Skyguide is transforming its business to meet customers’ needs in a changing ANS market.

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Skyguide is transforming its business to meet customers’ needs in a changing market of Air Navigation Services (ANS) which is on the cusp of a paradigm shift.

We pride ourselves for our innovation capacity and business mindset, while always giving due priority to safety, and this is the foundation on which we are building our future. We are going far beyond technological innovation to achieve our vision – we are transforming our business model, driven by our future operational concept and enabled by a transformed approach to human resources.

Our company is also developing and implementing structures, and setting targets, to become a more efficient market- and customer-oriented company that is sustainably implemented in its market.

This future will be created by our outstanding people, as a highly-valuable source of knowledge, as the pillar for innovation and for delivering future value.

Our transformation is already underway. For example, skyguide has started the digitalisation and virtualisation process through its programme to implement a Virtual Centre and by deploying a remote flight data processing through Coflight Cloud Services. Skyguide is also leading the way on drone incorporation being the first implementing U-Space.

We would like to continue driving change in partnership with like-minded partners. Thus, we are open to explore partnerships and create value together, and we want to learn from, challenge and share experiences with our partners. Together is better.

Alex Bristol
CEO skyguide
### Continuous challenges

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**Paradigm change**

**ANS Industry | Dawning of a New Era**

The aviation context is changing, and we are on the cusp of a paradigm change for the ANS industry. Europe is moving towards a new kind of Air Traffic Management (ATM) network enabled by new technologies, cooperative traffic management principles, innovative processes, a new approach to human resources management and by the emergence of new ANS business models.

ANS is a market that is traditionally slow and resistant to change, however new ideas and operating models are emerging to market much quicker than in the past which would suggest that the barriers of resistance are gradually being eroded.

Safety and cost effectiveness remain the core foundations of the Aviation Industry, and, in Europe, the implementation of the Single European Sky still faces important challenges. The past challenge of ensuring sufficient capacity has resurfaced, which needs to be flexible to demand, cost efficient and minimise environmental impact.

In addition, new challenges are arising especially with the integration of new airspace users, highly driven by the growth in drone traffic. Now, more than ever before with the transformation to information businesses, cyber threats have to be accounted for. Furthermore, there is the emergence of new ANS business models in particular enabled by space-based Communication, Navigation & Surveillance (CNS), all against a backdrop of rising traffic and delay in the face of continued downward pressure on costs.

Skyguide acknowledges that the future brings new challenges, and that the future starts now. We are advocating a shift from infrastructure ownership to an information business, focused on air traffic management services and on evolving customer needs. Business sustainability depends on being ready for change.

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**New ANS Paradigm | 2035**

Skyguide envisages a world where ANS has successfully managed the move away from the notion of controlling air traffic to managing it. Instead of regularly intervening with the flights, the Air Traffic Managers monitor and manage the airspace and communicate with the cockpit only by exception.

Many aircraft in the en-route phase of their flight self-separate along a whole leg of their European free-route, automatically separating one another without the need for intervention of air traffic controllers.

**Key aspects of the vision**

- Shift from infrastructure ownership to services acquisition and data management
- ANS infrastructure becomes location independent with digitalisation and virtualisation implementation of systems which rely on artificial intelligence and machine learning to support the Air Traffic Managers
- Worldwide seamless information exchange between aeronautical stakeholders
- Fully dynamic traffic flow management
- Airspace will be rationalised, simplified and harmonised, therefore more adapted to make best use of the modern technology
- Role shift from air traffic controllers to air traffic managers, that monitor and manage instead of intervening with the flights
- Staff as the pillar for innovation and creation of future value
- More competition for services in the ANS industry
- Strong civil-military cooperation lead for less need of redundant ANS systems or infrastructure
The paradigm change in the ANS industry is bringing challenges but also new business opportunities that will have to be supported by new business models. The ANS industry will have to innovate to face the challenges and take advantage of the opportunities.

Skyguide acknowledges the need to take steps in new directions to assure a bright long-term future. It is increasingly recognising the need to change and adapt rapidly, rather than continue to improve incrementally.

We are following a path to innovation centred on four key areas – technology, operations, human resources management and our business model. For example, in human resources, we are already transforming the profile of a “typical” skyguide technician to propel our business into the future.

Furthermore, with a future ANS business built around digitalisation, virtualisation and automation, cybersecurity and resilience are key requirements at the forefront of all we do.
Skyguide is an innovative and creative Air Navigation Service Provider (ANSP) looking to build on the competitive advantage it has established through its innovation projects to deliver its vision for the future.

Skyguide is proud to provide safe and reliable air navigation and related services. We are an international, multi-cultural organisation with an innovative and entrepreneurial spirit and we strive for continuous improvement to meet our customers’ needs. Our forward-thinking organisation is willing to be disruptive to enact change. As a matter of fact, we are re-thinking the management of our equipment, systems and data as well as the resources around them to deliver our vision for the future. We are doing this with outstanding people that embody a high-value source of knowledge and of creation of future value for the company.

Skyguide is looking in other industries, for best practices, best solutions and success stories transposable to the ANS industry. We are already taking confident steps in implementation.

Flashes of excellence

**Single European Sky Award 2017:** In 2017, skyguide received the Single European Sky Award for our leading role in introducing Service-Oriented Architecture in air traffic management. This is a strong signal that the European Commission recognizes the pathfinding innovation, which is currently taking place in Switzerland.

**Virtual centres:** Skyguide has started the digitalisation and virtualisation process to implement its Virtual Centre – with the aim of “one-sky-by-one-system”. Building on the foundation for the Virtual Centre, we have started to move our systems towards a layered information centric-architecture. We successfully launched the first services on the new service-oriented infrastructure.

**Drones:** Skyguide is leading the way on drone incorporation being the first to deploy U-Space (mid-2019), in a collaborative effort to enable situational awareness, data exchange, and digital communication for the European drone ecosystem. Swiss U-space capabilities were successfully demonstrated in June 2018 by skyguide and partners, as the first nationwide drone traffic management system in Europe.

**Civil-military cooperation:** As the first fully integrated civil-military air navigation service provider, skyguide has been able to exploit civil-military synergies, creating added value for both.

**Agile software development:** Skyguide is increasing the flexibility and responsiveness of its key software development projects through the application of state-of-the art agile software development methods.

**Skyguide’s cooperative culture:** Skyguide’s ability to transform its business is enabled through a good relationship with the state and regulator. Following the wish of skyguide to consider externally provided data services, the regulator performed adaptations to Swiss aviation law to make this possible.

**Coflight Cloud Services:** Triggered by the goal to implement a service-oriented architecture and following a successful feasibility study undertaken by skyguide and partner ANSPs, Coflight Cloud Services was created. This innovative service will provide remote flight data processing for skyguide, and other customers, to ultimately reduce operating costs. It is the first service of its kind in the industry, and skyguide and our partners are committed to its continuous development and deployment.

“The steps undertaken so far by skyguide in implementing Virtual Centre have materialised in an enhancement of productivity of 10%”
Partnerships for success

As air traffic management shifts to a new paradigm, partnerships between complementary and compatible organisations to deliver change will become ever more important. We have seen first-hand the tremendous added-value and mutual benefit of working with like-minded partners, from both inside and outside the ANS domain.

To deliver its future, skyguide intends to build further long-lasting strategic partnerships with those that excel in what they do. We have identified the following as potential reasons to form partnership:

• to exploit synergies and achieve scalability and efficiencies;
• to deliver new competences;
• to invest in our business, or new ventures;
• to deliver better services thanks to our combined skills.

Our priority is to innovate in the following areas:

• Augmented decision-making using AI
• Service orientation and continuity
• Integration of drones
• Moving from an infrastructure-based to service-based business
• Satellite CNS