

# VISION 2035

## EARNING THE RIGHT TO EXIST



ALEX BRISTOL CHIEF EXECUTIVE OFFICER

Skyguide CEO Alex Bristol and his executive team have elaborated an outlook on the future of the company and the journey to get there. The paper, addressed to employees and other stakeholders, is called “Vision 2035”. Why the year 2035? “It is far enough in the future so that we do not just see the problems of today, but not too far so that we can only fantasize,” says Alex Bristol. And what are the key findings? “We believe there will be strong competition in 20 years,” he says. “To keep our *raison d’être*, we have to be lean and flexible, apply advanced technology and deliver effectively and efficiently the services our customers need.”

“I SEE SKYGUIDE AS A COMPANY WHICH IS RESPECTED AND RECOGNIZED WORLDWIDE FOR ITS CUSTOMER FOCUS, INNOVATION CAPACITY AND BUSINESS MINDSET”

**SKYGUIDE Alex Bristol, what was your motivation to write this fundamental paper and to set it 17 years from now?**

**ALEX BRISTOL** The question of what gives us the right to exist in the future became an important topic in the management and board of directors. We wanted to clarify a few questions: where are we going? And with what purpose? What is the strategy of skyguide? Many employees are unsure about the direction in which management and the board of directors intend to steer the company. This causes a certain lack of confidence.

**So please, share with us your vision of what skyguide will look like in 2035.**

**AB** While always giving due priority to safety, I see skyguide as a company which is respected and recognized worldwide for its customer focus, innovation capacity and business mind set. We will be able to operate successfully not because we are a monopoly, but precisely because we have learned not to think and act as monopolists. We will have developed into a company close to its customers, which knows how to deliver effectively and efficiently the services that they need, offering a quality at a price with which they are happy.

**It is hard to imagine competitors taking over the services skyguide provides today. Whom could you think of?**

**AB** Competition is imaginable, for example, at regional airports: if the federal government decides to open them up for competition, someone else could provide these services. This is already partially happening in Germany, Spain and Scandinavia. Britain is even com-

# “WE WILL INSTALL SYSTEMS THAT RELY ON ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING TO SUPPORT THE AIR TRAFFIC MANAGERS”

pletely liberalized. Then the next question is: what about the international airports? Or: what happens above 25,000 feet? Germany, France, Italy or Austria could watch our airspace as well as we do. Although I do not see any radical change in the foreseeable future, a repositioning is theoretically possible. Or consider the drones: they have a disruptive impact on our traditional procedures. It would be possible that someone else would manage the U-Space, maybe Google or Amazon, who knows. Today there is little overlap between drones and manned aircraft, except at airports or no-fly zones. However, that will change.

## **Nevertheless, with the Swiss cost of living, skyguide will never be the cheapest provider of ATM services.**

**AB** Although I think that the price differences to neighbouring countries will level out to a certain extent, we will not be the cheapest competitor in the market. But we will be a lean organization, and we will be able to keep up with our international competitors in all segments of the (quasi-) market. This, by the way, is a market, which we are helping to create, because with “virtualization”, modern air traffic management will become location-independent and the supporting systems will no longer be monolithic and locked, but rather service-orientated and open. These principles, together with the drones as a strong disruptor from the outside, are creating the foundations for competition. The political and commercial environment is beginning to change.

## **What are the critical success factors?**

**AB** We will implement the main part of the Virtual Centre within the company early in the 2020s. By 2024, at the latest, the enterprise architecture and the flexible technological platform will be operational. The rest of Europe will realize that it needs to respond faster to customer expectations and disruptors. We are able to shape and influence the technological environment so that we can offer to take on airspace for others, which we are already doing, as well as redundancy solutions for other air traffic management companies. Our Unique Selling Proposition lies in combining these elements with a primary focus on the management of data, rather than the management of aircraft.

## **You predict that a significant amount of skyguide’s revenues will stem from non-Swiss airspace management. From where?**

**AB** Thanks to the Virtual Centre, it will soon be technically possible to work independently of geography. As a result, our potential sphere of influence will no longer be confined to neighbouring countries. Skyguide already maintains long lasting strategic partnerships with a small number of well selected other air traffic management and industry providers.



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**In your document, you are talking about a new, complementary system called “System Switzerland”. Can you tell us more about it?**

**AB** Our customers include manned and unmanned civil aircraft in the commercial and non-commercial aviation segments, third parties, and the Swiss Air Force. Between military and civilian aviation there are duplications, but also gaps. In certain cases, between Zurich and Geneva the same data is generated four times. That is inefficient. We want to design something that is good for the whole of Switzerland; we want to create synergies, avoid duplication and thus reduce costs. This complementary system, while still maintaining national sovereignty and the capability to manage the whole of the airspace from within Switzerland if necessary, will ensure that we have the best and most efficient system. This we call “System Switzerland”.

**With virtualization, ATM will become location-independent, communication will be digital, links to and from the aircraft and unmanned air vehicles will be standardized and automated: therefore, you predict that skyguide will transform into a full service company, owning much fewer fixed assets than today. Which assets will skyguide still possess?**

**AB** We will not own installations that we maintain locally for others any more, such as instrument landing systems at airports.

In Geneva and Zurich we currently work in a separate and physical tower. A digital “remote” system would be better and cheaper. We will need multilateration antennas, as we will no longer use radars for civil aviation. Our assets, other than a couple of buildings housing our Virtual Centre, will be our staff. Our ability to use technology as a base for efficient and effective services; our knowledge of how to exploit the data we manage; our ability to implement innovation; and our intellectual property rights – all will increase in value.

**The job profile of an air traffic controller will encounter profound changes. You are even talking about air traffic managers instead of controllers. What will be their role?**

**AB** We will install systems that rely on artificial intelligence and machine learning to support the air traffic managers. Jobs will therefore require much more technological understanding. Today, a controller must be able to make quick decisions, respond instantly to exceptional situations, and invent immediate creative solutions. In the future, we will need people who can manage the system with much less intervention. We want to move away from the notion of controlling air traffic and spend our time managing the flows of traffic. In all but the most urgent cases, we will rely on the datalink interface and communicate with the cockpit only by exception.

**You predict that skyguide will employ less staff in 2035, while offering more capacity than ever before. How will you achieve that?**

**AB** In 2035, the number of employees at skyguide will be less than today, and this includes the ones we need to operate the non-Swiss airspaces. Skyguide will be a lean organization. A significant number of tasks will be automated. Technology will reduce the requirement to have deep geographical knowledge, and air traffic managers are licensed for using specific tools instead of being licensed for a sector of airspace. That ensures more flexibility and quicker reactions to customer demands. The airspace itself will be rationalized, simplified and harmonized across Europe.

**How will skyguide take advantage of its strategic assets and grow?**

**AB** The pioneering move to a Virtual Centre means that we will be ahead of others to make the most of location-independent operations. The ability to move sectors from one centre to the other, and then out of Switzerland and, more importantly, from abroad into Switzerland, is the key issue. We will deliver services in numerous countries in Europe from our “Centre Switzerland”, because we will have the systems, reliability and reputation that will make us a preferred supplier.

**The traffic of unmanned aerial vehicles or drones is currently “exploding” and shaking up the world of ATM. Therefore, drones are a major disrupting force. Skyguide wants to act fast and integrate drones into the Swiss aviation system, and thus become the leading U-space service provider. How can the principles of unmanned air vehicles traffic management successfully influence the development of the future ATM systems?**

**AB** Drone traffic is indeed increasing rapidly, overwhelming the air traffic control world and the regulators who cannot regulate fast enough. At skyguide, we are embracing this disruption and will consequently be prepared for those challenges earlier than other air navigation service providers. Successful air traffic management will evolve out of unmanned air vehicles traffic management principles, and the handling of a mixed manned and un-manned airspace will be based on a very high degree of automation with the human air traffic manager at its core.

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