Deployable Digital ATC Tower

Maximising security, quality and efficiency

Fast, easy and cost-efficient deployments
Increased personnel safety, comfort and flexibility
Improved situational awareness and training

Defence

FREQUENTIS
FOR A SAFER WORLD

Maximum flexibility in supporting a vast range of operational requirements

Military operations rely on centralised and de-centralised command and control opportunities. Military forces stage from a Main Operating Base (MOB) in the rear, supporting Forward Operating Base(s) (FOB).

In this environment, a deployable air traffic control tower can operate as a centralised control centre controlling single or multiple airfields from one location in a hub-and-spoke configuration. Additionally, a deployable digital ATC tower can be transported to an FOB to operate as an independent facility serving that specific base or airfield. This de-centralised approach provides flexibility and resilience, helping military forces to maximise the reliability of operations and tactical communications. In addition, a deployable digital ATC tower can serve as a contingency system, for use when the main ATC tower is out of order. Besides pure ATC operations a deployable digital ATC tower can be used to support emergency response to natural disasters, during crises or in hostile areas. Conventional mobile and deployable ATC tower solutions are already in place – but with limitations.

Challenges for conventional mobile and deployable ATC towers

Crew safety
In contested environments, conventional deployable ATC towers are vulnerable to attack by enemy forces, which puts crew safety at risk.

Situational awareness
Limited operating height reduces above-ground-level visibility equipment versus a conventional full ATC tower, decreasing flight safety. In addition, low-light conditions and adverse weather can severely restrict operations.

Inefficiencies
Limited visibility, operational compromises and changes to the known ergonomic working environments cause inefficiencies in ATC services.

Flexibility
The necessity to position legacy mobile towers close to a runway decreases mission flexibility in setting up forward-operating bases (FOBs).

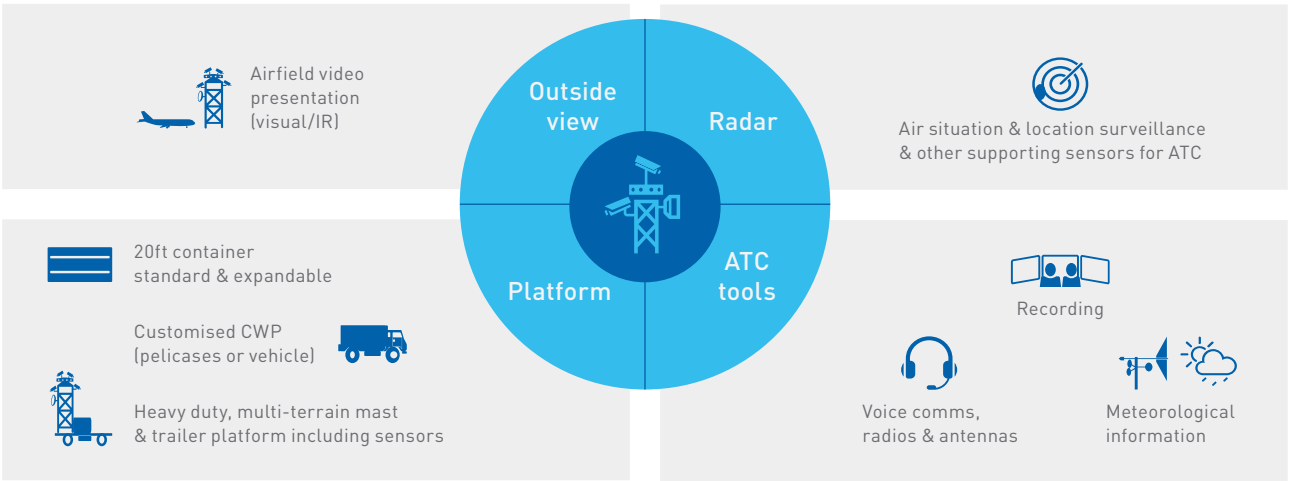
Crew experience
Poor ergonomics contribute to operator discomfort and fatigue. Disparities between training/simulation and deployed environments can reduce operator effectiveness and put safety at risk.

The latest deployable digital towers from Frequentis address all these shortcomings, ensuring safe, orderly and expeditious management of air traffic for out-of-area missions, without compromising on security, quality or comfort.

Frequentis deployable remote digital towers for military ATC

The Frequentis deployable remote digital tower solution has three main components: a trailer and mast system with cameras and optical sensors, a secure communication network and a control cabin hosting the working positions and the entire data centre. A movable camera mast will naturally be placed close to the runway – however, the control unit (sheltered container) can be located anywhere. Separating sensor mast and working position in this way augments crew safety and improves strategic command-and-control advantages through increased location flexibility.

Frequentis deployable digital towers can be rapidly set up and have the resilience to work with minimal maintenance demands, even in the harshest environments. Configuration is simple – all key functions are redundant. Our scalable solution can be adapted to individual use cases and mission requirements. Mounted on a flexible platform, the solution allows easy integration with third-party ATC equipment. Digitalisation improves situational awareness, reduces workload, and improves safety for air traffic. It enables the combination of training, simulation, recording and playback within a single solution, as well as the sharing of mission-critical information – such as 360° visual views, or other surveillance data supporting C2 elements or other field personnel in such as security forces. The system differentiates with state-of-the-art touch-based controls, video stitching, picture harmonization, object detection and tracking based on camera views. It allows for information augmentation with static overlays or surveillance data.



Benefits of the digital approach

Augmented crew safety and **strategic command advantages** achieved by separation of mast and working position

Improved field of view based on high resolution stitched and harmonised videos without over-laps or duplication of targets

Improved vision in adverse weather and at night with advanced visual and thermal sensors, augmented with AI

Improved alertness achieved by object detection and tracking for persons on ground, vehicles, aircraft, UAVs and wildlife

Reduced heads-down time and advanced training provision achieved by information overlays and augmented reality

Enhanced training and simulation by integrating the live situation and the simulation system

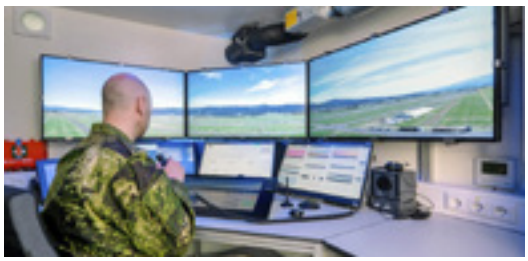
Shared situational awareness through distribution of video, information and other data with personnel of interest in the field

Improved after-action review and investigation, based on comprehensive video streams, data and voice recording

Mature and proven solution

Frequentis is the global leader in deployable digital tower solutions for military ATC. Our system solution is designed with leading armed forces requirements and diversified use cases. Drawing on more than seven decades of ATC experience, we are the first supplier offering a mature, field-proven deployable remote digital tower solution that helps military customers to ensure their mission success and to create tactical command and control advantages.

The Frequentis solution meets all necessary ATC standards, is transportable by air, land, rail and sea, and is deployable in standard shipping containers. The resilient equipment supports low-maintenance operation in all weather conditions and helps keep ATC crews out of harm´s way while its mission-critical operations support a safe, orderly and expeditious service.



FREQUENTIS

FREQUENTIS AG
Innovationsstraße 1
1100 Vienna, Austria
Tel: +43-1-811 50-0
www.frequentis.com