Asset Value

With LFV's first remote tower going operational, Aimée Turner examines how this advanced technology will manage to make a convincing business case for itself

LFV chief Olle Sundin tempers optimism with reality

S weden's LFV became the first air navigation service provider in the world to launch remotely operated air traffic management on April 21 from its Remote Tower Centre (RTC) in Sundsvall serving Örnsköldsvik airport over 150 km away.

The technology has been developed to meet air traffic controllers' operational needs by Saab in close partnership with the Swedish provider which in future will offer its operational expertise as a consultancy service as Saab embarks on the challenge of exporting its r-TWR concept.

The remote tower uses a whole host of highdefinition displays, input devices and new controller tools that provide the same functionality as those already in use at Örnsköldsvik.

The product suite will typically feature a comprehensive array of high definition cameras and pan-tilt-zoom cameras, surveillance and meteorological sensors, microphones and signal light guns at the airport.

Data from these sensors are now being sent to the Sundvall RTC to be displayed in real time, making it possible to retain air traffic services at low traffic airports such as Örnsköldsvik. So what are the prospects of remote tower technology delivering a compelling business case on a cost basis?

Here, one expert somewhat unfairly points out that Örnsköldsvik is arguably 'the least interesting single remote tower application in the middle of nowhere' and that in order to deliver any meaningful cost savings, the industry needs to embark on the deployment of multiple tower platforms before it can hit remote pay dirt.

Domestic

Olle Sundin, director general of Swedish air navigation service provider LFV, starts our interview by outlining the provider's domestic aspirations for remote tower technology. These centre on a plan to transition within nine months the current conventional tower operations at Sundsvall to the nearby remote tower centre.

LFV announced earlier this year that its remote tower solution will next be delivered at Linköping airport in the south of Sweden during the last quarter of 2015 where a more complex traffic mix will include managing Saab test flight programme which will no doubt extend the operational knowledge base.

In anticipation of the obvious business case line of questioning, Sundin talks of the future uptake of remote tower technology as being driven much more by the accompanying efficiency gains it offers

"To talk of cost savings, I think this is one of the least interesting perspectives concerning remote towers. People talk about cost savings, peoples don't necessarily talk about efficiency and that always surprises me. Of course, there will be a certain price for this service but the early perspectives on this technology have been so limited and have always centred on how we compare this kind of technical support to a conventional tower tool."

He suspects that many air navigation service providers will be eyeing remote tower technology to deliver fall-back and contingency solutions especially at very large airports whose security can be critical. "You can put a remote tower into a bunker and the only exposed element will be the cameras," says Sundin.

Rationale

For the LFV chief, the business case rationale comes very much down to who exactly is requesting the service. "I am from the airport side of the industry so it's also very much about maintenance costs, tower investment costs rather than strictly ATC concerns which are over what kind of service efficiency you gain if you feed 10-12 remote towers in to one RTC."

"I would say that even on a one-to-one basis, remote tower technology will generate cost savings, yes, but it will give you so many additional advantages too including efficiency, flexibility and the ability to make things much much safer," he says.

"If you approach it simply from an efficiency point of view, that alone allows a longer term perspective which will impact costs to the business as the technology offers far more possibilities to integrate the intelligence it delivers. This includes the visual imagery that can be relayed into other airport operational areas such as security."

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"As it is also a completely digitalised service it can disseminate a lot of information so the greatest gains will come from the secondary effect of remote tower technology which is more about sharing operational data in an effort to deliver seamless operations," he continues.

"If you are an airport you can put much more of your balance sheet into that cost benefit analysis. The ANSP business case is not always the most interesting one. If a country's airport industry has the freedom to choose rather than be restricted by a monopoly where both airport and air navigation service are bound to one another, there is arguably even more of an incentive."

Conor Mullan from Think Research agrees. Think has worked on many remote tower projects in Sweden and further afield too. Mullan believes the insight it has gained through working on the concept since its early formation allows it to see a bigger picture. "We must try and raise awareness of these other drivers so that remote tower is not pigeon-holed into a box marked '€€€," says Mullan.

"We are seeing a lot of talk regarding commercial return or achieving profitability. While this was the main expected benefit in early remote tower research and remains a key driver for implementation today, let's not forget other needs that the concept is addressing particularly outside of Europe," he says. "Some of these needs are primary requirements for which cost would otherwise be a constraint, some are requirements from which greater income may result, and some are requirements where cost - and therefore profit - is of secondary importance."

He presents the situation of air services in very remote areas where governments are required to provide community connectivity. Remote tower technology here could help overcome logistical hurdles and reduce costs, with an acceptable level of loss subsidised by the authorities through public charter arrangements.

Throughput

And then again, in some environments, the availability of a remote tower (e.g. for contingency at larger aerodromes or for service upgrades at smaller aerodromes) can enable greater throughput than would otherwise have been possible, and so increased revenue may result even if that was not the main objective.

In terms of LFV actually offering to operate remote tower services for other providers, Sundin's optimism is tempered by the structural realities of the ANSP industry.

"If this was a completely deregulated market and operated in normal business to business fashion, there would be potential here but, of course, there is so much conservativism and a lot of strategic national considerations that underlie the industry," he says. "the industry needs to embark on multiple tower platforms before it can hit remote pay dirt"

"In terms of exporting this potential we imagine that we will act as consultant in some varying capacity for Saab products on the market – essentially a build, operate and handover proposition," he says, adding, "I wouldn't limit myself to what LFV or Saab consider to be the product because they all have to be made tailor-made for the needs of different ANSPs."

Sundin reckons remote towers do represent a 'big bang', just not a big bang in terms of LFV offering it as a operational service as monopoly and national perspectives will always come to bear and the national ANSP will invariably want to lead any future remote tower operation. "My knowledge of the market is that there is no market – it's a limited at best," he says.

In terms of further development, Sundin says a lot of product development still needs to be completed in addition to a renewed focus on how both LFV and Saab package the product. "Both will be essential in the future," he says.

Certainly, in terms of options which seem to be emerging, the following are presenting themselves as prime operational contenders:

- Single Remote Tower: one controller responsible for one airport from a remote location.
- Multiple Remote Tower: one or more controllers responsible for more than one airport from a remote location
- Contingency Tower: a separate facility to be used when an airport's conventional tower is out of service.

 Single Remote Tower: a large multiple runway airport that would otherwise require more than one conventional tower

In terms of a definite ramp-up of potential projects, there is plenty of interest emerging in the United States. FAA administrator Michael Huerta mentioned the subject during House testimony on March 3, noting the upcoming demonstration project of Saab technology at Leesburg, Virginia, telling Congress that 'if the results are promising, this is something that I want to move out very aggressively on because it holds great potential to address the need [for new control towers]'.

Mullan notes that remote tower technology may not be deployed simply for financial reasons at all, but specifically for targeted safety goals, citing efforts in the United States where the Blended Airspace concept could arguably employ remote tower technology in current nontowered airports as a means to ensuring and even improving safety levels.

In the near term, it seems likely that several single remote tower projects will be at the vanguard. Norway's Avinor is at the head of the pack with a decision expected in June over who will build up to 15 remote towers in a three-way contest between Indra Navia, Frequentis and Saab. This may eventually see those 15 remote towers feeding into a RTC at Bodø which already handles a reasonable level of traffic including military operations. The question will then be on the ability of the technology house that has developed the solution to support that ramp-up on an industrial scale.

Before multiple operations start to really engage, however, the deployment of contingency remote technology is expected to emerge as a second operational mode. With the technology and configuration very similar to a single tower framework, uptake by major hubs whose motivation is backed by the necessary financial firepower certainly looks assured. ATM

