Remote Virtual Tower
Re-thinking the airport tower

Flexible, location-independent ATC-service provision
High performance camera, control centre and networks
Scalable for airports with low to high capacity needs

Air Traffic Management

FREQUENTIS
FOR A SAFER WORLD

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 are challenged to modernise air traffic control services to increase efficiency, while at the same reducing costs and meeting performance, safety and regulatory requirements.

Business needs of airport ATC operations

	Cost	Safety	Capacity/throughput	Airport security	Business continuity
Remote tower Small to medium capacity airport	Excel in operational performance while reducing the costs of ATC operations.	Ensure performance for safety-critical applications.		Ensuring full control over all airport infrastructure.	Reduce impact of tower maintenance, refurbishments, crisis or evacuation.
Contingency solution High capacity airport					
Enhanced tower High capacity airport			Having the flexibility to match demand with supply, and gain efficiency.		
Airport operation Medium to high capacity airport				Ensuring full control over all airport infrastructure.	

Turning challenges into opportunities

In order to achieve these ambitious goals, ANSPs and airport operators are looking for options to leverage shared assets, improve operations and explore new concepts of operations. Remote Virtual Tower enables the remote provision of ATC services from different geographic positions, using a multitude of local sensors, including visual and infrared cameras and surveillance solutions based on multilateration 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 remote 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.

Offering all the technologies needed for state-of-art airport control

Not every airport is the same. Therefore, the Remote Virtual Tower solution from Frequentis provides you with the right functionality to improve your operations and support your business model. It consists of airport equipment, remote tower control centre equipment and network functionality. Frequentis Remote Virtual Tower comes in three options to improve airport operations.
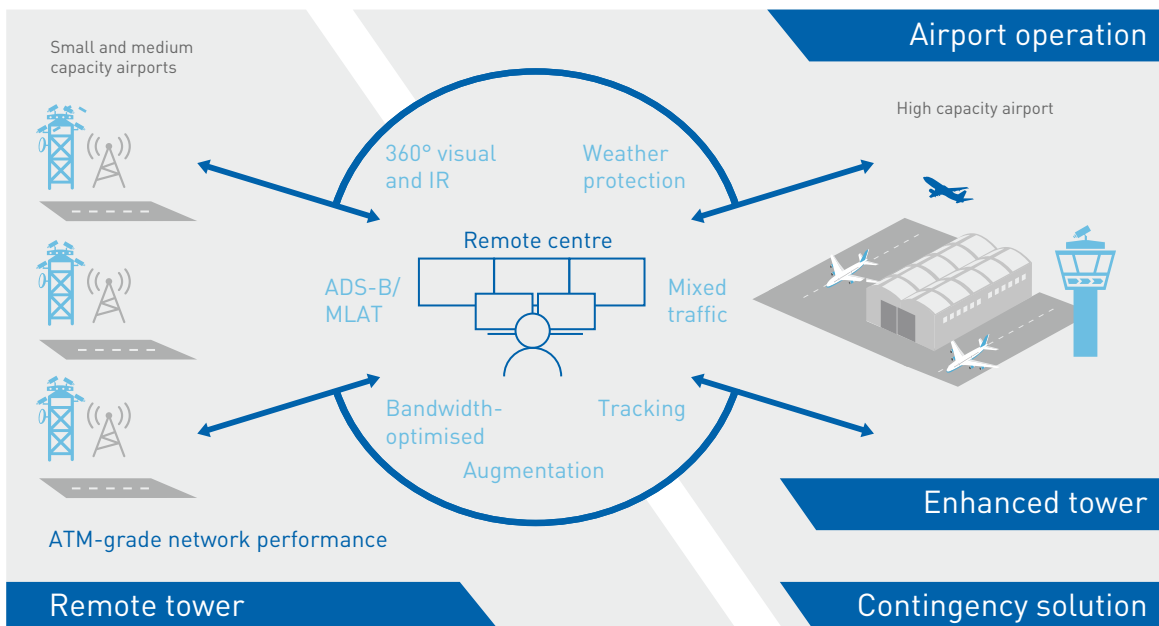
Remote tower
Remote tower for small and medium capacity airports replicates the visual view at airports, enabling ANSPs to provide air traffic control and information services from a remote location with new enhancement tools such as aircraft and object detection and tracking, information augmentation, to safely manage single or multiple airports from remote.

Enhanced tower operation and contingency
RVT can also be used to add new functionality to high capacity airports to provide contingency services or to enhance regular ATC operations. It gives operators a full airport view, and also flexibility in times of increased traffic flow. Smart binoculars, view enhancement based on IR technology, and alerting functions enhance airport operations, especially at night or in adverse weather. Tower operations can be remoted to a contingency centre to ensure continued operations in case of crises.

Airport operations
For this constituency, RVT provides an additional set of eyes, thus allowing video-based airport apron control, providing a large-scale video panorama, blind spot coverage, position information, augmented information about aircraft status and airport security protection through alerts and automated tracking with zoom/close-up/PTZ cameras for improved apron management and airport perimeter security.

Remote Virtual Tower success stories

Frequentis is actively driving the evolution of remote towers across the world, through involvement in major research programs such as SESAR, and by driving standardisation, e.g. via EUROCAE working group 100, to enable safe operations. Our customers benefit from more than sixty years of experience in mission-critical air traffic control solutions.

DFS, Germany
Remote Virtual Tower

Frequentis has equipped the airport of Saarbrücken (Germany) with remote tower technology, managing approximately 15,000 traffic movements per year. 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 allows detection and marking of IFR and VFR flights and vehicles. Surveillance information increases situation awareness. The airport of Saarbrücken, Dresden and Leipzig are to be controlled from the remote tower centre in Leipzig.

Vienna International Airport, Austria Airport apron management solution

Vienna Airport and Frequentis deploy a video-based surveillance solution for apron management at the largest airport in Austria. With about 220,000 movements per year, Vienna Airport is an important hub for Central and Eastern Europe. Controllers are provided with an ultra-high resolution panorama using advanced stitching algorithms and individually controllable PTZ cameras. Frequentis and Vienna Airport will improve video-based surveillance and safety-nets and provide essential contributions to European research projects.

ÖBH, Austria video-based surveillance

ÖBH (Austrian Armed Forces) and Frequentis have performed a test installation at the military airfield in Zeltweg (Austria) to evaluate a video-based surveillance system for the purpose of air traffic control from a remote position and use of this system for the protection and security of critical infrastructure. An interface to the local approach radar has been implemented to provide surveillance information and fuse surveillance data with a video presentation.

Remote Virtual Tower product portfolio

→ smartVISION visualisation and surveillance
→ smartTOOLS information display and control
→ smartSTRIPS flight data handling

→ VCS3020X voice communication system
→ QUADRANT ADS-B and multilateration
→ DIVOS 3 log recording and replay
→ Consulting services

Related solutions

→ vitalsphere ATM-grade network performance

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