



U-SPACE SEPARATION IN EUROPE



Validation Workshop Report

Online, March 23rd, 2021

Manon COYNE, POLIS Network
June 22nd, 2021



This project has received funding from the SESAR Joint Undertaking under grant agreement No 890738 under European Union's Horizon 2020 research and innovation programme

MAIN TAKE-AWAYS

1. Participants

Stakeholder Group	Organisation	Number of participants
Universities and Research Centers	University of South -Eastern Norway	6
	University of Hannover	4
	SESAR Joint Undertaking	3
	DLR	3
	CRIDA/DACUS Project	2
	ITACA Institute (University of Valencia)	2
	University of Coimbra	1
	Sapienza University Roma	1
International, national, and local Air Mobility Authorities	University of Madrid	1
	EUROCONTROL	3
	Spanish Ministry of Home Affairs	3
	ISDEFE	3
	Kenya Civil Aviation Authority	1
Air navigation and traffic controllers	AMAT Milano (Environment and Territory Mobility Agency)	1
	ANS (Czech Air Navigation Institute)	2
Technology Providers	IFATCA (International federation of Air Traffic Controller associations)	1
	NOMMON	4
	INDRA	3
	INECO (transport engineering and consultancy)	1
	FUVEX (drone manufacturer)	1
	IKEA	1
	BOEING	1
Networks and European association	IAI (technology provider)	1
	POLIS Network	2
	IFATSEA (Air Traffic Safety Electronics)	2
	TOTAL	53



2. Objectives and Agenda

The USEPE validation workshop was intended to present the project to the relevant community, and to collect information on needs and perceptions from different types of stakeholders (citizens, local authorities, aviation authorities, air mobility service providers, air navigation service providers, emergency response organisations, researchers).

Thus, the first part of the workshop included a **presentation of the project** purpose and its working approach, the theoretical framework and preliminary concept of operation developed, and the definition of relevant stakeholders to involve and the inputs expected from them.

As the workshop took place after the distribution of a survey, **preliminary results obtained via this survey on stakeholders' needs and views were presented**, to launch the discussion with participants and collect their views on the questions addressed.

The second part was then a discussion in smaller **break-out groups**, to encourage exchange, and provision of ideas and challenges by participants.

The workshop was then concluded by a **collective summary** and discussion of inputs received from participants in break-out rooms.

3. Summary of inputs received for USEPE

Key Messages	Find innovative technologies and properly use current ones to automate deconfliction	
	Coordinate with other projects and organisations	
	Define responsibilities of separation	
	Drones' trajectory and mission are key parameters to define separation approaches	
	Main two approaches considered for separation are self-separation and ground-based separation (for dense traffic in particular)	
	Prioritise preventive deconfliction rather than avoidance maneuvers	
	Integrate society acceptance in methods' design, and consider the challenge of integrating ATM and UTM	
Perceived needs	Types of flights to consider	Account for heavy drones (used for most business applications)
		Account for different types of drones (multi rotor and fixed wing)
		Consider Operations during the whole day
		Consider last mile deliveries
		Define implications of weather in drones' flights, and provide solutions for any kind of conditions
	Planning separation of drones	Define an interface between weather information and separation methods
		Determine timeline before collision including the 'remain well clear' phase
		Identify and manage the elements for separation
		Identify who oversees the prioritization of the flights
		Define the degree of aircraft equipment (collaborative vs. non-collaborative)
		Encounter models (encounter geometry is needed)
		Address communication issues in case conflict is detected. (drone to drone vs drone to ground)
		Minimal values for separation are needed
		Consider time reduction for flight planning
Suggestions/ Concerns	Include ANSPs and ATCOs in the Advisory Board	
	Address safety issues in terms of frequency of conflicts and collisions, base separation concept on risk analysis, avoid market approach (pay for priority)	
	Define whether capacity defines separation needs, or the opposite	
	Include emergency situations in separation planning	
	Account for both centralised (strategic) and decentralised (tactical)	
	Consider the impact of separation techniques on the cost of drones	



USEPE partners



Follow us!

Website: www.USEPE.eu



This project has received funding from the SESAR Joint Undertaking under grant agreement No 890738 under European Union's Horizon 2020 research and innovation programme