Remote towers spread their influence

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The technology continues to advance, especially in the deregulated European market. *Jenny Beechener* and *Ben Vogel* report

European air navigation service providers (ANSPs) are increasingly looking at digital tower technology to meet safety and efficiency needs. Small and regional airports are embracing the technology to extend their hours of operation, while larger airports recognise the benefits that enhanced surveillance and digital data bring to busy airfields.

Projects are under way in Azerbaijan, Estonia, Hungary, Ireland, Italy, Germany, Netherlands, Norway, Sweden, and the UK, with more anticipated in the coming months. International projects follow a similar pattern, with regional airports leading developments in Argentina, Brazil, Iceland, India, New Zealand, and the US. Major hubs Hong Kong and Singapore Changi, meanwhile, are looking to adopt the technology to enhance safety and efficiency in parallel with airport expansion plans.

The remote tower solution from ANSP Estonia Air Navigation Services (EANS) and Cybernetica displaying a view of the airfield at Tartu Airport. (EANS)

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Since the Sundsvall remote tower centre in Sweden received safety approval from the Swedish regulator in 2015, the centre has clocked up more than 30,000 hours of operation. Operator Saab Digital Air Traffic Services (SDATS) will control three airports from the facility by the end of 2019 and Swedish air navigation service provider LFV has started building a second remote tower centre at Stockholm-Arlanda, to manage 12 airports on behalf of the

airport operator Swedavia. The first four airports – Kiruna, Malmö, Östersund, and Umeå – are due to be operational in 2020 in this 3,800 m ^{2} facility, with others to follow by 2022.

The influence of digital towers extends beyond safety and efficiency; they also enable delivery of third-party services and introduce flexibility not supported by conventional service models. "We are in the final stages of becoming certified as an ANSP," SDATS President Johan Klintberg told *Jane's* . "SDATS will be the world's first digital ANSP."

Approval paves the way to provide digital tower services for multiple customers supported by a new operational concept. "Our second generation is where we start to include elements around the digital environment like drone detection and management." SDATS is also looking at the visual requirements where just flight information services are provided, rather than air traffic control services.

SDATS introduced a new simulator capability earlier this year. "One of our offerings is to simulate an airport environment and provide an introduction to remote digital tower operations," said Klintberg. "You can provide a customer with a view of how this would look operationally." Parent company Saab is a partner in the Digital Aviation Research and Technology Centre (DARTeC) at Cranfield University, which develops and tests remote digital technology, including drone operations beyond-visual-line-of-sight.

Multiple tower operations

"There are a lot of newcomers to the market but we were the pioneers, and now we can talk about the next generation of digital tower technologies," noted Peter Engberg, Saab vice-president and head of traffic management. In particular, he added, "multiple airport control is coming. We think we will have that approved by the Swedish regulator next year [2020]."

Multiple tower operations is a long-term goal for Norwegian ANSP Avinor ANS. The company expects to complete construction in 2020 of the Bodø remote tower centre with 15 controller workstations, under Phase I of its remote tower programme. Initial operations will support single airport operations, with the first four airports expected to start operations during 2020. In the longer term, each workstation will be expected to handle more than one airport.

"We are working with Indra on SESAR validation projects for multi-airport operations," Avinor Director of Remote Services Jan Østby told *Jane's* . "The infrastructure will be in place in 18 months so we can start to gain experience. It will be a few more years before we reach certification."

The original plan from Avinor identified up to 36 airports as suitable for remote digital services. Performance at the first 15 will determine whether more airports are added to the programme.

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