In a nutshell

When a currently non-towered airport in the National Airspace (NAS) considers migrating to a towered business model, what are the considerations that need to be incorporated into the planning?

- Economic impact
- Safety enhancement
- Opportunities for economic growth
- ATCO staffing
- Cost of implementation
- Funding options

Digital towers offer an alternative to constructing a physical tower, and the benefits of doing so are many. This use case will consider the path to making this decision.

The business case for transforming from non-towered to towered airports

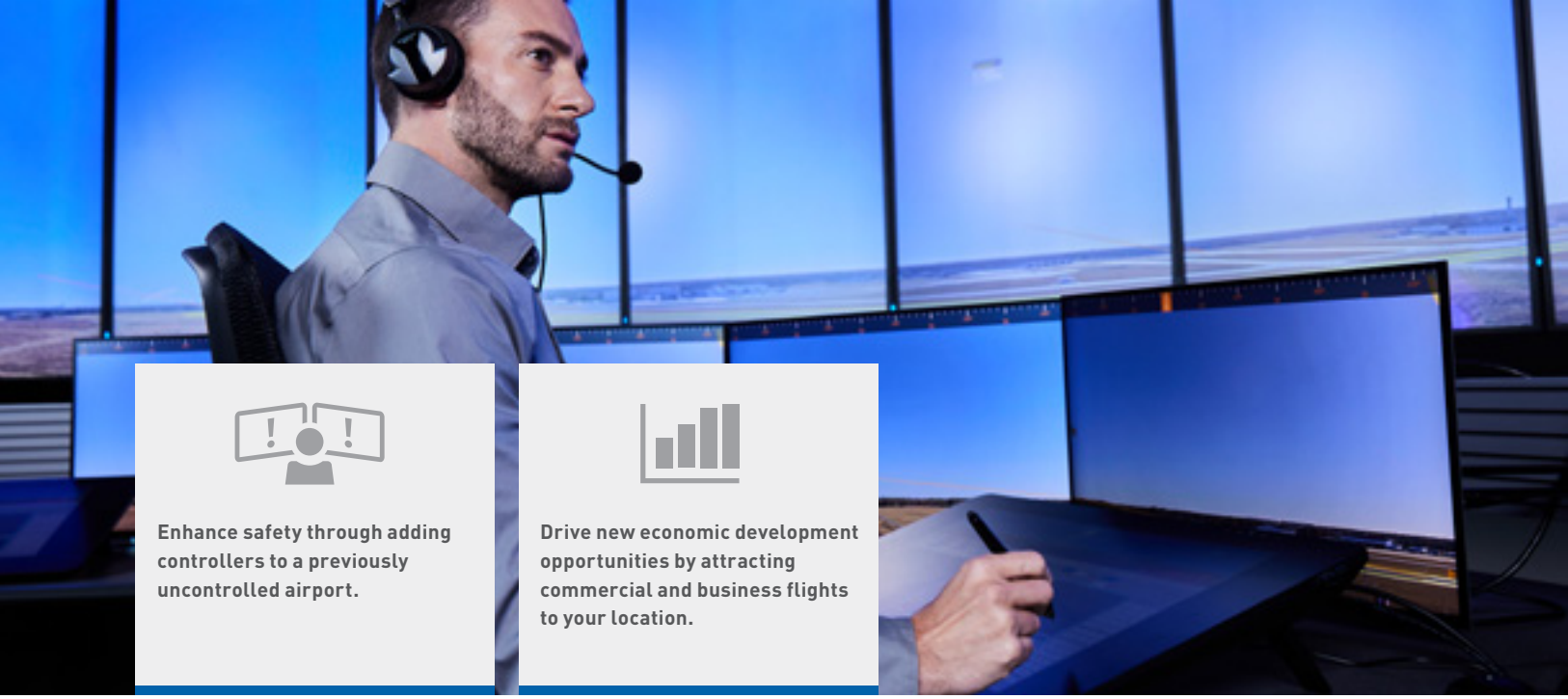
Challenge and outcome

Airports are faced with many challenges. Although the safety of their facility and its users will always be primary, they also need to think about keeping up with new technology and contributing to the local economy. For an airport without a control tower, there aren't many financially viable options to meet all of these objectives. Let's consider how digital tower technology can have an impact.

For airports, safety is always the top priority. The addition of tower services to non-towered airports is already a big step forward in terms of safety. Digital tower technology takes it to the next level.

Technology advances can drive positive public perception, new business opportunities and readiness for whatever the flying future might bring. New market entrants are on the horizon – drones and electric vertical take-off and landing (eVTOL) traffic. A digital solution positions airports to be ready to support these aircraft.

Opportunities for economic growth can also come from bringing business to a local economy that doesn't currently exist. For non-towered airports, this comes from attracting new traffic. More specifically business jets, fuel sales, landing fees, enplanements and commercial services to support these new customers. The opportunity to be a local/regional 'technology showcase' should also be considered.



Enhance safety through adding controllers to a previously uncontrolled airport.

Drive new economic development opportunities by attracting commercial and business flights to your location.

Making the case for deploying a digital tower

Digital towers enable rural airports as a cost-effective means to attract new business by providing safe connection to the flying public. Thus, starting an economic growth engine. In addition, airport operators reduce total cost of ownership of tower infrastructure, drive positive community perception and prepare for the future.

Before undertaking a construction effort, there are some important factors for implementing digital tower functionality that should play a role in this analysis. Starting with the bottom line. The total cost of ownership of a digital tower vs. a brick-and-mortar tower is lower. Digital tower technology can provide 30-50% cost savings vs. brick-and-mortar towers. Time to deploy is another factor to consider. Once all approvals have been completed, a digital tower solution can be live in a matter of months. As little as 6 months.

A 'digital' solution allows locations that are not easily accessible due to remoteness and/or safety reasons to be supported. Frequentis provides a modernization platform allowing for faster addition of new features in the future through software additions/upgrades.

Adding air traffic controllers might seem daunting, but again there are different options working with the FAA or contract organizations. All-in-all digital towers provide a better quality of life for ATCOs at work. Increased situational awareness to enhance safety, tools based on the latest technology, reduced stressors in the working environment, and more location opportunities. You don't need to live/commute to where you work, providing more options for remote locations considering the move to a towered airport.

Airports are able to pursue funding for digital tower solutions through the standard yearly funding processes provided by the federal government. There are two such federal grant options which come into play depending on what type of airport the facility is – the Airport Improvement Program (AIP) – Tower Construction and the Federal Contract Tower (FCT) Program – Tower Construction and Modernization Grants.

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