ETSI MEC meets vertical markets: APIs exposure helping the Drones Business

26 June 2023, Sophia Antipolis, Hybrid

New Network Capabilities for UAS Command-and-Control and Deconfliction
Demand for UAS services is growing really fast, market leaders are ready for rapid scaling.

Sources: McKinsey, 2022; Levitate VC whitepaper (2020) for parcel delivery demand

Delivery flights (in millions per year)

2022: 1.5
2025: 117
2030: 2700
A large number of daily UAS operations requires technologies, which are able to support high-density flights.

Separation less than 200 metres would be needed to support air traffic in suburban Paris 2030.

But that’s not enough to scale number of flights and support more sophisticated, advanced operations.

**Existing UTM ecosystem supports:**

- Authorization & Flight planning
- Pre-planned collision avoidance
- Remote identification

**But there are huge gaps:**

- BVLOS (beyond visual line of sight)
- Real-time, high density collision avoidance
- Multiple operators in single airspace

- Advanced and mass operations
Flyvercity software platform provides core services for UAS operations scaling, leveraging emerging 5G capabilities.

- Aviation-Grade Command-and-Control
  - Compliant with emerging standards
- Real-Time Collision Avoidance
  - Support of high-density flights (150 meters safe separation)
- BVLOS (beyond visual line of sight)
- Multiple operators in single airspace
- Collision avoidance for high density
- Low Latency
- Urban Infrastructure
- Augmented Positioning

5G enablers
Our C2 Communications Service Provider (C2CSP) solution streamlines usage of cellular infrastructure for everyone.

- C2 with aviation-grade performance characteristics
- Security compliant with emergent standards
- Signal behavior analysis for compliance monitoring
- Uniform access in multi-operator environments
State-of-art UTM uses simple conflict resolution algos and relies on Internet quality of connectivity and autonomous navigation.

Simple Pairwise Deconfliction

Flyvercity algorithms take into account multiple secondary conflicts (patent pending)

Real world environment and scalable technology

Non-scalable approach for low-density operations
Flyvercity solutions enhances the UTM ecosystem with connected services based on critical communications.

Aerial Connection Services: Cellular C2 Connectivity and more

UAS

Basic Services

UTM System

Coordination

Flyvercity Services

Tactical Deconfliction Services
Leveraging Critical 5G-Based Technologies

- Command-and-Control
  - Aviation-Grade Connectivity
    - Quality-of-Service Management
      - Network Slicing Management API
  - Reliable Surveillance
    - GNSS/Network Fusion
      - Precise Position API
- Real-Time Collision Avoidance
  - Deploy as Close as Possible
    - MEC
  - Need: Aviation Vertical Apps Provisions
A roadmap to deployment and scaling shall be also coordinated with MEC standardization.

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**EU Drone Strategy 2.0 (2022)**

**EU/US cellular connectivity standard**

**High-density regulatory framework**
Critical medical deliveries in Northern Europe

50% of CO2 footprint related to e-commerce are removed.

You receive your Amazon order in 20 minutes.

Your life is saved with less than 10 min with flying ER service.

50% of CO2 footprint related to e-commerce are removed.

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