Results from second survey and roundtable consultations

D5.4

AW-Drones

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Authoring & Approval

Authors of the document

Name/Beneficiary	Position/Title	Date
Peter van Blyenburgh/B&C	Project Contributor	02/08/2021
Damiano Taurino/DBL	Project Coordinator	06/09/2021

Reviewers internal to the project

Name/Beneficiary	Position/Title	Date
Vera Ferraiuolo/DBL	Project Dissemination Manager	20/09/2021
Marco Ducci/DBL	Project Contributor	27/09/2021

Rejected By - Representatives of beneficiaries involved in the project

Name/Beneficiary	Position/Title	Date

Document History

Edition	Date	Status	Author	Justification
00.00.01	02/08/2021	Draft	Peter van Blyenburgh	Initial draft, outcomes of the second survey
00.01.00	27/09/2021	Issued	Damiano Taurino	Outcomes of the roundtable consultations, Integration of internal reviews

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AW-Drones

CONTRIBUTING TO A WELL-REASONED SET OF AIRWORTHINESS STANDARDS FOR MASS-MARKET DRONES

Abstract

This document reports on the outcomes of the second survey and roundtable consultations performed between M16 and M30 in the AW-Drones project.

The document is organized as two distinct parts:

- the first part is devoted to the presentation of the results of the roundtable consultations with the Advisory Board of the AW-Drones project;
- while the second part contains the outcomes of the second online survey with external stakeholders, with a focus on U-Space.

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1 Results from second roundtable consultations

AW-Drones project is built upon a solid and structured communication with stakeholders external to the consortium. As extensively described in Deliverable 7.1, the project identified three main categories of stakeholders, with different levels of involvement and means of consultation:

1. Institutional bodies:
    a. EU and EC: DG-INEA, DG-MOVE (EASA and the European Commission represent the main targets of the project, to be updated constantly on progress, findings and results);
    b. European Joint Undertakings (e.g. SESAR, Clean-Sky);
    c. Regulatory and safety agencies: ICAO, EASA and National CAAs, JARUS;
    d. Standard making bodies: EUSCG, ISO, EUROCAE, ASTM, RTCA, ASD-STAN;
    e. National bodies: National Ministries of Transport, National Agencies.
2. Specialised audience:
    a. AW-Drones Advisory Board
    b. Research community
        i. R&I institutes;
        ii. Universities;
        iii. Private research companies;
    c. Industry
        i. Drones manufacturers and maintainers;
        ii. Drones operators;
        iii. Drones Pilots
        iv. ANSPs;
        v. UTM/U-Space Service Providers
        vi. Industrial associations;
    d. Training Institutes.
3. General stakeholders:
    a. General public;
    b. Media.

1.1 Advisory Board involvement

Active contribution and participation from a large set of stakeholders are key aspects for the achievement of the objectives of the coordination action. Thus, the project constituted an Advisory Board. This group is composed by experts in the field of drone operations, regulation, airworthiness and standard development. The role of the advisory board consists in: supporting the methodological work of the project, providing review, recommendations and feedback on project activities and

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findings; to bring an external view into the project and help the consortium answering the following questions:

- "What are the main gaps and bottlenecks in the current development of standards for drones?"
- "What is the safety effectiveness of the standards currently available and under development?

The Advisory Board is also be a channel for the consortium to access information about activities going on worldwide in terms of safety regulation and standards development for drones. The group is exclusively composed of external organisations and will act as an independent advisory body. Its members participate on behalf of their respective organisations. Membership does not imply endorsement of the activities or results of the project by the organisations represented. The Consortium provides the AB with the administrative and logistical support necessary for its operation and compensate members for the costs of their participation. The AB can interact with the project also via mail and phone calls.

During the reference period (M16-M30 of the project) selected members of the project Advisory Board have been invited to contribute to the project workshops and have been individually contacted by the consortium for feedbacks on specific technical topics. The current composition of the Advisory Board is reported here below:

Name	Affiliation	Role	Stakeholder category	Country
Hao Liu	BUAA	JARUS Vice Chair	Safety regulator	China
Giovanni Di Antonio	ENAC	Airworthiness Regulation Department Structures Expert	Safety Regulator	Italy
Carl King	Northrop Grumman	Chair WG 2 (Product) in ISO TC/20 SC/16	Manufacturer/ Standard Making Body Member	International
Catherine Ronfle-Nadaud	DGAC		Safety Regulator/ANSP	France
Alessandro Gonçalves Adinolfi	ANAC		Safety Regulator	International
Kakuya Iwata	Japan UAS Industrial Development Association	Executive Director	Manufacturers association	International
Joe Urli	Australian Certified UAV Operators		Operators Association	International
Louise Jupp	Terreco Aviation	Director	Operator	International

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Robert Jonker	Clear Flight Solutions		Manufacturer/Operator	EU
Kenzo Nonami	Japan Drone Consortium (JDC)	Chairman	Operators Association	Japan
Franck Martin	ADP Ingienerie	Aiport Operations development	Operator for innovative applications	France
Stephane Morelli	Azur Drones	General director	Manufacturer/Operator	France
Anne-Marie Haute	Pilgrim Technology	Maunfacturer/ JARUS advisor for DGAC	Manufacturer Operator	EU
David Roy Guerin	Ozyrpas	Regolatory consultant	Regulatory consultant	UK
Sean Reitz	United drone Holdings	CEO	Manufacturer	International
Natale Di Rubbo	EASA	Rule making officer UAS	Strategy and Safety Manager Director	EU
Mike Lissone	EUROCONTROL	UAS-ATM Integration Manager		EU
David Bowen	SESAR JU	UAS-ATM Integration Manager		EU
Félix Herrero	AESA		Safety Regulator	Spain
Karim Benmeziane		ASD-STAN WG8 Secretary	Standard Making Body	France
Andrew Thurling	NUAIR Alliance	Chief Technology Officer	Standard Making Body	US
Lorenzo Murzilli	FOCA	JARUS WG-6 Leader	Safety Regulator	Switzerland
Josef Saurer		DIN responsible on UAS	Standard Making Body	Germany

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Alain Vallèe	EUROCAE		Standard Making Body	EU
Segiu Marzac	EUROCAE		Standard Making Body	EU
Ségalite Sellem-Delmar	Safran Electronics & Defense	Airworthiness Manager	Manufacturer	EU
Philip Kenul	ASTM	Chair of ASTM Committee F38 on Unmanned Aircraft Systems	Standard Making Body	US

1.2 Roundtable consultations

In February 2021 the AW-Drones consortium and selected Advisory Board Members had a (virtual) meeting and a collaborative workshop with EASA (third AW-Drones workshop with EASA). The main objectives of the workshop were the following:

- gather comments on the 1st and 2nd iterations assessment of SORA-related standards;
- gather comments on the U-Space-related standard assessment.

EASA personnel involved in the workshop were coming from different departments and working on the following topics:

- U-Space
- Personnel Competence
- UAS Maintenance/Manufacturing
- UAS Design
- Operations and procedures

Here below the agenda of the three days' workshop is reported:

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Time	Item	Item description	Presenter
		Tuesday 16th February	
14.30	**1**	**Welcome & Introduction**	**EASA/DBL**
14.45	**2**	Overview of standards assessment process and results	**EUSC**
15.15	**3**	Introduction to group works: topics and objectives	**DBL**
15.45	**4**	Group Session 1	**ALL**
17.30	**End of 1st day**		
		Wednesday 17th February	
14.30	**5**	**Group Session 2**	**ALL**
16.15	**6**	Group Session 3	**ALL**
17.30	**End of 2nd day**		
		Thursday 18th February	
9.30	**7**	**Group Session 4**	**ALL**
14.30	**8**	**Group Session 5**	**ALL**
17.30	**End of 3rd day**		
		Friday 19th February	
10.00	**9**	**Group Session 6**	**ALL**
12.00	**End of 4th day**		

The detailed scheduling of the three days is available at the following link: https://drive.google.com/file/d/1DeGsg23evKluK7Ed_2R5LqUI6kGiMIP6.

The main outcomes of the workshop have been integrated in the AW-Drones deliverable D4.2.

The minutes of the third EASA workshop with the Advisory Board members can be found at the following link: https://drive.google.com/file/d/1FY51nnraoKKtMq9VjvIpZb4UkP3Gg2i9.

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Survey
On the Perception of U-space

CONCLUSIONS

Funded By The European Union

In The Context Of The Horizon 2020 Programme

Produced by
Blyenburgh & Co
France

Co-funded by the European Union

TABLE OF CONTENTS

SURVEY SCOPE, OBJECTIVE & CONDITIONS

SURVEY ORGANISATION

This survey has been created and conducted by Blyenburgh & Co, a private company registered with the Chamber of Commerce in Paris, France, and established at 86 rue Michel Ange, FR-75016 Paris, France - Tel.: 33-1-46.51.88.65 - www.rps-info.com & www.rpas-regulations.com.

This survey was carried out in the context of the AW-Drones Project (www.aw-drones.eu), which is co-funded by the European Union (EU). Blyenburgh & Co is a participant in the AW-Drones Project.

SURVEY OBJECTIVE

The objective of this survey was to
- Evaluate the comprehension of U-space and its relevant services in the Single European Sky (SES) Member State area (and the knowledge level & the expectations of the stakeholders)
- Obtain an opinion on the technical standards required to support U-space implementation
- Identify possible bottlenecks & gaps
- Scope the possible pre-occupations of stakeholders concerning U-Space and its implementation
- Check on the U-space implementation status

COUNTRIES CONCERNED

This survey is aimed at the UAS / RPAS / Drone community principaly in the following countries: Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia,Faroe Islands, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom.

Respondents in other countries were also invited to participate.»

NON-ATTRIBUTION OF RESPONSES

The survey responses supplied will not be nominally attributed to the companies/organisations having supplied them.

RECOGNITION OF CONTRIBUTION

A list of names of all companies & organisations having contributed to the survey, and the countries where they are established, is part of this final report.

PUBLICATION OF RESULTS

The conclusions of this survey are being made publically available on a no-cost basis to all interested parties. They are published on www.rps-info.com & www.aw-drones.eu.

DISSEMINATION

The notification of this survey and the invitations to contribute to it were disseminated by Blyenburgh & Co making use of its database and social media, as well as by specialized blogs (UAS Vision, Unmanned Airspace), and various UAS / RPAS / Drone community stakeholders

CONFIDENTIALITY

Personal contact information provided in response to this survey (hereinafter "Personal Data") will only be processed for the survey within the limits of the survey's purpose.

Data processing was performed by Blyenburgh & Co and its staff, which was instructed to observe the rules of this confidentiality clause.

Personal Data will not be transmitted to any entity for any purpose whatsoever. Persons having completed this survey may at all times request Blyenburgh & Co (pvb@rps-info.com) to have their Personal Data deleted from its database for any future use by addressing an email with "Delete from database" in the subject box, and indicating their family name, first name & company/organisation as the message text. Non-personal data shall not be subject to such deletion requests. Persons having supplied their contact details can, at all times, obtain a copy of the information concerning them that is registered by Blyenburgh & Co and rectify it by addressing a simple written request to Blyenburgh & Co, 86 rue Michel Ange, FR75016 Paris, France (pvb@rps-info.com).

This statement is in accordance with the EU General Data Protection Regulation (GDPR), which entered into force on May 15, 2018.

REFERENCE DOCUMENTS

For the convenience of the respondents, the following documents were accessible at each step of the survey:
- U-Space Insight Survey – Terms & Explanations - 210104
- EC Draft EU-923-2012 - SERA.6005 - U-space Amendment - 210303
- EC Draft EU-COM – Implementing Regulation – U-space Act - 210303
- EC Draft EU-COM – Implementing Regulation – U-space Act - Annex - 210303

TERMS & EXPLANATIONS

In the context of the "U-space Insight" survey the following terms and explanations apply.

UAS - (ICAO explanation)
''Unmanned Aircraft System'' (UAS) is an aircraft and its associated elements which are operated with no pilot on board.

UAS Operator - (ICAO explanation)
''UAS Operator'' is a person, organization or enterprise engaged in or offering to engage in an aircraft operation.

U-space - (SESAR JU explanation)
''U-Space'' is a set of new services relying on a high level of digitalisation and automation of functions and specific procedures designed to support safe, efficient and secure access to airspace for large numbers of drones. As such, U-space is an enabling framework designed to facilitate any kind of routine mission, in all classes of airspace and all types of environment - even the most congested - while addressing an appropriate interface with manned aviation and air traffic control. The SESAR Joint Undertaking blueprint proposes the implementation of 4 sets of services to support the EU aviation strategy and regulatory framework on drones:

U1: U-space foundation services covering: e-registration, e-identification, and "pre-tactical" geo-fencing.

U2: U-space initial services for drone operations management: "tactical" geo-fencing, flight planning management, weather information management, tracking, monitoring, drone aeronautical information management, procedural interfacing with conventional air traffic control, emergency management, strategic de-confliction.

U3: U-space advanced services supporting more complex operations in dense areas such as de-confliction (assistance for conflict detection), dynamic geo-fencing, automated detect and avoid functionalities, collaborative interface with ATC, tactical de-confliction, dynamic capacity management.

U4: U-space full services, offering very high levels of automation, connectivity and digitalisation for both the drone and the U-space system.

UAS Geographical Zone - Source: Implementing Regulation (EU) 2020/639 (amending Implementing Regulation (EU) 2019/947), Article 2: Definitions, point (4)
''UAS geographical zone'' is a portion of airspace established by the competent authority that facilitates, restricts or excludes UAS operations in order to address risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from UAS operations.

U-Space Services - Source: The most recent edition of the U-space draft

- **Network Identification Service**
  A network identification service should provide the identity (registration number) of UAS operators and geo-location & serial number of UAS during operations and in contingency situations, and share relevant information with other U-space airspace users.
- **Geo-awareness Service**
  A geo-awareness service should provide UAS operators with the information about the latest airspace constraints and defined UAS geographical zones information made available as part of the common information services.
- **UAS Flight Authorisation Service**
  A flight authorisation service should ensure that authorised UAS operations are free of intersection in space and time with any other notified flight authorisations within the same U-space airspace.
- **Traffic Information Service**
  A traffic information service should alert UAS operators about other air traffic that may be present in proximity to their UAS.
- **Weather Information Service**
  A weather information service should support the UAS operator during the flight planning and execution phases, as well as improve the performances of other U-space services provided in the U-space airspace.
- **Conformance Monitoring Service**
  A conformance monitoring service shall enable the UAS operators to verify whether they comply with the operator requirements and the terms of the flight authorisation. To this end, it shall alert the UAS operator when the flight authorisation deviation thresholds are violated and when the operator requirements are not complied with by the same UAS operator.

Service Providers

There are two types of service providers:

Common Information Service Provider (CISP)

Member States may designate a single Common Information Service Provider (CISP) to supply the common information services on an exclusive basis in all or some of the U-space airspaces under their responsibility. The CISP will support the exchange of information and the coordination between U-space service providers and air traffic service providers, without discrimination, to enable the safe management of unmanned aircraft traffic and segregation of manned aircraft from unmanned aircraft.

U-space Service Provider (USSP)

U-space service providers will act as gateway with U-space for UAS operators, they will provide at least the following minimum mandatory U-space services: a network identification service, a flight authorisation service, a geo-awareness service, and a traffic information service. UAS operators subject to U-space regulation may only operate in U-space airspace if they use the mandatory U-space services that are indispensable to ensure safe, secure and efficient operations.

TARGETED PARTICIPANT CATEGORIES

1	**Aeronautical Information Service** (AIS) **Provider** (e.g. conformance monitoring, geo-awareness, flight autorisation, network identification, weather information)
2	**Air Navigation Service Provider** (ANSP)
3	**ATM/UTM/U-space software development companies** (not supplying services to UAS operators with the software dfeveloped by them)
4	**Common Information Service Provider** (CISP) *(Prospective)*
5	**Communication Service Provider** (e.g. mobile network, satellite communication)
6	**Conformity Assessment Body** (private or public, commercial or not-for-profit entity, national standards bodies, trade association, consumer organisations, organisations that undertake conformity assessment activities (e.g. testing, inspection, certification) in accordance with national regulations
7	**Consultancy specialized in safety risk assessment** (SORA, PDRA, STS), and selling their services to UAS operators, and approved by their national aviation authority (NAA)
8	**UAS Manufacturer / Integrator**
9	**UAS Manufacturer / Integrator & Operator** [commercial – all aircraft types & all flight mission purposes].
10	**UAS Operator [commercial & non-commercial** – all aircraft types - **all flight mission purpose categories (except transport of cargo & persons)**]
11	**UAS Operator** [commercial & non-commercial – all aircraft types - **Transport of cargo & persons**]
12	**General Aviation** (GA) (manned aviation e.g. sport & leisure activities: pilots of balloons, gliders, ultralights; aerial work operators; business aviation; & related associations)
13	**Commercial Manned Aviation** [airlines (passenger & freight carriers; air taxi operators); pilots; related associations).
14	**National Aviation Authority** (NAA) - Regulatory authorities (ministry, directorate, CAA, inspectorate) - National & regional level
15	**Local Authority** (e.g. city/municipality, harbour) & regional authority (e.g. France: department; Germany: Länder; Spain: region; Italy: province/region; Netherlands: province)
16	**Notified Body** (organisation designated by EU country to assess product conformity)
17	**Qualified Entity** (QE) (an entity to which a specific certification task is allocated by and under control of a national aviation authority or EASA)
18	**Standard Development Organisation** (SDO) (national, European, international)
19	**Urban Air Mobility** (UAM) service provider *(Prospective)* [services (incl. infrastructure) required to make the transport of cargo & persons (air taxis) by unmanned aircraft possible in an urban environment]
20	**U-space Service Provider** (USSP) *(Prospective)* (supplying e.g.: network identification service, flight authorisation service, geo-awareness service, traffic information service)

U-SPACE INSIGHT

CONCLUSIONS

SUMMARY OF THE PRINCIPLE RESULTS & CONCLUSIONS

- On the average, the survey r**espondents** had significant **knowledge & understanding** of the drone sector (54% with >5 years of experience) and the aviation sector (83% with > 5 years of experience and 66% with >10 years of experience).
- 30% of the respondents are employed by companies/organisations with more than 250 employees. In other words, **70% of the respondents work in SMEs/SMIs**.
- The **principal contributing countries**: Belgium (13%), Germany (13%), France (12%), Spain (10%), Netherlands (7%), Italy (7%)
- Publishing the survey in French, German & Spanish may have resulted in an **increase of 49% of the inputs** to the survey.
- The activity sector segmentation used to categorize the respondents has permitted to **benchmark the drone operations community** and to obtain a **representative & qualified insight** to the views of this community.
- The **top three respondent categories**: UAS Operators (35%)
  Consultancy Specialized in Safety Risk Assessment (22%)
  UAS Manufacturer/Integrator & Operator (19%).
- **Less than 50%** of the respondents currently **contribute to standard producing work**.
- The activity sectors with the **largest projected growth**:
  - U-space Service Provider +12%
  - Urban Air Mobility Service Provider +9%
  - Consultancy specialized (safety risk assessment) +6%
  - UAS operator [commercial & non-commercial; All aircraft types - Transport of cargo & persons] +6%
  - UAS manufacturer / integrator & operator [Commercial - All aircraft types & flight missions] +5%
- **Services currently available** in respondent's country (>40% of the positive replies):
  Common Information Service (CIS)
  - ATM Data Service 55%
  - Flight planning 53%
  - Geo-Awareness Data Service 47%
    UAS Flight Authorisation Service
  - Flight plan/authorisation validation 47%

  Geo-awareness Service
  - Applicable operational conditions 46%
  - Airspace constraints in designated U-space airspace 42%
  - Geographical zones in the designated U-space airspace 41%

  Network Identification Service
  - Data for authorized users 69%

  Traffic Information Services 40%
  Weather Information Services 61%
- Respondents' **preference** or **expression of needs**:
  - Prefer Integration to Segregation 76%
  - Need for further specifications of rules & guidelines in the U-space regulation (e.g. de-conflicting processes) 83%
  - Need for clarification of the roles & responsibilities of Air Navigation Service Providers, Common Information Service Providers, U-space Service Providers 64%
  - Business & financial aspects of U-space should be referred to in the regulation 53%
  - Business & financial aspects of U-space should be a national implementation matter 50%
- The majority of the respondents indicate that the **U-space is not mature** and that the **available information/ documentation** is insufficient.
- Respondents with an **above average or total comprehension** of the following topics:
  - The U-space concept 74%
  - Relations between service suppliers 56%
  - Data supplied by each service provider 41%
  - To whom the data is supplied 37%
  - Legal responsibilities & liabilities of service providers 29%
  - How the data is supplied 22%
  - Format of the supplied data 18%
- The **10 most urgently required services**:
  - Flight Authorisation Request Processing 56%
  - Geo-graphical Zones in the Designated U-space Airspace 48%
  - Geo-Awareness Data Service 47%
  - Authorization Request Service 45%
  - Applicable Operational Conditions 45%
  - Supply of Flight Authorisation 44%
  - Flight Plan/Authorisation Validation 42%
  - Airspace Constraints in the Designated U-space Airspace 42%
  - Weather Information Service 42%
  - Dynamic Airspace Restrictions 40%
- The majority of respondents (>50%) **do not know when the required services will be available** in their countries.
- Principal currently **missing U-space-related aspects** are:
  - Required technical standards 73%
  - Required operational standards 69%
  - Detailed additional information on U-space 62%
  - Detailed additional regulatory information 57%
  - Costing aspect of U-space services 56%
  - Responsibilities & liabilities relative to U-space services 55%
  - Definition of «dynamic reconfiguration of the airspace» concept 48%
  - Defined communication interface between ANSP & USSP 38%
  - Defined communication interface between CSP & USSP 37%
  - Defined communication interface between CSP & ANSP 35%
  - Definition of «Notified Body» & applicable criteria/standards 28%

- The **principal concepts** that are considered **based on immature or non-existent technologies**:
  - Detect & Avoid 80%
  - Collaborative interface with ATC 51%
  - Surveillance & communication technology for manned aviation VLL flights 51%
  - Dynamic geo-fencing 47%
  - Tactical de-confliction 47%
  - Communication methods – 5G 41%
  - Procedural interface with ATC 40%
  - Strategic de-confliction 40%
- The **principally required European-wide standards**:
  - Pilot Training & Qualification: Theoretical 85%
  - Detect & Avoid 84%
  - Electronic conspicuity methods (UAS position transmission) 82%
  - Pilot Training & Qualification: Practical 81%
  - Command & Control integrity 78%
  - Cybersecurity 78%
  - Drones for Transport - Cargo/Goods 77%
  - Drones for Transport – Persons 76%
  - Population density definition/calculation 67%
  - UAS «black box» recorder (on aircraft) 60%
  - Person-identifiable imagery 55%
- 80% of the respondents indicate that **E-registration is available in their country**.
- 61% indicate that **E-registration is free-of-charge**.
- The **minimum age** is principally 16 or 18 years.
- France, Italy & Spain have 3 classes: 14, 16 & 18 years
  Denmark has 2 classes: 15 & 16 years
  Germany has 2 classes: 16 & 18 years
- 65% of the respondents indicated that **geo-zones had been established in their country**.
- The responsibility for **management of the Geo-zones** and **Geo-awareness Service Provision** belongs to:
  - National aviation authority 76%
  - Governmental agency 38%
  - Regional authority 25%
  - Municipal authority 14%
  - Independent company 14%
- The majority of the respondents indicate that a **Geo-awareness Service Provider** should have a **designated accountable geo-awareness manager**.

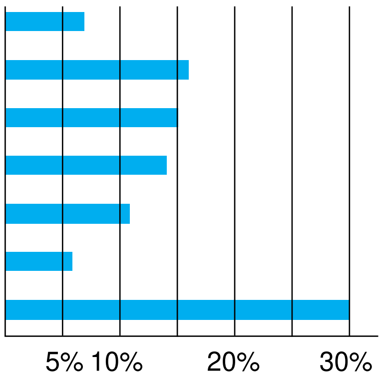
RESPONDENT ORGANISATIONS & RESPONDENTS

Fig. 1 - SECTOR INVOLVEMENT

	Quantity of Years				
	<1	1-2	3-5	5-10	>10
Respondent organisation's involvement with drones	4%	12%	30%	34%	20%
Respondent's personal involvement with drones	5%	10%	26%	27%	33%
Respondent's personal involvement with aviation	3%	3%	11%	17%	66%

Fig. 2- SIZE

Quantity of Employees	
1 Employee	7%
2 to 5	16%
6 to 10	15%
11 to 25	14%
26 to 100	11%
101 to 250	6%
251 & more	30%



< 251 employees = SMEs/SMIs

Fig. 3 - PARTICIPATING COUNTRIES

		%
1	Albania	0,83
2	Australia	1,65
3	Austria	2,48
4	Belgium	13,22
5	Bulgaria	2,48
6	China	0,83
7	Czech Rep.	0,83
8	Denmark	2,48
9	Estonia	0,83
10	Finland	4,96
11	France	11,57
12	Germany	13,22
13	Ireland	0,83
14	Italy	6,61
15	Jamaica	0,83
16	Kenya	0,83
17	Lithuania	0,83
18	Netherlands	7,44
19	New Zealand	0,83
20	Norway	0,83
21	Poland	2,48
22	Portugal	0,83
23	Spain	9,92
24	Sweden	1,65
25	Switzerland	2,48
26	Ukraine	0,83
27	United Kingdom	2,48
28	U.S.A.	4,96
	Total	100

Fig. 4 - LANGUAGE USED TO COMPLETE SURVEY

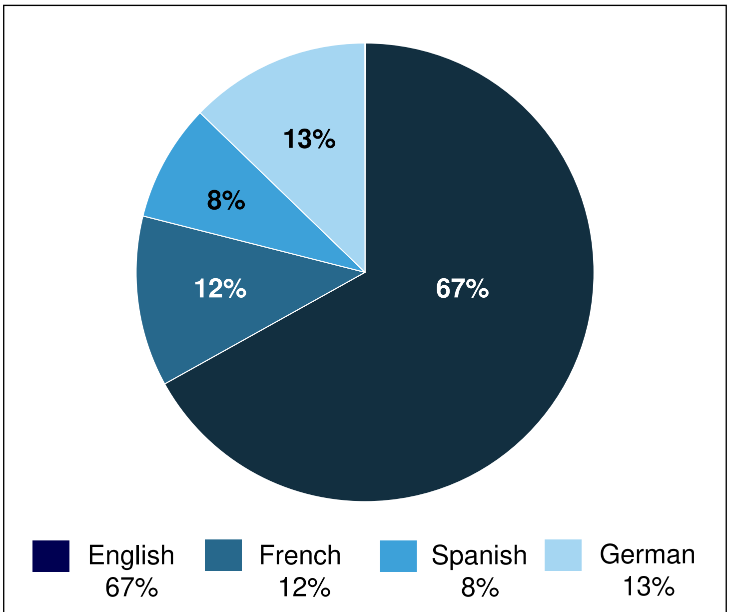


Fig. 5 - CURRENT & POSSIBLE FUTURE RESPONDENT ACTIVITIES

Multiple Replies were possible

	Activity Sectors	Current Activities	Possible Future Activities
1	**Aeronautical Information Service** (AIS) **Provider** (e.g. conformance monitoring, geo-awareness, flight autorisation, network identification, weather information)	5%	6%
2	**Air Navigation Service Provider** (ANSP)	7%	7%
3	**ATM / UTM / U-space software development companies** (does not supply services to UAS operators with the developed software)	13%	15%
4	**Provider of Common Information Service** (CISP) *(Prospective)*	5%	9%
5	**Communication Service Provider** (e.g. mobile network, satellite communication)	1%	2%
6	**Conformity Assessment Body** (private or public, commercial or not-for-profit entity, national standards bodies, trade association, consumer organisations, organisations that undertake conformity assessment activities (e.g. testing, inspection, certification) in accordance with national regulations	7%	10%
7	**Consultancy specialized in safety risk assessment** (SORA, PDRA, STS), and selling their services to UAS operators, and approved by their national aviation authority (NAA)	22%	28%
8	**UAS Manufacturer / Integrator**	17%	18%
9	**UAS Manufacturer / Integrator & Operator [commercial – all aircraft types & all flight mission purposes].**	19%	24%
10	**UAS Operator [commercial & non-commercial – all aircraft types - all flight mission purpose categories (except transport of cargo & persons)**]	35%	33%
11	**UAS Operator [commercial & non-commercial – all aircraft types - Transport of cargo & persons]**	13%	19%
12	**General Aviation** (GA) (manned aviation e.g. sport & leisure activities: pilots of balloons, gliders, ultralights; aerial work operators; business aviation; & related associations)	10%	9%
13	**Commercial Manned Aviation** [airlines (passenger & freight carriers; air taxi operators); pilots; related associations).	2%	5%
14	**National Aviation Authority** (NAA) - Regulatory authorities (ministry, directorate, CAA, inspectorate) - National & regional level	7%	9%
15	**Local Authority** (e.g. city/municipality, harbour) & regional authority (e.g. France: department; Germany: Länder; Spain: region; Italy: province/region; Netherlands: province)	2%	2%
16	**Notified Body** (organisation designated by EU country to assess product conformity)	1%	4%
17	**Qualified Entity** (QE) (an entity to which a specific certification task is allocated by and under control of a national aviation authority or EASA)	3%	7%
18	**Standard Development Organisation** (SDO) (national, European, international)	2%	5%
19	**Urban Air Mobility** (UAM) **Service provider** *(Prospective)* [services (incl. infrastructure) required to make the transport of cargo & persons (air taxis) by unmanned aircraft possible in an urban environment]	12%	21%
20	**U-space Service Provider** (USSP) *(Prospective)* (supplying e.g.: network identification service, flight authorisation service, geo-awareness service, traffic information service)	12%	24%

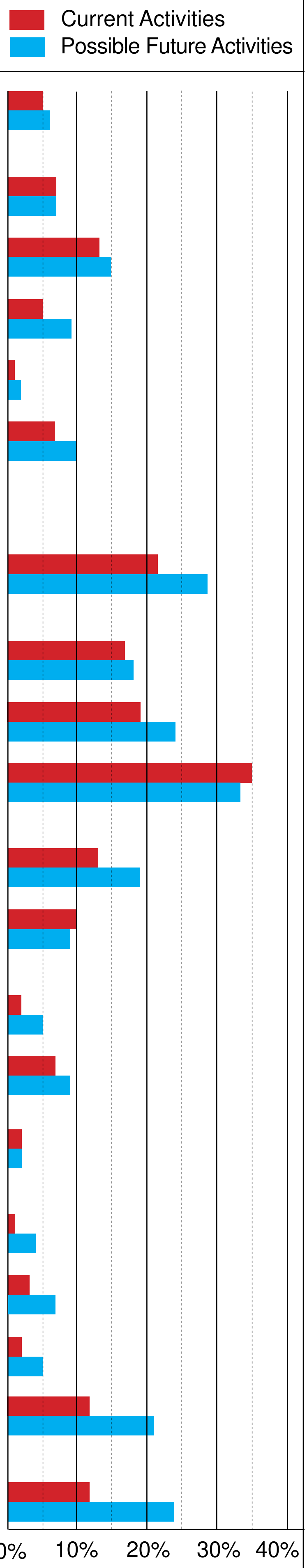


FIG. 6 - GENERAL COMPREHENSION

	Not at all	Slightly	Partially	Above Average	Completely
Is the general concept of U-space clear to you?	1%	3%	22%	**46%**	28%
Are the relations between the service suppliers clear to you?	4%	12%	27%	**45%**	11%
Is it clear what data is supplied by each service provider?	7%	10%	**41%**	34%	7%
Is it clear in what format the data is supplied?	21%	16%	**46%**	16%	2%
Is it clear to whom the data is supplied?	11%	12%	**40%**	30%	7%
Is it clear how the data is supplied?	18%	11%	**48%**	20%	2%
Are the legal responsibilities & liabilities of the service providers clear to you?	15%	13%	**43%**	23%	6%
Is the 5G mobile network coverage in your country sufficient to supply the data?	27%	25%	**30%**	15%	2%

The following concerns 26% of the respondents

Why is U-space not clear to you?	
- Have not read all the relevant information	**39%**
- The U-space documents were not detailed enough	**34%**
- My English was insufficient to understand the documents	4%
- U-space documents were not available in my native language	3%
- Other (including no answer supplied)	20%

FIG. 7 - PARTICIPATION IN STANDARD PRODUCING ORGANISATIONS

Multiple answers possible

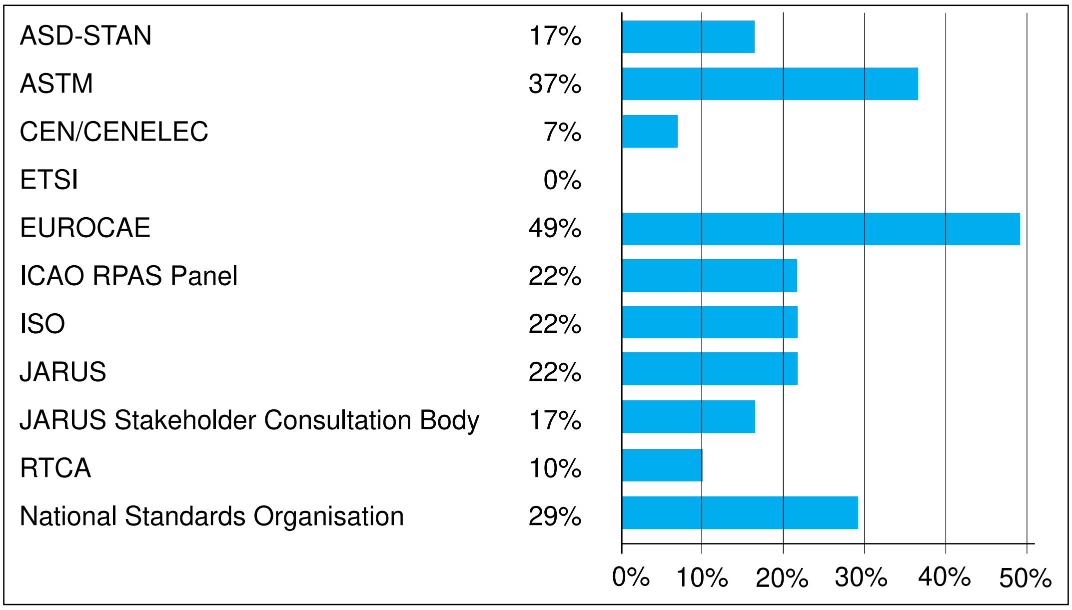


FIG. 8 - THE RESPONDING COMPANIES & ORGANISATIONS

- 5D Konsulterna AB, Sweden
- ADSE Consulting & Engineering, Netherlands
- Advanced Protection Systems, Poland
- AED, France
- Aero Enterprise GmbH, Austria
- AéroTronique EIRL CROZE V., France
- AESA, Spain
- Airial Robotics GmbH, Germany
- Albadron shpk, Albania
- Almende B.V., Netherlands
- Ampell Consultores Asociados, Spain
- ANRA Technologies UK, United Kingdom
- ANS CR, Czech Republic
- ANWB Medical Air Assistance, Netherlands
- Archiflight, Belgium
- Asociacija DRONEA, Lithuania
- ASTM International, United States
- BP SOLUTIONS, France
- BULATSA, Bulgaria
- BVdrone Oy, Finland
- CAA, Jamaica
- CAA, New Zealand
- CAA, Poland
- Capgemini, France
- Lanseau, France
- CIRA, Italy
- Clearance, France
- Cognitive Technologies and Services, Italy
- Delta Aadvise GmbH, Germany
- Distretto Tecnologico Aerospaz, Italy
- DJI, China
- DJI, Denmark
- DJI, Germany
- dlapilota.pl Sp. z o.o., Poland
- Drone Class, Netherlands
- Drone Manufacturers Association Europe (DMAE), Belgium
- DroneQ Aerial Services, Netherlands
- Droniq GmbH, Germany
- Dronotique, France
- EDA, Belgium
- ENAIRE, Spain
- ENAIRE, Spain
- ENAIRE/CRIDA, Spain
- ESSP-SAS, Spain
- EUROCONTROL, Belgium
- European Commission, Belgium
- EuroUSC Italia ltd, Italy
- Everis Aerospace and Defense, Spain
- FACIL'ETIC, France
- FH Joanneum, Austria
- FlyingBasket, Italy
- Flyover di Vania Di Francesco, Italy
- FLY-R, France
- flyXdrive GmbH, Germany
- Freelance Operator, Kenya
- General Atomics aeronautical Systems, United States
- Globe UAV GmbH, Germany
- Goldy Aviations, Belgium
- Griff Aviation AS, Norway
- GUTMA , Belgium
- Haw Trade & Consulting GMBH, Germany
- HELISEO SAGL, Switzerland
- HEMAV, Spain
- Holding The Drones, Netherlands
- IATA, Germany
- Icarus Aerospace, United States
- ICTD Bulgaria, Bulgaria
- Individual Expert, Germany (not on behalf of employer)
- Individual Expert, Finland (not on behalf of employer)
- Individual Expert, France (not on behalf of employer)
- ITG, Spain
- KNVvL, Netherlands
- Landesluftfahrtbehörde Hamburg, Germany
- Leitek Innovative Solutions, Portugal
- Leonardo, Italy
- Linköping University (LiU), Sweden
- Local Police Belgium, Belgium
- Naviair, Denmark
- Nokia, Finland
- NUAIR, United States
- OUAS, Urban Air Mobility Oulu, Finland
- Pilgrim Technology, France
- Poladrone, Malaysia
- RadarBasedAvionics, Netherlands
- Rigi Technologies SA, Spain
- Ripper Corporation, Australia
- RMIT University, Australia
- SAAU, Ukraine
- SDIS de Seine-et-Marne, France
- senseFly, Switzerland
- SGS, Germany
- sicherfliegen.com, Germany
- SkeyDrone, Belgium
- SkeyDrone, Belgium
- Skycorp OÜ, Estonia
- Skydio, Inc., Germany
- SkyeBase BV, Belgium
- SOGITEC, France
- stsi², France
- Stüker Consult, Denmark
- Survey Drones Ireland, Ireland
- Tecnofly Canarias, S.L., Spain
- Toni Eiser Innovation, Austria
- Topview SRL, Italy
- Traficom, Finland
- TruWeather Solutions, United States
- TruWeather Solutions, United States
- UAS Consulting, Belgium
- UAV+, Netherlands
- UAVDACH-Services, Germany
- UIC2, Germany
- Unifly, Belgium
- Unifly, Belgium
- Unifly, Belgium
- Unmanned Systems Bulgaria, Bulgaria
- UPC, Spain
- VIVES University - DroneLab, Belgium
- Volocopter GmbH, Germany
- Volocopter GmbH, Germany
- VTOL Technologies Ltd, United Kingdom
- Wing Aviation Finland Oy, Finland

Remarks: Companies/organisation indicated more than once = More than one person completed the survey.
12 Respondents interrupted the survey completion and did not resume it (not included in list above).
5 Respondents submitted incorrect respondent information and were disqualified.

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FIG. 9 - RESPONDENT ORGANISATIONS & RESPONDENTS - REVIEW

Respondent Experience (>5 years)

Organisation's involvement in drone sector	54%
Personal involvement with drones	60%
Personal involvement with aviation	83%

Quantity of Employees

1 - 25	52%
26 - 250	18%
<251 (SMEs/SMIs)	70%
>250	30%

Participating Countries

European Union	17
EU-associated	4
Other	7

Language Used to Complete Survey

English	67%
German	13%
French	12%
Spanish	8%

Respondents' Principal CURRENT Activities (>10%)

UAS Operator [commercial & non-commercial - all aircraft types - all flight mission purpose categories (*Except transport of cargo & persons*)]	35%
Consultancy specialized in safety risk assessment	22%
UAS Manufacturer / Integrator & Operator [commercial - all aircraft types & all flight missions]	19%
UAS Manufacturer / Integrator	17%
ATM / UTM / U-space software development companies	13%
UAS Operator [commercial & non-commercial – all aircraft types - *Transport of cargo & persons*]	13%
Urban Air Mobility (UAM) Service Provider	12%
U-space Service Provider	12%
General (Manned) Aviation	10%

Respondents' Principal FUTURE Activities (>10%)

UAS Operator [commercial & non-commercial - all aircraft types - all flight mission purpose categories (*Except transport of cargo & persons*)]	33%
Consultancy specialized in safety risk assessment	28%
UAS Manufacturer / Integrator & Operator [commercial - all aircraft types & all flight missions]	24%
U-space Service Provider (USSP)	24%
Urban Air Mobility (UAM) Service Provider	21%
UAS Operator [commercial & non-commercial - all aircraft types - *Transport of cargo & persons*]	19%
UAS Manufacturer / Integrator	18%
ATM / UTM / U-space software development companies	15%
Conformity Assessment Body	10%

COMMENTS

A significant majority of the survey participants had the required experience, expertise and competence.

70% of the respondents are Micro & Small/Medium-sized companies.

U-space is followed outside of the EU.

The majority of the survey participants (67%) master English.

Less than 50% of the survey respondents currently contribute to standard producing activities.

The activity sectors with the largest projected growth are:
- U-space Service Provider (USSP) +12%
- Urban Air Mobility (UAM) service provider + 9%
- Consultancy specialized in safety risk assessment + 6%
- UAS operator [commercial & non-commercial - all aircraft types - Transport of cargo & persons] + 6%
- UAS manufacturer / integrator & operator [commercial - all aircraft types & all flight missions] + 5%

COMPREHENSION

Percentage of the respondents indicating that they have an **above average** or **total** comprehension of the following:

The U-space concept	74%
Relations between service suppliers	56%
Data supplied by each service provider	41%
Format of the supplied data	18%
To whom the data is supplied	37%
How the data is supplied	22%
Relevant legal responsibilities & liabilities of service providers	29%

FIG. 10 - CURRENT AVAILABILITY IN RESPONDENT'S COUNTRY

Common Information Service (CIS)	**Yes**
ATM Data Service	55%
Geo-Awareness Data Service	47%
Autorisation Request Service	
Communication Service (infrastructure for)	
Conformance Monitoring Service	27%
UAS Flight Authorisation Service	
Flight planning	53%
Flight autorisation request processing	
Flight plan assistance	
Flight plan processing	
Flight plan/authorisation validation	47%
Priority management	18%
Strategic de-confliction	16%
Supply of flight authorisation	
Geo-awareness Service	
Applicable operational conditions	46%
Airspace constraints in the designated U-space airspace	42%
Geographical zones in the designated U-space airspace	41%
Dynamic airspace restrictions temporarily limiting the area in the designated U-space airspace	26%
Network Identification Service	
Continuous processing of the remote identification of the UA throughout the whole duration of the flight	23%
Remote identification of the UA (Open category) to authorised users	23%
Data (operator registration nr, unique serial number, geographical position & flight alt. of UA, route course, geographical position pilot or take-off point, UA emergency status, time stamp) for authorized users	69%
Traffic Information Services	40%
Weather Information Services	61%

FIG. 11 - SERVICES CURRENTLY SUPPLIED BY RESPONDENTS

Common Information Service (CIS)	
ATM Data Service	45%
Geo-Awareness Data Service	68%
Autorisation Request Service	55%
Communication Service (infrastructure for)	18%
Conformance Monitoring Service	36%
UAS Flight Authorisation Service	
Flight planning	71%
Flight autorisation request processing	71%
Flight plan assistance	71%
Flight plan processing	71%
Flight plan/authorisation validation	46%
Priority management	21%
Strategic de-confliction	46%
Supply of flight authorisation	29%
Geo-awareness Service	
Applicable operational conditions	65%
Airspace constraints in the designated U-space airspace	70%
Geographical zones in the designated U-space airspace	61%
Dynamic airspace restrictions temporarily limiting the area in the designated U-space airspace	48%
Network Identification Service	
Continuous processing of the remote identification of the UA throughout the whole duration of the flight	63%
Remote identification of the UA (Open category) to authorised users	75%
Data (operator registration nr, unique serial number, geographical position & flight alt. of UA, route course, geographical position pilot or take-off point, UA emergency status, time stamp) for authorized users	63%
Traffic Information Services	33%
Weather Information Services	36%

FIG. 12 - SERVICES MOST URGENTLY REQUIRED

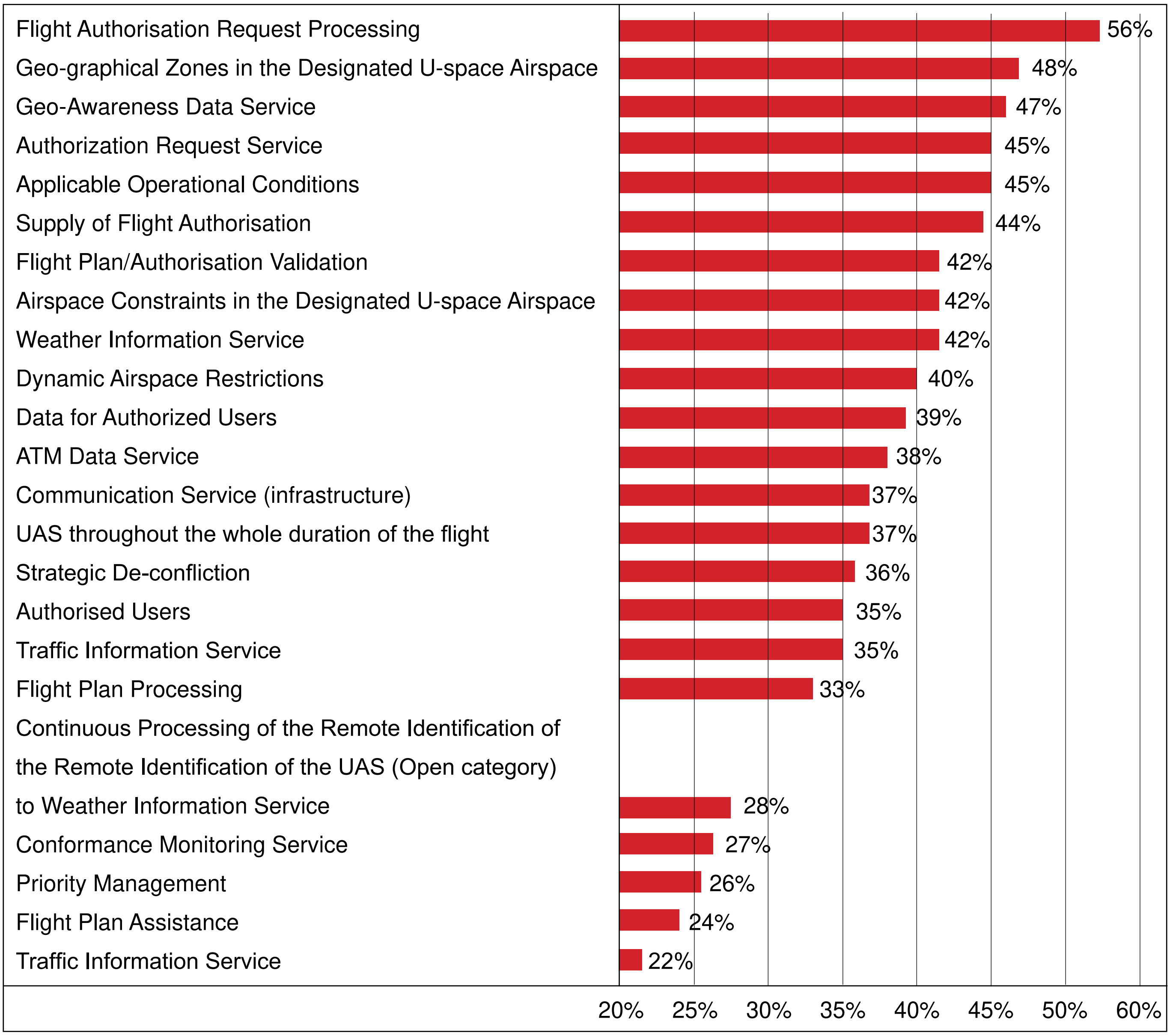

FIG. 13 - WHEN WILL THE FOLLOWING SERVICES BE AVAILABLE IN YOUR COUNTRY

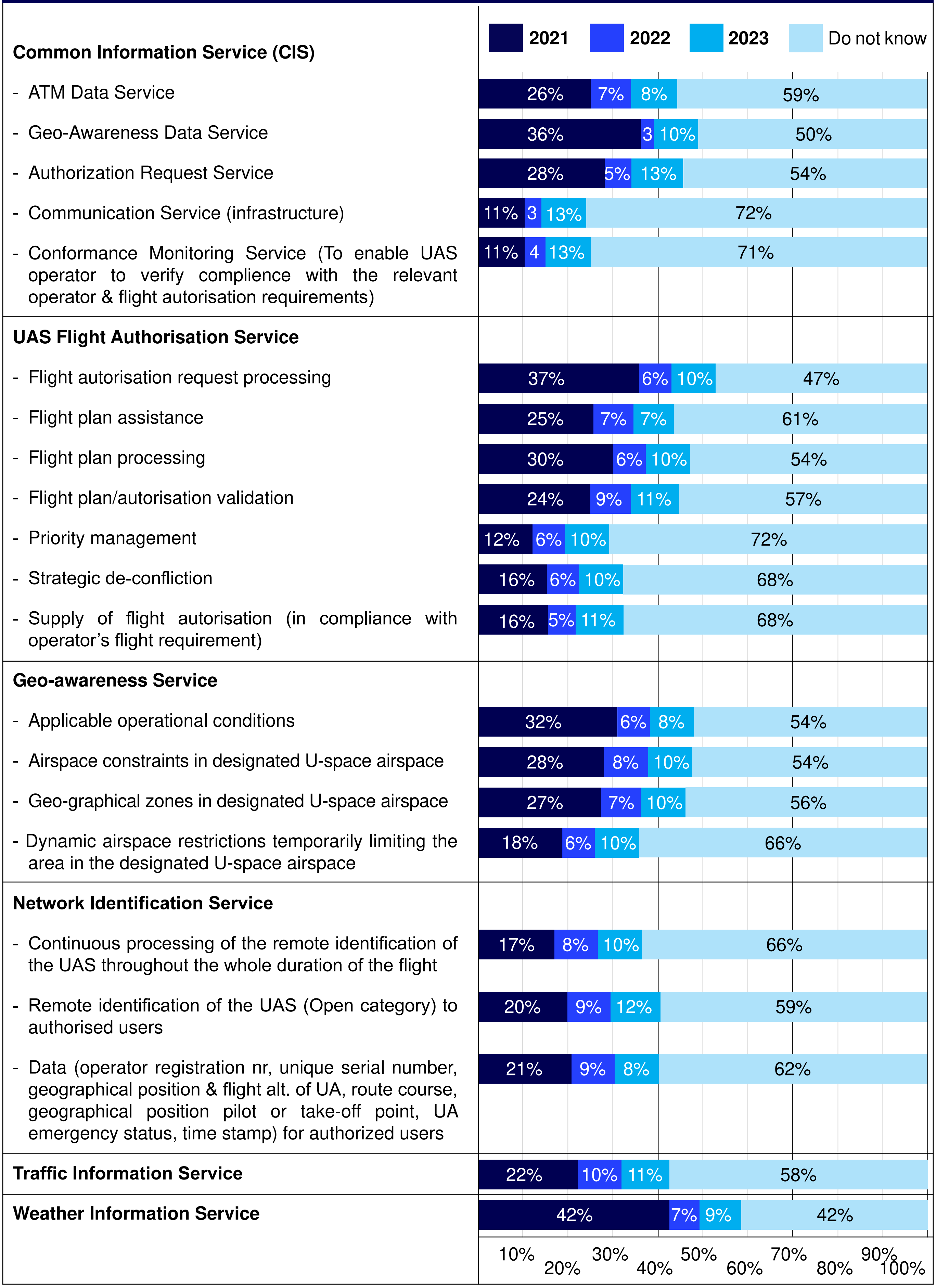

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FIG. 14 - DESIRED URGENCY TO MAKE SERVICES AVAILABLE

1 = Most Urgent - 5 = Least Urgent

Service	1	2	3	4	5
Common Information Service (CIS)					
- ATM Data Service	38%	21%	22%	13%	5
- Geo-Awareness Data Service	47%	17%	18%	12%	7
- Authorization Request Service	45%	24%	13%	10%	8
- Communication Service (infrastructure)	37%	25%	20%	11%	7
- Conformance Monitoring Service (To enable UAS operator to verify complience with the relevant operator & flight autorisation requirements)	27%	31%	27%	10%	6
UAS Flight Authorisation Service					
- Flight autorisation request processing	56%	16%	15%	7%	5
- Flight plan assistance	24%	25%	31%	14%	6
- Flight plan processing	33%	29%	28%	5	5
- Flight plan/autorisation validation	42%	29%	19%	5	5
- Priority management	26%	37%	23%	12%	3
- Strategic de-confliction	36%	28%	23%	6%	7
- Supply of flight autorisation (in compliance with operator's flight requirement)	44%	24%	20%	5%	6
Geo-awareness Service					
- Applicable operational conditions	45%	23%	18%	7%	7
- Airspace constraints in designated U-space airspace	42%	30%	17%	4	7
- Geo-graphical zones in designated U-space airspace	48%	22%	21%	3	6
- Dynamic airspace restrictions temporarily limiting the area in the designated U-space airspace	40%	27%	17%	8%	7
Network Identification Service					
- Continuous processing of the remote identification of the UAS throughout the whole duration of the flight	37%	23%	23%	13%	5
- Remote identification of the UAS (Open category) to authorised users	35%	17%	25%	17%	6
- Data for authorized users (operator registration nr, unique serial number, geographical position & flight alt. of UA, route course, geographical position pilot or take-off point, UA emergency status, time stamp)	39%	20%	24%	12%	6
Traffic Information Service	35%	31%	23%	8%	3
Weather Information Service	28%	19%	24%	18%	10%

10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

FIG. 15 - PREFERRED AIRSPACE RECONFIGURATION CONCEPTS

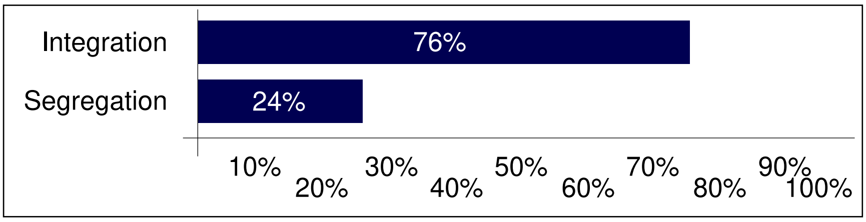

FIG. 16 - RULES & REGULATIONS - NEED FOR SPECIFICATIONS

Is there a further need for specifications of rules & guidelines in the U-space regulation (e.g. deconflicting processes)

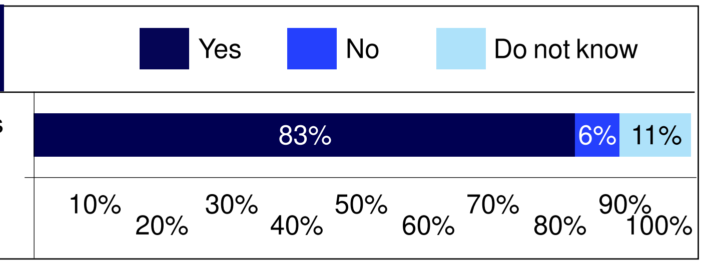

FIG. 17 - ROLES & RESPONSIBILITIES - NEED FOR CLARIFICATION

ANSP - Air Navigation Service Provider

CIS - Common Information Service

USSP - U-space Service Provider

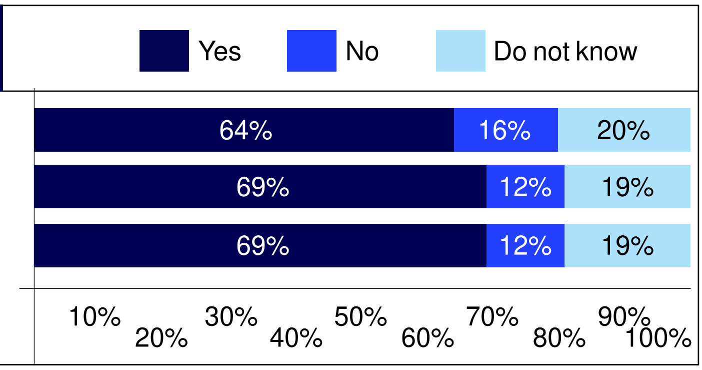

FIG. 18 - BUSINESS & FINANCIAL ASPECTS

Should the business & financial aspects of the U-space concept be touched on in the regulation?

Should the business & financial aspects of the U-space concept be a national implementation aspect?

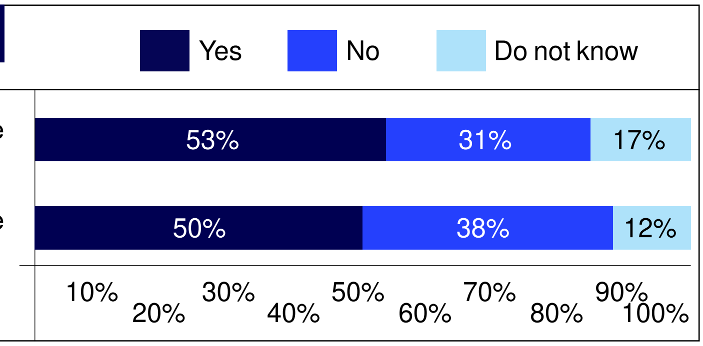

FIG. 19 - THE U-SPACE CONCEPT - DEGREE OF MATURITY

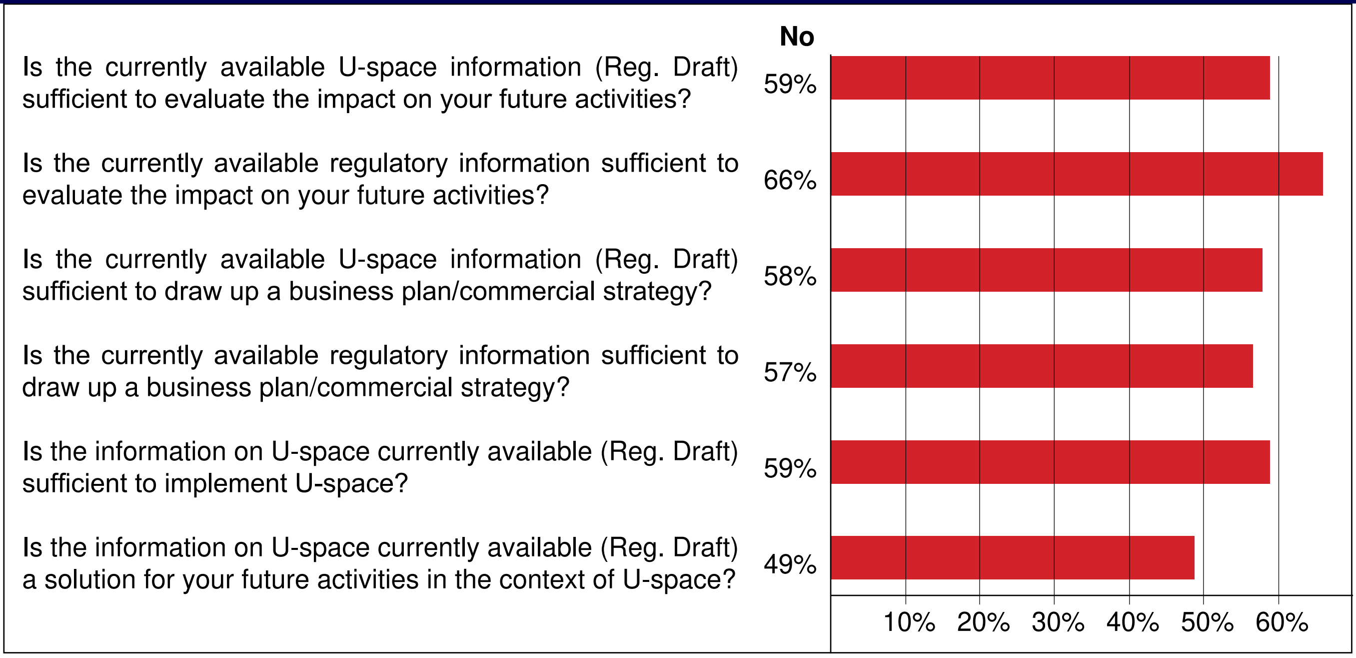

FIG. 20 - THE U-SPACE CONCEPT - WHAT IS CURRENTLY MISSING?

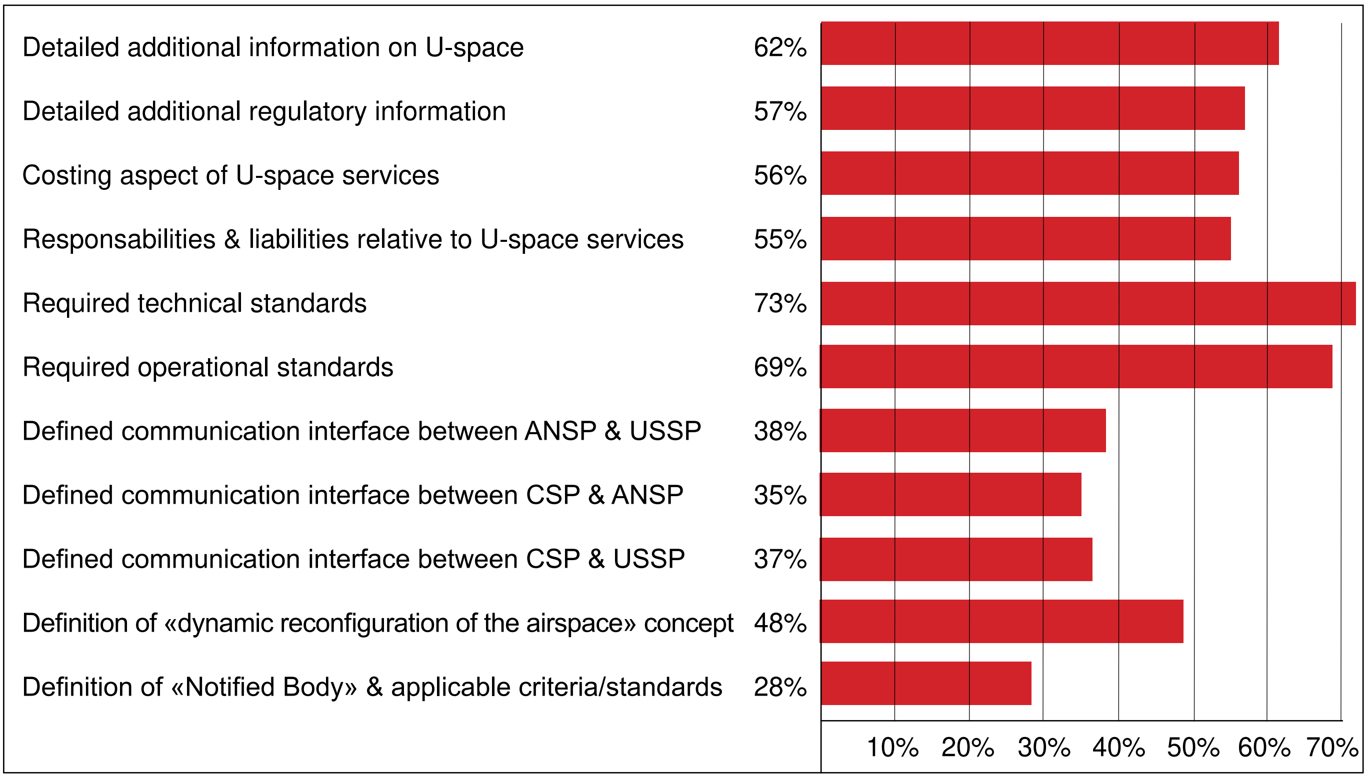

FIG. 21 - CONCEPTS BASED ON IMMATURE OR NON-EXISTENT TECHNOLOGIES

(Multiple answers were possible)

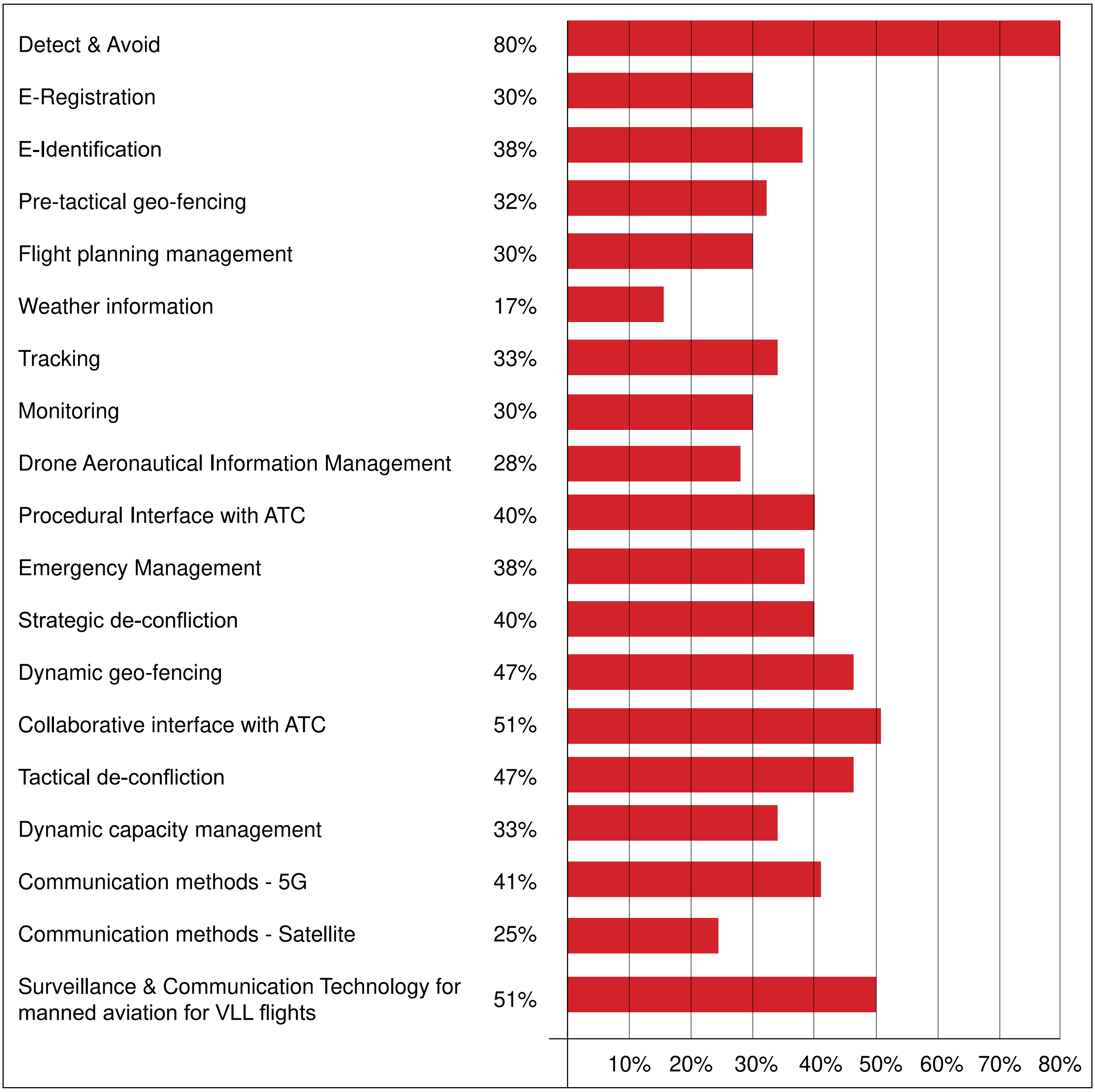

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FIG. 22 - STANDARDS - POSSIBLE PARTICIPATION

Work relative to the definition of the following standards is currently ongoing.

Data Exchange Standards (U-space service provider/U-space service provider & U-space service provider/ANSP) is currently ongoing.

	Yes	No
Data Exchange Standards – Would you like to be involved?	55%	45%
Remote Identification Standards – Would you like to be involved?	60%	40%
Electonic Registration Standards – Would you like to be involved?	56%	44%

FIG. 23 - GENERAL STANDARD-RELATED MATTERS

Standards & Respondants	Yes	No	Do not know
Is your national standards organisation involved in the drone standards producing activity (for the «open» category) by ASDSTAN?	21%	23%	56%
Is your national standards organisation involved in the drone standards producing activity by ISO?	31%	19%	50%
Are the standards that your company/organisation requires available?	31%	39%	31%
Are the standards that your company/organisation requires easily identifiable/findable?	28%	44%	28%
Are the standards that your company/organisation requires available in your local language?	20%	43%	37%

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FIG. 24 - DO THE REQUIRED STANDARDS FOR THE FOLLOWING SERVICES EXIST?

Service	Yes	No	Do not know
Common Information Service (CIS)			
ATM Data Service	32%	27%	41%
Geo-Awareness Data Service	32%	34%	34%
Authorization Request Service	23%	37%	40%
Communication Service (infrastructure)	20%	41%	39%
Conformance Monitoring Service *(To enable UAS operator to verify complience with the relevant operator requirements and the flight autorisation requirements)*	15%	44%	42%
UAS Flight Authorisation Service			
Flight autorisation request processing	28%	31%	42%
Flight plan assistance	17%	41%	43%
Flight plan processing	19%	38%	42%
Flight plan/autorisation validation	25%	31%	44%
Priority management	16%	42%	43%
Strategic de-confliction	16%	40%	44%
Supply of flight autorisation *(in compliance with operator's flight requirement)*	20%	36%	44%
Geo-awareness Service			
Applicable operational conditions	28%	34%	38%
Airspace constraints in designated U-space airspace	29%	35%	36%
Geo-graphical zones in designated U-space airspace	29%	39%	32%
Dynamic airspace restrictions temporarily limiting the area in the designated U-space airspace	22%	39%	39%
Network Identification Service			
Continuous processing of the remote identification of the UAS throughout the whole duration of the flight	26%	35%	39%
Remote identification of the UAS (Open category) to authorised users	30%	34%	36%
Data for authorized users *(operator registration nr, unique serial number, geographical position & flight alt. of UA, route course, geographical position pilot or take-off point, UA emergency status, time stamp)*	31%	32%	37%
Traffic Information Service	29%	35%	36%
Weather Information Service	41%	27%	32%

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FIG. 25 - STANDARDS - REQUIREMENTS

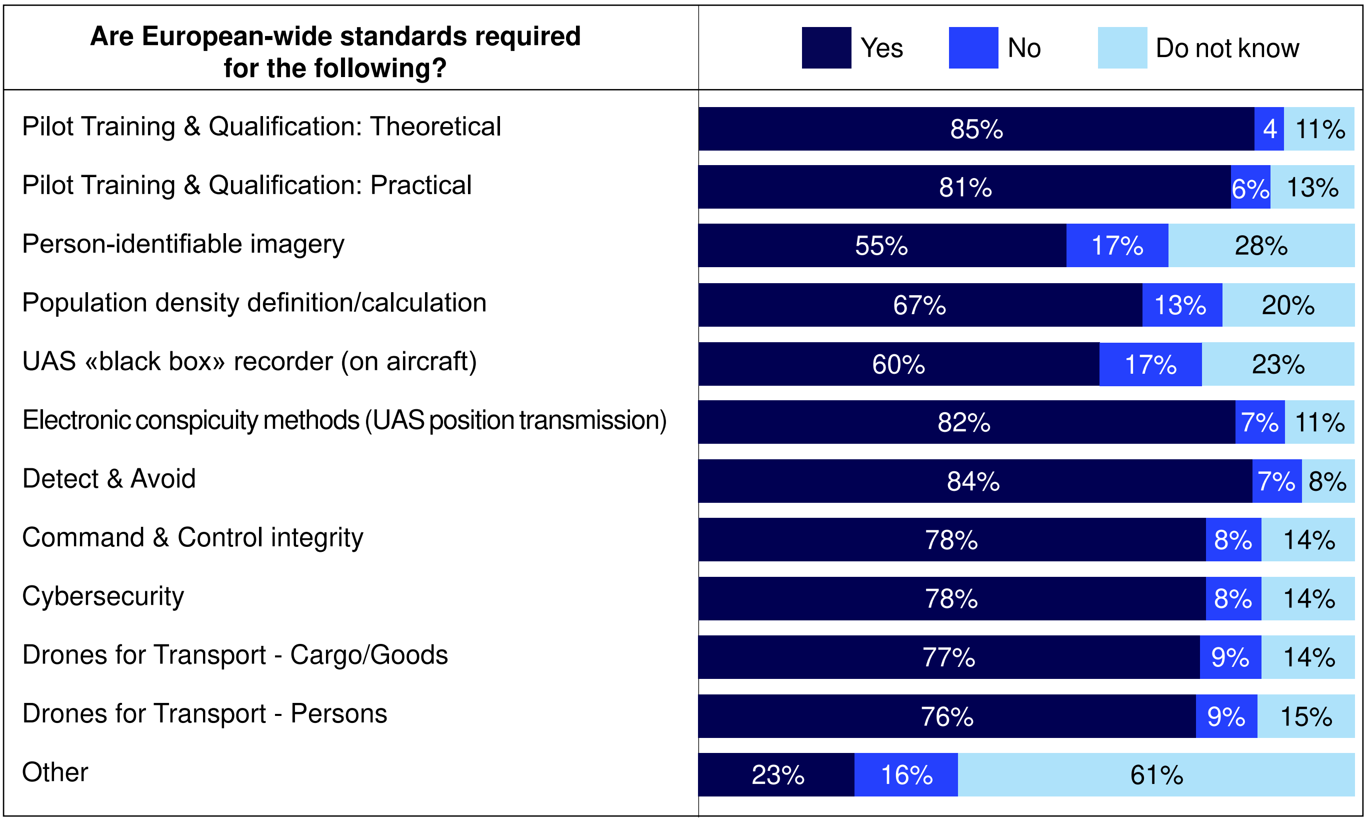

FIG. 26 - SUGGESTED ADDITIONAL EUROPEAN-WIDE STANDARDS

1 Accident/incident reporting
2 All the 30 UTM services in ISO 23629-12.
3 Area of Buffer dynamic calculation
4 ATS/ATC service provided by ANSP to UAS/U-space entities
5 ATM/UTM communications
6 ATM/UTM contingency management Radio emission power
7 Cross-border Interoperability or systems (avoiding national implementations)
8 Data exchange from different sources
9 Drone-to-Drone communication
10 Drone-to-Infrastructure Communication
11 eInsurance Card
12 ePilot Licence
13 GNSS use for drones (in particular EGNOS)
14 Human-Autonomy Teaming and Human-Machine Interactions
15 Night operations ie. lights
16 SMS communications
17 Surveillance observation
18 System design
19 UTM integration

FIG. 27 - IS THERE A REQUIREMENT FOR THE FOLLOWING *(CURRENTLY NON-EXISTENT)* STANDARDS UNDER CONSIDERATION BY ISO?

	Yes	No	No Opinion
Collaborative Interface with ATC (CIA) Objective: Provide automated digital means (e.g. app) for UAS crews to communicate with ATS, different from VHF radiotelephony, when flight is in controlled airspace.	57%	17%	25%
Would like to be involved in the standard production process	47%	53%	
Dynamic (airspace) Capacity Management (DCM) Service Objective: a) Calculate the traffic accommodation capacity in the Designated Operational Coverage (DOC) based on the UTM services availability, taking into account aspects that are specific to the relevant operational area [e.g. flight near airports, protected airspace, near hospitals) and environmental constraints (e.g. visual & noise pollution)], and provide this information to FCS, vertiport operators and to authorised UTM users. b) Activate and deactivate temporary segregated areas or other airspace structures in its DOC.	48%	20%	32%
Would like to be involved in the standard production process	48%	52%	
Tactical Conflict Management Service (TCM) Objective: Provide management of conflicting flights in the UTM DOC at tactical level (after take-off), based on real time information provided by other UTM services, such as CMS, NIS and TRS.	57%	13%	30%
Would like to be involved in the standard production process	46%	54%	
Communication Coverage Information Service (CCI) Objective: Provide information on UTM COM coverage (excluding VHF radio-telephony coverage)	50%	17%	34%
Would like to be involved in the standard production process	25%	75%	
Electro-Magnetic Interference Information Service (EMS) Objective: a) Provide information on known electro-magnetic interferences to radio navigation signals or other signals supporting safe flight in its DOC, during the flight planning phase and during the flight; and b) Provide any issued EM alerts to LRS Provider.	48%	17%	35%
Would like to be involved in the standard production process	22%	78%	
Geospatial Information Service (GIS) Objective: Provide UTM users and other UTM SPs geospatial information, including terrain, buildings and other obstacles, useful to plan operations before submission of the operation plan.	59%	11%	30%
Would like to be involved in the standard production process	37%	63%	
UTM Communication Service (LCS) Objective: Provide communication services for UTM purposes connecting all UTM users, UTM SPs and involved aircraft with the UTM Platform, through links or networks among fixed points on the ground and through terrestrial or satellite mobile communication services with aircraft.	50%	15%	35%
Would like to be involved in the standard production process	30%	70%	

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UTM Route Design Service (URD) Objective: Design, document, validate, maintain and periodically review air routes necessary for the safety, regularity and efficiency of air navigation of unmanned aircraft in the UTM context. Would like to be involved in the standard production process	45% 20% 35% 32% 68%
Navigation Coverage Information Service (NCI) Objective: Provide information on coverage of radio navigation signals. Would like to be involved in the standard production process	39% 19% 42% 24% 76%
Population Density Information Service (PDI) Objective: Provide UAS operators, other UTM Survice Providers (SPs) and competent authorities with static or dynamic maps on the density of population in each portion of its DOC. Would like to be involved in the standard production process	51% 18% 31% 32% 68%
Procedural Interface with ATC (PIA) Objective: Provide automated digital means (e.g. app) for UAS crews to communicate with ATS, different from VHF radiotelephony, when flight intends to enter controlled airspace, between submission of the operation plan and take-off. Would like to be involved in the standard production process	55% 15% 30% 33% 67%
Accident and Incident Reporting Service (ARS) Objective: Provide web-based tools to facilitate mandatory and voluntary reporting of safety, security or privacy related occurrences and transmits these reports to the involved organisation and to competent authorities. Would like to be involved in the standard production process	61% 16% 23% 33% 67%
Digital Logbook Service (DLB) Objectives: a) Provide UAS operators and their crews, web-based tools to log, as minimum, the information required by law or regulations to record the activity; and b) Collect and stores the logged information; and c) Distribute this information to involved operators, crews or competent authorities. Would like to be involved in the standard production process	48% 25% 27% 34% 66%
Maintenance Management (MMN) Objective: Provide UAS operators with web-based tools to support development & application of UAS Maintenance Programmes. Would like to be involved in the standard production process	42% 22% 36% 30% 70%
Operational Plan Preparation (OPP) Objective: Based on information provided by other UTM SPs, provide web-based tools to UAS operators for preparation and optimisation of the operation plan before submission. Would like to be involved in the standard production process	47% 18% 35% 37% 63%
Risk Analysis Assistance (RAA) Objective: Provide to UAS operators and to civil aviation authorities web-based tools to support development and evaluation of risk assessments prior to operations. Would like to be involved in the standard production process	66% 15% 19% 51% 49%
	10% 30% 50% 70% 90% 20% 40% 60% 80% 100%

E-REGISTRATION

FIG. 28 - AVAILABILITY & COST

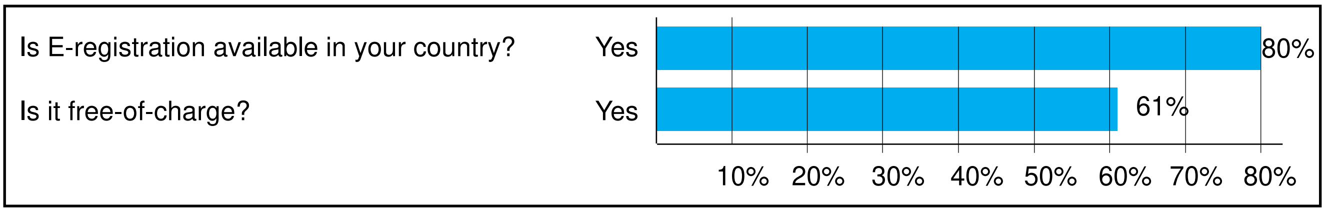

FIG. 29 - ANNUAL COST IN €

Albania	30 €
Austria	31,20 €
Belgium	100 €
Denmark	10 €
Finland	30 €
Italy	6 / 24 / 98 €
Jamaica	Not Applicable
Kenya	200 €
Lithuania	10 €
Malaysia	45 €
Netherlands	10 / 25 / 70 €
New Zealand	Not Applicable
Norway	18 €
Spain	50 €
UK	10 €
USA	4,20 €

7 Respondents did not know
4 Respondents indicated that E-registration was not applicable in their country
Respondents from 6 countries did not reply

FIG. 30 - MINIMUM AGE

Albania	16
Australia	18
Austria	18
Belgium	16
Bulgaria	16
China	12
Czech Rep.	18
Denmark	15/16
Estonia	16
Finland	18
France	14/16/18
Germany	16/18
Italy	14/16/18
Jamaica	Not Applicable
Kenya	18
Lithuania	16
Malaysia	18
Netherlands	16
New Zealand	Not Applicable
Norway	18
Poland	16
Portugal	16
Spain	14/16/18
Sweden	16
Switzerland	18
UK	16
USA	16/18

21 Respondents did not know
2 Respondents indicated that a minimum age was not applicable in their country

Co-funded by the European Union

UAS GEOGRAPHICAL ZONES (GEO-ZONES)

FIG. 31 - EXISTING GEO-ZONES

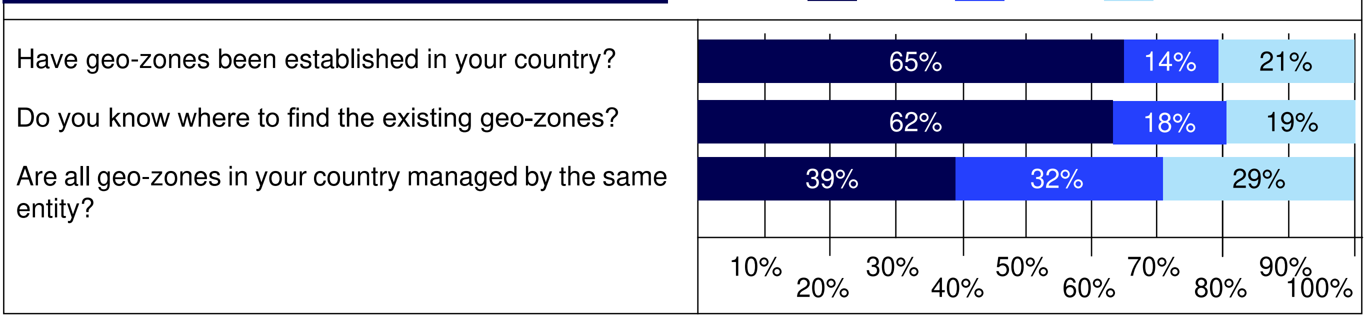

FIG. 32 - RESPONSIBILITY - MANAGEMENT OF GEO-ZONES & GEO-AWARENESS SERVICE PROVISION

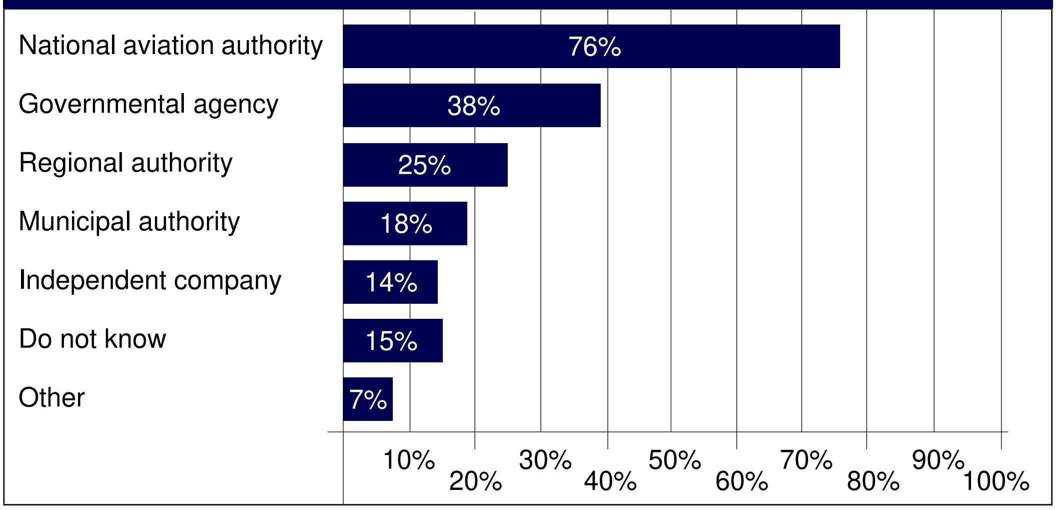

FIG. 33 - ACCOUNTABLE GEO-AWARENESS MANAGER

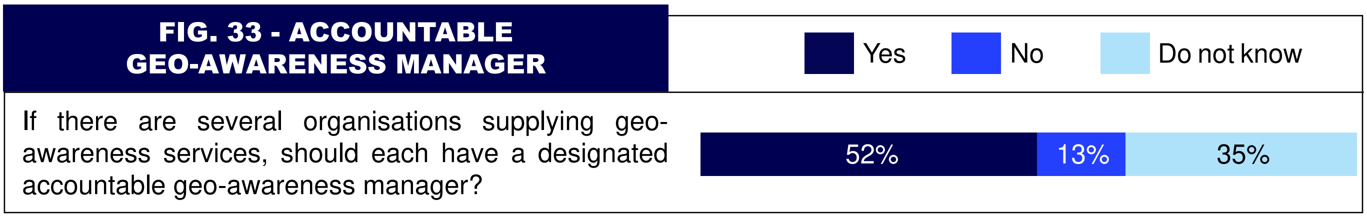

FIG. 34 - IS THERE A CHARGE FOR THE GEO-AWARENESS SERVICE?