

# Remote Digital Tower

## Advanced remote sensing

Field-proven  
Scalable and flexible  
Turnkey solutions and services

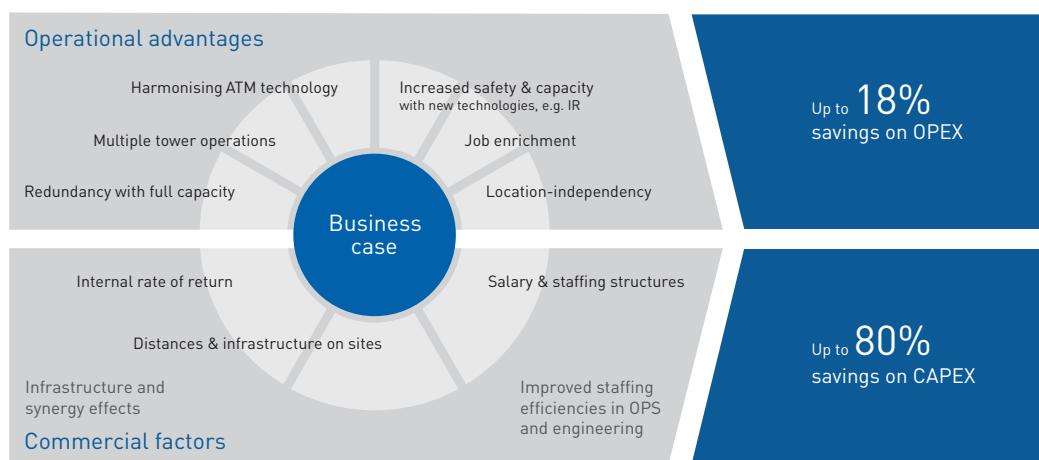
**FREQUENTIS DFS  
AEROSENSE**

# Balancing modernisation and cost

Air navigation service providers (ANSPs) and airport operators around the world are facing increasing pressure from airspace users and competition in tower air traffic control (ATC) markets. They face the challenge of modernising air traffic control services to increase efficiency, while at the same time reducing cost and meeting performance, safety and regulatory requirements.

## Business needs of airport ATC operations

In order to achieve their ambitious goals, ANSPs and airport operators are looking for options to leverage shared assets, improve operations and explore new concepts of operations.



## Individual solutions for different airports

Remote Digital Tower enables the provision of ATC services from different geographic positions, using a multitude of local sensors, visual and infrared technology including advanced tracking and video processing and surveillance solutions based on multi-lateration or ADS-B, in order to provide the situational awareness needed for the controller to safely operate an airport. An ATM-grade network provides reliability and performance to safely connect the airport with the remote tower control centre, where ATC operations are employed using newly designed remote tower controller working positions, featuring a complete digital tower, with ergonomics optimised for controller performance.

No two airports are the same, hence the remote tower solution uses these three building blocks – sensors, network, centre – to create a solution best suited for each airport's unique use case.

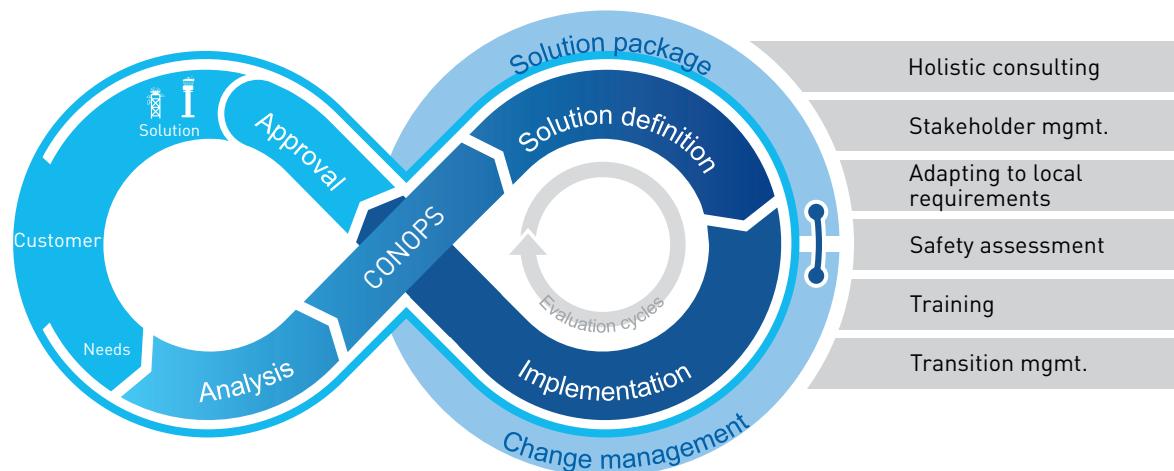


## Turnkey services from concept to go-live

<b>Advanced remote sensing for ATC</b> A set of cameras combined with advanced video processing, object detection and tracking provides superior situational awareness. The solution offers a range of models: from cameras operating in the visual spectrum, to seamless 360° infrared and modular pan-tilt-zoom cameras.	<b>Flexible, scalable remote tower centre</b> The design of the remote tower centre is essential for efficient operations. The solution can scale from providing flight information services (FIS) up to full ATC-grade operations for tower and approach.	<b>Reliable, robust and secure network</b> An intelligent ATM-grade network ensures continuous performance and service thereby balancing performance and network costs.
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## Technical and operational support of customer process in all phases

No two airports are identical. Therefore, the Remote Digital Tower solution provides each individual airport with the exact functionality it needs to improve operations and enable new business models.



Cutting-edge technology is only one part of what is needed for a successful remote tower project. Equally important is an operational concept which is based on clear and concise captured customer needs and a sound business case. Implementing remote ATC operations includes ATS procedure adaptation and consulting, ATS training and transition, support during the regulatory approval process as well as stakeholder management throughout the whole implementation process.

# Remote Digital Tower success stories

FREQUENTIS DFS AEROSENSE is a trusted worldwide partner that provides advanced turnkey remote sensing solutions for ATC. This proven combination brings together digital tower systems from Frequentis with operational and regulatory concepts and know-how from the DFS group.

## German Airports (DFS)

DFS has already been successfully operating the RTC system for years. Since April 2022, air traffic at Erfurt Weimar and Saarbrücken international airport, hundreds of kilometres away, are controlled from the DFS remote tower centre in Leipzig. Both airports are equipped with remote tower technology. 360° visual and IR cameras provide a seamless panorama view, supported by a high-performance PTZ camera with visual and IR sensors. Advanced video tracking enables the detection and marking of IFR and VFR flights and vehicles, while detailed surveillance information increases situational awareness. Extension to next airport is already being planned: Dresden Airport will also be monitored from Leipzig at the end of 2023.

## Brazil – Santa Cruz (DECEA, CISCEA)

This is a first-of-its-kind project in South America to provide remote air traffic control services using digital tower technology. The solution provides controllers with a real-time 360° visualisation of the airport and its surroundings in a remote operating environment. Digital support tools such as automatic object detection, surveillance labelling, image recognition and tracking are some of the major features of this solution, which will support the safety-critical and high-pressure work of controllers.

## Akureyri (ISAVIA)

Sub-zero temperatures in isolated airfields pose a distinct set of challenges to airfield cameras and casings. Together with Isavia, Frequentis and DFS are exploring remote tower solutions suitable for use in extreme weather. Particularly in the north of Iceland, there will be a requirement for camera technology and protective casings that ensure consistent high performance in the face of challenging climatic conditions.

## Driving safe innovation

We build on cutting-edge technology to deliver the required capabilities for ATC and beyond. Intelligent, advanced vision with innovative approaches across the whole visual surveillance chain provide the controller with an optimal user experience, ensuring situational awareness. We understand that making new technologies truly ATM-grade is an essential element in enabling innovation in safety-critical environments.

We continue to push boundaries, with advanced video processing, artificial intelligence and deep learning solutions that have the power to make airports of any size smarter. We are one of the leading participants in the EUROCAE WG-100 working group, driving change and creating standards, as well as supporting SESAR research into multi remote towers.

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