EASA
European Union Aviation Safety Agency

Counter-UAS
and
iConspicuity

Thomas OSTER
EASA drone project manager

23 January 2025

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Counter-UAS

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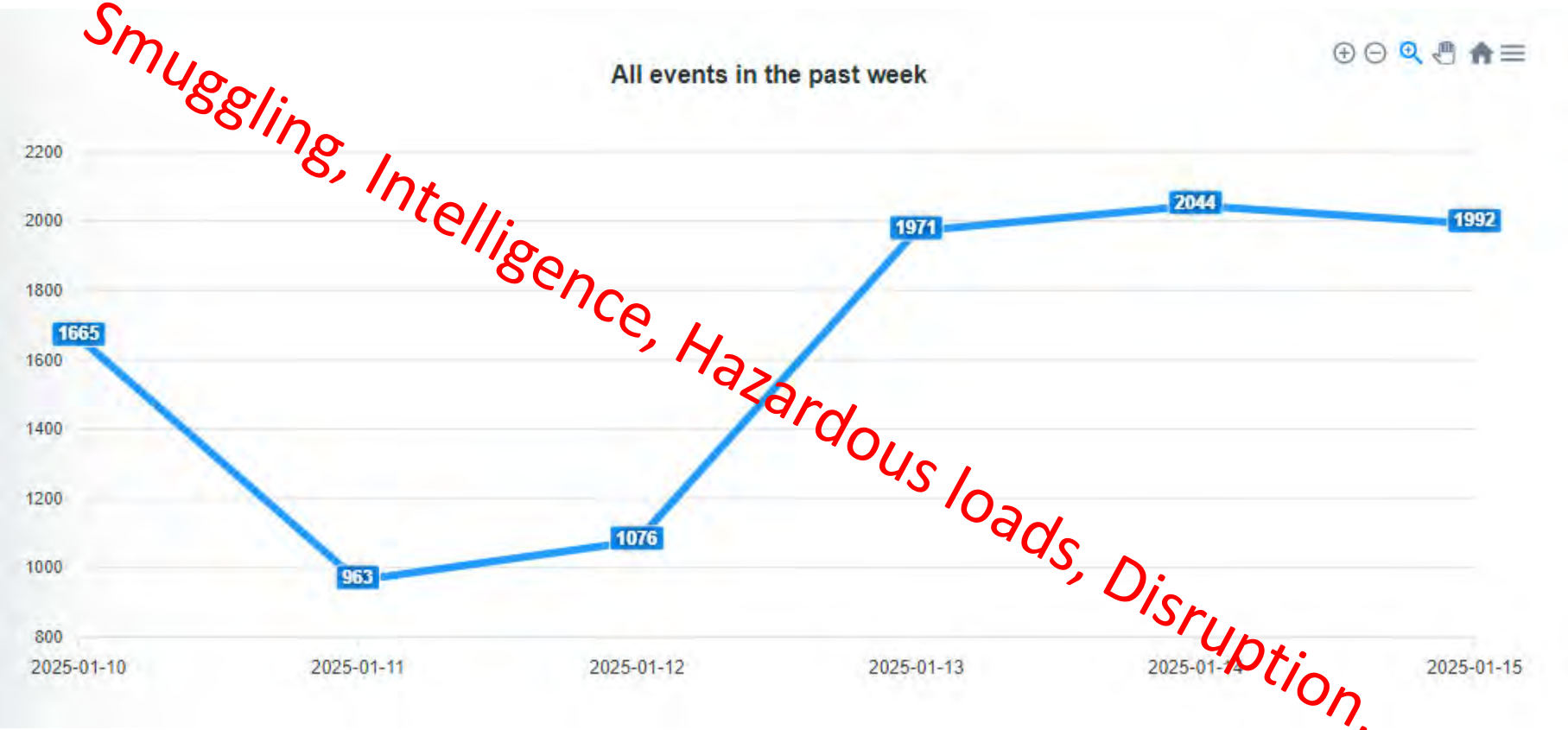
Drone events observed in Europe



Smuggling, Intelligence, Hazardous loads, Disruption,…

Drone incidents across the globe

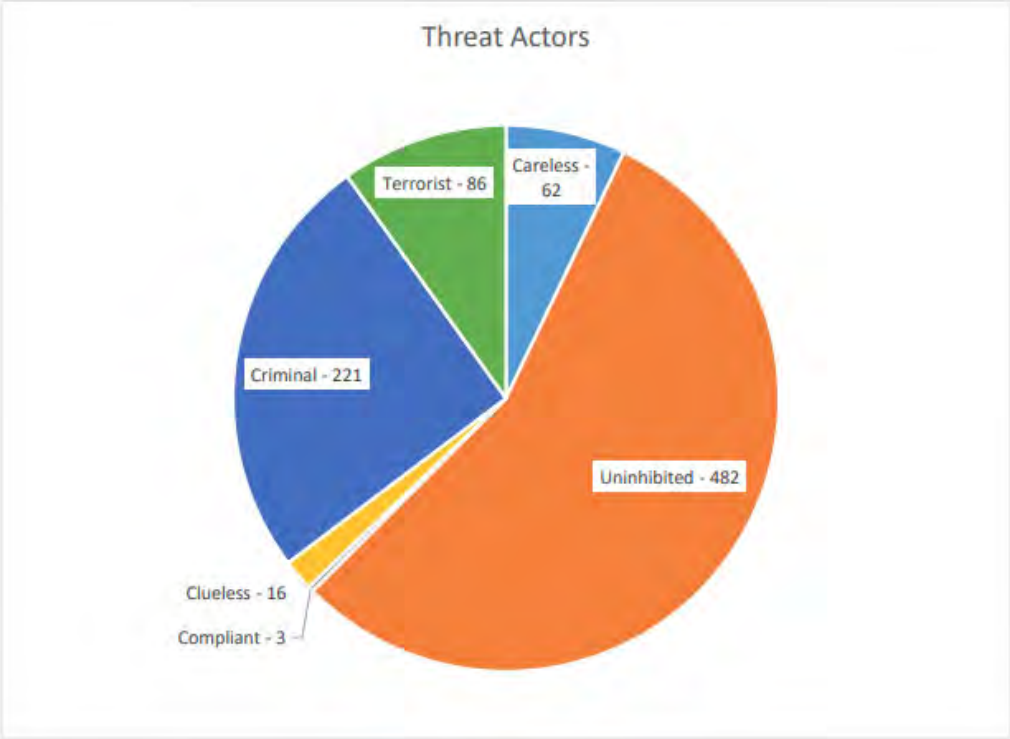


Figure 5: Different threat actors

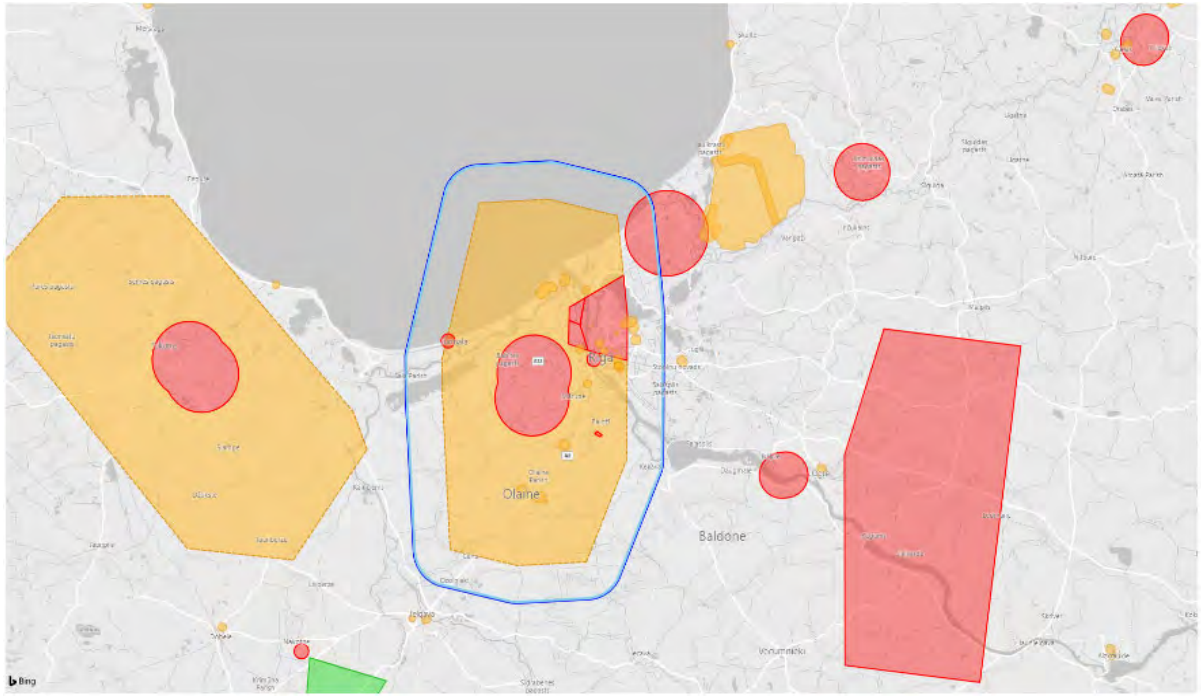
Table 4: Types of threat actors

Type of Threat Actor	No of Incidents	%
Careless	62	7.1%
Uninhibited	482	55.4%
Compliant	3	0.3%
Clueless	16	1.8%
Criminal	221	25.4%
Terrorist	86	9.9%

UAS Geographical Zones

Geographical zones defined by Member States i.a. (EU) 2019/947 art 15!

COLOR CODE	MEANING
	Flights are prohibited for operations in all or certain classes.
	UAS operations are limited and are subject to fulfilment of set of conditions imposed for relevant zones.
	UAS geographical zones, which facilitate operations in the "OPEN" category
	U-Space airspace



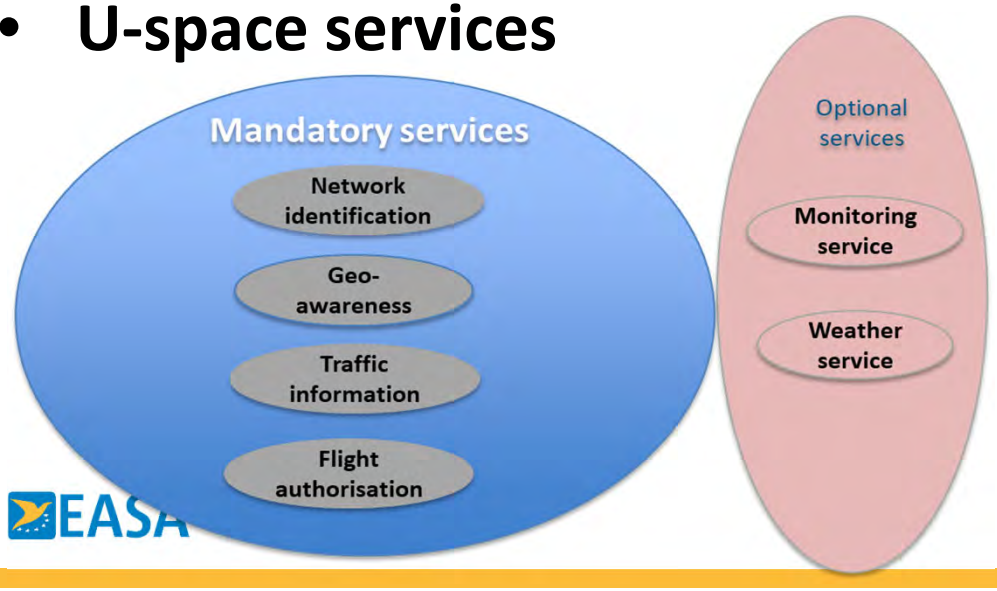
U-space regulatory framework

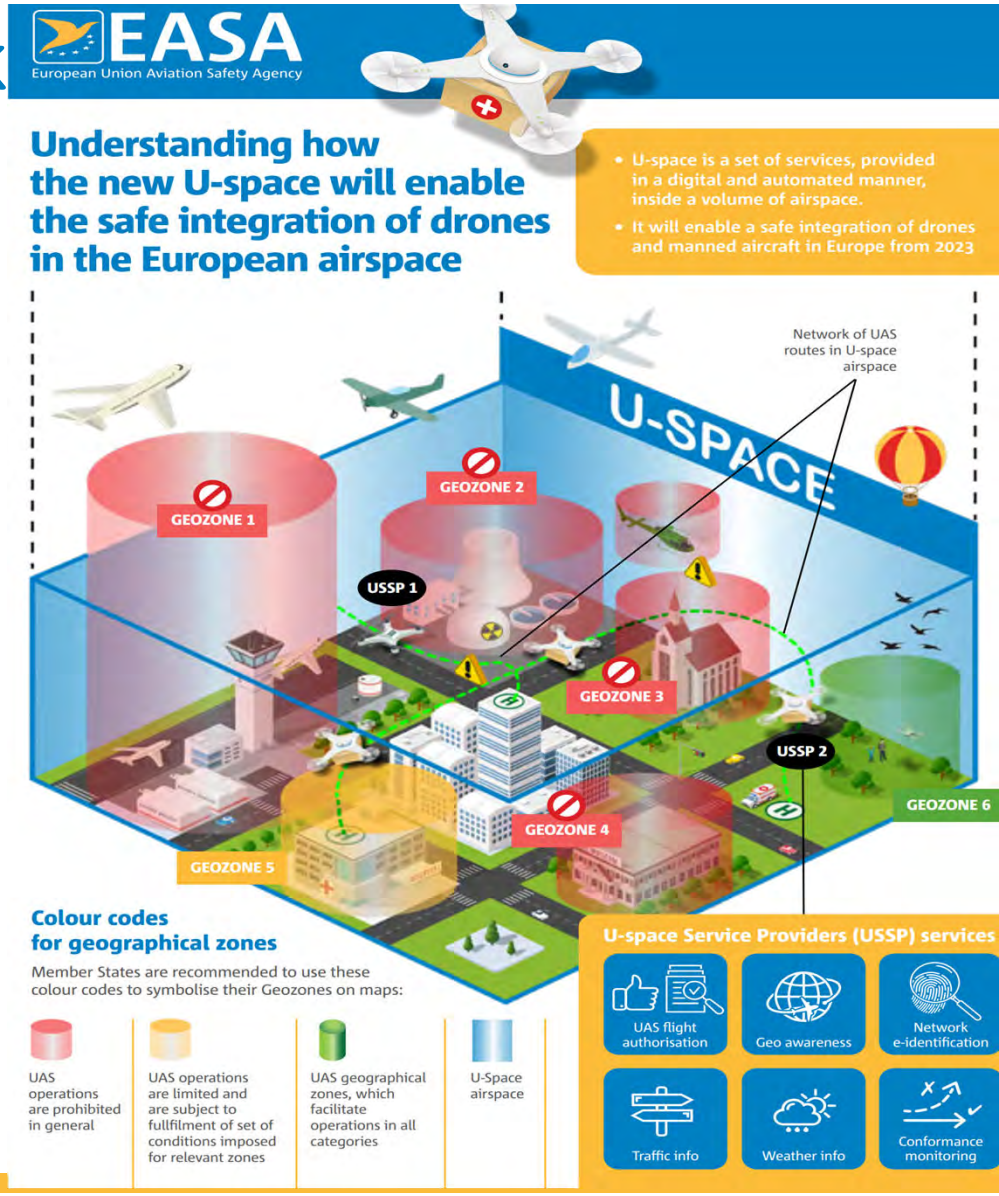
- **Regulations (EU) 2021/664, 2021/665& 2021/666 of 22/04/21**

  Applicability date 26 January 2023

- **U-space airspace** where services are provided.

- **U-space services**





Regulatory context: ADR Surroundings 2018/1139

Article 38

Protection of aerodrome surroundings

1. Member States shall take the necessary measures to ensure that aerodromes located in their territory are safeguarded against activities and developments in their surroundings which may cause unacceptable risks to aircraft using the aerodrome.

2. The organisations referred to in Article 37(1) shall monitor activities and developments which may cause unacceptable safety risks to aviation in the surroundings of the aerodrome for the operation of which they are responsible. They shall take the necessary measures to mitigate those risks in as far as this lies within their control and, where that is not the case, bring those risks to the attention of the competent authorities of the Member State where the aerodrome is located.

3. In order to ensure the uniform application of this Article, the Commission shall, on the basis of the principles set out in Article 4 and with a view to achieving the objectives set out in Article 1, adopt implementing acts laying down detailed provisions. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 127(3).

EASA Counter UAS Action Plan

1. Educate the public to prevent and reduce misuse of drones around aerodromes.
   Safety promotion material / guidance for UAS-GZ
2. Prepare aerodromes to mitigate risks from unauthorised drones use.
   COMPLETED
   “Drone Incident Management at Aerodromes” manual
3. Support the assessment of the safety risk of drones to manned aircraft with scientific data.
   COMPLETED
   Research project on open cat UAS impact on manned aircraft

EASA Counter UAS Action Plan

4. Ensure that C-UAS measures are swiftly considered and implemented from global safety perspective.
   Participation to activities of:
   DG-Home, -MOVE, Eurocae, FRONTEX, NATO, FAA,…
5. Support adequate occurrence reporting
   Adaptation of legal basis (rules) and tools (ECCAIRS) to accommodate occurrences involving drones

Proposal being discussed with the commission

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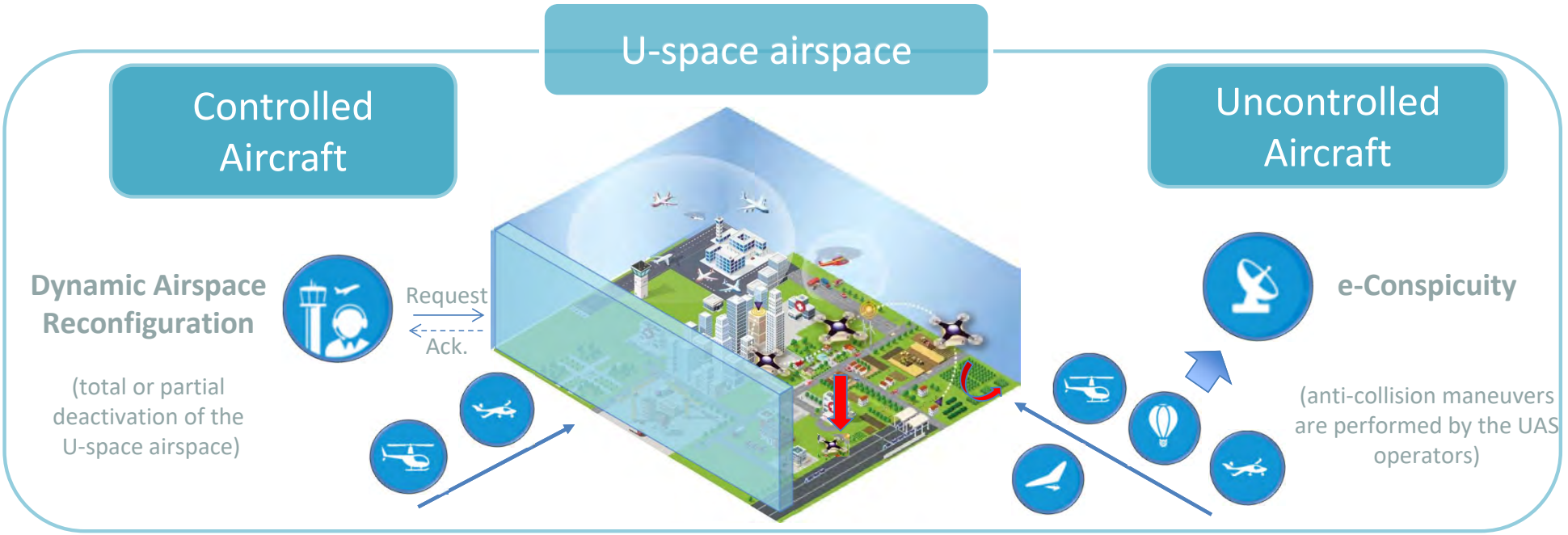
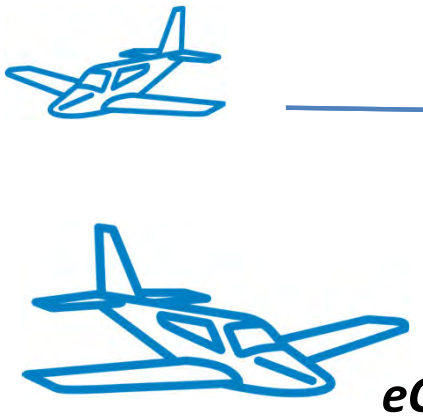
Safety and spacing with manned aircraft in U-space



Detection of unmanned/manned aircraft in U-space



eConspicuity
(EU) 2021/666

Network Remote ID
(EU) 2019/945

Network and
Traffic Information services
(EU) 2021/664

USSP

UAS Operators

EASA

To be seen in U-space - SERA.6005(c)

ADS-B Out (1090 MHz)

For certified aircraft, using the **existing certified technology** already installed on board

ADS-L 4 SRD-860

Non-certified devices transmitting at low power on the licence-free band SRD-860, in compliance with ADS-L specifications

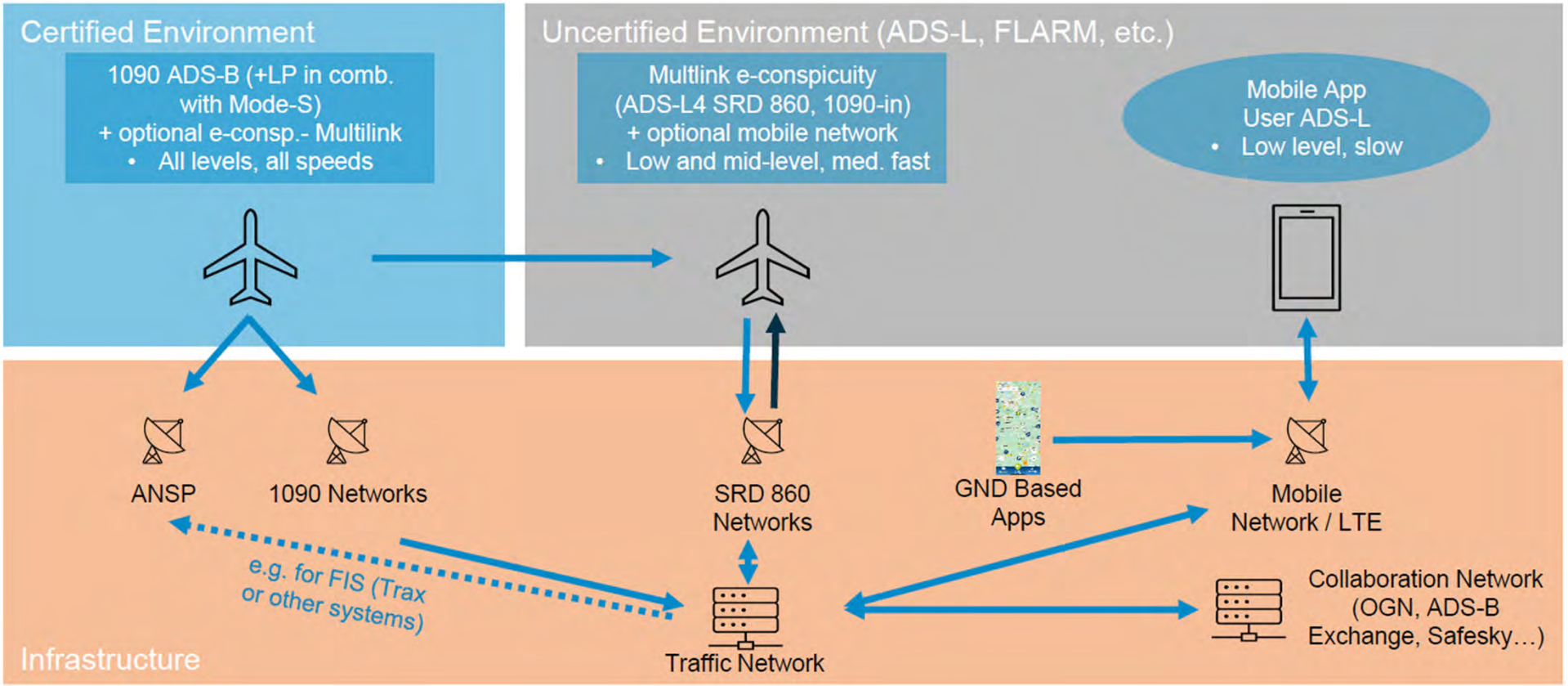
ADS-L 4 MOBILE (telephony)

Mobile telephony application transmitting in compliance with ADS-L specifications

2022

2025

Future ¡*Conspicuity* according to RES.0031*



* Outcome of the ¡*Conspicuity* interoperability research (EASA.2022.HVP.12)

Target Solution

Simple

System design that ensures interoperability and affordability for end users

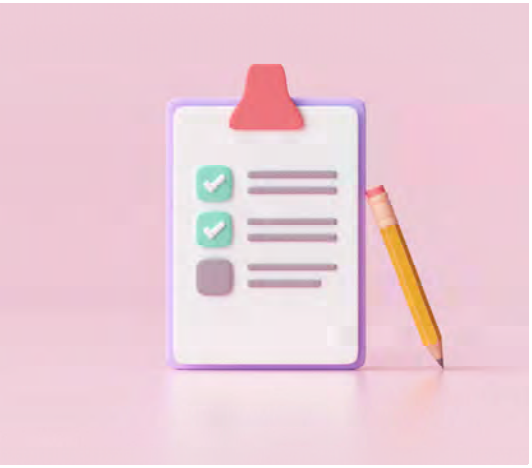
One Language

To ensure interoperability.
ADS-B and ADS-L are good candidates for common language(s)

One Link

Air-Ground transmission for U-space
A direct radio Air-Air link for pilot awareness
A second link for other purposes

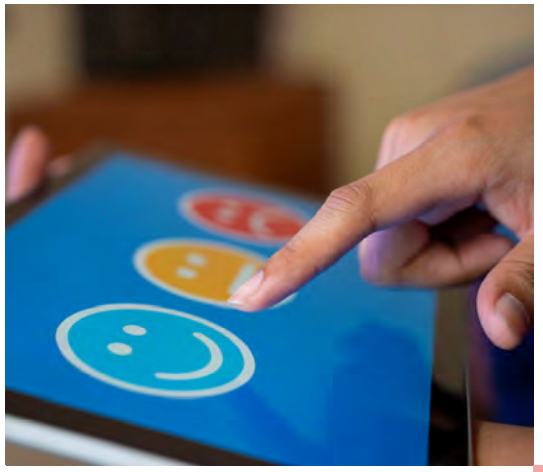
Approach



Consider

Key criteria

U-space **mandate**
Voluntary elsewhere
Different needs (IFR vs glider)
Dual use cases (e.g. ADS-B for ATC and U-space)



Communicate

Throughout the process

A **clear strategy and communication** campaign to get stakeholders to implement the right solutions

Address

Use Cases

Pilots' **situational awareness**, Europe-wide at all altitudes

U-space conspicuity, initially geographically limited & low altitude

Assess

Candidate technologies

'One link' based on a **comparison of options** considering **assessment of** ground-based **operations and** the **business case for all users** (airborne and on the ground) .

EASA EUROCONTROL

Timeline & Implementation Milestones

Q1 2025

‘One language’ proposal considering previous and ongoing developments

2025

Comparative assessment of options

2026

Consolidation of ‘one link’ proposal including transitional arrangements

2027+

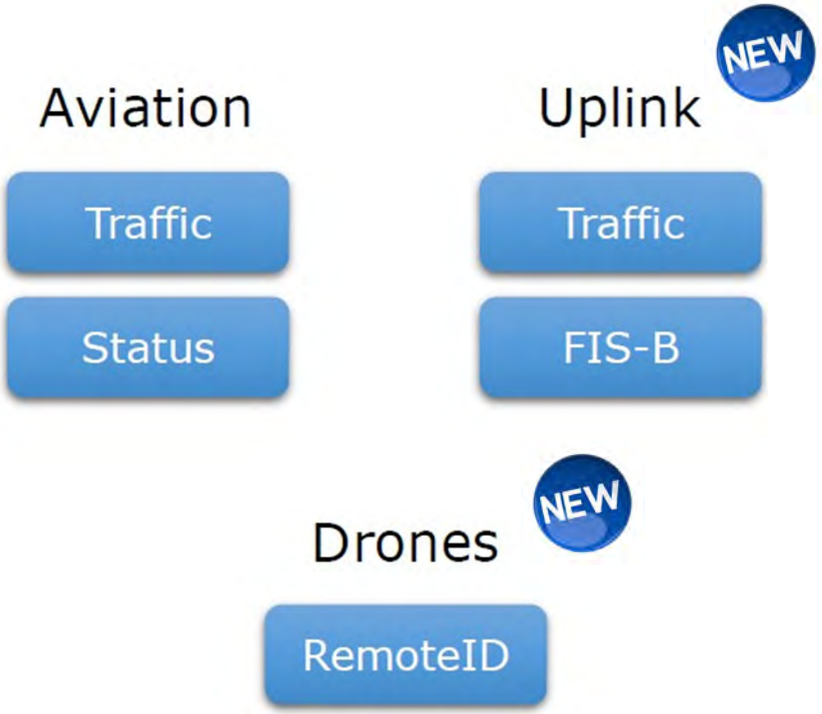
Community awareness and endorsement of the concept

Work in Progress

ADS-L

4 SRD860

Issue 2*



* Draft subject to consultation

Implementations

South-Eastern Finland

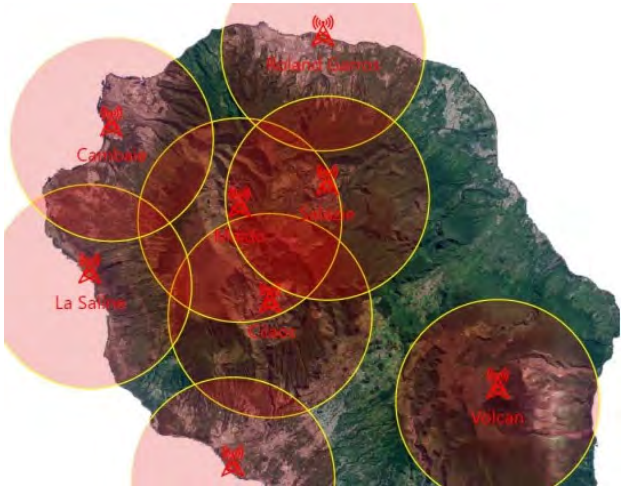
Two ground stations for reception of position data from various systems (ADS-B, ADS-L, UAT, MLAT, FLARM, RemoteID) and UAT retransmissions of nearby traffic, weather, NOTAMS to GA aircraft

Norway (Oslo)

Five transceivers (ADS-B, ADS-L, UAT, MLAT, FLARM, RemoteID) allow drone pilots to receive alerts from nearby GA aircraft (including helicopters and paragliders) and vice versa

France (La Réunion)

The network of eight transceivers (ADS-B / ADS-L / FLARM / OGN / RemoteID) has doubled the number of conspicuous aircraft in the mountains and in the vicinity of airports



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Your safety is our mission.

An Agency of the European Union