



DRONE CONSORTIUM FOR A  
**CENTER OF EXCELLENCE**  
IN HANS CHRISTIAN ANDERSEN AIRPORT

# Besøg fra Erhvervsudvalget 5. februar 2025

12.20 – 12.50: Frokost og velkomst v. kontorchef for borgmesterkontoret Kaare Pedersen, Odense Kommune samt Head of UAS Denmark Lars Michael Larsen

12.50 – 13.05: Præsentation af SDU's droneresforskning og rundvisning v. professor Christian T. Veje og professor Jerome Jouffroy, Syddansk Universitet

13.05 – 13.15: Præsentation af fynsk drone- og robotklynge v. Project Manager Gert Taul Pedersen, Odense Robotics

13.15 – 13.20: Transport til QuadSAT

13.20 – 13.40: Demonstration v. Chief Technology Officer Lars Bach, QuadSAT

13.40 – 13.45: Transport til Terma

13.45 – 14.05: Demonstration v. Senior Advisor Mads Dalgaard Madsen, Terma

14.05 – 14.10: Transport til SDU UAS Center

14.10 – 14.30: Demonstration v. Business Developer Jesper Lund Frederiksen, MyDefence

14.30 – 14.35: Afrunding og tak for i dag – v. Head of UAS Denmark Lars Michael Larsen

# UAS Denmark - status januar 2025

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*Erhvervsudvalget*

*5. januar*







# Hans Christian Andersen **Airport**



# Mangfoldighed!



# Aktuel situation

- Start 2011: Første flyvninger med Boeing
- + 5.500 droneoperationer sidste 12 mdr.
- Henvendelser i august-september: CA, CH, DE, FR, PL, UA, US
- Betydelig udvikling for testcentre – vi sidder med ved bordet i EU
- Aktivt og voksende forsvarskonsortium
- Forøget samarbejde med Forsvaret
- Stærk markedsvækst nationalt og internationalt (25 – 62 %)
- Alene centret forventes at fordobles over 2-3 år, afhængig af kapacitet
  
- NextGen Drones (Erhvervsfyrtårn) on track

 Danmarks  
Erhvervsfremmebestyrelse

 Finansieret af  
Den Europæiske Union



# Testcentret som *gateway*

- Adgang til forretningspartnere ✓
- Adgang til forskning og viden ✓
- Adgang til regulatorisk ekspertise ✓
- Adgang til Grønland ✓
  
- Adgang til tilladelser ✓
- Adgang til luftrum ✓
- Adgang til testfaciliteter ✓
- Adgang til Forsvaret ✓
  
- Adgang til indendørs plads ✓





Unclassified

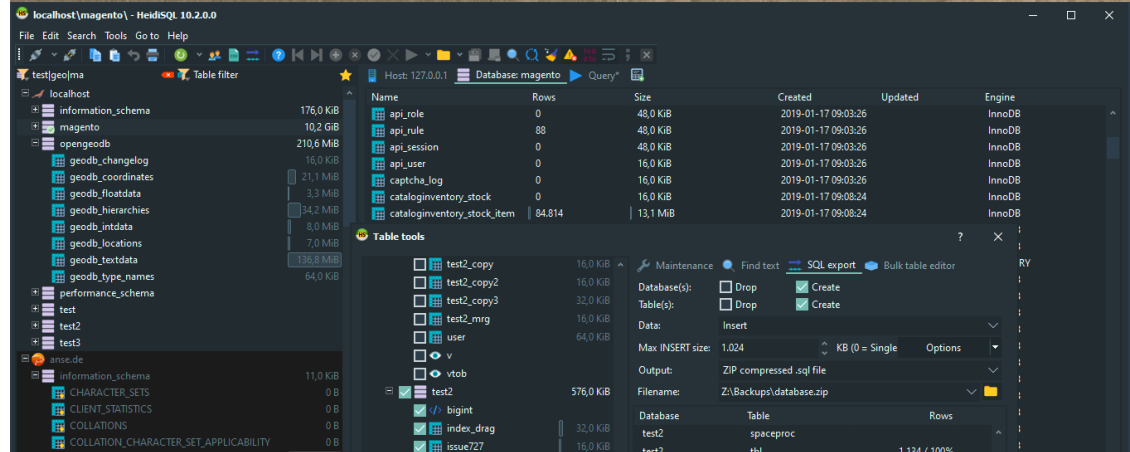
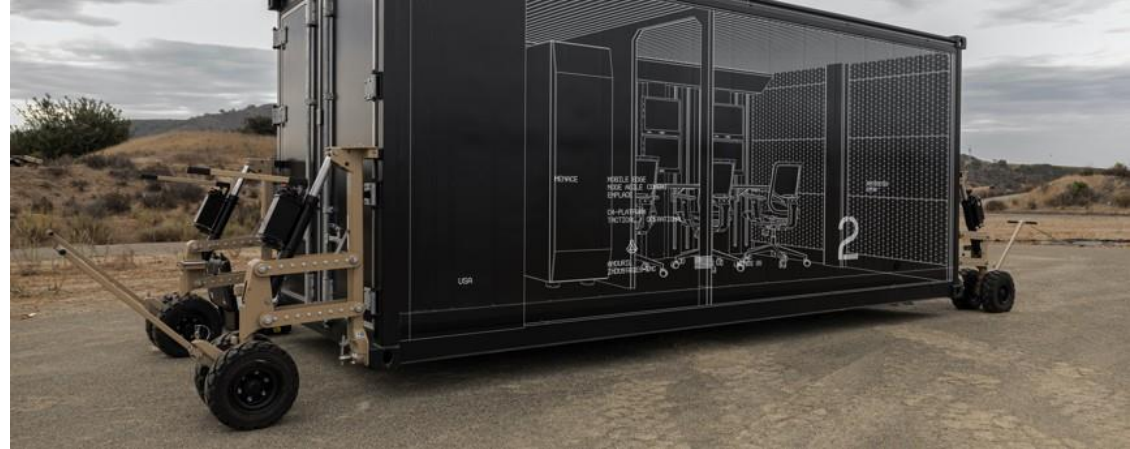


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# Next steps for testcentret

- Mobilt operations- og simulationscenter med værkstedsfaciliteter
- Data-cloud til testdata
- EMC kammer





Tak for jeres tid

Folketingets Erhvervsudvalg, 5. Februar 2025  
Gert Taul Pedersen, ODENSE ROBOTICS

# Odense Robotics



Odense Robotics is co-funded by the Danish Board of Business Development, the Danish Agency for Higher Education and Science, and the European Union, as well as a broad range of projects and partnerships



# Our ecosystem

## INDUSTRY

360+ members  
from Denmark and  
abroad

## PUBLIC SECTOR

 Danish Board of  
Business Development

 Co-funded by  
the European Union

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## KNOWLEDGE



## ORGANISATIONS

Clusters and member  
organisations



# Denmark's robotics industry in figures



## The industry

**593** robot, automation, and drone companies in Denmark

**18,500** employees in total

**EUR 3.7** billion turnover in 2022

**EUR 1.8** billion exports in 2022

**EUR 1+** billion invested in companies since 2015



## Our members

**350+** members

**20%** established since 2020

**40%** develop and manufacture new technology

**87%** collaborate with other robotics companies

**77%** provide solutions that contribute to a green transition

# Changing the way we live

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Danish robotic solutions are changing the way we live and work – providing solutions for a wide range of sectors.



Agriculture & food



Construction & building



Defence & security



Environment

Energy



Health & welfare



Logistics & transport



Manufacturing





**NEXTGEN  
INNOVATION**





Fyn er

Globalt  
Centrum for  
Robotter



Fyn er en af verdens førende robotklynger.

175 robotvirksomheder. 4000 job.

Stor eksport til udlandet.

Stærkt viden-innovations- og uddannelsesmiljø

StartupHub og inkubator





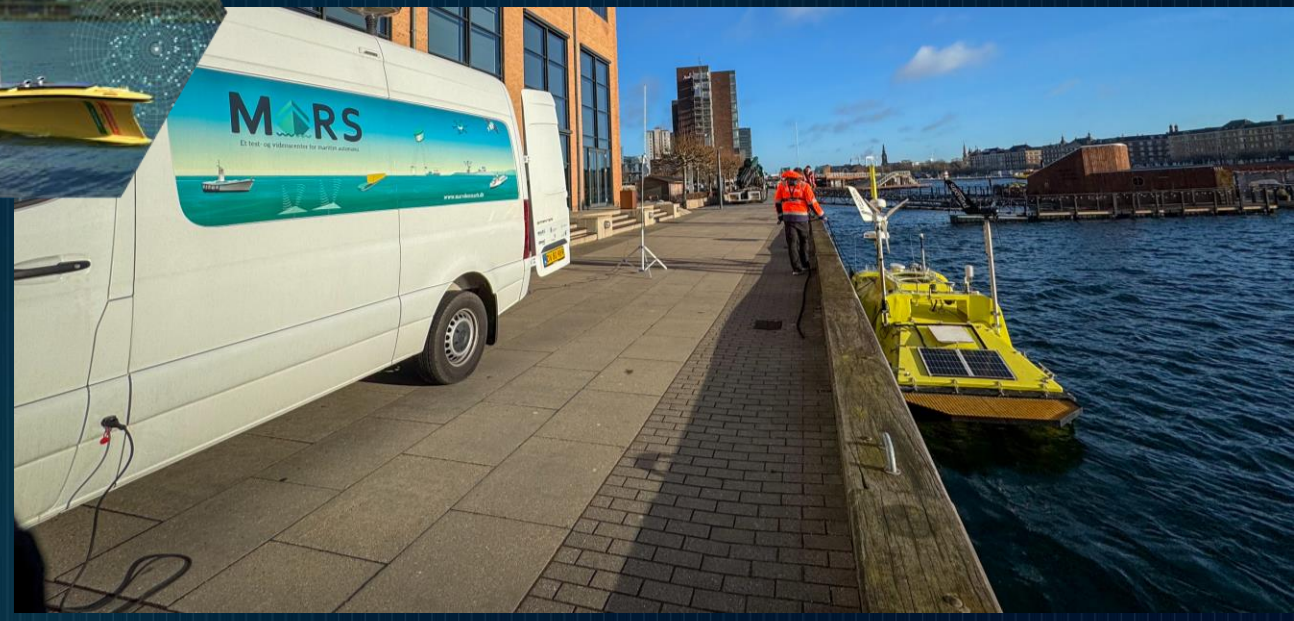


MARS skaber

# Fremtidens Autonome Skibsfart



**MARITIME  
AUTONOMOUS**  
Reliable Systems



**250 virksomheder. 7000 job**

**7 videns- & uddannelsesinstitutioner  
25 mellem- & længerevarende uddannelser**

**Unik geografi og infrastruktur til test**

**Lokal opbakning og samarbejde**



Center for

# Large Structure Production

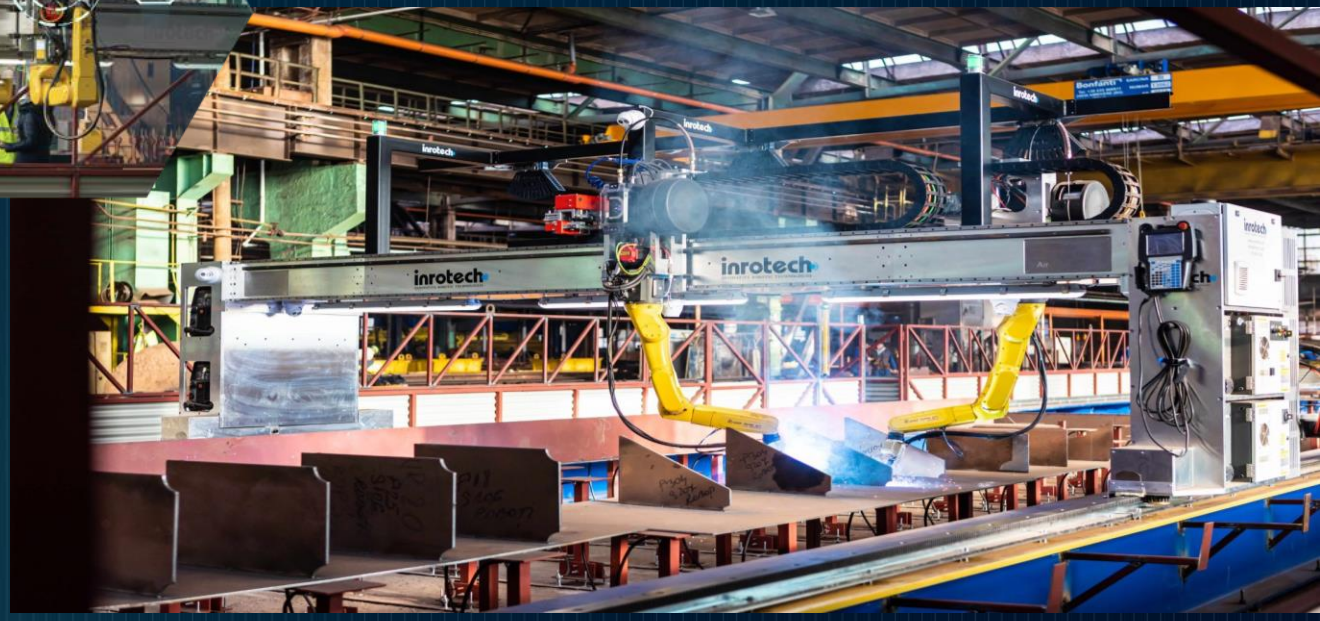


Vi bygger stort, og vi bygger klogt.

Automation = bæredygtighed

Målet er at revolutionere den måde, vi bygger på med digitale løsninger og automatiserede robotter

Vi bygger verdens største center for SMART produktion af megakonstruktioner





Vi vil være

# Internationalt Knudepunkt for Droner



**Infrastruktur og højteknologiske testfaciliteter = hurtigere og mere avancerede test**

**30 aktører. 200 job. 150% vækst siden 2017**

**Stærkt forsknings-innovations- & uddannelsesmiljø**

**1.900 km<sup>2</sup> luftrum over land og hav**



# Accelerator programmet APUS

## Accelerating Program Unmanned Systems – Ukraine, kriser, kritisk infrastruktur



Defence & security



Environment



Critical Infrastructure

**Større virksomheder:**  
Terma  
SH Defence  
Weibel

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### Danske up-coming forsvars- og sikkerheds-teknologi SMV'er

UXV Technologies

MyDefence

Nordic Wing

Sky-Watch

Controls and sensors for unmanned systems

Anti-drone systemer

Astero drone

Heidrun drone

**Start-Ups:** DanaDynamics, Dropla, ThunderStrike

# Udfordringer for Dronebranchen

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## Accelerating Program Unmanned Systems – Ukraine, kriser, kritisk infrastruktur

- Regulatoriske udfordringer
  - mangler at implementere et effektivt system for sameksistens af droner og bemanded lufttrafik
  - høje omkostninger til flyvetilladelser for BVLOS
  - tilladelser ofte mere begrænsede end forventet
- Investeringer i infrastruktur
  - trafikstyringssystemer til sameksistens af bemanded og ubemandet lufttrafik,
  - elektronisk trafikstyring og U-Space
- Modernisering af rammevilkår
  - vi venter på den nye dronestrategi



# SECURE DRONE INFRASTRUCTURE

AIRSPACE AWARENESS AS-A-SERVICE

Jesper Lund Frederiksen

Business Development

[jlf@mydefence.dk](mailto:jlf@mydefence.dk)

- Founded in 2013
- 2 subsidiaries (DK & US)
- 2 market segments (dual use – military & civil)
- Detection and jamming of commercial off the shelf (COTS) drones
  - Location of drone and remote controller using RF detectors
  - Sensor fusion in MyDefence software
  - Jamming of control and video signals using RF effectors



Wolfpack / Dobermann  
360° RF drone detection and jamming

# Products



C2



Fixed



Vehicle



Wearable



# Growth of drone traffic

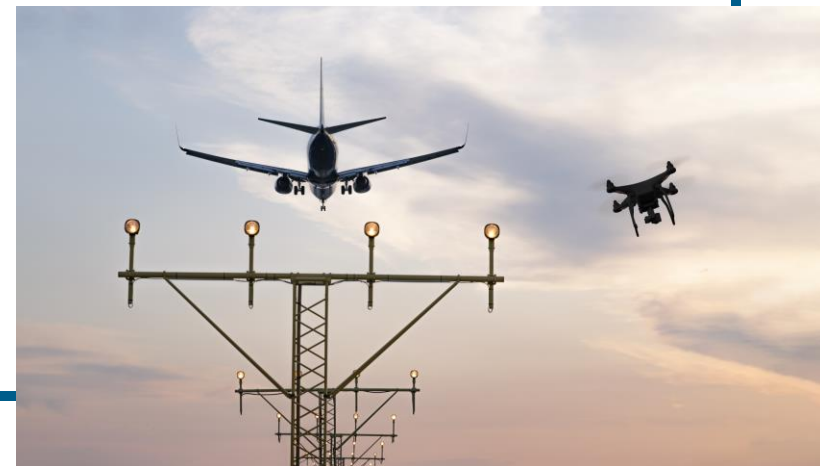
Offer benefits to our society:

- Cost-effectiveness
- Green transition

Comes with challenges:

- Privacy, safety and security concerns
- New entrant into airspace

How to ensure **responsible and safe integration** of drones into our society?



# Drone traffic control

Efforts to manage drones:

- Regulation on drone design and flight rules
- Remote ID for drones
- Unmanned Traffic Management (UTM) systems

Lack of Airspace Awareness (C-UAS) systems:

- No ability to **govern** drone use
- No ability to **enforce** the law



# Drone traffic control

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# Car traffic control

Efforts to manage cars:

- Regulation on speed and maneuverability
- ID on carplates
- Speed control systems

Police has speed control systems enabling:

- Ability to **govern** car use
- Ability to **enforce** the law



# Sense of security

We depend on our authorities' ability to enforce the law and keep us secure:



## Homeland security

Arrest criminals to keep  
our society secure



## Critical infrastructure

Sustain operations to keep  
our supply secure



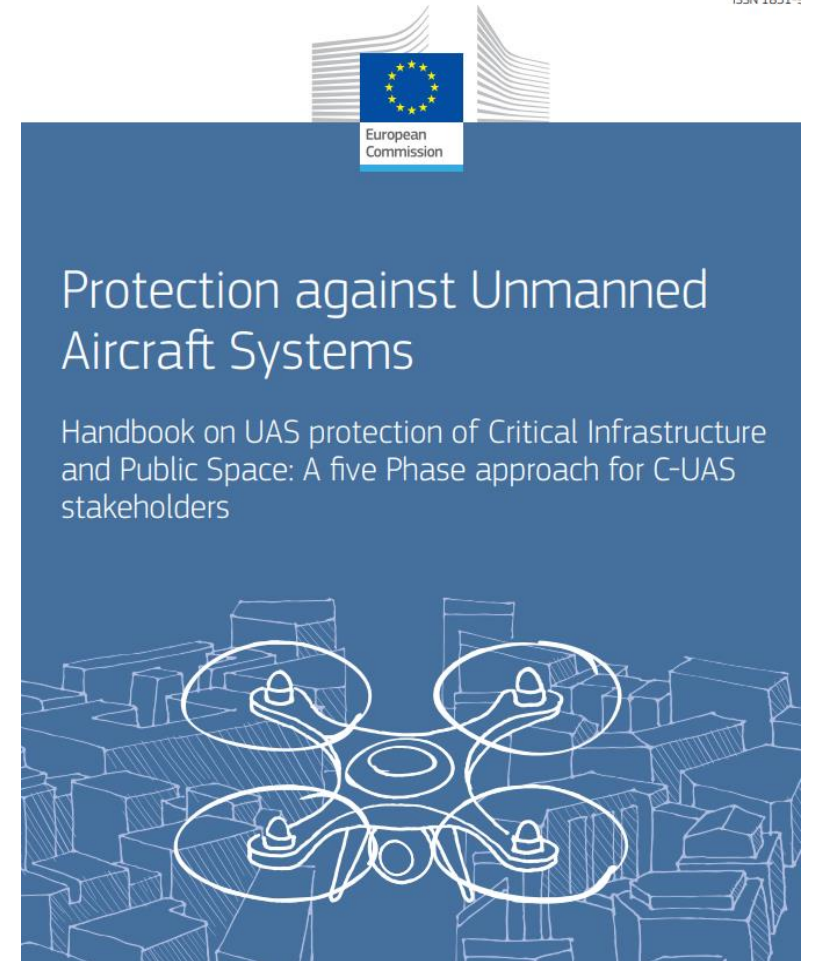
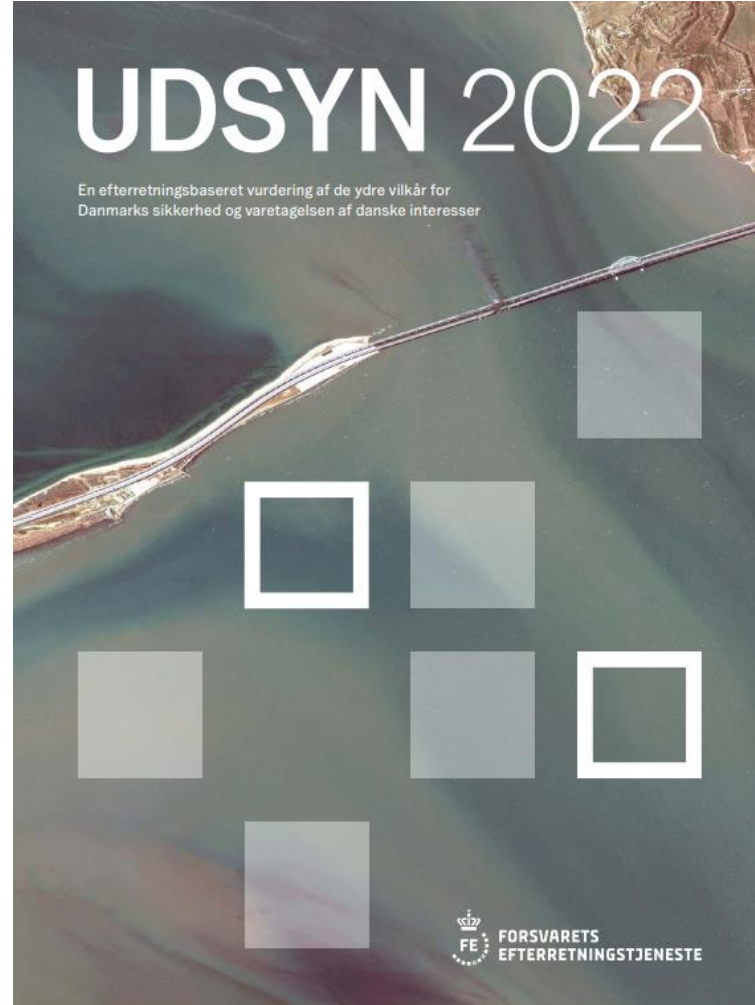
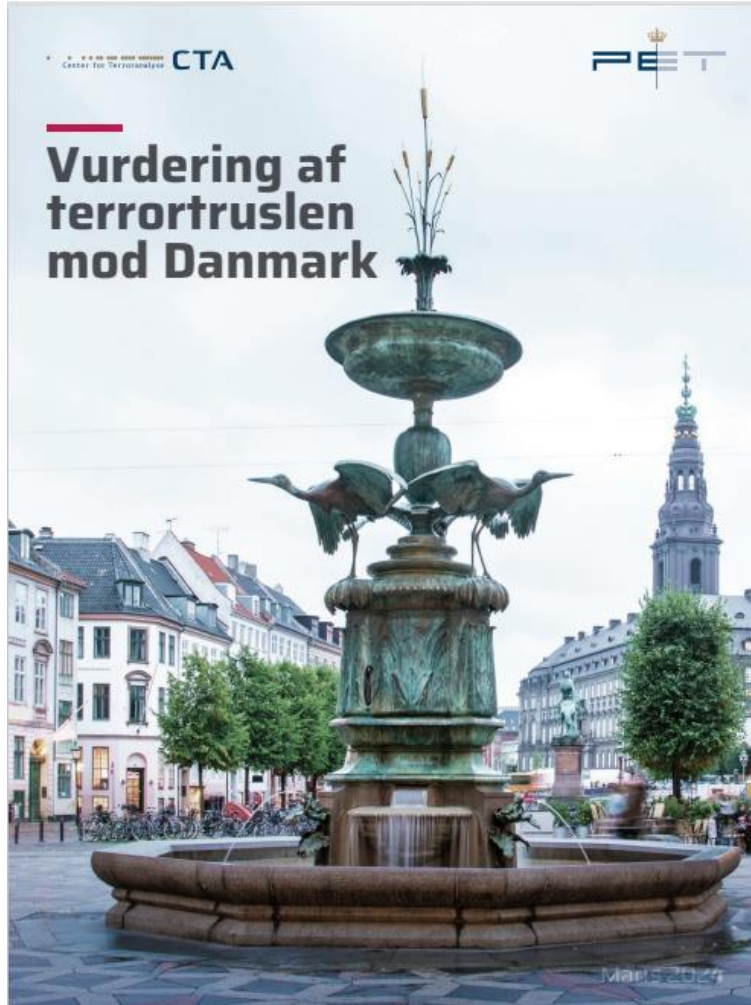
## Air traffic management

Separate aircraft to keep  
our airspace secure

# Paradox

Growth of drone traffic – but authorities lack ability to **govern drone use** and **enforce the law**

# Emerging threat from drones



HCA

3/2 16:16 12:52

FLIR X

10:50:41

0.00 100%

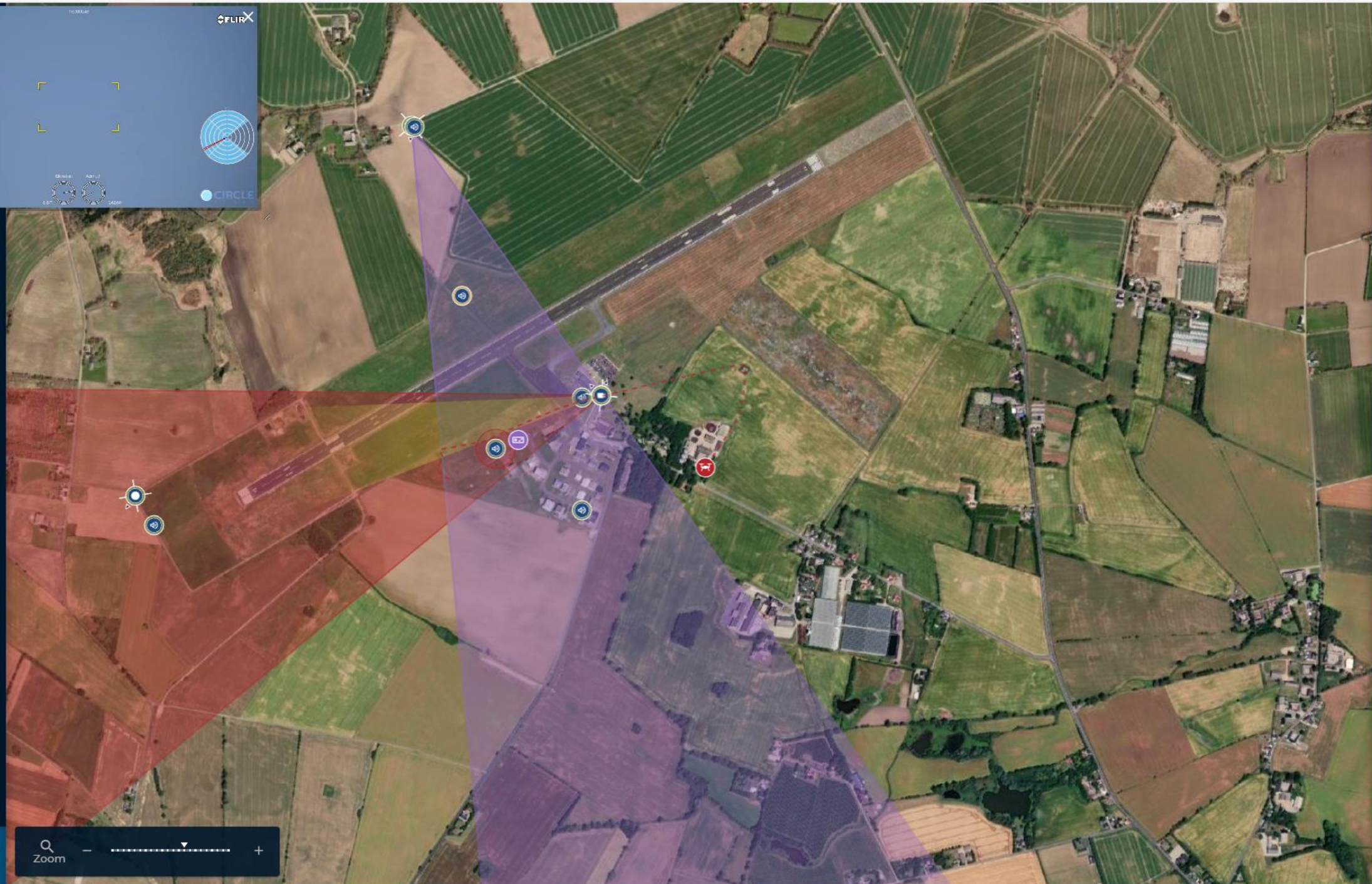
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CIRCLE

11 Devices



5 Threats

Camera

Report

RF Recording

TAK

Layers

Sound (muted)

Server time  
12:30:55  
5 February 2025

Setup

Zoom

— — — — — +

Maxar, Microsoft

200m

Powered by Esri



# Current challenges in DK

## Challenges:

- Limited opportunities to test jamming equipment
  - Prolonged approval process for testing
  - Lack of test sites
  - Inconsistent availability and reliability of test locations
- No clear approach for mitigating drone threats