



Remote Virtual Tower

Rethinking ATC towers

Field proven

Scalable and flexible

Turnkey solutions and services

Air Traffic Management

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 are challenged to modernise air traffic control services to increase efficiency, while at the same time 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					
Digital tower High capacity airport			Having the flexibility to match demand with supply, and gain efficiency.	Ensuring full control over all airport infrastructure.	
Vision enhancement Medium to high capacity airport					

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, visual and infrared technology including advanced tracking and video processing 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 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. Remote Virtual Tower comes in three options to improve airport operations.

Remote tower

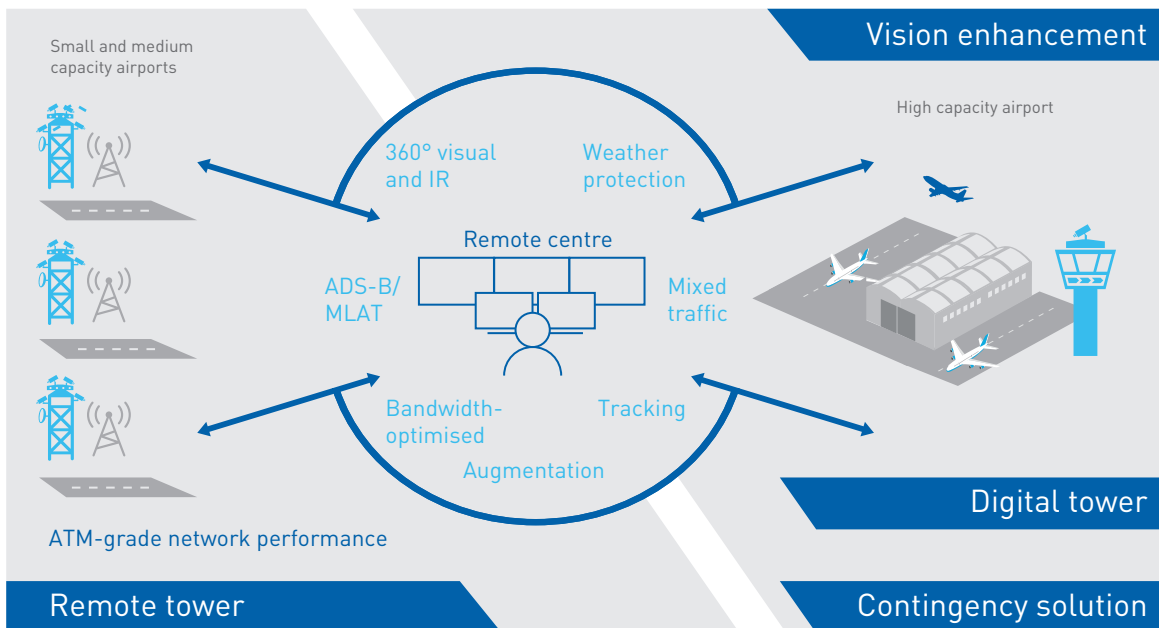
Remote tower for small and medium capacity airports replicates the visual view at airports, enabling ANSPs to provide air traffic control and information services from a remote location with new enhancement tools such as aircraft and object detection and tracking, information augmentation, to safely manage single or multiple airports from remote.

Contingency and digital tower

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 remotely to a contingency centre to ensure continued operations in case of crises.

Vision enhancement

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 DFS AEROSENSE will leverage existing Frequentis customer successes and 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.

German Airports Remote Virtual Tower

The airport of Saabrücken was equipped 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 Erfurt 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.

Buenos Aires Ezeiza Airport, Argentina Remote Virtual Tower

Frequentis deploys South America's first remote virtual tower supporting terminal expansion for Ezeiza international Airport in Buenos Aires. They will receive an airport camera system to enhance surveillance coverage. The solution will provide additional tower air traffic control (ATC) capabilities once construction of a new ATC tower has been completed. It will also ensure situational awareness as the main terminal building undergoes an expansion. The redesigned airport will feature a new ATC tower and facilitate up to four times as many aircraft.

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 recording and replay
- Implementation, operation and technical services

Related products and solutions

- vitalsphere™ ATM-grade networks
- Infrastructure, container, masts
- Consoles and workplace design
- Datasharing, CDM
- Drone detection
- Airport security
- Training and simulation

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