



Bundesaufsichtsamt  
für Flugsicherung



# Remote Tower Operations An NSA view

Implementation and oversight



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## ATC providers in Germany

ANSP	Services	Additional
DFS Deutsche Flugsicherung GmbH	ACC, UAC, APP, TWR, FIS, ALS	ATFM, ASM, TO
DFS Aviation Services GmbH	TWR	TO
Austro Control GmbH	TWR	
Rhein-Neckar Flugplatz GmbH	TWR	



## CNS providers in Germany

ANSP	Services
DFS Deutsche Flugsicherung GmbH	C, N and S
BAN 2000 GmbH	C, N and S
ESPA	C, N and S
DLR GfR	C



## MET providers in Germany

ANSP	Services
Deutscher Wetterdienst (DWD)	MET



## AIS providers in Germany

ANSP	Services
DFS Deutsche Flugsicherung GmbH	AIM



## History in Germany

- First thoughts in 2001 to transfer low traffic aerodromes into remote ATS services
- „Dark Tower“ as a first attempt. Field test in 2004. One low traffic aerodrome was controlled by another tower at night.
- Meanwhile: DFS and DLR researched a video based outside view, however without achieving the expectations.
- In 2010: Kick off for the current remote tower project.



## Regulatory situation

- ICAO SARPs (Annexes 1 to 18) and DOCs
- European Regulations, e.g. 2015/340, 1035/2011, 923/2012
- National regulations





## EASA

- EASA accompanied mostly passively remote tower concepts in the mid and end of the last decade.
- With NPA 18/2012 EASA mentioned first thoughts of regulatory steps for the implementation of remote tower operations.
- Establishment of a rule making task (RMT.0624) with representatives from ANSPs, NSAs and associations.
- In 2015 first Guidance Material (GM) was published.



## ANSP and NSA

- With first concrete progress, NSA had been involved in a transparent way in 2012.
- ANSP and NSA exchanged their expectations and milestones on a regular base.
- Coordination between ANSP's Safety Management and NSA's method expert for changes in the ATM functional system.
- Open door policy offered by ANSP.



## IR 2015/340

- The transfer of controllers from the conventional tower to the remote tower center was based on a new unit endorsement.
- Rating endorsement was not changed as the services provided are still the same.
- Transition plans for training were coordinated and part of the local safety assessment.



## IR 1035/2011

- The local safety assessment was split into many parts according to its subjects. Each part was delivered to the NSA separately.
- The common core contents for the provision of ATS from a remote location are the same as for providing ATS on the airport.
- Audit management split the oversight of the equipment into CNS and ATS parts:
  - C and N remained unchanged
  - S: outside view sensors added and classified as surveillance systems
- Visual presentation at the remote tower module classified as ATS equipment. Also the control HMI for the camera steering.



## IR 1035/2011

- German NSA is still evaluating, how to approach the remote tower operations regarding auditing:
  - Focus on each single airport being controlled by RTC?
  - Focus on the RTC like on ACCs (each airport is a different “sector” within the RTC)?

Thank you for your attention.  
The floor is now open for discussion!



Remote Tower Sensors at Saarbrücken Airport. Picture by DFS.