



FLIGHT MANAGEMENT SYSTEMS TO LIMIT THE INTERFERENCE FROM WIND TURBINES ON AIR TRAFFIC CONTROL RADARS

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BUNDESWEHR

- Presenter
- Air Traffic Control Technology
- Process / workflow
- Determination of disruptive effects
- Flightmanagement system

OVERVIEW - AIR TRAFFIC CONTROL TECHNOLOGY

No.	System	Description	Managing system
1	ARS-S	Aerodrome Surveillance Radar-Selective – Area of responsibility of the airfield	Yes
2	PAR	Precision Approach Radar (old) – Supports landing – Area: Landing corridor	No*
3	ILS	Instrument Landing System – Supports landing – Area: Landing corridor	No
4	TACAN	Tactical Air Navigation (old) – Supports navigation and landing	No
5	NDB	Non-Directional Beacon (even older) – Supports navigation and landing	No

* = Swiss are currently developing

PROCESS OF THE STATEMENT FOR AIR TRAFFIC CONTROL TECHNOLOGY

Summarization of all information about existing and planned wind turbines

Determination of disruptive effects via Simulation Software

Evaluation of the flight operation

In case of ARS-S:
impose condition

Statement

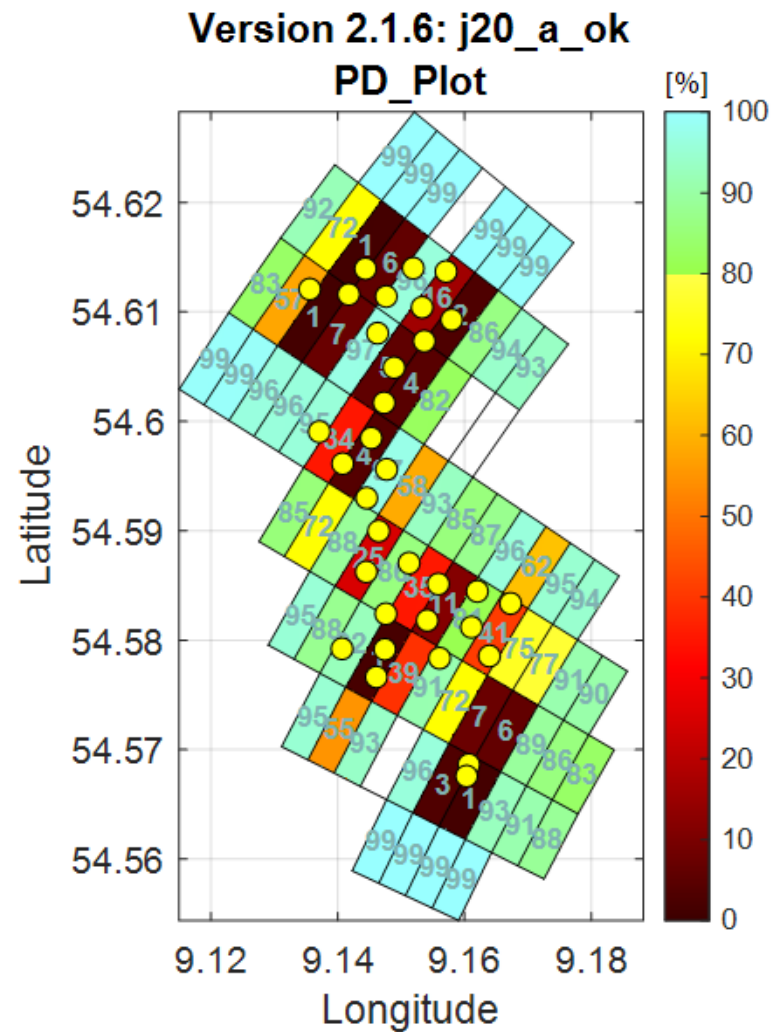
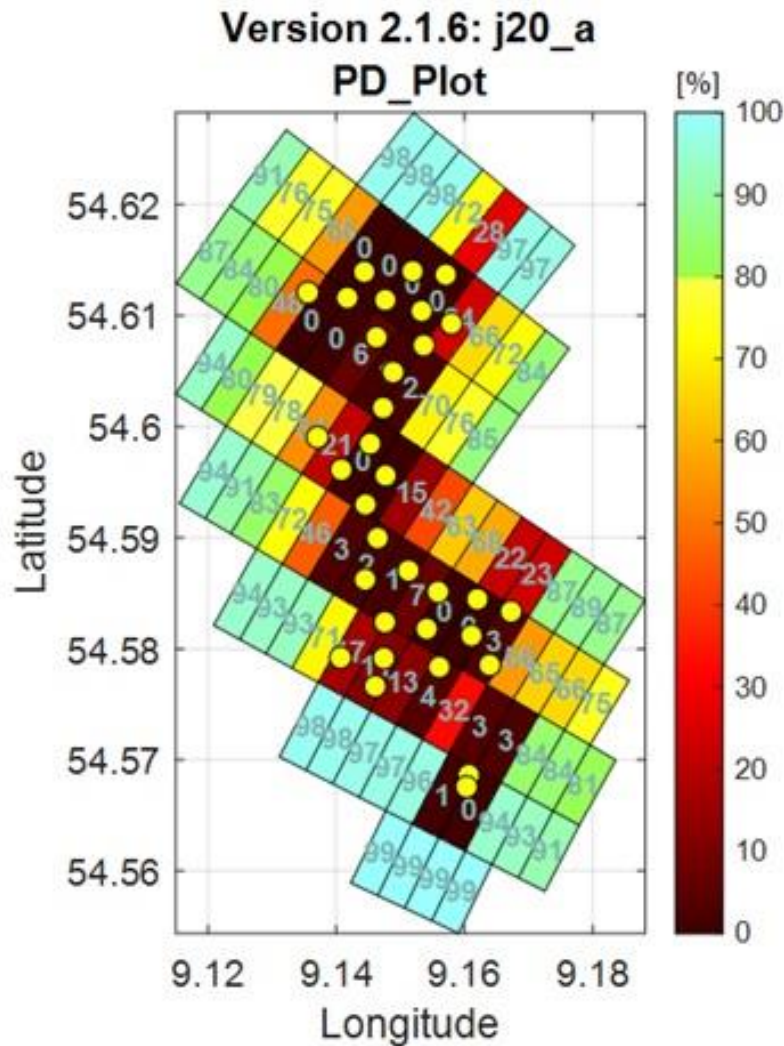
Flight operations

Main: Primary Radar
Additional Information: secondary Radar SSR

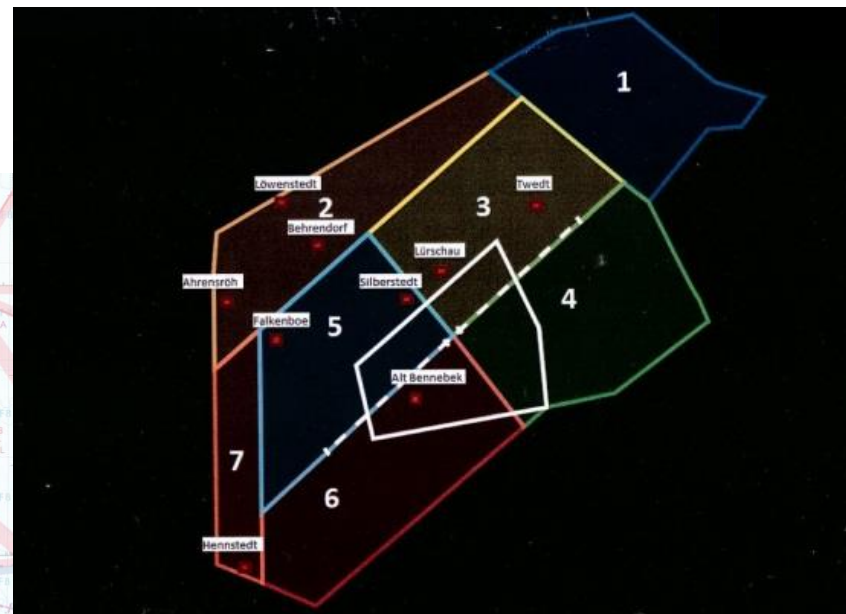
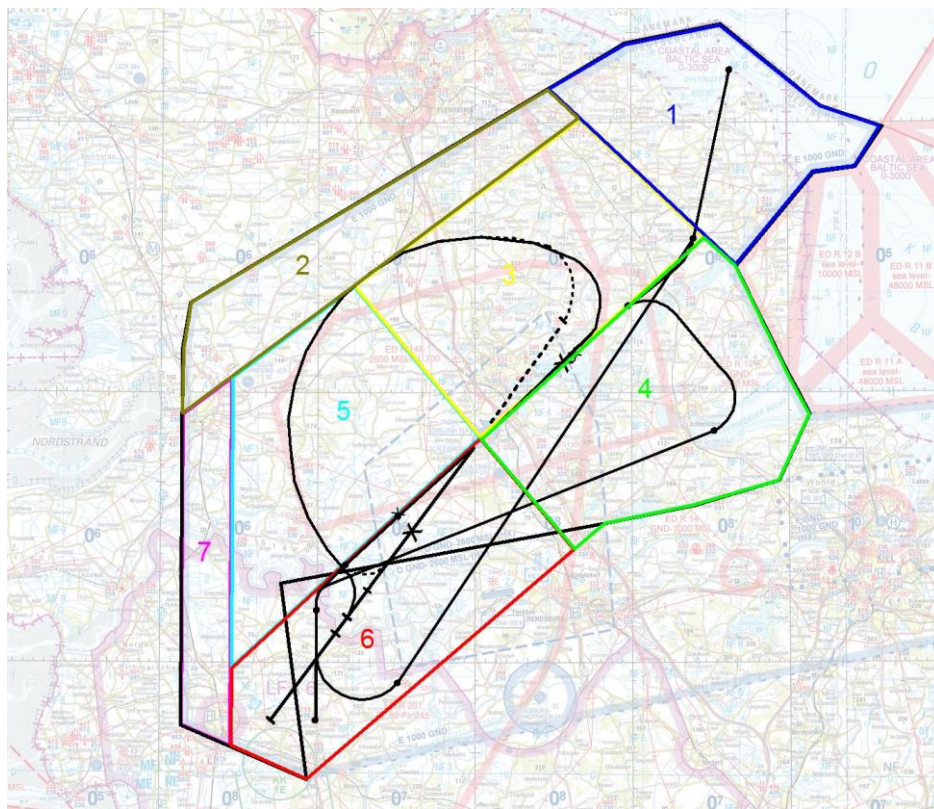
Civil/military
Avoid Collison
Stack closely for landing sequence

Military
Formation flights / tactical procedures
Combat training
Quick Reaction Alert (QRA)
Tactical low level flights

DETERMINATION OF DISRUPTIVE EFFECTS

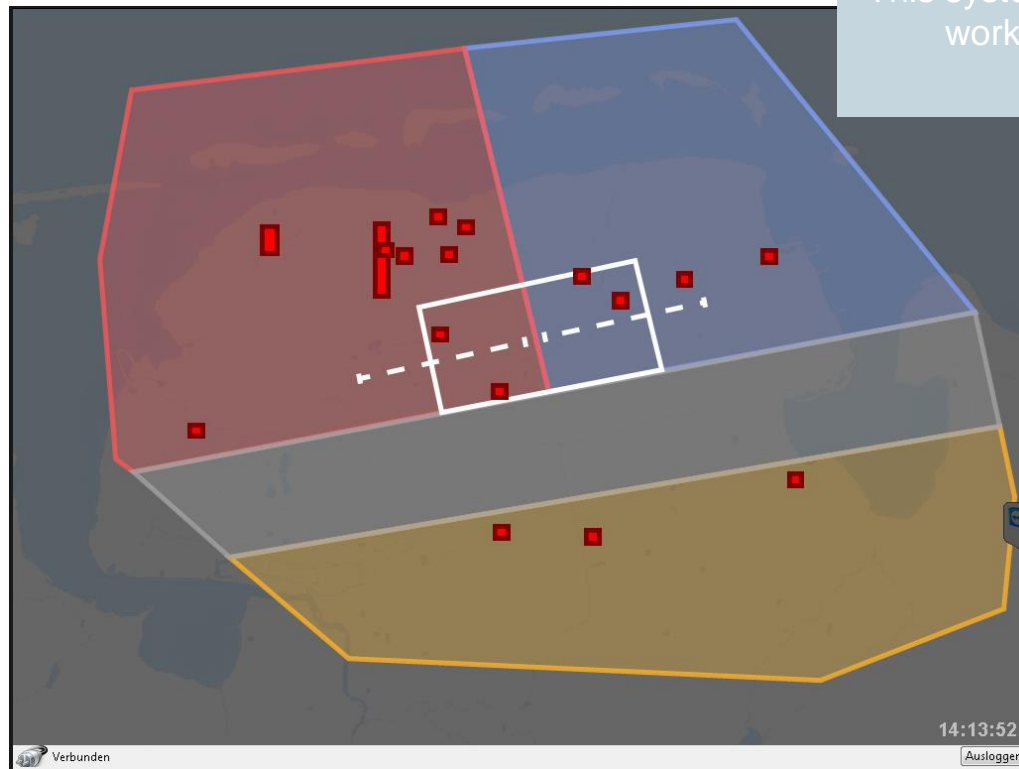


FLIGHTMANAGEMENT SYSTEM



FLIGHTMANAGEMENT SYSTEM AT THE WORK PLACE

This system is at the
work place



- Flight management systems set up to limit the interference from wind turbines on air traffic control radars are only used for one Radar System
- Necessary requirements for use (In the case of Flightmanagement System)
 - 2-D Radar System (Primary Radar) as main basis for controlling
 - Determination of disruptive effects
 - Military flight operations etc.
- Alternatives are applicable
 - For example: Transponder mandatory zone