

# Deployable Digital ATC

## Digital technology for austere conditions



### Challenges for deployed military ATC

- Vulnerability of deployable ATC towers and safety of military air traffic controllers in case of an attack
- Reduced situational awareness and flight safety in mobile towers
- Mixed, manned and unmanned, air traffic
- Inefficient operations caused by brown-outs and limited visibility

### Digital tower solution

- Visual and thermal cameras
- Advanced pan-tilt-zoom camera
- Object detection and tracking
- Augmented reality
- Seamless panorama

### Deployable digital tower coverage

- Safety
- Flexibility
- Security
- Continuity

Mobile and deployable ATC tower solutions are already used at military airbases and civil airports in many countries to provide air traffic control services outside of the normal day-to-day use. These mobile solutions are used at times when the conventional tower is not usable because of maintenance, after natural disasters or when providing ATC services during times of crisis or in hostile areas.

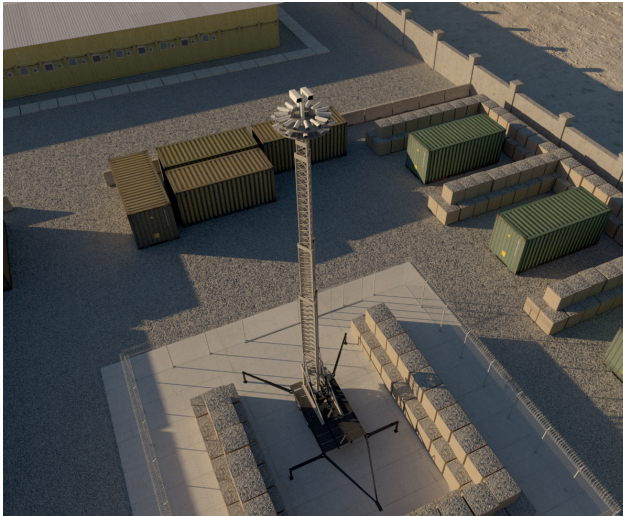
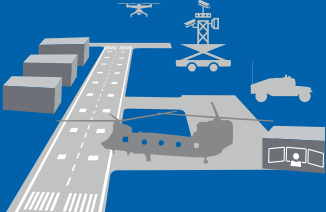
Mobile towers are a well-established solution to provide these services, but at the same time, the services available to pilots can be limited. Some are not as well equipped as conventional towers, space within the cabin as well as the operating height is limited and the overall ergonomic workplace is unsatisfactory. The ideal situation would be to provide air traffic controllers with the same equipment, regardless if the service is provided at a domestic airbase or in a crisis area in the desert.

The Frequentis deployable digital tower solution provides the same functionality and features as our fixed digital tower.


### Safety

Increased situational awareness and safety of flight operations is achieved by using enhanced vision. This includes visual and thermal cameras, a seamless panorama display, digital overlays and integration of surveillance data. As is increasingly important nowadays, the integration of manned and unmanned air traffic can be addressed appropriately with the digital solution.

Importantly, using this technology, the deployable solution will protect the lives of air traffic controllers while on duty in crisis and war-like areas. Moving the operators out of harm's way by placing the control room inside a protected camp with only the cameras and sensors close to the runway reduces the risk to personnel as well as reducing the infrastructure costs of building or renovating ATC tower buildings.

- Autonomous mast system with telescopic or cross bar solution
- Height: up to 80ft
- Quickly deployable on demand
- Sheltered controller working position
- Increased safety for operators
- Independent operation
- Enhanced vision



Protected controller position

## Flexibility

The highly modular solution gives military forces a high degree of flexibility during the design of the system as well as during operations. Depending on the requirements, the sensor suite can be equipped with visual and thermal cameras, pan-tilt-zoom cameras and surveillance sensors. The same applies to the control room and the equipment installed in the container. The deployable system can fit into a standardized container or other vehicles already in use, enabling rapid expeditionary transport, deployment and use. Furthermore, the time spent in the area of operations can be reduced thanks to a straightforward dismantling approach after the mission is completed.

## Security

Mission-critical data must be transported securely to fulfil the mission and enable harmonized data exchange. The Frequentis digital tower, in combination with its secure voice communication (ICS-C2), creates the ideal low-risk solution package for deployed military airbase operations.

## Continuity

Deploying to a crisis area automatically increases stress levels. The deployable solution helps air traffic controllers to concentrate on their task of providing a safe ATC service when external factors are not ideal. The goal should be to provide the best training and equipment possible – “train as you fight”. The system enables military air traffic controllers around the world to be trained and ready to deploy with increased situational awareness, to increase their ability to provide the best ATC services possible and ultimately to increase flight safety and support of mission success.