SESAR2020 PJ05 SOL2
Multi Remote Tower
Open House – V3 Validation
Frequentis & Remote TWR - more than eight years of experience

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<tbody>
<tr>
<td>Early concept definition</td>
<td>Technology research, SESAR</td>
<td>Operational validation Germany, Austria</td>
<td>DFS RTC Project</td>
<td>Jersey, Iceland Vienna, Military</td>
<td>SESAR 2020 Multi Airport</td>
<td>Live Validation</td>
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Research & development  
Single Remote Tower  
Multi Remote Tower

Driving Innovations from a Concept to the Solution
Advanced remote sensing around the world
Systems in Operation 2018

Key references

Advanced Remote Tower
Remote Tower
Integrated vision enhancement
Large airport: 3rd runway
Vision enhancement
Apron management
MIL Remote tower
Contingency
Vision enhancement
Apron mgmt.
Continuity
Integrated Vision enhancement
Different flavours of Digital Tower – Flexible Controller Working Position

**Single Operator - Single Airport**

**Single Operator - Multi Airport**

**Multiple Operator – Single Airport (Shared View)**

**Multiple Operator – Multi Airport (Shared View)**
Individualization of the HMI

“Controller takes care of the airspace – not of the system”
Remote tower – more than visualization

Important factors for Multi Remote Tower

### Tower use cases

- Enhanced Tower
- Contingency Tower
- Airport operations
- Remote Virtual Tower
- Regional Tower

### Solution portfolio

- **Communication**
  - Voice Communication System VCS3020X
  - DIVOS

- **Information & Control**
  - smartTOOLS
  - ATIS / VOLMET
  - MET / NAV
  - LICOS / TEC

- **Flight data handling**
  - smartSTRIPS
  - smartPlanner

- **Surveillance**
  - Air Situation Display
  - ADS-B
  - MLAT

- **Visualisation**
  - smartVISION

### Controller working position

- Complete information
- Digitalisation
- Integration
- Automation
- Usability

### Situational awareness

Frequentis
Multi Remote Tower

- Augmentation of Video
- Integration of VCS
- Support Planning
Multi Remote Tower

Controller Working Position

3x Panorama with augmentation

3x approach radar

Planning Tool
Flight Strips

3x PTZ view for each airport

Support Information & Control Functions
Directly integrated Voice Communication

Full integration of enhanced voice services

Multi-airport planning tool for efficient and safe traffic handling

Surveillance Integration & Augmentation

Combined Civil / Military operations

Validations with DFS and Hungaro Control

Control of up to 3 airports by one Air Traffic Controller
Multi Airport CWP – Colour Coding
VCS Integration – Squelch Highlighting
Planning Tool
Traffic: Same Time - Multiple Airports

Traffic: Same Time - Multiple Airports
Feedback & Changes from last Validation

- Expansion of Planning Tool & Strips
- Integration of Ground - Ground communication (coordination)
- Runway Direction & Status for RWY Change
- Rework Support Info & Control Area
- Preparation for Working Position Split & Merge (ON Validation)
Next Steps – Further Validation

- PJ05 SOL3 – V2 Validation with ON DECEMBER 2018 – SIMULATION
  Focus: airport split off to 2nd working position

- PJ05 SOL2 – V3 Validation with HC MARCH 2019 – LIVE Val Budapest
  Focus: Live traffic evaluation with real airports