



Quantec Sensors / Light:Guard

Supplier of ADLS solutions

Willi Lehmann





Company profile Quantec Sensors / Light:Guard



ADLS – radar- and transponder-based



Experience



More questions



Specialist for radar-based ADLS and windfarm infrastructure retrofits

- Planning, project engineering and selling of Radar-based ADLS solutions
- Operation and maintenance of Radar-based ADLS
- Complementary ADLS services for windfarms
 - Assessment and retrofit existing infrastructure in windfarms
 - Supplying ADLS signals to windfarms
 - Additional services: e.g. obtaining approvals for the operation of ADLS

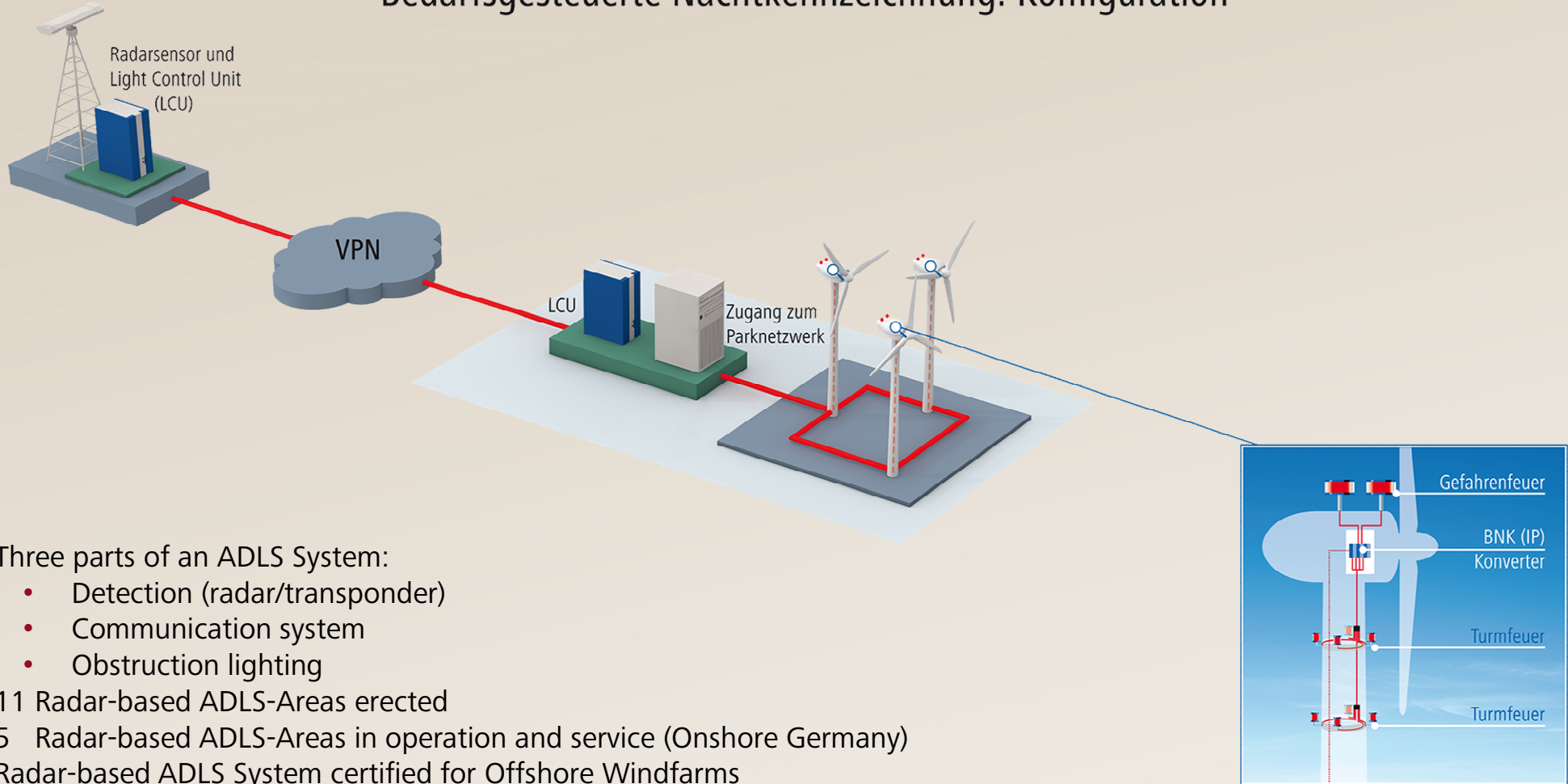


Specialist for transponder-based ADLS

- Planning, project engineering and operating of transponder-based ADLS infrastructure
- Supplying ADLS signals to windfarms as a service (similar to a phone contract)
- 36 employees in Hannover, Hamburg and Dresden (project engineers, project manager, IT specialists, sales women, purchaser, students, apprentice)



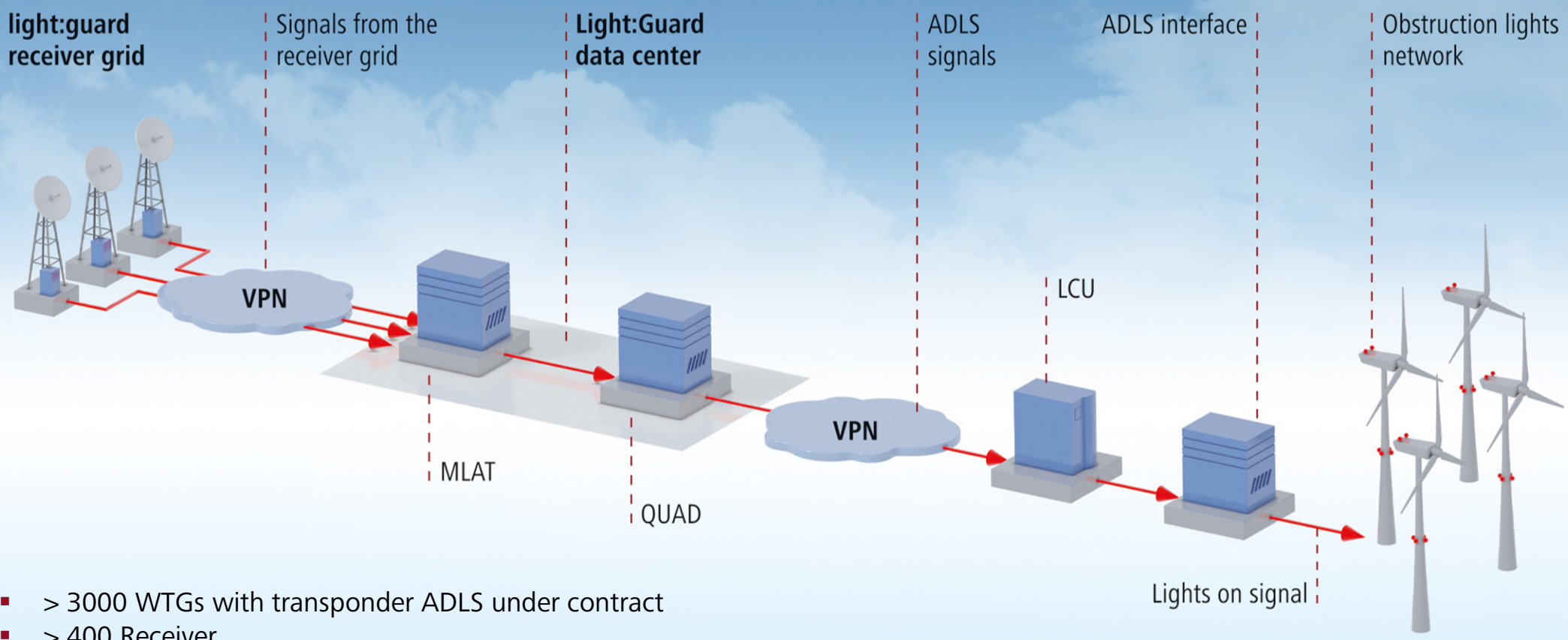
Bedarfsgesteuerte Nachtkennzeichnung: Konfiguration



- Three parts of an ADLS System:
 - Detection (radar/transponder)
 - Communication system
 - Obstruction lighting
- 11 Radar-based ADLS-Areas erected
- 5 Radar-based ADLS-Areas in operation and service (Onshore Germany)
- Radar-based ADLS System certified for Offshore Windfarms



Aircraft Detection Lighting System light:guard

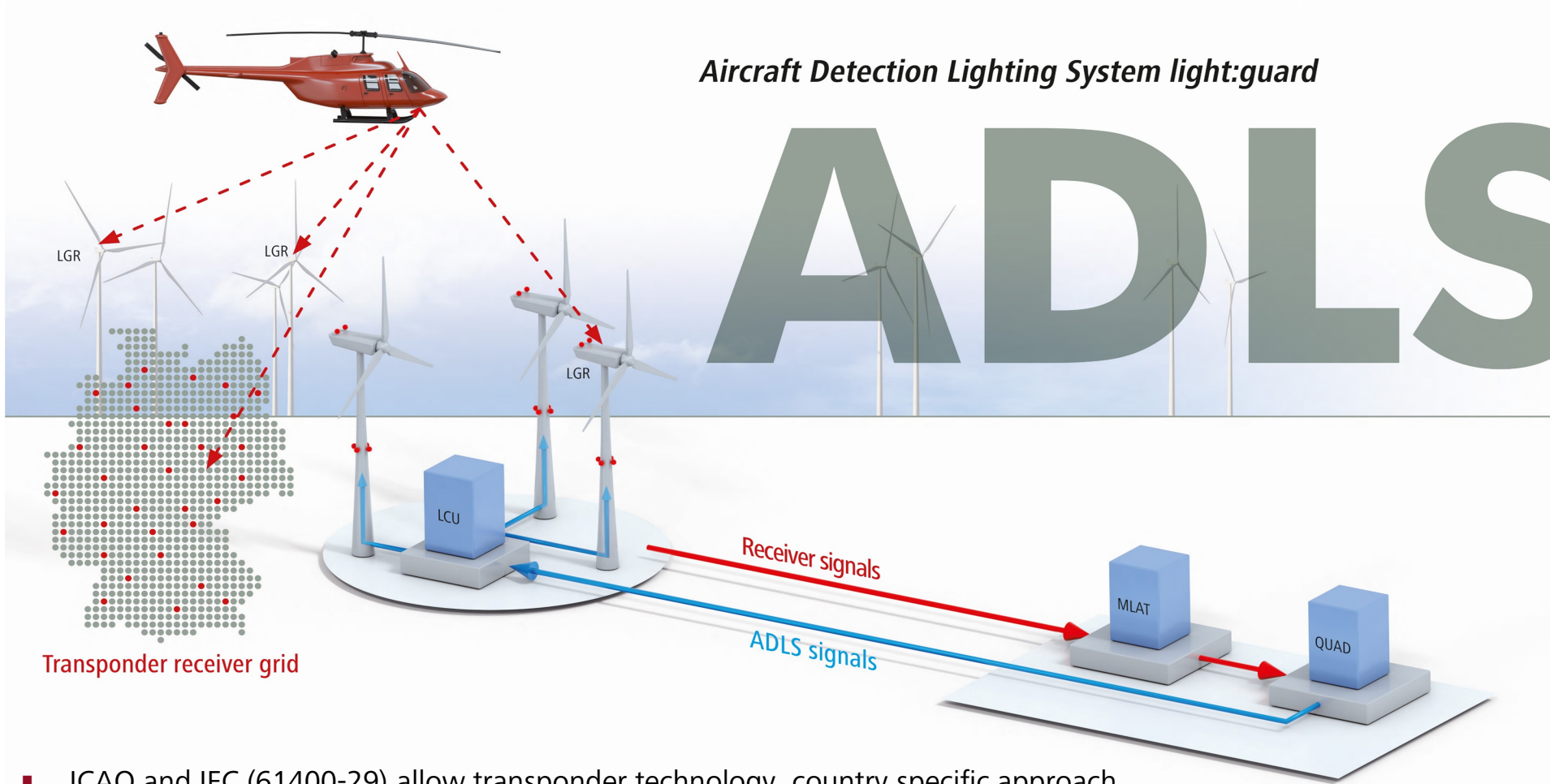


- > 3000 WTGs with transponder ADLS under contract
- > 400 Receiver

Transponder-based ADLS

Aircraft Detection Lighting System light:guard

ADLS



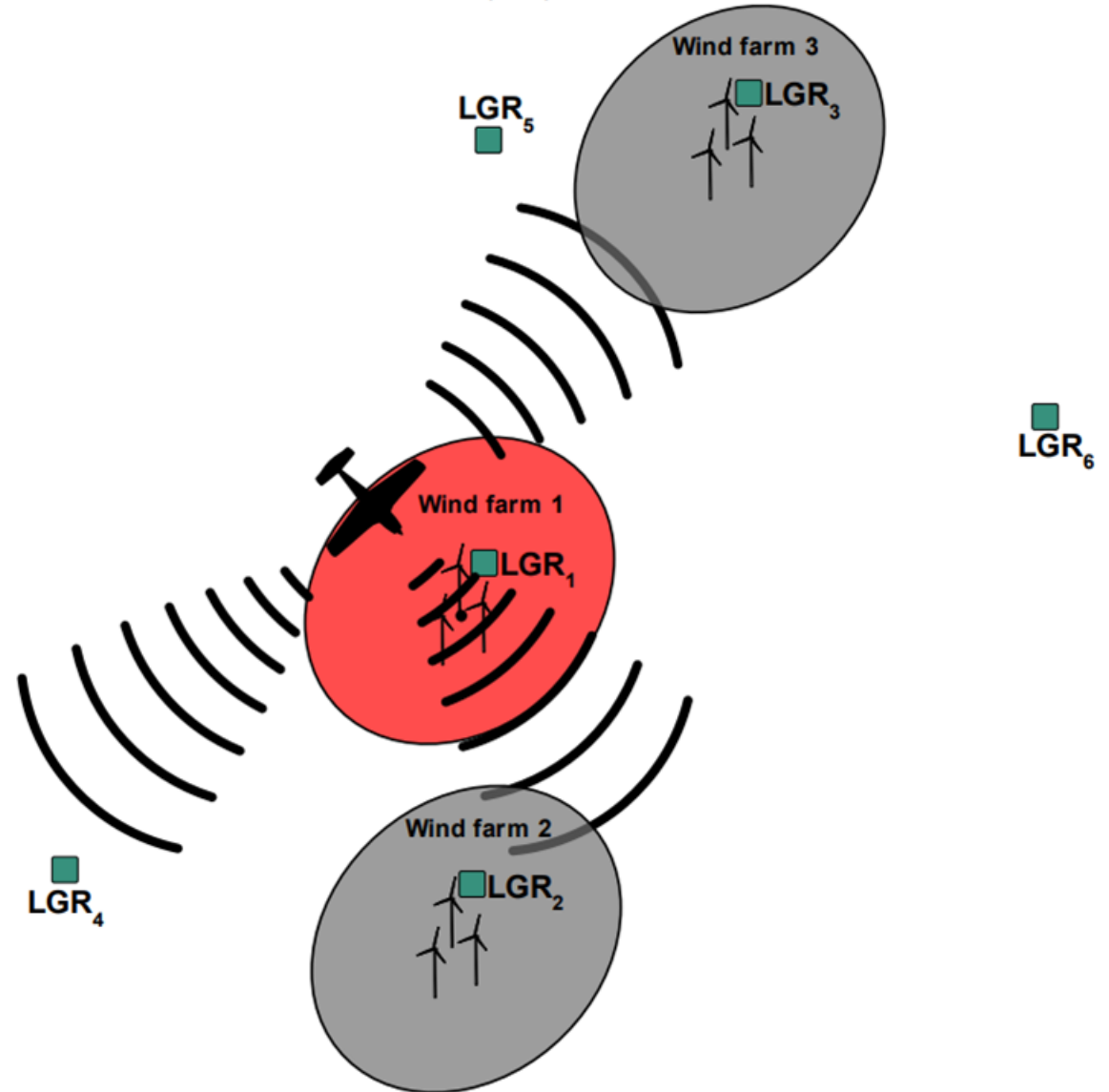
Transponder receiver grid

- ICAO and IEC (61400-29) allow transponder technology, country specific approach
- Mandatory for all aircrafts to have transponder obligation in VFR (night flight)
- LGR receives all required transponder modes (FLARM, ADS-B, Mode A/C, S)

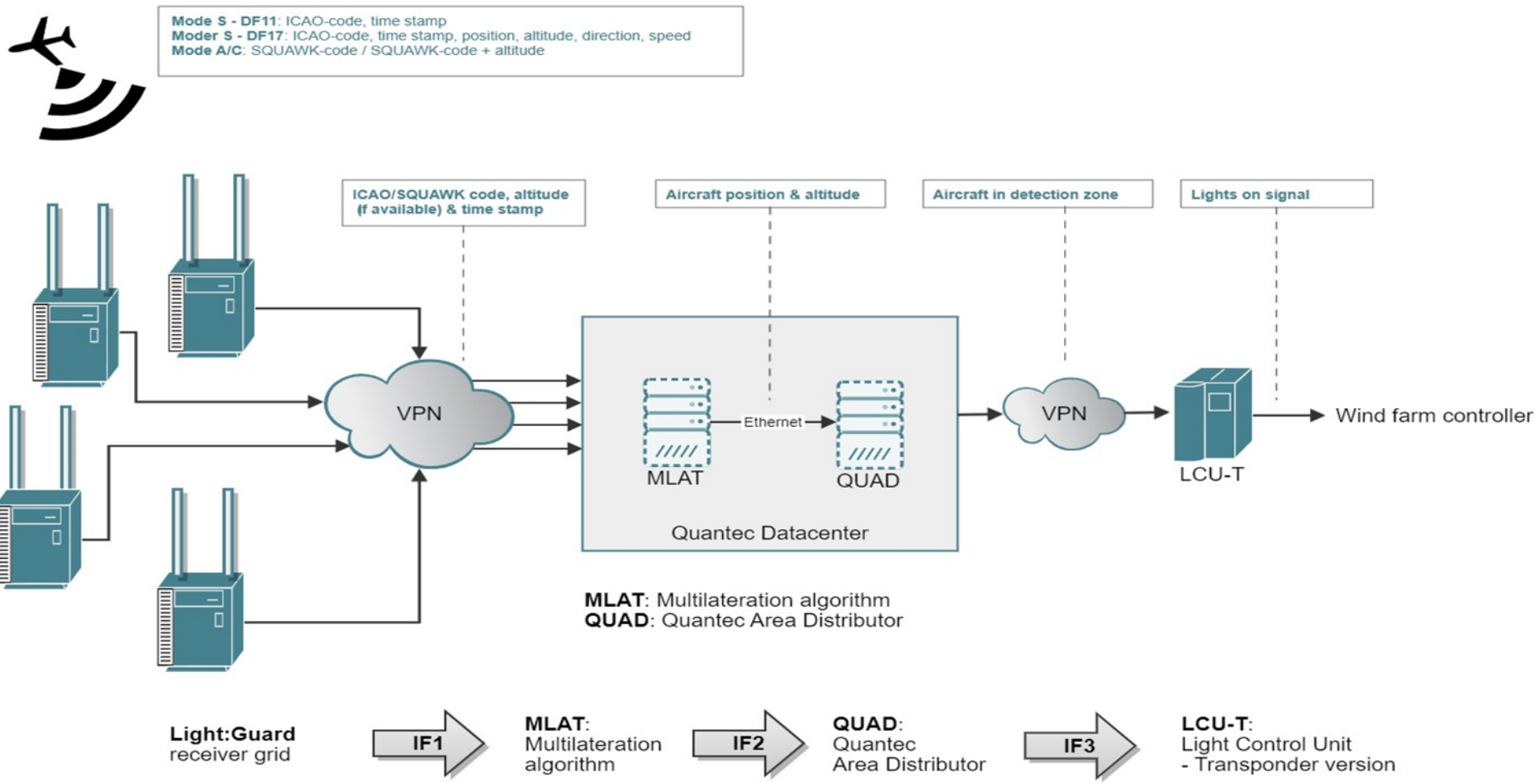
Transponder-based ADLS: multilateral detection



- Aircraft transponder constantly sends out radio signal
- LGR receives all required transponder modes (FLARM, ADS-B, Mode A/C, S)
- Lights on: if information of said signal or detection of said signal puts aircraft in defined activation range within a wind farm
- Lights on: if information of said signal or detection of said signal can not be ruled out to be in defined activation range within a wind farm
- Lights off: for all other cases
- MLAT approach: for best quality of signal evaluation (information of signal, strength of signal, placing of signal)



Transponder-based ADLS: multilateral detection





- 2016 First ADLS Active Radar-Projects
- 2018 development of transponder-based ADLS solutions (Quantec)
- 2019: start of hardware installations in the region of Brake/Ovelgönne within the coverage of an ADLS radar (to compare the results of the 2 networks)
- 03/2020: preparation for the certification process
- 07/2020 with the nomination of DFS Aviation Services as certification body start of the certification process
- 11/2020: receiving the type certificate for the German market
- 2022: currently mass rollout for more than 3.000 WECs onshore in Germany
- 2022: negotiations for the first Offshore WFs and international projects





Your questions are welcome.

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