Ireland), ISAVIA (Iceland), LFV and Swedavia (Sweden) and Naviar (DK). LFV and Naviar will participate in the I-4D flight trial.

✦ **NATMIG:** Remote towers allow ATS at airports with low or seasonal traffic to stay economically viable and to extend their operating hours. Building and maintenance costs are also reduced, which makes contingency towers a possibility for many more airports. With remote towers, ATC resources are pooled, which allows for increased training opportunities for Air Traffic Controllers (ATCOs) who no longer have to move to remote areas.

✦ **DFS:** Remote Tower Services will contribute to a more cost efficient provision of air traffic services at small airports. Controllers will be cross-trained for a number of airports enabling them to provide aerodrome control services to different airports, which will allow a more efficient shift planning. Deployment will start with single remote tower operations, while the multiple remote tower is expected to provide even more productive and hence cost efficient operations. But the latter concept is still subject to research.

How far are we from seeing Remote Tower services deployed?

✦ **NORACON:** We believe that SESAR has provided sufficient evidence of the concept's operational feasibility. Deployment is already at an advanced stage of implementation by some ANSPs within the NORACON consortium. We believe that deployment at a larger scale is likely to take place already within the next couple of years for single aerodrome operations, and that in the years to follow we will see even greater benefits emerging as a gradual transition can be made towards multiple aerodrome operations, which is already planned for validation in SESAR.

✦ **NATMIG:** After eight years of development, the single remote tower concept is being deployed in several countries and will be granted permission to operate at the first airport in Sweden during second quarter of 2014. The next generation of the remote



Figure 2: The real out-of-the-window-view might soon be history at some smaller airports in Germany

tower, which will be capable of handling up to three airports simultaneously, is now under development and will be available at the end of 2014. With some initial real-time simulations by DFS/DLR and NORACON/SAAB, the multiple remote tower concept will undergo further validation exercises within SESAR.

✦ **DFS:** Within the next few years, DFS plans to relocate aerodrome control services from some small airports to a remote tower centre. Located in Leipzig, in a first step, the centre will serve the German airport of Saarbrücken. The airports of Erfurt and Dresden will follow. The deployment will initially involve single remote tower operations, which means that the tower runway controller will provide the service to one airport at a time. The remote tower working positions will be equipped with conventional ATS systems complemented by a reproduction of the "out-of-the-window-view" based on a camera sensor system. ■

Read more:

www.noracoon.aero

www.natmig.eu

www.dfs.de

Member's profile



SEAC – The SESAR European Airports Consortium



In 2008, the SESAR European Airports Consortium (SEAC) was launched and became a member of the SESAR Joint Undertaking, bringing together

the operators of six major European airports: **Aéroports de Paris S.A., Heathrow Ltd, Flughafen München GmbH, Fraport AG Frankfurt Airport Services Worldwide, Amsterdam Airport Schiphol Nederland B.V. and Flughafen Zürich AG.**

Since the establishment of the consortium, SEAC has significantly contributed to SESAR's research and development work and is now playing a vital role in implementing its results, as Thorsten Astheimer, SEAC Coordinator, explains: *"Our main goal in SEAC has always been to contribute to the success of SESAR by enhancing the performance of the major European airports. Now, together with ACI-Europe, we are eager to deploy the outcomes of SESAR for the benefits of our customers and especially the passengers."*

The consortium members manage six of Europe's ten busiest airports, most of which are currently operating close to their respective capacity limits. As a consequence, in the event of disruptions, constraints at the airports and in the airspace around the airport have a huge impact on the European air traffic network. SEAC members therefore have years of experience in airport management and have acquired many unique skills and knowledge such as: political and regulatory affairs, strategic planning and forecasting, airside and landside operations, capacity management and enhancement, infrastructure design and construction, information technology, safety management, environmental management, and performance management.

Currently, operators of airports within the ATM system cooperate with many different partners to manage the network nodes. One of the main airport competencies is the fast and efficient management of the turnaround process and the provision of accurate

data. A key challenge for overcoming congestion at major airports will be the full integration of airport processes in the ATM chain (air-to-air process). One of the main SEAC goals is then the introduction of new procedures and technologies to prepare airports for the air traffic demand expected for 2020 and beyond. Consequently, airports have to become a more integral part of the ATM network, bringing local planning into the Network Operations Plan. Integrated planning and information sharing is therefore another SEAC goal and will be the basis for joint decisions and a performance-driven airport management. This is of particular importance in situations of reduced capacity such as bad weather, strikes, etc.

However, no one solution can fit all airports. The major challenge will be to reach these goals while at the same time giving each airport the room to account for its local situation and to pursue its individual business plan. SEAC is committed to ensuring an improvement of the environmental sustainability of future air traffic, strengthening and extending our relationship to the communities living close to the airports. It is therefore vital that airport operators maintain the ownership of the relevant airport processes and support the SESAR work programme with their expertise. This is strongly encouraged on the political level by the work of the ACI Europe, taking the "Ground-Coordinator" concept as example. Furthermore, ACI Europe is working on the integration of important aspects for small and medium-sized airports into SESAR as well as on a communication campaign on airport-related SESAR topics.

In this way, the SEAC member airports take responsibility in building the future of air traffic management and contributing to the success of SESAR. In this Framework, SEAC is currently defining the scope and the content of the airport related topics for the future as SESAR scales up its research efforts in the SESAR 2020 programme. This was pointed out by **Thorsten Astheimer, Coordinator of SEAC**, at a recent meeting hosted by the SJU in



Figure 3: Frankfurt Airport, Terminal 2

Brussels “For the benefit of passengers, European hub-airports rely on innovative procedures and systems for safer and more efficient operations. In order to meet tomorrow’s challenges to growth - in a very competitive environment - it is very important to continue the research work performed by SESAR beyond 2020.”

At the working level, the SEAC consortium combines and steers the SESAR-related efforts of its six member airports. Various SESAR projects are staffed by experts from the SEAC members. SEAC is currently represented in 33 projects and is leading the “Airport Operations¹” work package (WP6) together with AENA, the Spanish airport operator and air navigation service provider. The SEAC members are actively involved in topics related to airport design, infrastructure and operations. The consortium plays a leading role in the SESAR “Airport Operations Management” Operational Focus Area, which includes strategic projects such as the Airport

Operations Plan (AOP), airport capacity and flow management and airport operations centre. These projects will set the framework for the integration of airports in ATM and the performance-driven planning and management at airports. In the area of surface management, SEAC is the key driver in validating highly automated, safe and efficient procedures for routing and guidance, such as “Follow-the-Greens”. Of course, environmental sustainability is a vital concern of airport policy. Thus, WP 16 ‘Environment’ combined with the European AIRE programme is another key area of SEAC involvement in SESAR.

For strategic guidance, SEAC has established a supervisory committee at top management level. In addition, SESAR project managers of each company meet on a regular basis with several experts in a technical coordination group. Together with the ANSPs, airspace users and other stakeholders, SEAC airports are actively involved in the development and testing of procedures and systems related to enhancing operational safety and capacity, as well as increasing service quality, predictability and the reduction of environmental impact.

Since many SEAC airports are responsible for air traffic control on taxiways and aprons, the consortium is a crucial partner in developing the future ATM system from the perspective of the most important hubs in the European air traffic network. All in all, SEAC has a small but very motivated and skilled team for tackling the future challenges of the European ATM system. ■

¹ Airport Operations” describes all the ATM-related operational procedures at airports and integrates them into the concept of operations, while “Airport Systems” (WP 12) is currently building the related system prototypes for validation. The goal of the ATM process is a safe and efficient handling of the entire flight from the parking position at the departure airport to the arrival at the gate of the destination airport, including the complete turnaround process.

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