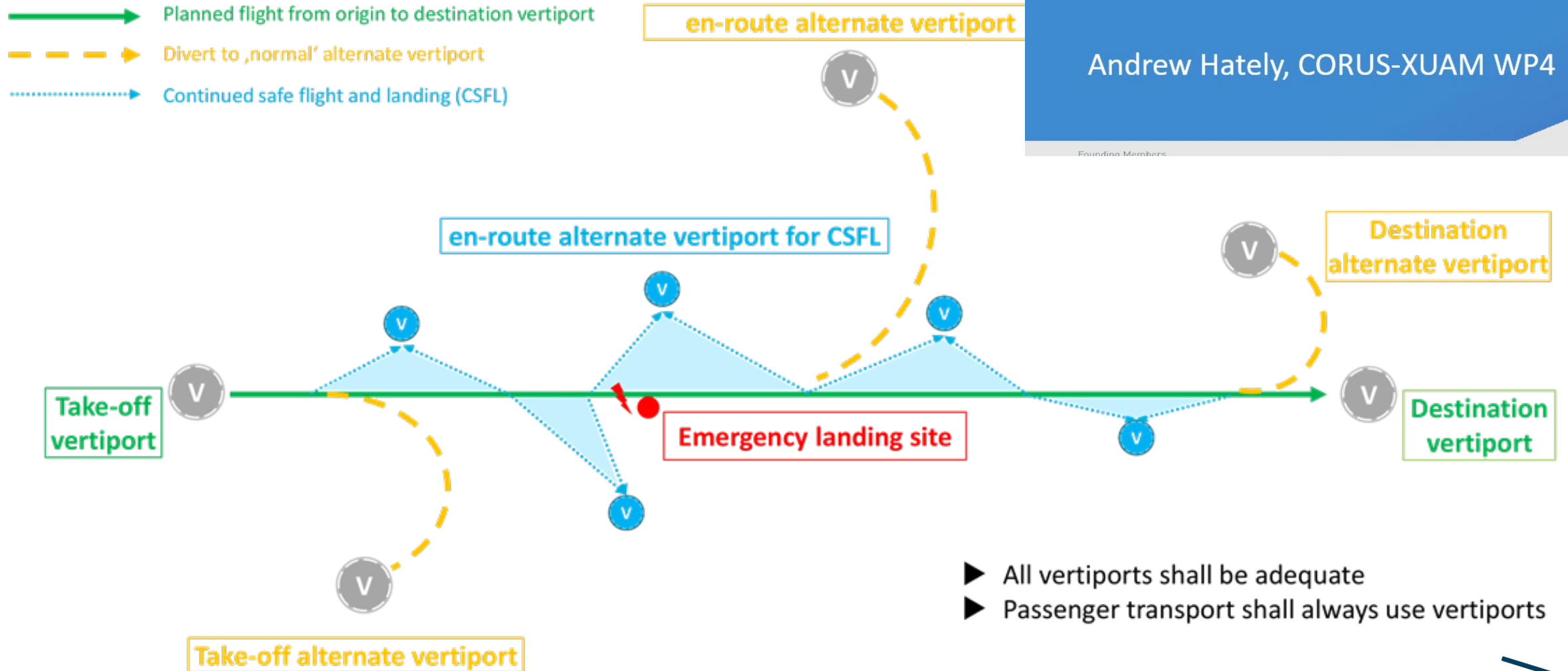


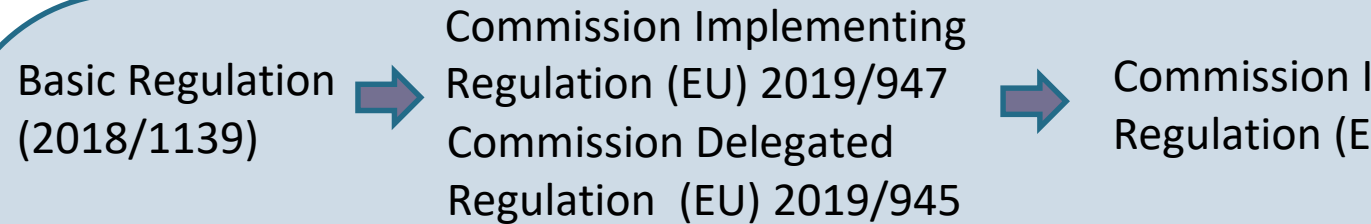
Wrap-up of Day 1 - 3

Dirk Schaefer, EUROCONTROL

EVTOL flight and alternative landing spots



Setting the scene



Following three basic concepts:

- **Operation centric**
- **Risk based**
- **Performance based**

Open category: buy and fly – strict limits
 Specific category: assess risk
 Certified category: traditional certification

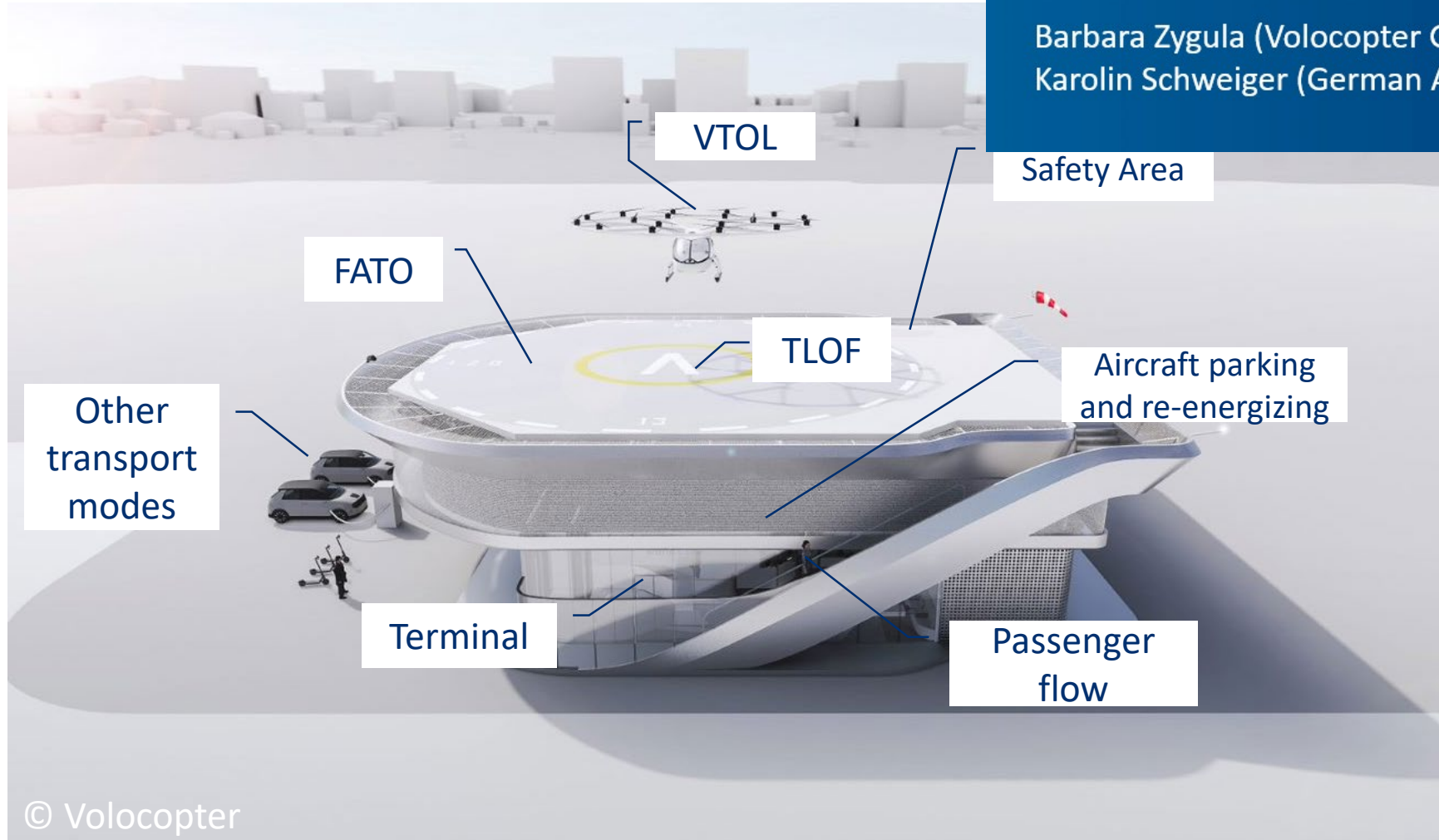
Geographical zones
 (IR947 Art.15)

U-space airspace
 (IR664)

Vertiport – Common Basis

CORUS-XUAM: 2nd Stakeholders Workshop The Vertiport in the CORUS-XUAM ConOps

Barbara Zygula (Volocopter GmbH)
Karolin Schweiger (German Aerospace Center)



© Volocopter

Vertiport Management System

CORUS-XUAM: 2nd Stakeholders Workshop The Vertiport in the CORUS-XUAM ConOps

***New* U-space service: Vertiport dynamic information service**

Barbara Zygula (Volocopter GmbH)

Karolin Schweiger (German Aerospace Center)



Provides information about the vertiport in real-time

- Availability, capacity changes, utilization

Benefits strategic planning processes

- Resource allocation
- Demand and capacity balancing

Benefits tactical processes

- Deviations, diversions, closure, etc.
- Demand and capacity balancing

Linked to:

Common Information Service Provider (CISP)?, operation plan preparation/processing/optimization, strategic/tactical conflict resolution and demand capacity balancing,...

VLOS flights

Can VLOS apply right-of-way rules?

- Visually detecting incoming aircraft in time is difficult
 - Obscured Line-of-sight to incoming traffic
 - U-space Traffic Information Service may resolve that → what kind of HMI would be suitable?
- Difficult to judge relative altitudes & motions from the ground
- Do we add UAVs to the priority rules, so they give way to anything else?



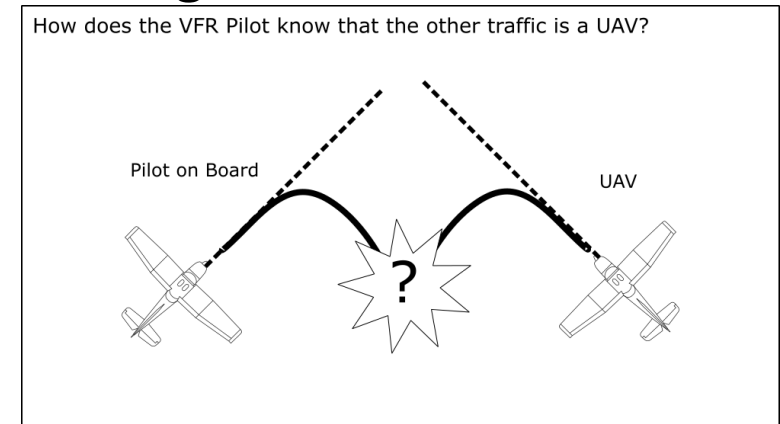
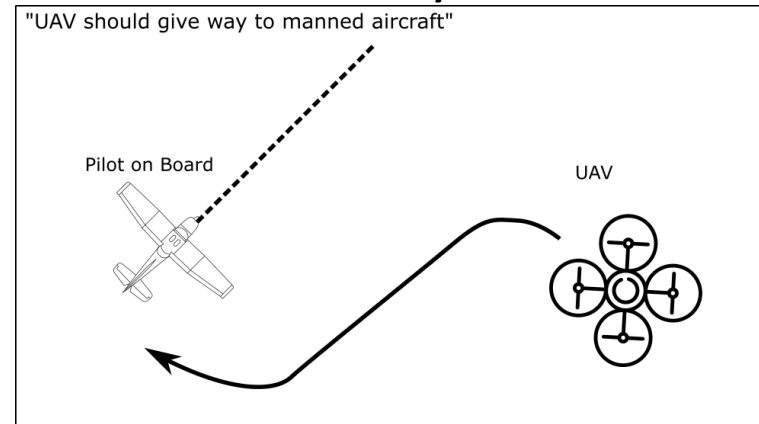
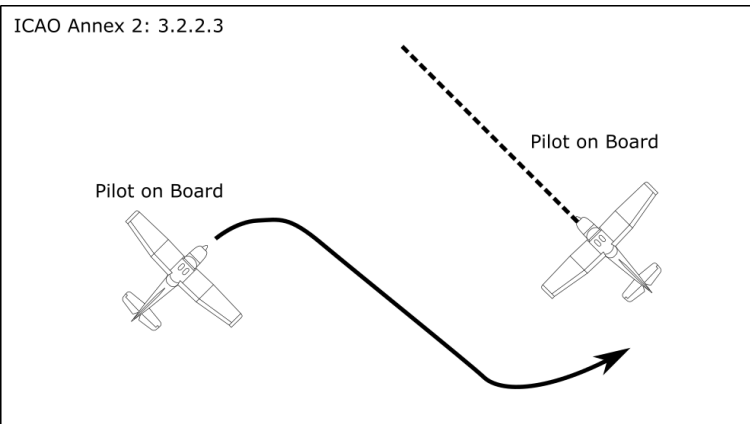
Picture source: EASA Easy Access Rules for Unmanned Aircraft Systems



(Small) UAV and current VFR

Separation is depending on vision & right of way rules

- VLOS pilot point of view is unsuited to right of way procedures with manned traffic
 - VLOS should give way to other traffic by descending
- BVLOS pilot is completely reliant on traffic information.
 - Traffic information becomes safety critical for VFR integration



ATM – UTM interaction use cases

- Two use cases are considered
 - Departure of an EVTOL from a vertiport at an airport
 - Arrival of an EVTOL at a vertiport at an airport
- Each occurs in the same context
 - Integration of UAM in the airport ground infrastructure
 - Vertiport location, location, location
 - Uninterrupted flow of traffic
 - Deconfliction before take-off
 - Coordination between Tower & UTM
 - Dealing with uncertainty of manned traffic

ATM-UTM interaction in the airport environment use cases from CORUS-XUAM

CORUS-XUAM second workshop

16th March 2022



VLDs overview: Six Exercises and 7 Countries

CORUS-XUAM – 2nd Stakeholders Workshop
CORUS-XUAM Demo activities planned in 2022

Zakariya Laftit (WP5 Leader-Unifly)
Javier Garcia Moreno (WP5 contributor-CRIDA)
14.03.2022



- WP6 Belgium
- WP7 Germany UK
- WP8 Italy
- WP9 Spain
- WP10 Sweden
- WP11 France



Solution: dynamic reconfiguration of airspace

CORUS XUAM - WP7: VLD - Germany & UK Airspace Structure

CORUS XUAM 2nd Stakeholder Workshop, 16th March 2022

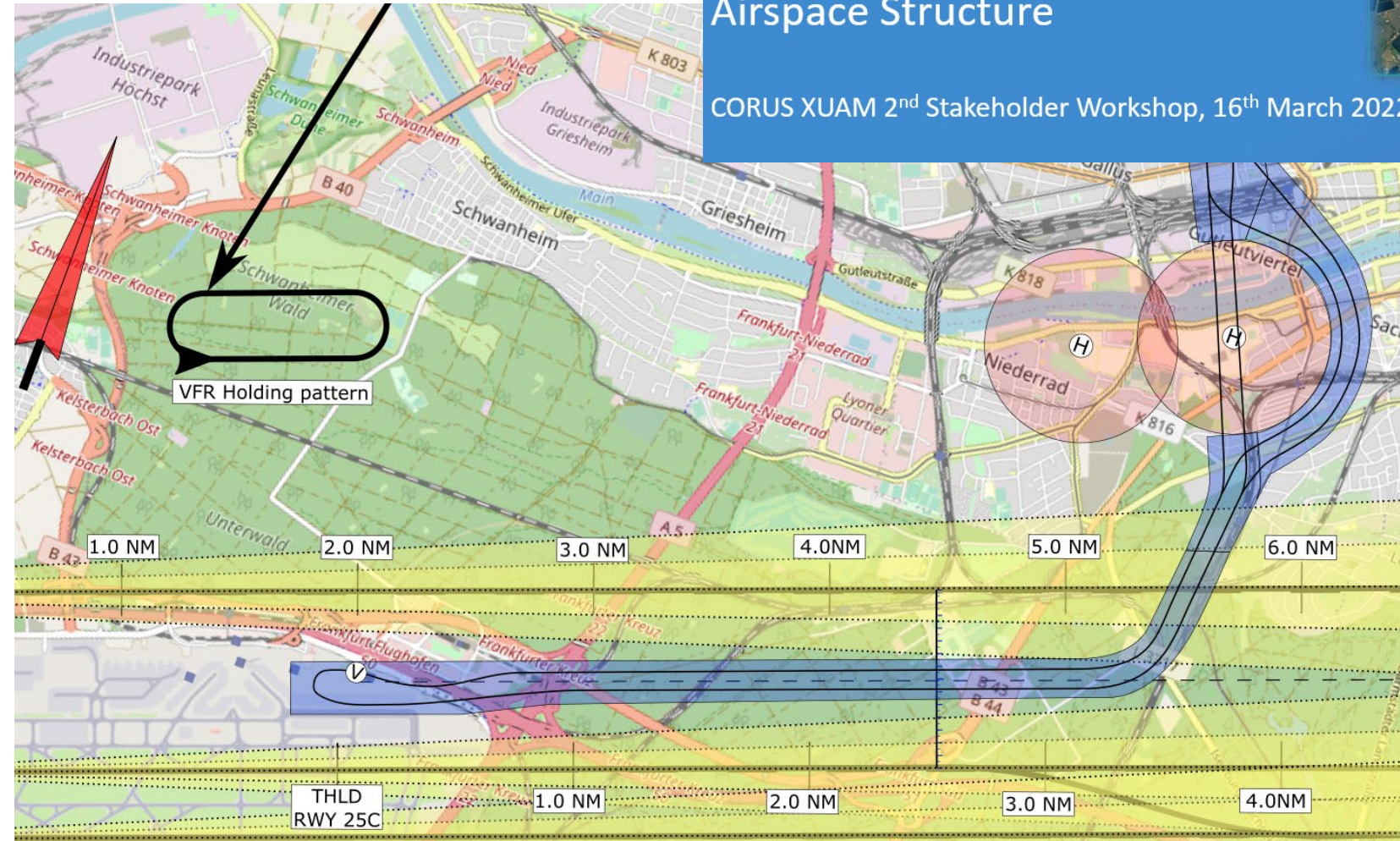
When there is an (imminent) operation at the eastern helipad:

ATC closes the corridor over the hospital and opens the corridor around.

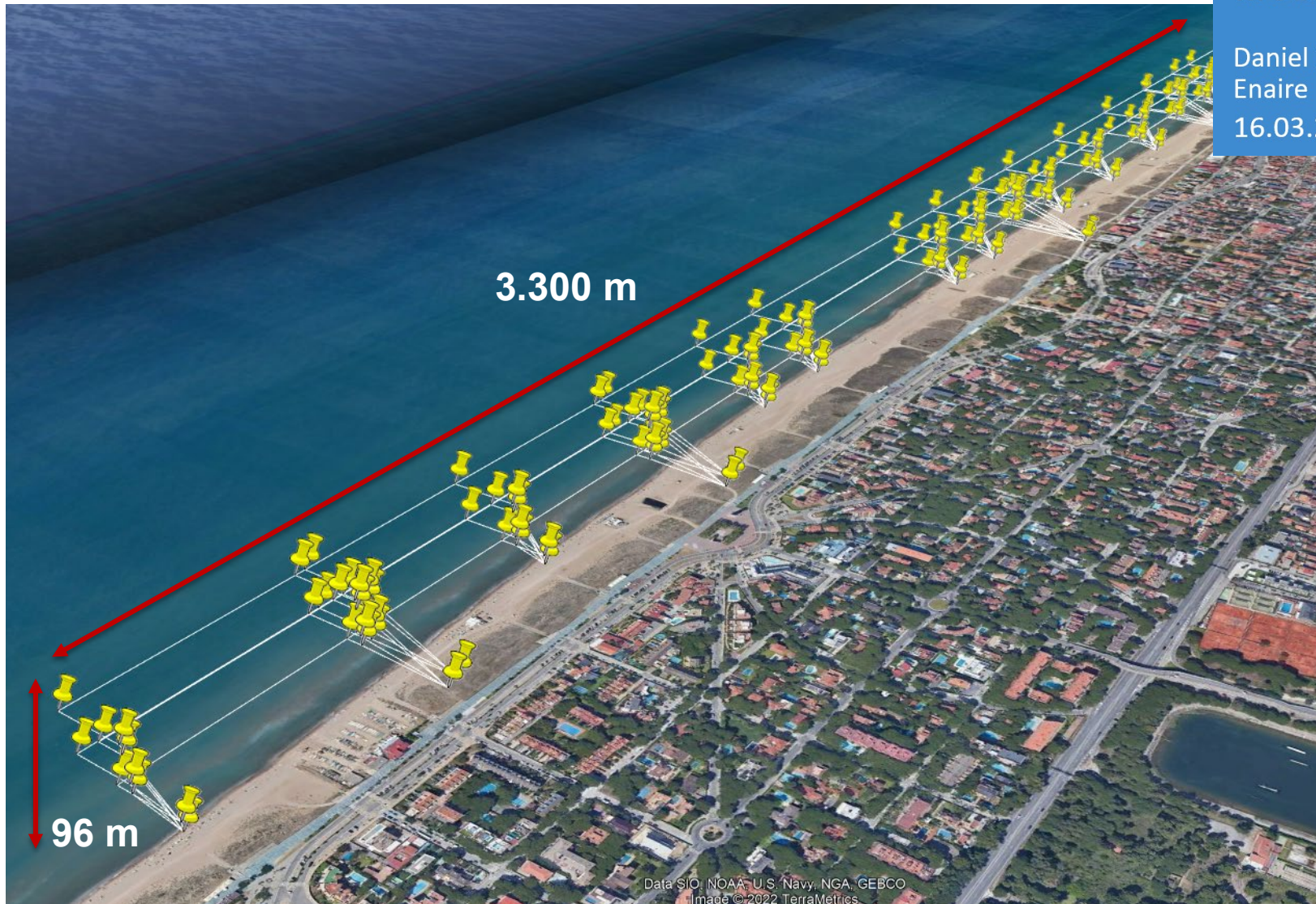
- Air taxis in the closed corridor (or on the verge of entering) will continue as planned and clear the area within 2 minutes.
- Air taxis approaching the closed corridor will take the detour.

Change of clearance distributed by the UTM system.

Interface between Tower Flight Data Processing System and UTM under development.



Airspace Analysis



Operational Resources

- 4 Generic UAS operators
 - 8 Multicopter UAS
- 1 Police UAS Operator
 - 1 Multicopter UAS
- 4 Vertiports
- 12 Delivery Points
- +40 people involved

Some (many) open issues

- **Airspace classes and structure**
 - shall we re-define IFR/VFR to accommodate drones or define UFR?
 - How to avoid a 'my turf' mentality: integration of UAS, manned aviation, and Class G users – in traditional airspace and U-space airspace
 - Integration of UAS operations in busy existing airspace is non-trivial
 - How to allow jump-starting UAS operations
- **Priority of manned vs. unmanned vehicles (beyond existing regulations)**
 - Should manned or unmanned traffic be prioritized
 - Emergency; medical supplies; air taxis vs. manned leisure aircraft
- **Vertiport capacity and access management**
 - Who is responsible for vertiport access/slot management?
 - Vertiports need to reserve capacity to allow them to be used as alternative landing points by passing eVTOLS: how to manage this?
- **U-space flight planning**
 - First filed vs Reasonable Time to Act
 - Managing alternative landing points will be a significant activity in U-space flight planning and execution
- **Strategic and/versus tactical de-confliction**
 - Do eVTOL flights need tactical separation services?
 - To which point does tactical separation hinder strategic de-confliction?
- **Integration of vertiport in the airport environment**
 - Need to be next to the terminal – this is the worst use-case!!!
 - Questions of responsibilities and operational integration