We have had some fun recently digging into our archives in preparation for the ‘ATM Industry Survey – 10 Years On’ reports. You can read the first report in the March edition of Air Traffic Management magazine. Who would have guessed 10 years ago, that today we would be writing about real life remote towers and exploring the business case for datalink centralised services? Back in 2005, the talk was about earlier versions of some of these concepts, and the focus was on capacity rather than cost-efficiency. However, one topic that has constantly remained in the spotlight throughout the last 10 years is the Single European Sky – and today our staff are actively supporting ANSPs with safety assurance and regulatory compliance as well as developing roadmaps to assist with interoperability.

The new 2015 ATM Industry Survey asks for your views on SES, on innovation, successes, disappointments, priorities and challenges. It takes 5 minutes to do and is brought to you this year in association with Air Traffic Management magazine. Do take part online, or alternatively if you are attending the World ATM Congress in Madrid, please come and say hello to us on our joint stand with Egis (stand 335). There will be another opportunity to take part there.

Best wishes

Mike Shorthose, Executive Chairman

The spectacular Lofoten mountains provide a stunning backdrop to Væroy heliport in Norway, operated by Avinor, the Norwegian ANSP. Thanks to the newly installed remote tower equipment, this view can now be admired, 80km away, from the “out the window” view at the remote tower facility in Bodø. The availability of high quality screens, improved communications, and above all the ambition to find solutions to cut the costs of tower services have come together to create one of the most talked about game-changers in the industry – remote towers.

Avinor sensibly started with a flight information service at a single aerodrome to gain some experience in the new concept and technology through their SESAR involvement. Helios’ role was to develop the safety case as part of a safety framework contract we have with Avinor. Our approach focused attention initially around the new concept as a whole before drilling down into specific potential failures, gaining useful operator insight into key safety concerns (information which is difficult to obtain through the rigid structure of some industry standard safety methodologies).

The ‘single mode’ (or ‘1:1’ model) of operating one airport from one remote tower offers limited cost savings. There is therefore a strong desire to implement the ‘multiple’ or ‘switched’ modes that enable operation of more than one airport with a single operator, delivering the positive business case that ANSPs need.

So Helios is now engaged in a much more ambitious phase of the project to develop safety and performance requirements that could enable up to 15 airports in Norway to be operated via Avinor’s remote tower technology. There’s no easy or quick path to take this new technology through the rigorous approval process of cautious regulators.
Bringing remote towers closer continued

With this in mind, Helios has worked closely with the Avinor team to integrate safety into the heart of their vision from the very outset. Initial safety workshops provided valuable input to help shape the operational concept. Subsequent workshops have played a role in the system design. This helps to minimise the risk of future validation work raising safety concerns that could have been fixed at lower cost, had they been identified earlier.

Throughout the work, questions have arisen that demonstrate the value of a collaborative approach bringing together operational experts, technical staff, human factors specialists, validation teams and safety experts. Many of these questions have never been asked before, let alone solved, so the knowledge and experience gained is invaluable.

For example:

- How long does it take an operator to gain situational awareness when shifting attention to a new aerodrome?
- What is the best way for one operator to manage simultaneous arrivals at different airports?

The safety and human factors work are intrinsically linked and human factors expertise was provided by Egis. The close cooperation between us all has enabled Avinor to achieve an operationally driven concept with a validation plan that addresses safety and human factors issues and accommodates an evolving concept.

For further information contact james.hanson@askhelios.com. To find out more about remote towers, come and hear James speak at World ATM Congress in Madrid (more details in HOT AIR!).

SES II compliance
Appropriate and effective?

Croatia became a member of the European Union on 1st July 2013. This means that SES II regulations fully apply to Croatia, including Croatia Control, the Croatian Air Navigation Services Provider (ANSP). The European Bank for Reconstruction and Development (EBRD) is funding, through a loan, the update of Croatia Control’s ATM/CNS infrastructure. As part of the loan covenants, the ANSP had to establish the necessary regulatory processes and procedures by the end of 2014.

Helios advised Croatia Control on its compliance with EU regulations in four areas:

- Internal performance management processes
- Preparation of performance-based business planning
- Interoperability requirements
- Safety Management System (SMS)

Our partners Egis advised on compliance with the Software Safety Assurance system.

The team undertook a gap analysis of Croatia Control’s existing practices and developed action plans for addressing the gaps in compliance. Helios provided general awareness training in all five areas to senior management and experts within the organisation, in order to ensure that there was a common understanding of the recent changes in the Single European Sky legislation and the resulting implications for its day-to-day operations.

Croatia Control proved to be mature in its regulatory compliance in many of the elements for each area, but it was particularly keen to gain insights into how other ANSPs had applied best practices in compliance. The Helios/Egis team were able to help by showing for example:

In safety: how normal operations and day-to-day safety surveys have been implemented by other ANSPs, with particular focus on the Risk Analysis Tool and implementation of associated measures.

In interoperability: how Croatia Control could enhance conformity assessment by aligning its systems representation with a future SESAR architecture, integrating conformance assessment with procurement processes and by preparing for the transition of the interoperability regulation into EASA’s responsibility.

In performance: how to link business areas with performance objectives in its business plan.

Says Damir Poleš, project manager for Croatia Control: “This was more than a box-ticking exercise. Helios worked with us to propose solutions that were specific to our needs and added real value.”

For further information contact naheed.arshad@askhelios.com.
Datalink Centralised Service
Is there a business model?

EYROCONTROL is proposing a set of pan-European Centralised Services (CS) that avoids the current fragmented ANSP-by-ANSP approach in order to provide more harmonised and cost-efficient services. One of the CS proposed is the centralisation of air-ground datalink infrastructure services (known as CS9-1). EUROCONTROL commissioned Helios to undertake a feasibility study to address questions on technical architecture, business models, governance, regulation, certification, safety and security. Helios led an industry consortium comprising SITA, Inmarsat, Airbus and Austro Control.

We first identified a centralised routing architecture that is capable of supporting ATN datalink applications over VDL2, SATCOM and future standardised technologies, such as AeroMACS, as they become available. Following the technical analysis, it became apparent that the success of CS9-1 relies not only on technical feasibility but more importantly on operational and business acceptability, and specifically governance, ownership and control of the datalink service infrastructure and associated assets.

As a Centralised Service it would be free of charge at the point of use and mandatory for all EUROCONTROL members. To deliver the desired benefits it needs a sufficient level of centralised control, but to be acceptable to stakeholders it needs to avoid unnecessary asset transfers and provide users with sufficient say in the service. Helios defined three options for CS9-1 which progressively increase the level of centralisation.

Helios and EUROCONTROL explored and discussed the relative strengths and weaknesses of each approach. Since no option provided maximum benefits at minimal risk, we identified trade-offs, focusing mostly on the ambition and goals of stakeholders. The resulting insights will now be taken into EUROCONTROL’s next round of consultation and decision-making on CS9-1 and help inform the wider debate on the centralised service business model.

For further information contact matt.shreeve@askhelios.com.

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HOT AIR!

- **Egis Avia awarded new contract with DSNA** – Egis has won a new eight-year framework agreement to support the French air navigation service provider. The work includes a wide range of ATM engineering activities including: consolidation of needs; human factors studies and controller training; operational validation as well as performance assessment activities. For more information, contact julien.pratx@egis.fr.

- **Safety assurance for Southern Norway Airspace Project** – In November 2014, Avinor successfully implemented changes to the southern Norway airspace (excluding Oslo area) to increase capacity, reduce workload and reduce fuel consumption. The changes included increased standardisation, improved arrival route systems and improved arrival sequencing. Helios assisted with the transition by verifying safety assurance for the five terminal manoeuvring areas and two area control centres that provide services to that region. Airspace changes included implementation of performance based navigation and Avinor’s second implementation of Point Merge approach procedures (the first ANSP to implement a second Point Merge project) – this time to Stavanger, Bergen and Trondheim airports. For further details, contact glen.smith@askhelios.com.

- **ATM Industry Survey 10 years on** – This year it will be just over 10 years since we started the Helios ATM Industry Survey. It was first run at ATC Maastricht and will run again this year in association with Air Traffic Management magazine online and at our stand in World ATM Congress, Madrid (10-12 March). Check out Air Traffic Management to read our report: what did the industry get right? What did they get wrong? Where have the areas of progress been … and how have the priorities changed over the last 10 years? The new 2015 ATM Industry Survey will pick up on some old themes and explore some new ones. We want as many people as possible to participate, so please take part now online at www.surveymonkey.com/s/ATM2015 or visit us in Madrid on stand 335 – you could win some of our popular noise-cancelling headphones!

- **Interested in remote towers?** – During World ATM Congress, principal consultant James Hanson will present on “Remote Towers: from paper to procurement”. He will examine the fast growing market for remote towers, and in particular discuss the practical realities of the work involved in the initial phases of feasibility and procurement. James will draw on his experience of supporting pioneering ANSPs in the deployment of this promising new technology. Join him at the Frequentis Aviation Arena on Wednesday 11 March (5:35-6:00pm).

- **High fliers** – We are pleased to announce two senior appointments to the Helios team. Mike Pearson joins us from Atkins, where he was Director of Airport Development. Mike will oversee our business development activities and add further depth to our airport offering alongside Helios’ Director of Airports, Steve Leighton. Jan-Björn Shömann joins us as Principal Economist. Educated in Germany, Italy, Spain and the USA, Jan is a fluent speaker of 5 languages. He has extensive experience of aviation economics having worked for Spanair and Amadeus among others. Both Jan and Mike will be based at our Farnborough UK offices.
**Flight Object**

The path to unlocking European airspace

At the core of the air traffic management system, Flight Data Processing (FDP) platforms provide a complete real-time picture of air traffic with accurate prediction of upcoming events, enabling controllers to plan flight paths further in advance.

When aircraft cross borders in the sky those systems need to be able to talk to each other. In today’s patchwork of systems and borders, many cannot. So, cross-border cooperation of FDP systems is a fundamental requirement for air traffic management modernisation in the Single European Sky. Although this has been recognised by ANSPs, it involves major changes to the FDP system and requires a concerted approach. It has recently come into focus through the Flight Object (FO) concept, with its inclusion in the Pilot Common Project (under SWIM) and a due date for operation across Europe of January 2025. Nevertheless, in these days of cost pressure, ANSPs will not make an early investment unless the early stages are at least cost neutral.

The Deployment roadmap

Helios has been working with air navigation service providers (ANSPs) across Europe as well as their industry partners to develop a roadmap for Flight Object deployment. The concept necessitates a high level of coordination and synchronization between different stakeholders. The team undertook a Europe-wide systems survey and assessed different deployment options, considering amongst other criteria the business case for ANSPs and the overall network.

The study (partly funded by INEA) showed that a pragmatic approach can be taken, minimizing costs for ANSPs, by allowing clusters of ANSPs to move at a different pace, but nevertheless maintaining a focus on achieving a step change in FDP capability throughout Europe over the next 10 years. This step change will enable the development of future concepts, such as trajectory based operation and free-routing that will finally deliver real benefits.

The roadmap is expected to be used as a guideline for coordinated FO deployment and decision making. However it will be important to keep an eye on ongoing developments to ensure the roadmap remains practical and relevant.

For further information contact Isabel.Franke-Chaudet@askhelios.com.

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**Travel expenses**

Ben was comparing notes with Isabel on how much he had spent that day on his journey to the office: “I realised I was short of cash when I arrived at the train station. I spent half of what I had on my railway ticket, and then £1 on a drink. When I got to Farnborough I spent half of what I had left, and £2 on a newspaper. Then I spent half of the remainder on the bus ticket to AeroPark and then realised I’d lost 50p. I arrived at the office with just 75p.”

How much did Ben start out with?

The answer to our last puzzle “The Arctic freeze” was 140 cans. For the full solution visit www.askhelios.com/puzzles. It did prove “our toughest puzzle yet”, as sadly no-one sent the correct solution. However Nigel Eite of the CAA managed to do even better with 143, so we think he deserves the prize. Congratulations Nigel!

And the winner is …

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The Pilot Common Project identifies six ATM functionalities:

1. Extended Arrival Management and Performance Based Navigation in the High Density Terminal Manoeuvring Areas
2. Airport Integration and Throughput
3. Flexible Airspace Management and Free Route
4. Network Collaborative Management
5. Initial System Wide Information Management (ISWIM)
6. Initial Trajectory Information Sharing

The deployment of these six ATM functionalities is mandatory according to Commission Implementing Regulation (EU) No 716/2014 of 27 June 2014.

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