Moving with the times

In the year of its 75th anniversary, **Philip Mason** talks to Frequentis's vice-president of public safety, **Robert Nitsch**, about the company's origins, and the fundamental differences between the air traffic and public safety sectors

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Frequentis vice-president of public safety ***Robert Nitsch***

Frequentis is in the process of celebrating its 75th anniversary. Could you discuss the origins of the company and how it has developed over the years?

The company was founded in Austria in 1947 by two young engineers [Emanuel Strunz and Walther Hamm], during the recovery phase after the end of the Second World War. The two of them built the business according to a particular mantra: we build everything that this young republic needs.

Several years after that, once the occupation had come to an end in 1955, there was a need for communications with air traffic again. I don't think the capacity in the country at that time was huge, but it was still a need, and we decided to help address it as a company. That offering progressed and became more sophisticated going into the 1980s with the arrival at Frequentis of Hannes Bardach.

Could you provide some background on Hannes Bardach for those who don't know?

Mr Bardach became Frequentis MD in 1983, subsequently taking ownership of the company three years later.

He came in initially as a consultant, designing a new system involving a hybrid micro-processor, analogue audio switch and so on, which in turn became the VCS 2020. We were able to use that to capture the Austrian market, as well as becoming increasingly successful in other countries.

For instance, at the same time, a German telecom company got a similar contract to provide air traffic communications technology in Germany. They couldn't get their system up and running within the requisite time frame, so they approached us and we ventured into the German market. That was around 1990.

Has the way in which Frequentis develops technology evolved over the years? What does the strategy look like now compared to 30 or 75 years ago?

We continue to maintain a huge emphasis on research and development. A big part of that is a real appreciation of employees' entrepreneurial spirit, and the opportunity that we give them to come up with new ideas and new technologies. This is an engineering-driven company – it always has been and it still is. At the same time, mission critical is also a clear part of our DNA, and we test the technology against that criterion the entire time. Going back to our employees, everyone in the company is thinking about what happens if something fails. Is there a back-up? If not, why not?

Honestly, this is not a natural approach for a business, but we live it every day. I had to learn it as well when I was a young programme engineer. My first trip when I joined the company was to Frankfurt airport, and meeting the people who are actually responsible for flight safety at the sharp end, you realise how important the work is.

Given the success that Frequentis already had in the air traffic space, why did the company decide to diversify into public safety?

Over the course of the 1990s and the 2000s, we had one fundamental goal, which was to reach a certain size as a company. We achieved that, primarily because of how successful we were in expanding our air traffic control effort, at which point we started to look at diversification.

We were obviously focused on mission critical, so we started looking into areas where the same mindset was required. That naturally meant any other kind of transportation – public transport, maritime – but also public safety. We pursued success in those adjacent domains, and honestly, it didn't take long.

Is there an element of risk inherent in that kind of diversification?

You naturally want to grow as a company, looking for ways to increase your business, thereby providing a stable future environment for your employees. In my own experience, I was in a similar situation – albeit on a smaller scale – when I took over responsibility for building out our subsidiary in the US. Ultimately, you start the programme, put it into place, bring employees along. And when you've done that, you do it again – that's how you grow your company.

What has been your biggest public safety contract so far?

Our biggest success in relation to public safety so far took place in 2005, when we won the contract for the Metropolitan Police. That is a huge organisation – more than 30,000 field officers and 500 radio dispatchers, responsible for more than 14 million people. Again, for us, that's not so much a job as a calling.

The Met's requirement was three control centres, networked together and connected to the TETRA infrastructure. We participated in the procurement, which took place in 2002/2003, and weren't selected after the first round. As it turned out, the company that was selected couldn't achieve the requirements, so in 2005 we were asked to jump in.

We were given two years to build the system and bring it into operation, which we did. And the system is still running. We also won the re-compete for tender in 2020, and will replace the Frequentis ICCS 3020 with our newest multi-media platform, LifeX.

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What would you say are the key differences between air traffic and public safety?

There are key differences between the two, and they have very different missions. They each have their own domain knowledge, operational concepts and so on, which are very specific to them.

At the same time, both sectors have the same basic requirements when it comes to the communications technology they use. It has to be reliable, redundant and so on.

So, while it was a natural move for us, there was also a lot of learning. There are always new things to learn working in the field of mission-critical communications, which helps keep spirits up. We're not getting bored, I tell you.

Which of the two sectors is more risk averse when it comes to the adoption of new technology?

As a general rule, I'd say that both sectors are quite risk averse. At the same time, public safety moves towards new technologies quicker than air traffic control tends to.

Aversion to risk also seems to be different depending on where in the world the organisation in question is operating. Generally speaking, new innovations tend to be adopted more quickly by America and the UK, and then – moving around the world – to places such as Australia, and eventually Europe. I think the most risk-averse people are the Europeans.

An illustration of that is the adoption of new trends such as software as a service. SaaS is a massive talking point for everyone at the moment, but it's really in the US and the UK where it is mainly being deployed [in a mission-critical context].

As well as being risk averse, both public safety and aviation are keen to leverage standards-driven technology, and that can take a long time. For instance, from the initial idea of a standard to the point where it's really ready, you're talking between 10 and 20 years.

If you look at NG 911/112, for example, the original meeting for the blueprint architecture took place sometime in 2000. After that, the first finalised documents came out in 2007, after which the NENA Plugtests began, of which there have been around 10 at this point. It's been an extremely long process.

With public safety now increasingly starting to use broadband-based technology, what's the expectation from the user perspective? How has users' experience in their personal lives informed what they now expect at work?

The private use of smartphones and smartphone apps and their use within the mission-critical context are two very different things. For instance, before adopting any new piece of technology, public safety organisations have to follow procedures and take account of operational concepts. You can't just use something [as you would at home] – it has to be thought through.

That includes questions around who is using the technology, when it's being used and so on. Likewise, the information used during communication has to be encrypted, captured, traced and [enabled for] use as proof in front of a judge.

In terms of user expectation itself, that is certainly higher in relation to broadband, because – as you say – they already have experience of what they can do with it in their non-professional life. The first stakeholder which has to overcome that is the user organisation itself, which has to

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explain the safety-critical context when it comes to the use of technology.

At the same time, we as manufacturers are also challenged because of the need to differentiate between what the app is and what you use it for. Is it used as mission-critical or just a supporting application for the mission in question?

Frequentis has been heavily involved in BroadWay, the pan-European project to provide cross-border communications for the emergency services. What part have you personally played in that?

It's been an extremely important project as far as I'm concerned, both from the 'public' side of contacting the emergency services, and from the dispatching side.

We started looking at the [integration of broadband into emergency operations] around 2015, at the time of the initial development of ESN. At that point it was a general interest in how the technology was going to develop, and what the general requirements were going to be, compared to TETRA. That included infrastructure, applications, devices and, of course, the control room.

As part of that process of looking at how the radio side was changing, we also engaged with the standardisation bodies, as well as participating in the MCX Plugtests. There was a lot of learning from other companies to come out of that, and we also started to build a relationship with Nemergent, which was one of the companies we partnered with during our work on BroadWay.

Our involvement in that project was a natural progression following our experience with the emergency services, and with our background in TETRA.

Frequentis's largest public safety contract is with the Metropolitan Police

Has your involvement in the BroadWay project given you any particular insight into the needs of users that you wouldn't necessarily have had before? The initial stage of the project involved surveying operational need across the continent, after all...

We did, and that absolutely helped us with the development of our products going forward. Seeking out cross-connections between domains is also a really fruitful approach. There are certain elements in air traffic which in public safety you would never think about. But when you engage a little, you see that it has merit.

How do you see Frequentis progressing from here? What are the immediate ambitions for the company?

Going forward, we have high aspirations of expanding our product portfolio even further, to better serve the air traffic, public safety and defence communities.

We took the company public [in 2019], and last year acquired elements of L3Harris Technologies, specifically around voice communication product lines. As a result of the latter, we now offer a much broader, more consolidated solution.

Specifically on the public safety side, we became a majority shareholder for [computer aided dispatch specialist] Regola, at the beginning of 2022. In terms of the market, currently our main focus is in Europe, the Middle East, and a little bit of Asia.

We want to expand more globally, however, specifically in instances where we're very much in the country already, such as our presence in Australia.