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# UAS Regulatory issues and other challenges



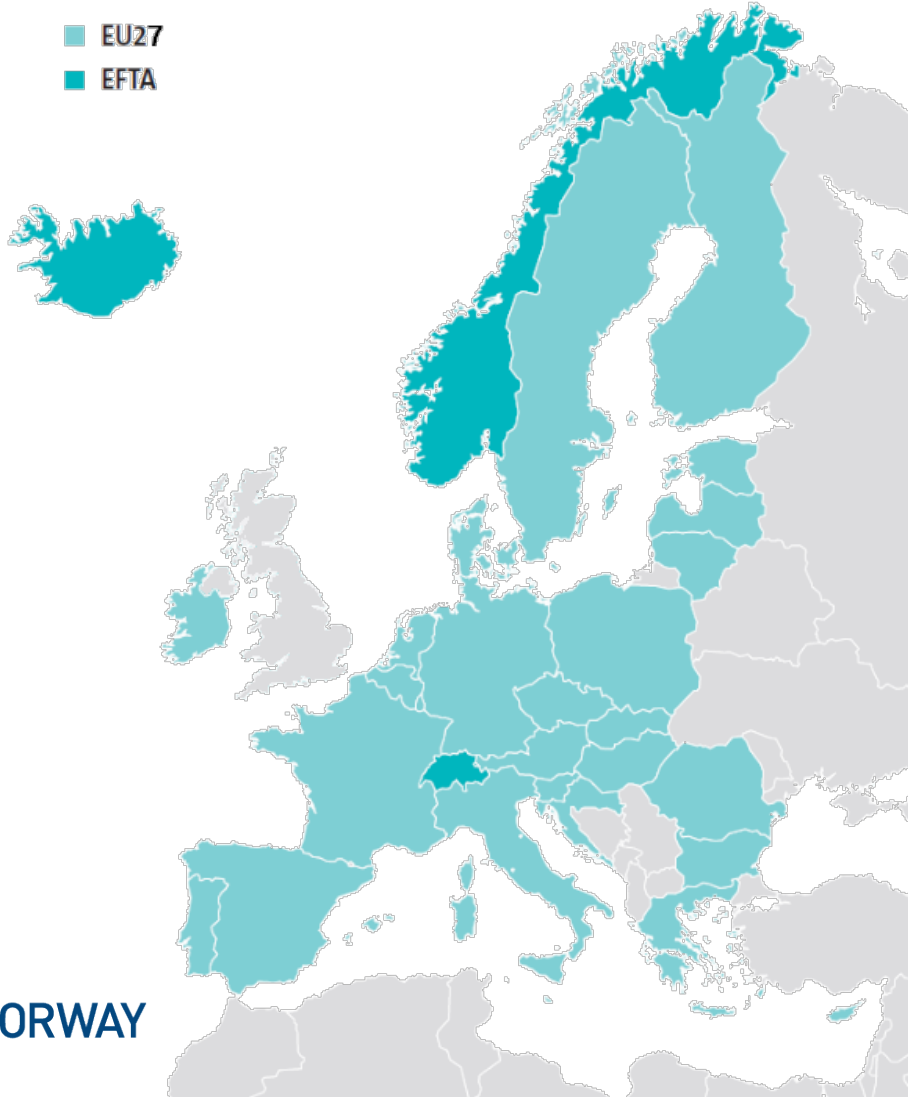
CAA Norway



**UAS**  
(IR + AMC & GM + DR)  
eRules

# Standardized European rules

■ EU27  
■ EFTA



• EU



• Norway



• Iceland



• Switzerland



• Liechtenstein

# Operational categories based on risk

Risk



## Open

- VLOS, below 120 m, MTOM  $\leq$  25 kg
- 3 subcategories
- Online course – [flydrone.no](http://flydrone.no)
- Procedures required if the operator has more than one pilot

## Specific

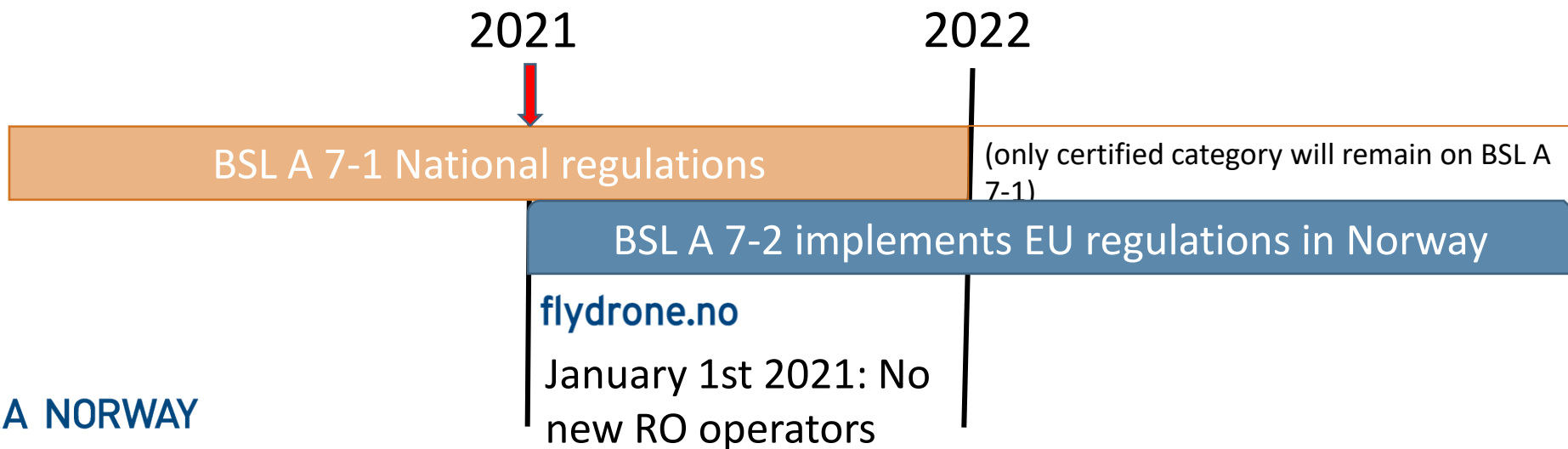
- Application
- Specific Operations Risk Assessment (SORA)
- Requirements depend on the risk

## Certified

- Risk as manned aviation
- Transport of people
- Flying over assemblies of people with heavy drones
- Regulations are still a work in progress

# The road ahead

- From 2022 all operators must be established on the new regulations
- CAA Norway will assist with guidance
- Operators must educate themselves on the SORA process and make timely applications



# New equipment requirements 1. July 2022



Bilde hentet fra  
<https://www.cencenelec.eu/news/events/Pages/EV-2021-15.aspx>

- Remote ID





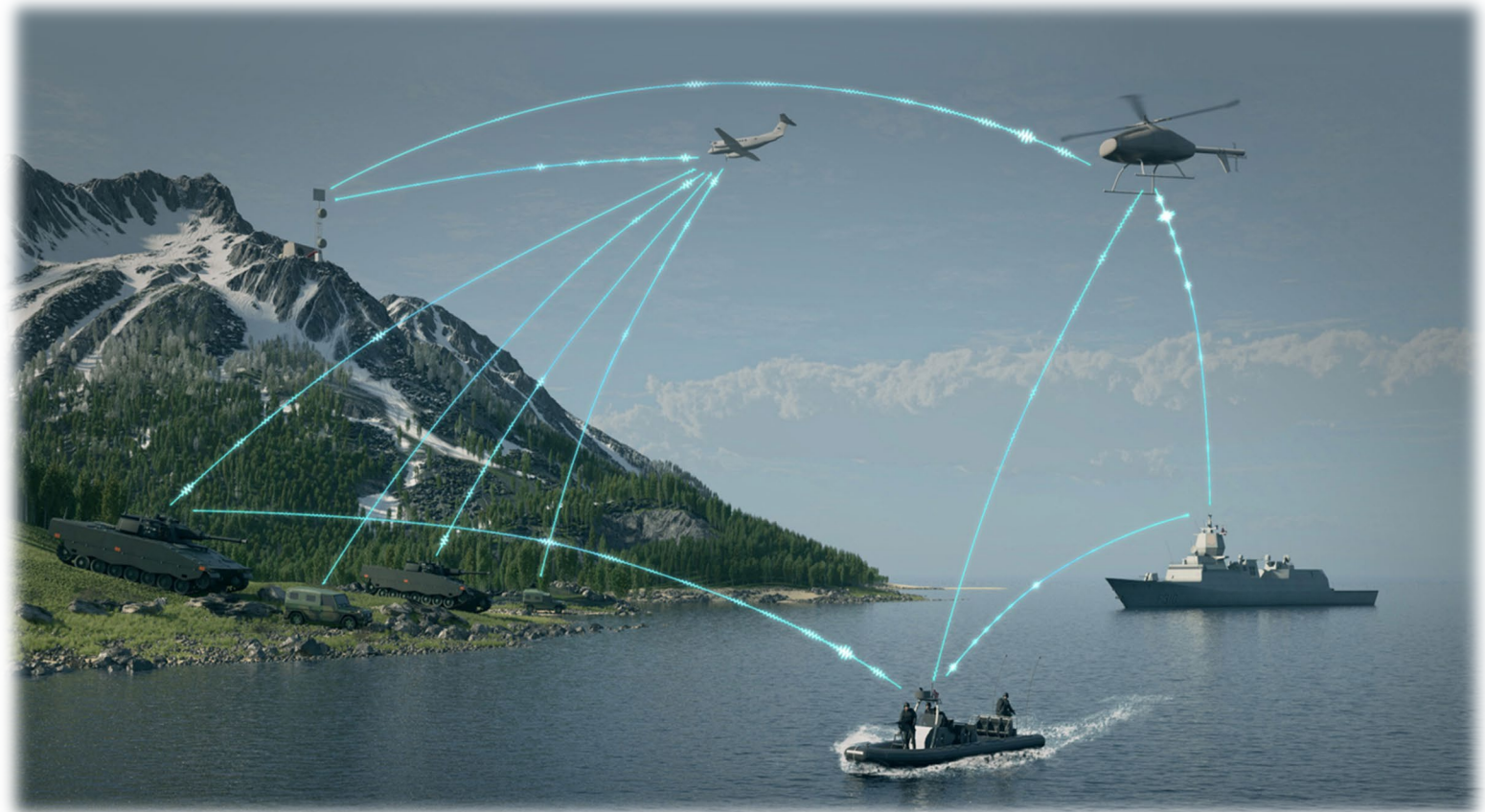
Schiebel group, Equinor and Nordic Unmanned

# We can see several challenges

- Airspace
- Altitude measurement
- Detect and avoid
- GNSS and positioning
- Link
- Ground risk
- Operation manual
- Implementation of regulations
- Operational complexity and robustness
- MCC and CRM
- Elemental impact on operational capacity

# Complexity of operations

- Coordination
- MCC and CRM
- Sharing airspace
  - Same referance





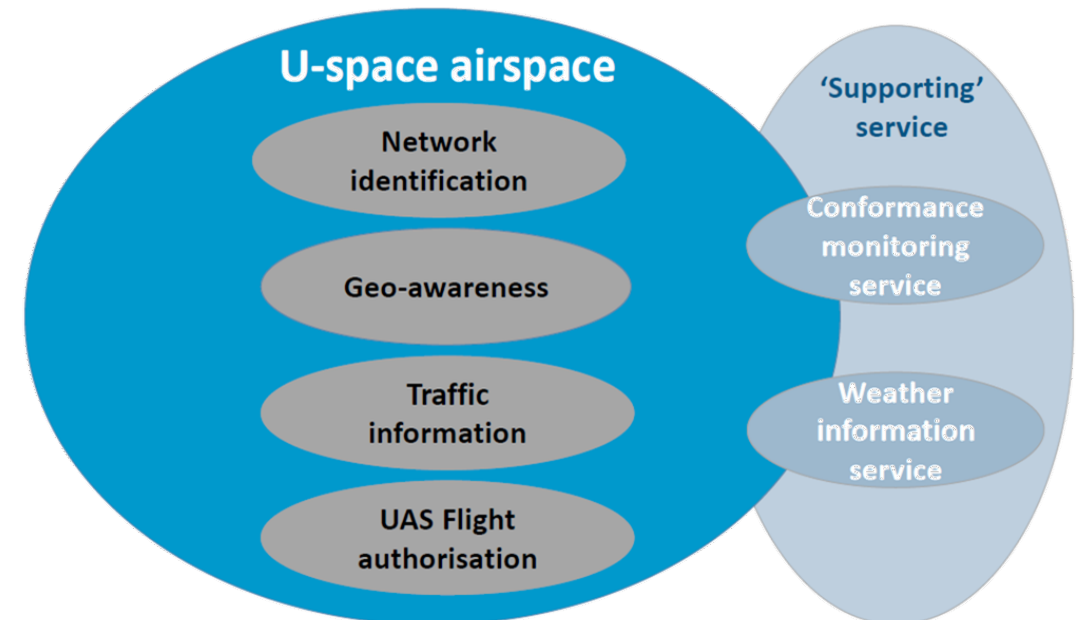
# Resources, efficiency and risk management

- Asset collaboration
- Search and Rescue
- Accidents



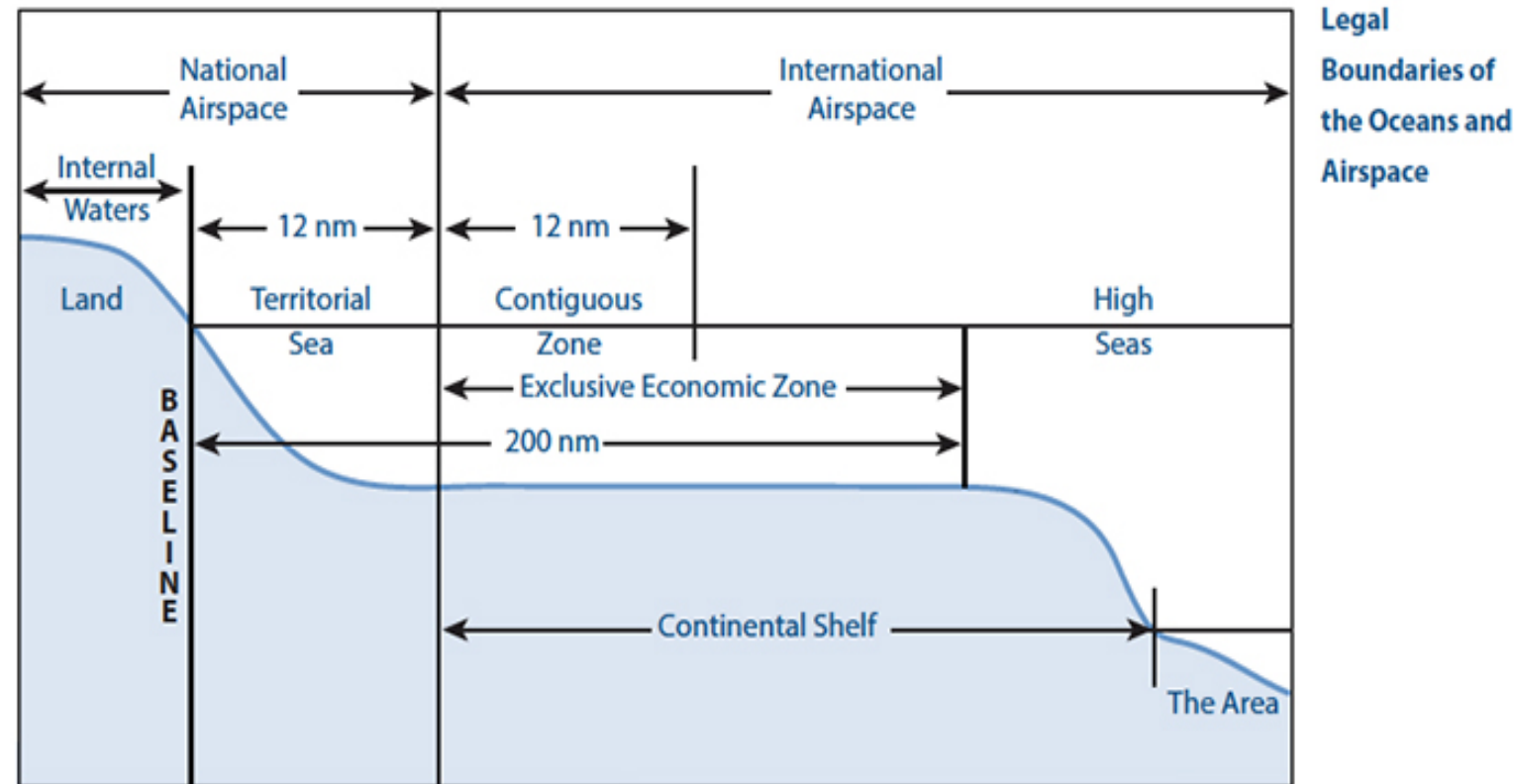
# Detect and avoid

- Requirement level will depend on the air risk
- ADS-B - Automatic Dependant Surveillance Broadcast
  - Not all aircraft are equipped
  - Line of sight - limited reception at low altitudes
- Radio
- Segregated airspace
- UTM



# Seaward of the national airspace/territorial waters

- International airspace
- Controlled airspace at oil platforms



nm – nautical mile

UNCLOS Maritime zones division

# Offshore

- Windmill inspection
- Transport to and from platforms
- Adding to – not replacing



# Environment

- Green solutions
- Pollution control
- Electrification



# Elemental impact on UAS operational capabilities

- Icing
- Offshore winds
- Interference

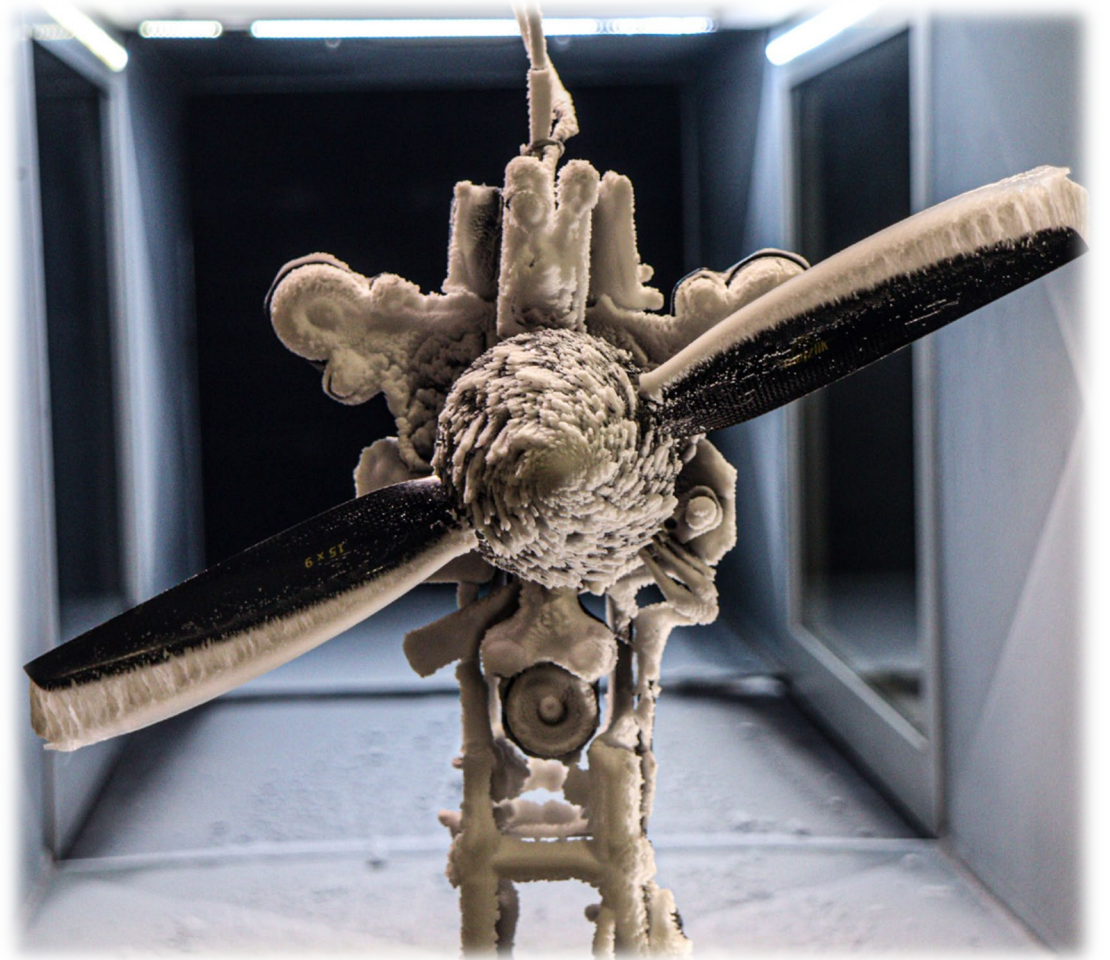


Photo: Richard Hann, UBIQ  
Aerospace



Together for safe aviation

