Appendix to Opinion No 01/2020

Comment-response document (CRD) to draft Opinion

Following the consultation on the draft Opinion on U-space between 8 and 30 October 2019, this CRD provides:

— a summary of the comments provided on the explanatory note

— a summary of the comments on the draft regulation, the responses and the resulting changes to the rule text.

NOTE: In this document, the amendments proposed to the articles are subject to changes until the regulation is adopted and published in the EU Official Journal.

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Explanatory Note

The comments on the explanatory note covered many different topics, some of them directly related to the technical content of the draft regulation while others were related to the conceptual approach in relation to U-space.

As the Agency provides a new explanatory note to the Opinion, neither responses nor text amendments will be provided. These will be provided in relation with the comments made on the articles.

MAIN COMMENTS ON CHAPTER 1 (ABOUT THIS DRAFT OPINION) AND CHAPTER 2 (IN SUMMARY – WHY AND WHAT) OF THE DRAFT OPINION

THE EASA PROCESS

— The accelerated procedure used is too rushed. Many questions remain unanswered.

— U-space is not a mature and stable system. Many parameters are still unknown. The proposed framework is not necessary at this time.

— Performing focused consultation only for such an important issue is not appropriate.

— Further rulemaking in this area shall follow the standard rulemaking procedure.

— No sufficient justification for the development of a Regulation? Need for a 'proof of concept'.

THE REGULATION SHOULD NOT PRESCRIBE ANY DETAILED TECHNICAL SOLUTIONS

— The scope of the regulation should be commensurate with the actual maturity of the drone operational environment.

— The regulation should concentrate on requirements for safety, security and harmonisation and should not address in detail technical issues such as architecture, services and flight rules yet.

— The regulation establishes constraints that will induce undue costs for the industry and airspace users.

— The proposal is likely to prevent innovation, flexibility and a sustainable competitive market in this rapidly evolving sector.

— It would be more beneficial if this Opinion focused on the strategic and pre-tactical areas, and waited to see how the industry develops.

AVOIDING GROUND RISK SHOULD BE HIGHLIGHTED

— The U-space regulation should more clearly state that U-space services aim at both air and ground risk mitigation.

— It is not clear how the ground risk is addressed within the proposal.

AIRSPACE CLASSIFICATION AND RULES ARE NEEDED

— Airspace classification and U-space flight rules should be a part of this regulation.

— Airspace classification has to be based on the maturity of U-space services. It is difficult to address services without the link to the airspace classification.

ROLES AND RESPONSIBILITIES NEED TO BE CLARIFIED

— There is a need to clarify the roles and responsibilities of those taking part in U-space.

— The roles of ANSPs & USSPs as well as the relation between U-space services and ATS services have to be defined.

NATIONAL AND MILITARY ASPECT OF SHARING THE FLIGHT INTENT

— Operators of flights for national security purposes will not provide full information of their flight details. That framework shall take into consideration the legitimate need of some users to have their flight information protected.

— Military will not always accept to be cooperative in the scope of real operations or NATO exercises.

— The U-space should integrate the creation of dynamic no-fly zones.

ANSPS' ROLE IN U-SPACE

— The market will not be competitive if currently certified ANSPs are not allowed to provide UTM. Any entity that on equal terms is qualified and able to provide CIF or U-space services should be allowed to provide U-space services.

— The proposed text is discriminating and against the free market principles/law of the Union.

— If ANSPs are excluded from providing U-space services, this goes against operational reality.

NEED FOR CLARIFICATION OF THE GIVEN DEFINITIONS AND EXPRESSIONS

— Improvement of the definitions is required.

— U-space is not properly defined. Its mission is missed in the definition.

— The term 'U-space' is misleading. It leads to considering an airspace classification rather than a whole concept of air management.

— All terminology concerning drones should be rationalised in parallel with ATM/ANS.

NOT CLEAR WHETHER THE DOCUMENT APPLIES TO 'MANNED' OR 'UNMANNED' AIRCRAFT/OPERATORS

— This draft is unclear about its scope of applicability when referring to aircraft and aircraft operators; there is a need to know if a specific requirement applies only to unmanned ones or to manned or both.

— It is not clear if VTOL aircraft and manned GA can use the services of U-space.

COMMENTS ON FIGURE 1

— It is unclear if the USSP Platform is a system (central) or an integration (communication) between USSPs.

— The diagram seems to indicate that there are two distinct flows of data/information exchange between ATS (units) and USSPs (a first one via the CIF, a second one directly). Clarification is needed on the data exchanged using both ways.

— ATS should have direct and secure access to the relevant airspace information for flight safety purposes at all times.

REGULATING THE MARKET IS OUTSIDE THE SCOPE OF THE EASA WORK

— Requirements related to market regulation and competition is not in line with the remit given to EASA via Regulation (EU) 2018/1139. Market regulation is not part of the EASA mandate. The EASA regulation focus should be on safety.

— Mixing safety, security and market aspects into one regulation is a very ambitious and challenging approach. Consider market aspects to be handled in a separate regulation.

— The intent of imposing market regulation is not clear, since it is questionable if a European market exists.

COMMON INFORMATION FUNCTION

— The CIF/FIMS differences are not very clear. The same applies for the USSP platform.

— There could be no candidate to provide the CIF and all the services described.

— It is not specified which entity is to provide the Common Information Function (CIF) as well what kind of certification will have.

— Change the classification from 'Function' (CIF) to 'Service' (CIS).

— The CIF and the USSP Platform should not be separate but should provide all centralised services (not just data provision) in combination.

OBLIGATION OF MANNED AIRCRAFT OPERATORS TO SHARE THEIR POSITION

— The proposal is based on the assumption that all airspace users will generally behave cooperatively. Some aircraft operators would share their position voluntarily, while others would not like to be seen.

— It remains unclear how the expectation of sharing flight intent in uncontrolled airspace is to be achieved.

— Sharing flight intent is not a manned aircraft operator responsibility. It is the ATS provider’s responsibility to share the required information with the U-space service provider.

U-SPACE REGULATION IMPACT ON OTHER USERS OF U-SPACE AIRSPACE

— U-space has to be the foundation for the future co-existence of manned and unmanned aviation.

— The integration of UAS in manned aviation should be clarified.

— The draft Opinion does not clearly define the relation between U-space services and ATS.

— The current aviation environment should be kept as it is in order to keep the current safety of flights and benefit of experience. UAS operations should be a complement and should adapt to the manned aircraft environment.

U-SPACE SERVICES

— There is a need to clarify which services are mandatory and which are optional.

— The requirement for U-space service providers to be responsible for de-confliction service is not feasible as there will be areas where tactical de-confliction is not possible.

— U-space services should be limited to e-identification, geo-awareness and flight authorisation.

— It is not clear why registration service (a prerequisite for e-identification) is not part of the U-space services list.

— Traffic information should not be considered to be a mandatory service, as some operators may operate in U-space without the need for it (open category, within VLOS, at low risk and conducting short duration operations)

— U-space airspace will be also used by actors who cannot comply with U-space services due to the nature of their operation (e.g. non-powered sailplanes).

— Dispersing one U-space system of UAV operations management and coordination into a number of individual services is a threat to creating a safe, integrated and interoperable U-space environment, due to a large number of different suppliers providing their services individually. It will also significantly increase the costs.

AIR TAXIS

— The draft Opinion should mention urban air mobility taxis, which will be flying in the urban areas where U-space will be established.

— Clarification is needed whether a piloted or autonomous VTOL air taxi would be treated like a drone for flight authorisations.

REFERENCES TO SERA AND ICAO RULES

— It is unclear whether SERA rules apply to U-space airspace and what the interaction between those two sets of rules is.

— According to SERA, ANSPs are responsible for separation between aircraft.

— Applicability of ICAO rules of air set out in Annex II to Chicago Convention: ICAO already includes UAS in the category of aircraft, and they share the same airspace. It is not sure if the airspace above the international waters within a State FIR can be classified as U-space.

— It is not sure if, in case of covering all airspace by U-space, SERA and ICAO rules will be applicable.

— If drones are to be operated in SES, several issues need to be addressed such as SES certification of the U-space provider, integration of the U-space into the SERA Regulation and the clarification of responsibility under the ICAO Convention.

DETECT AND AVOID SYSTEM

— Importance of the DAA system in ensuring separation from manned aircraft; its validation should be given a priority in order to enable the potential of rapidly developing services.

— The DAA system should be fulfilled before the introduction of U-space. UAS operations cannot go ahead until the problems of 'tactical separation, and detect and avoid systems' are solved.

U-SPACE AS A SEGREGATED AIRSPACE

— U-space airspace should be designated as a restricted area until UAS operations are integrated within the regular airspace.

— The designation of U-space will cause segregation instead of integration of airspace.

FLEXIBILITY ALLOWS FOR TOO MUCH LOCAL VARIANTS

— Allowing flexibility for local variants of U-space may end up with 28 different types of implementation in the Member States instead of having a common European market for UAS and U-space services.

— This flexibility goes against the need for harmonisation and for services to be based on standards that 'should be validated in the European airspace and framework'.

PRICING OF U-SPACE

— UAS operators are the beneficiaries of the U-space and should therefore pay for U-space services.

— GA should not pay for entering U-space, as none of the services is beneficial for them.

— It is not acceptable to expect that ANSPs will provide information free of charge.

OTHER COMMENTS

— The protection of airports and their vicinity regarding the unlawful use of drones should be addressed.

— Mobile telecom is already supporting UAS operations globally and should be considered in the regulation.

— Cybersecurity needs to be highly considered to prevent the possibility that a USSP will use the data for other purposes than U-space services.

Draft Regulation

CHAPTER I
PRINCIPLES AND GENERAL REQUIREMENTS

Article 1 – Subject matter and scope

Main comments

— 'Open' category should be within the scope of the Regulation. The IR requires to transmit e-ID and retrieve geo-fencing information. Also, manned aircraft fly in the whole FIR above U-space and should be kept safe by monitoring and alerting service if an 'Open' category unmanned aircraft climbs too high.

— All UAS operations should be under the Regulation and services provided should be free of charge.

— Proposal to include reference to the qualified entities accredited on the basis of Article 69 of the EASA Basic Regulation.

EASA assessment

— The comments are accepted. However, it is considered that some very small UAS should not follow the requirements of the regulation, as they are not a potential hazard to other aircraft. In order to maintain a harmonised European approach, the regulation must be strict on the scope and not permit every Member State to decide which of the drones in the 'open' category should be subject to the rules or not.

— It is legally not necessary to include the 'qualified entities' in the scope as it is up to each Member State to decide whether they want to use them.

Amendment to Article 1 (resulting text)

This article now includes the 'open' category in the scope of the regulation. However, subcategory A1 unmanned aircraft that have a maximum take-off mass (MTOM) of less than 250 g and a maximum speed of less than 19 m/s are exempted. This is also the case for those in subcategory A1 that are marked as class C0.

Article 2 – Objectives

Main comments

— The objective of providing efficient air traffic services to UAS seems like an important objective.

— This provision states that Member States may be in a position to create this market when there are uncertainties on the viability of the market.

— A safety regulation cannot ensure economic regulation. The text on the conditions for an internal market for U-space services should be removed.

EASA assessment

The comments on the market aspect are noted and the comment proposing to add the term 'efficient' is accepted.

Amendment to Article 2 (resulting text)

Paragraph (d) has been now amended with the inclusion of the term 'efficient' in addition to 'fair' and 'affordable'.

Article 3 – Definitions

Main comments

— Reference to other regulations for definitions is making the understanding more difficult. Delete the reference and add the definitions from the referenced documents.

— Common Information Function (CIF) and USSP platform need to be defined.

— Add the following definitions: 'U-space service provider', 'UAS operator', 'common information function (or service)', E-identification service', 'Geo-awareness service', 'Flight authorisation service', 'Traffic Information Service', 'Tracking Service', 'Weather Information Service", 'Conformance monitoring service'.

— Principal place of business: A company's main head office with its financial functions can be separated from the location of the operational control.

— Clarification on the following part of the definition 'Open communication protocols': 'standards that allow two or more entities of a given system to communicate with each other.' It is not clear how this type of communication will work.

— 'U-space': not all operations can be processed in an automated way.

— U-space could be a mix of digital and analogue system. Therefore, reference to an established infrastructure would be better.

— The definition of U-space should be amended to include manned aviation as well.

— The definition of the U-space airspace shall be consistent with the existing UAS geographical zones.

EASA assessment

— Some clarity needs to be brought to the definitions.

— Some terms such as 'CIF' and 'USSP Platform' are not used anymore.

— With regard to 'UAS operator', this term is already defined in Commission Implementing Regulation (EU) 2019/947 and does not need to be repeated here, as the appropriate reference

is being made in the introductory sentence of this article (which is the standard legal approach for all EU regulations).

Amendment to Article 3 (resulting text)

— The 'U-space' definition has been deleted.

— 'U-space service provider' and 'connectivity' definitions have been added.

— The 'U-space airspace' definition has been amended.

CHAPTER II
ESTABLISHMENT OF THE U-SPACE

Article 4 – Designation of U-space

Main comments

— Clarification on the consultation needed in case U-space airspace is cross-border.

— The notion of 'restricted airspace' implies that the restrictions will affect the traditional aviation.

— Designation of U-space should take into account the existing airspace design and air operations.

— Member States should be encouraged to designate all airspace as U-Space and apply suitable classification within U-Space airspace to reduce complexity of airspace structures throughout Europe.

— The authorisation in controlled airspace shall be done by ATC.

— Not clear how the manned aviation will be informed of the status of the U-space.

— Providing services outside designated U-space is unclear; in particular, the criteria for being designated or not designated airspace with more or less same services.

— Provision of U-space services should not be confined to certain airspace classes only, but instead be operation-centric.

— U-space airspace should not be an airspace that excludes certain types of air traffic (no restricted area or segregated airspace), UAS shall share the airspace with the existing manned aircraft (integration).

— Manned aircraft may continue today's operations with no need for change.

— Add that the U-space airspace will not be active until a UTM service provider is established.

— The reference to the acceptable level of safety is not defined. Need for real-time risk assessment methodology with a quantitative basis for UAS operations and UTM operations within their airspace.

— Clarification on the relationship between U-space and geographical zones.

— It is unclear how the designation of volumes of airspace as U-space would affect existing classifications of airspace.

— U-space has potentially significant and disruptive implications for existing airspace users, particularly those who predominantly operate in uncontrolled airspace.

EASA assessment

The comments related to this article show that there was a lack of clarity in the intention of this article. EASA has re-drafted this paragraph to clarify the responsibilities of the air navigation service providers and U-space service providers, in both controlled and uncontrolled airspace. The regulation should also be clear on the airspace as U-space. The elements related to the designation of the airspace and the cross-border aspect should be clarified.

Amendment to Article 4 (resulting text)

Article 4 has been amended to clarify:

— that U-space airspace can be in controlled or uncontrolled airspace or designated on a temporary or permanent basis;

— who is responsible in which airspace (controlled/uncontrolled) and for what type of aircraft operations (manned/unmanned);

— what services are mandatory in which airspace (controlled/uncontrolled);

— the type of coordination is required when U-space airspace is cross-border;

— that Member States may mandate any other U-space services based on a risk assessment.

Article 5 – Common information function

Main comments

— Traffic data should be provided as well.

— Clarity on how this service will be funded.

— CIF (better CIS) should also disseminate the dynamic info relevant to authorisation — procedural or collaborative with ATC.

— Certified ANSPs should be allowed to provide U-space services.

— Sharing of info free of charge is highly questionable.

— Common and shared picture of the airspace is essential for the ATS, in particular during the unexpected developments.

— The regulation shall ensure harmonised implementation.

— Several organisations shall provide CIF in the same airspace.

— European standards for traffic information and communication protocols needed.

— To use a concept of ‘FIMS’ or ‘CIS’ with a specific manager/provider.

— Clarification needed for the ‘discovery function’.

— Many comments questioned the need for a structural separation between CIF and USSP and why ANSPs are excluded.

EASA/EC assessment

Most of the comments are accepted. It is now proposed to better clarify the concept of the common information, who provides the information and how the availability of the information can be ensured. In addition, it is important to clarify more explicitly the obligations of the CIS provider in terms of data quality requirements, connectivity interface protocols, etc.

On Article 5.5.: ANSPs are not excluded from being active as USSPs. However, the monopolistic provider of the CIF cannot be active in the downstream market as a USSP. Competition requires that all USSPs need to get exactly the same information with the same quality at exactly the same moment. When an entity combines the functions of CIF and USSP, there would be a clear conflict of interest between its business interests as a USSP and its obligation to serve all competing USSPs at the same terms and conditions. The best solution to avoid such a conflict of interest is to impose a structural separation between the CIS monopoly and the competitive USSP market. The regulation allows ANSPs to enter the U-space services market; an ANSP may even be designated CIF and enter the U-space services market outside the U-space airspace for which it is designated. Therefore, no change is proposed and Article 5.5 remains unchanged (now Article 5.6)

Amendment to Article 5 (resulting text)

Article 5 has been revised as follows:

— throughout the article (and the regulation), the common information function has been replaced with common information service (CIS);

— a CIS provider has been introduced and is designated by the Member State;

— the CIS needs to contain a list of certified U-space service providers.

Article 6 – The inter U-space service provider platform

Main comments

— The establishment and maintenance of the inter USSP platform should be clarified.

— Inter-USSP platform may give the big players a dominant role.

— Discovery function needs to be clarified.

— Critical common functionalities should be served by one inter-service USSP.

— Lack of clarity in the platform concept and responsibilities/liabilities.

— The concept of ‘founding U-Space Service Providers’ is not understood.

— Add more information about the inter U-space service provider platform.

— It is not clear why all these functions cannot be provided directly by the ANSPs CIF as Member States may decide to integrate and provide the platform as part of the CIF.

EASA assessment

This article raised many questions. The relationship between the platform and CIF brought some uncertainty about the functioning of the system. The intention of the USSP platform was to provide a complete picture of how the system should work. At the same time, this platform seemed to constitute more a means by which the information should be exchanged than the end objective of a given architecture. Therefore, it is proposed to remove this article to avoid confusion, but to keep the necessary elements contained in it and maintain the respective requirements set for the different actors of the U-space.

Amendment to Article 6 (resulting text)

This article has been removed.

Article 7 – U-space priority rules

Main comments

— Clarification required for the application of prioritisation in case several USSPs provide services in the same airspace.

— This article is hard to achieve for VLOS operations.

— Lack of clarity in the role of USSP and ANSP in priority establishment and the related responsibilities.

— Does not fit to have prioritisation rules without having rules of the air.

— Priorities are not justified and not in line with the current ATM authorities.

— Most likely it will not be feasible to give priority to unpredictable traffic i.e. HEMS.

— Not feasible for two BVLOS.

— The rule that UAS must give way to other traffic is not negotiable (non-motorised flyers).

— Add information on off normal/emergency situations.

— Clarify difference between flight authorisation and the operational authorisation as defined in Commission Implementing Regulation (EU) 2019/947.

— It is not clear why an aircraft carrying passengers to summer holidays would have priority over an unmanned aircraft performing the inspection of the railway line — one competitor is given an inappropriate advantage without a proper justification.

EASA assessment

It is reminded that the priority rules are those that apply only for the granting of the flight authorisation and in the order proposed. This order has been carefully assessed and it is not considered that it should be changed. However, it has been considered that two priority rules were missing and they have now been included.

Amendment to Article 7 (resulting text)

The priority rules are now contained in Article 14 related to the flight authorisation service as it is closely linked to this service. The main change is the addition of two priority rules:

— when an aircraft is in distress; and

— when two flight authorisation requests have the same priority.

CHAPTER III
GENERAL REQUIREMENTS FOR AIRCRAFT OPERATORS AND PROVIDERS IN U-SPACE AIRSPACE

Article 8 – UAS operators

Main comments

— Registration information shall be provided by CAA, CIF.

— Use of consistent terminology: 'UAS operator' not 'Unmanned aircraft operators'.

— Clarification request for the unique identifier of UAO.

— Details on registration info and mandatory information of UAS and operator to be provided.

— Provision in the regulation is needed for situations where UAS operators and U-space service providers cannot connect.

— There should be provision for fall-back options if systems do not operate as intended.

— The article shall specify when the FPL shall be submitted prior to the flight.

— Point (c) to be clarified — what 'connectivity' means.

EASA assessment

The comments underlined the need to be more complete in terms of obligations for UAS operators, in particular about the information that would need to be provided. The outcome of the consultation required a deep review of this article in order to provide the missing necessary requirements.

Amendment to Article 8

This article (now Article 6) now includes:

— the criteria for dissemination of the flight plan;

— the information to be provided to U-space services providers;

— the details on the registration by reference to Regulation (EU) 2019/947;

— the obligation to ensure that UAS operators are connected to U-space service providers; and

— contingency measures.

Article 9 – Obligation for manned aircraft to provide data to U-space service providers

Main comments

— Additional equipment for U-space is considered unacceptable.

— Use of ATC FPL is considered the appropriate way of providing the information.

— Additional burden since in class 'G' airspace normally dissemination of intent/FPL is not required.

— SERA is considered the better regulatory tool.

— Vertical position data needs to be established for this type of information.

— Specify how the necessary expenses will be covered.

— Define term 'close proximity'.

— The 'manner acceptable to the Agency' is not clear.

— The article should be carefully assessed to better understand what will be its impact on GA, and HEMS flights. Also, Air Force is a frequent user of VLL.

EASA assessment

— The main concern on this article relates to the potential impact on manned aircraft. It is acknowledged that the intent might be difficult to provide. Currently, and until a full integration of manned aircraft with unmanned aircraft is feasible in the U-space airspace, the way to ensure safe operations of manned aircraft when entering in an area where drones are flying is to request some information. Without this information, U-space service providers are not able to identify if a manned aircraft will fly into the U-space. EASA shall ensure that the future conspicuity devices are able to provide the necessary data to ensure safe operations.

— The intent of this article is now to specify the kind of information to be provided to the U-space service providers.

— There is a need to take into account that manned aircraft operators can fly in uncontrolled airspace but also in airspaces where there is uncontrolled traffic within controlled airspaces such as VFR traffic within class E airspace.

Amendment to Article 9 (resulting text)

This article (now Article 7) has been amended as follows:

— The obligation to include the information about the aircraft position to be provided as well as a sufficient level of performance.

— This obligation also applies when operators of manned aircraft operate as uncontrolled traffic within in the U-space airspace designated in controlled airspace

— The terms 'intent, estimated and actual' as well as the term 'close proximity' have been removed.

Article 10 – U-space service providers

Main comments

— This article leaves too much freedom to the U-space providers, e.g. due to the lack of prescribed data formats or standard data messages. This will cause enormous fragmentation. European control is needed to enable harmonisation.

— Industry standards should be used.

— There is no provision on the expected quality of service.

— It is not clear what information is in the unique identification.

— It is unclear how USSPs are linked with the ATS providers concerned. There is no uplink information flow from USSPs to ATS. Possibly the figure implies that ANSPs shall connect to inter-USSP.

— Cybersecurity risks to be addressed.

— What is the information required and criteria to determine a flight may be authorised? This should be an automated system.

— It is not clear how manned aviation will exchange (traffic) information when entering U-space.

— A reliable connectivity service is the foundation enabling U-space services to work, which is missing in the proposal. In order for the 'cooperative approach' to function, airspace users must be guaranteed a reliable means of communication that ensures coverage, low delays and capacity while avoiding communication breaks and congestion.

— Add the following situation: where an airspace managed by an ATS provider overlaps with a U-space airspace, the U-space service providers concerned shall establish contractual arrangements with the ATS providers.

EASA assessment

The comments are noted and most of them have been accepted.

Amendment to Article 10 (resulting text)

This article (now Article 8) has been clarified as follows:

— The quality of services to be delivered is in accordance with the service level agreements.

— The retention of data is proposed to be 30 days.

— The unique identification is removed and replaced by the information listed in the network identification service.

— The U-space service providers have to ensure secure connectivity and data quality and data protection.

This article contains the new following requirements:

— To check, reject or accept the flight plan submitted to them;

— Exchange of information through the appropriate interfaces;

— Arrangements when there are conflicting authorisation requests; and

— Report to the competent authority when they start, cease or restart operations.

Article 11 – Collaboration between U-space service providers and aircraft operators

Main comments

— This article should be limited to UAS operators. No need for specific arrangements between USSPs and aircraft operators.

— Contractual agreements will most probably result in too many different local rules that will totally saturate the capability of manned aircraft pilots to be clearly informed.

— It is not understood how this could work in practice. NCO aircraft operators cannot establish a contract with a USSP. The U-space regulation is to define provisions for safe operation between aircraft operators and U-space operators. This cannot be ensured by an individual contract.

— Remuneration and liability need to be specified in order to set up a coherent European framework.

— The service level should be agreed with the competent authority. Otherwise, each service provider may negotiate different service levels in the same U-space airspace with their operators.

— Clarify the 'other service providers'.

EASA assessment

This article should only apply to UAS operators. However, service level agreements are already required by U-space service providers and UAS operators, in their respective requirements (Articles 6 and 8). Therefore, this article is not necessary to maintain.

Amendment to Article 11

This article has been removed.

Article 12 – Occurrence reporting

Main comments

— There should be a reference to Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation.

— Replace Article 12 with reference to Regulation (EU) No 376/2014. It is unclear why separate occurrence reporting is required.

— The occurrence reporting must fulfil the requirements of Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation.

EASA assessment

Comments accepted.

Amendment to Article 12

This article (now Article 9) now refers to Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation.

CHAPTER IV
U-SPACE SERVICES

Article 13 – E-identification service

Main comments

— Clarification about how the e-ID service correlates with requirements concerning identification and registration given by the delegated act.

— It is not clear what is meant by ‘flight intent’.

— E-ID is mandatory within the U-space airspace for UAS, while, on the other hand, some aircraft are not subject to this Regulation but will remain able to operate within the U-space airspace.

— Traffic information cannot always be provided, especially in G airspace at low level.

— It needs to be specified whether registration number relates to the UAV and/or the operator.

— There are some uncertainties regarding the ‘serial number’. Clarification is needed if it is intended for unique identification of the UAS.

— ‘Levels of access based on the credentials of the user’ — clarification of ‘credentials’ is needed.

— ‘Tracking information’ is confusing. It is believed that tracking shouldn’t be mentioned in e-ID service.

— Meaning of ‘vehicle registration’ needs to be clarified. It is not sure if it refers to the operator’s registration number or the drone’s registration number.

— To comply with this rule, every USSP should deploy ground receiving antennas to guarantee the coverage for the entire U-space airspace. Most service providers do not have technical systems that would receive broadcast E-ID transmissions.

— The article mixes and incompletely describes the network remote identification and E-identification.

EASA assessment

It is acknowledged that clarification should be provided on what is the intent of this service. The comments are noted and due account is taken in the revised text. In order to distinguish this service from the remote identification service already included in Regulation (EU) 2019/945, this article provides a revised set of service requirements for the network identification.

Amendment to Article 13 (resulting text)

Based on the comments, this article (now Article 10) has been amended a follows:

— the title of this service is 'Network identification service';

— it clarifies the objective of this service;

— it provides consistency with Regulation (EU) 2019/945 (remote identification) for the content of the distributed messages;

— it puts the obligation on the competent authority to establish the level of access of authorised users;

— it does not contain any reference to tracking information.

Article 14 – Geo-awareness service

Main comments

— The definition and scope of the geo-awareness service is not clear nor which data has to be provided by whom to whom.

— U-space airspace geometry is to be published by competent authorities to be made available to non-U-space users so that this airspace is not infringed.

— The requirement should include that a 'single source of truth' for geo-awareness information shall be made available through the CIF.

— City authorities to be included in the list of defined authorities.

— Who is expected to provide this service and at what cost?

— USSPs should be allowed to create non-fly zones in a pre-tactical and tactical phase in certain cases.

— 'Timely manner' in relation to the update of 'geo-awareness' information is too vague and may lead to different interpretations.

— Updates shall include an indication of what information has changed.

— A definition of 'geo-awareness service' is missing.

— Data quality for geo-awareness service is missing.

— Reference to 'common altitude reference system' is missing.

— An industry standard is required at the level of AMC.

EASA assessment

It is acknowledged that this article should be improved to clarify:

— the relationship between U-space volumes and UAS geographical zones;

— the objective of this service;

— the added-value of this service taking into account the requirements of the geo-awareness function in Regulation (EU) 2019/945.

In addition, it is expected that the UAS Geographical Task Force (TF) will agree about the character of data defining a variety of zones. Currently, it is anticipated that not all data related to zones requires to be treated in line with Aeronautical Data Quality. However, data shall not be degraded within the respective data provision processes. The TF is currently defining a common digital format. Besides ISO, EUROCAE currently is developing a standard as well. The TF will make a final proposal for the respective AMC.

Amendment to Article 14 (resulting text)

The text of this article (now Article 11) has been now amended to better clarify that:

— this service exists as support to the UAS geo-awareness system as a whole;

— the geometry of all airspace with special access rules for UAS shall be provided to other applicable U-space service providers and not to operators;

— the Member State shall specify which authorities may update or add to the geo-awareness information.

Article 15 – Flight authorisation service

Main comments

— There is a need to clarify the relation between flight authorisation service and operational approval required for the 'specific' UAS category.

— Concerns expressed when two flight plans with the same level of priority are requested and who makes the final decision.

— It has to be defined what kind of authorisation(s) needs to be obtained and if the service provider must obtain it from the relevant authority, or if the operator must do this.

— This article is understood as it exclusively concerns UAS operators.

— There won't always be an automatic reply from the service, sometimes manual approval is needed. The word 'automatically' could be replaced by 'immediately' to ease the implementation of the service.

— It is not clear what is meant by 'airspace access information'.

— It is not clear who is responsible for the strategic de-confliction.

— ANSPs must remain responsible for controlled airspace and decide if UAS operations are possible.

— Without clarifying the sharing of responsibilities between USSP and ABSP, this article leads to having two entities managing different operations inside the same airspace (controlled airspace under an ANSP management, and U-space restricted airspace under USSP management).

— Terms used in the paragraphs, such as 'authorisation requests', 'required notifications', 'voluntary notifications', 'regulatory information', 'acknowledgements', 'pre-authorisation information', 'manual authorisation information' need to be clarified and sufficiently described.

EASA assessment

There is a need to improve the way this article was drafted, in terms of both structure and technical content. The entire article has been reconsidered to ensure consistency with the obligations of the UAS operators, U-space service providers and the requirements on the CIS provider as well as on the competent authorities.

Amendment to Article 15 (resulting text)

The text of this article (now Article 12) has been now amended to include:

— the necessary coordination with ATS providers;

— the priority rules to be followed when flight authorisation is granted, including the priority rules when two flight authorisations are requested.

The text has been amended to better structure the provisions that pertain to each actor:

— Paragraph 7 has been moved to the article related to the competent authority;

— Paragraph 8 has been moved to the article related to the UAS operators; and

— Paragraph 9 has been removed completely as it is not considered necessary given that this type of information is already contained in the common information service.

Article 16 – Traffic information service

Main comments

— Traffic information and alerting service should be two separate services.

— Clarification of the term 'Traffic Information Service' is needed.

— It is not clear what kind of 'alerts to the aircraft operator' shall be provided.

— It is not clear how USSPs will provide position reports of non-cooperative manned aircraft that they cannot be aware of.

— The notion of 'floating decimal latitude' is normally not used in aviation and therefore should be defined.

— Further information on how to define 'altitude' and 'time' is needed.

— The altitude reference used by the providers should be defined.

EASA assessment

The comments are accepted. This article has been redrafted to avoid misunderstanding with the traffic alert and tracking service that were both mentioned under this service. The revised text now clarifies the intent of the service and focuses on what information shall be included and from whom. Terms such as 'alerts', 'floating decimal' or 'cooperative/non-cooperative' have been removed to avoid confusion.

Amendment to Article 16 (resulting text)

The text of this article (now Article 13) has been amended:

— to define the purpose of this service;

— to clarify that the relevant information to be provided is real-time 3D position of the known air traffic, latitude, longitude, altitude, time of report and emergency status;

— to require UAS operators to take action as soon as they receive traffic information.

Article 17 – Tracking service

Main comments

— Tracking should not be mixed up with e-identification and traffic information.

— Tracking service should also be mandatory.

— It is unacceptable for such a service to not be available or to have any interruptions in the service.

— The meaning of 'track report' is not clear.

— Clarify if 'the identity of the unmanned aircraft and operator' refers to the serial number and the operators' registration number?

— Clarify who is responsible for fusing U-space and ATM tracks in the remit of inter-USSP platform/CIF.

EASA assessment

The text now takes into account the comments and ensures consistency with Regulation (EU) 2019/945. However, most of the content remains.

Amendment to Article 17 (resulting text)

The text (now Article 14) has been amended as follows:

— it is explicitly mentioned that the objective is to associate consecutive surveillance observations of the same UAS flight into tracks (with current position, heading and speed);

— the track updates are now to be determined by the competent authority.

Article 18 – Weather information service

Main comments

— Units: requesting (kilo-)metres in lieu of Statute Miles.

— Who may provide the weather service between traditional MET providers and other weather providers.

— Clarify the types of MET services to be provided and those that do not have to be provided.

— Choose between a prescriptive or performance-based approach. Need to specify every parameter in detail or to simply state that the weather information must be adequate to support a safe operation.

EASA assessment

The comments related to the units are accepted. With regard to the comments related to who will provide this service, it is considered that it should not be regulated at EU level but left to the decision of the Member States, as it is the case under the SES regulation where Member States may designate a provider of MET services.

Amendment to Article 18 (resulting text)

The text (now Article 15) has been amended as follows:

— Speed is measured in metres/second;

— Visibility is measured in metres and kilometres instead of statute miles.

Article 19 – Conformance monitoring service

Main comments

— The intention of this article is not clear if this service is mandatory only when flight authorisation is necessary.

— It could be stated more clearly whether the conformance monitoring service is optional or not.

— This service should not be limited only for authorised operations, it can also manage the UAV not requiring an authorisation and monitor that they do not infringe the regulation.

— Who will be responsible for providing the conformance monitoring service?

— Proper notifications should be sent also to authorities/airspace managers/ANSPs.

— Alerts should be sent to the person who controls the UAS (remote pilot), not the company which has the approval to operate.

— Concerns that this service requires other aircraft to carry equipment able to receive this information.

EASA assessment

The comments are accepted. The text has been slightly re-drafted accordingly. The conformance monitoring service shall be used when it is needed to support another service. In addition, the alert is provided not only to UAS operators but also to authorities and other U-space service providers.

Amendment to Article 19 (resulting text)

The text (now Article 16) has been amended to clarify that:

— this service applies to UAS operators;

— the alert will be activated also when the UAS operator does not meet its obligation under Article 6(1).

CHAPTER V
U-SPACE SERVICE PROVIDERS CERTIFICATION

Article 20 – Application for a U-space service provider certificate

Main comments

All service providers connected to the U-space system shall be certified and subject to oversight to ensure the safety of the system and the integrity of data.

EASA assessment

Because of the amendment to Article 5 (CIS) — the regulation now includes a service provider for providing the common information service — this article needs to be amended accordingly. Therefore, all the requirements for a U-space service provider now apply to the CIS provider as regards the application for a certificate, and a new template for certificate has been introduced for the CIS provider.

Amendment to Article 20 (resulting text)

The text (now Article 17) has been amended to include CIS providers.

Article 21 – Conditions for obtaining a certificate

Main comments

— It is unclear what level of guarantee is required and appropriate to meet the intention of this regulation and the risk management approach that underpins the aviation regulatory systems.

— Net capital reference should be removed, as it will discriminate against small companies.

— Management system should be proportionate to the risk.

— Suggest to replace 'in view of the intended operations' by 'in view of the most risky operation expected'.

— It is unclear what 'the objectives set for the service provided' are and where these are clearly documented.

— Without clear direction on the level of safety (per Article 4(5)) as applicable to the U-space services, it is impossible to ascertain if this regulation is at all achievable.

— No means of compliance have been defined for the mandatory safety assessment.

— Standards should also include the security protection. Proposal to add 'assurance confidence level and security requirements'.

— Competent authority and EASA should not be evaluating financial positions or business cases of USSPs. Delete paragraphs 3 and 6. Remove 'or financial performance' from Article 22, paragraphs 3 and 4.

EASA assessment

Because of the amendment to Article 5 (CIS) — the regulation now includes a service provider for providing the common information service — this article needs to be amended accordingly. Therefore, all the requirements for a U-space service provider now apply to the CIS provider as regards the conditions for obtaining a certificate.

It is also acknowledged that the business plan and assessment of the financial capacity of the providers is a concern. AMC and GM will be provided to support the requirements while ensuring that this does not create administrative burden for the providers while ensuring that they can still demonstrate that they are capable of providing their services thanks to an assured level of financial means.

Amendment to Article 20 (resulting text)

The text (now Article 18) has been amended to include:

— CIS providers;

— the reference to the service level agreements when providing their services.

In addition, 'level of safety' has been removed as it is considered not to be measurable at this moment.

Article 22 – Validity of a U-space service provider certificate

Main comments

— It might be possible that one USSP operates in different countries, where different services are required. If operation means 'operative service', then in one country, one operative service might not be required at all.

— Suggest reducing the duration periods (6 months and 9 months) as the requirements for being a U-space service provider are significantly fewer than those for an ATM service provider; the time allowed to be operational does not need to be as long as 6 months.

— Add a paragraph to reflect that any changes to the technical or operational characteristics detailed within the certificate will invalidate the approval.

— SMS for USSP to be considered.

— Nothing is mentioned about the retention period of the data in order to safeguard continuity in case of bankruptcy or in the event that a USSP is no longer providing any U-space services.

— The pan-European Service provider could be subject to many assessments throughout the year. Request the possibility to use third-party auditors instead, and the ability to re-use generated audit-reports for each request of any competent authority (or the Agency).

EASA assessment

Because of the amendment to Article 5 (CIS) — the regulation now includes a service provider for providing the common information service — this article needs to be amended accordingly. Therefore, all the requirements for a U-space service provider now apply to the CIS provider as regards the validity of the certificate.

The retention period of data of 30 days is already required from U-space service providers in Article 8.

U-space service providers are not required to establish a safety management system. In the future, they might need to comply with the SMS in the case they provide ATC-like services. Currently, it is not expected that they fulfil this requirement.

In addition, the proposal to invalidate the approval when changes occur is not accepted. It is already covered by paragraph 4 where the competent authority may suspend or revoke the certificate after an audit.

Amendment to Article 20 (resulting text)

The text (now Article 19) has been amended to include CIS providers. In addition, in paragraph 3, 'may' has been replaced by 'shall'.

CHAPTER VI
COMPETENT AUTHORITIES

Article 23 – Competent authority

Main comments

— Allowing the Agency to issue certificates for U-space service providers that operate in more than one Member State could expose a potential loophole that could be exploited.

— The quoted article from the Basic Regulation is only applicable to ATM/ANS providers (not U-space service providers) and so it is not directly relevant here. If the principle of the BR is being followed, then it will need to be stated in full.

EASA assessment

The comments are noted.

Amendment to Article 23 (resulting text)

No amendment has been made to the text (now Article 20). Further explanation can be found in the explanatory note of the Opinion.

Article 24 – Tasks of the competent authorities

Main comments

— There is no corresponding requirement on the service providers to retain all relevant operational and flight plan information for a defined period of time in electronic format that is retrievable on demand by the competent authority.

— Clarify that the CA specifies or agrees with the services to be provided and the performance targets to be achieved.

— Add a paragraph to include selection of a CIF provider and oversight of the same provider as it is done with the USSPs.

— e-Registration shall be added as task of the competent authority.

— If a competent authority has the ability to carry out audits and assessments of U-space service providers, then it is permitted on-site (Article 24.1(e)), so no need for on-site visit.

— Add to the task list that the designation of U-space airspace shall be done fairly and shall provide fair access in uncontrolled airspace to aircraft without the means for communicating intent and position.

— The text is contrary to the principles of risk-based regulation, since not all providers may need to be certified by the authority.

EASA assessment

— The revised text in Article 8 now includes requirements on the service providers to retain all relevant operational and flight plan information for at least 30 days.

— E-registration is indeed an obligation of the competent authority and this is reflected in the revised text.

— The visit on-site of the competent authority is necessary as the latter can also carry out audits/assessments remotely (desktop assessment).

Amendment to Article 24 (resulting text)

The text (now Article 21) has been amended as follows:

In paragraph 1:

— Addition of a requirement for a registration system for certified U-space service providers to be established and maintained;

— Three provisions formerly in Article 6 (USSP platform) have been moved to this article as they are competent authority requirements and are related to the communication protocols and level of access, the exchange through interfaces, and the determination of the type of traffic data to be made available;

— The reference to the compliance with national law has been deleted as it is legally not necessary.

Article 25 – Exchange of safety information and safety measures

Main comments

Proposal to require the service provider to automatically collect specific information and routinely provide it to the CA for analysis with respect to safety and performance.

EASA assessment

It is expected that U-space service providers will support the competent authority in collecting, analysing and disseminating safety information.

Amendment to Article 25 (resulting text)

No amendment has been made to this article (now Article 22). Further explanation can be found in the explanatory note of the Opinion.

CHAPTER VII
PRICING OF U-SPACE SERVICES

Article 26 – Pricing freedom

Main comments

Possibilities of financing of the U-space by airspace users.

EC assessment

In a competitive U-space services market, U-space service providers can set the prices freely. Therefore, this provision is not needed. The fact that there should be no cross-subsidisation between ATM and U-space possible will be covered by SES2+.

Amendment to Article 26 (resulting text)

This article has been deleted.

Article 27 – Fee regulation

Main comments

There appeared to be some confusion about the need for regulation and the cost for providing ATM information.

EC assessment

The CIF is a designated monopoly and requires fee regulation. The cost of the CIF relates to the management of the data flow – the data is generated by either ANSPs or USSPs. As a general requirement, all actors that are exchanging safety information through the CIF, need to provide this information for free.

Amendment to Article 27 (resulting text)

No substantial change. Further explanation can be found in the explanatory note of the Opinion.

CHAPTER VIII
FINAL PROVISIONS

Article 28 – Entry into force and applicability

Main comments

— Considering the tasks that will have to be done (new certification tasks, new budget, new HR, services implementation), 2 years are a minimum for the applicability of this regulation.

— 2 years' transitional period proposed.

— Application of the regulation 1 year after entry into force will be overly burdensome for the Member States.

EASA assessment

All the comments are noted.

Amendment to Article 28 (resulting text)

For the moment, no amendment is proposed to this article (now Article 25). The final decision is to be taken after the publication of the Opinion.

Appendix 2

Main comments

— Information should include authorisation for certified operations, if available.

— Common vertical measures in the FPL.

— Flight path should include an alternate landing spot if the original end point is not accessible.

— Change UAS flight plan to be volume-based consisting of a series of overlapping 3D volumes with start and end times (to support e.g. loiters or search patterns).

— Add UAS Performance Class and Com Device Class. Group ID (for swarm operations, see below).

— Add min separation distance from subject aircraft as part of flight plan information.

— Identification technology (ADS-B, FLARM, Mode S, WiFi, etc). Why is telecommunication not mentioned?

— In point (16), specify what other info.

EASA assessment

All the comments are well noted and all the proposals have been assessed. However, it is considered that the information to be provided by the UAS operator in the flight plan is deemed enough.

Amendment to Appendix 2 (resulting text)

No amendment has been made to this appendix. Further explanation can be found in the explanatory note of the Opinion.

Appendix 3 – Service provider certificate

Main comments

Add a section to the service provision conditions certificate. This should be in the form of an additional table which details the Member States that the U Space service provider is permitted to operate in.

EASA assessment

The comments are well noted.

Amendment to Appendix 3 (resulting text)

No amendment has been made to this appendix. Further explanation can be found in the explanatory note of the Opinion.