

Draft acceptable means of compliance (AMC) and Guidance Material (GM) to Opinion No 01/2020 on a high-level regulatory framework for the U-space

Issue 1

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¹ For the date of entry into force of this Issue, kindly refer to Decision 20xx/0xx/R in the [Official Publication](#) of EASA.

GM1 to Article 1 Subject matter and scope

APPLICABILITY

The subject matter of the regulation refers to the categories of persons or organisations to which the rules applies. It also exonerates some UAS operations from the application of the rules. The rules shall not apply to drones that are either toys, model aircraft within clubs and associations that receive an authorisation in accordance with Article 16 of Commission Implementing Regulation (EU) 2019/947 or limited in their weight and speed which are the UAS within the open category A1. It is considered that such types of drones can be frequently used for recreational purposes by anyone and therefore there should be exempted from the application of this Regulation.

GM1 to Article 2 Objectives

SAFETY AND SOCIETAL, OPEN MARKET CONSIDERATIONS

This article includes a list of the objectives that this regulation is aiming to meet. Beyond the safety aspects which is the primary objective for EASA with this regulation, this regulation is considered a key enabler in opening the drones service market by allowing the conduct of more complex operations in a safe manner and granting fair access to certain volumes of airspace which are designated as U-space airspace. Moreover, the opening of a competitive market creates jobs and fosters positive economic growth. Because of the impact that drones have on society today, this regulation needs to take into consideration the concerns of the citizens in terms of security, environment and privacy.

GM1 to Article 3 Definitions

GENERAL

This article specifies only those terms that are necessary to understand the provisions of the regulation. As this regulation is closely linked to the two existing regulations on drones (Regulations (EU) 2019/945 and 2019/947), the definitions included in those regulations are considered also to apply to this regulation and are not repeated here. Well-established terms are not included either.

GM1 to Article 4 Designation of U-space airspace

RESPONSIBILITIES IN THE U-SPACE AIRSPACE

This article is the 'starting point' for the management of air traffic in the U-space airspace, and therefore it is important to define the roles and responsibilities of all organisations that are involved in the U-space airspace.

The Member States have full authority on the designation of the U-space airspace, and therefore have the power to decide how their airspace is designed, accessed, restricted, etc. As the U-space airspace can be established in either controlled or uncontrolled airspace, there is a need to take into account that there is already an organisation being designated to provide ATS services on an exclusive basis

based on the Single European Sky (SES) regulation¹ and ICAO Standards and Recommended Practices (SARPs). Therefore, air traffic services (ATS) providers are designated to provide air traffic control (ATC) services in controlled airspace and flight information services (FIS) providers are providing FIS and alerting services in many parts of uncontrolled airspace. When designating U-space airspace and integrating USSPs to provide U-space services to UAS within controlled and uncontrolled airspace, the already established principles need to be considered and respected. Therefore, this article clarifies who is responsible for what kind of operators and how they should ensure their respective obligations. Finally, this article defines the specific coordination procedures between ANSPs and USSPs.

The principle is that ANSPs provide air navigation services (ANS) to manned aircraft while USSPs provide U-space services to UAS operators. Both ANSPs and USSPs are certified to provide their respective services in a safe, secure and continuous manner. Within controlled airspace, U-space airspace is designated by the Member States and is dynamically managed by the ANSP. The safety of operations is guaranteed by the fact that manned and unmanned traffic will not mix with each other as they are dynamically segregated and ANS and U-space services are not provided at the same time in the same volume of airspace. In uncontrolled airspace, the airspace remains uncontrolled for manned aircraft. But when the Member States designate a volume of airspace as U-space airspace, there is a restriction (therefore it could be established as a restricted area): for UAS operators, to use U-space services to fly in that airspace; and for manned aircraft operators, to make available their position at regular intervals to the USSPs. The latter can provide manned traffic information to unmanned aircraft or can geo-fence the unmanned traffic around the manned traffic. The manned aircraft operator will also be informed about the U-space airspace and the unmanned traffic either by the FIS provider or by the USSP, depending on the specific implementation. EASA considers that U-space and its services can bring added value in terms of safety also to the manned aircraft operations flying in uncontrolled airspace as there will be more sharing of traffic information between manned and unmanned aircraft and also between manned aircraft operations themselves with the use of more affordable conspicuity devices and by sharing existing ground infrastructure. Of course, the way to ensure that there is no conflict between both operations is that they mutually share the relevant information (position and possible trajectories and for UAS also planning, etc.).

This article also underlines which U-space services are mandatory in the U-space airspace. Based on the assessment conducted by EASA of existing U-space services and their maturity, the following U-space services are considered necessary and mandatory to ensure safe and efficient operations in each U-space airspace implementation: network identification, geo-awareness, traffic information and UAS flight authorisation. In addition, Member States may decide that additional U-space services are needed to support safe and efficient UAS operations in specific volumes of U-space airspace implementation. They can decide to mandate those based on their risk assessment. This is considered necessary when, for safety reasons, they consider that such operations require more than the mandatory services listed in the regulation. One example could be weather services for operations taking place in a location where the wind or temperature are known to be hazardous factors.

¹ Article 8 of Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) (OJ L 96, 31.03.2004, p. 10) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1582541782395&uri=CELEX:32004R0550>).

This article further clarifies the obligations of the Member States in the case of cross-border U-space airspace.

GM1 to Article 5 Common Information Service

U-SPACE ARCHITECTURE

This article contains the requirements related to the provision of the necessary information for the functioning of U-space. The objective is to ensure that the information comes from trusted sources and that it is of sufficient quality, integrity and accuracy as well as security so that the USSPs and other users such as ASNPs can use this information with full reliability when providing their services.

Based on the comments received during the AB consultation, EASA has reconsidered whether or not an organisation should be certified and designated by Member States as the CIS provider for each U-space airspace implementation in which they will provide the service.

The fact that the Member States designate a CIS provider does not mean that there is only one CIS provider per Member State; it means that there is only one provider per U-space airspace. There could be as many CIS providers as there are designated U-space airspaces. The reason for having one CIS provider per U-space airspace is to ensure that there is one single point of contact, one single point of truth that consolidates all the information necessary for the functioning of the U-space airspace.

The CIS is at the heart of the U-space system. The information will be managed by the CIS provider. This provider ensures that all the information can be exchanged between the various organisations to fulfil their obligations. This article specifies the necessary information that needs to be made available for the U-space and the quality and information security requirements applicable for the service provider.

The CIS works on the basis that the exchange of information is being ensured by application of (open) communication protocols allowing USSPs and ANSPs to exchange information through the appropriate interface. The USSPs shall use the information provided by the CIS provider to provide U-space services to UAS operators.

This article also specifies that the CIS provider cannot be a USSP itself. This is necessary to ensure that there is no conflict of interest when the common information is made available to the different USSPs and that there is fair competition in the U-space services market.

GM1 to Article 5(3)(g) Common Information service

DEVIATION THRESHOLD

When the CIS provider makes the authorisation for deviation threshold available, this information should include not only lateral deviation but also time-window deviation. For instance, when the UAS operator cannot meet the allocated departure window with the consequence that the flight must be realigned with current operations.

GM1 to Article 6 UAS operators

OBLIGATIONS WHEN OPERATING IN U-SPACE AIRSPACE

This article covers the obligations for UAS operators when they operate in the U-space airspace. The proposed requirements are based on the assumption that UAS operators share the airspace with manned aircraft. To ensure that the risk of mid-air collision is adequately mitigated and an orderly flow of traffic is ensured, UAS operators are obliged to meet a number of requirements. At a strategic level, the UAS operators shall consider where U-space airspace is designated when preparing for their UAS operations in that airspace and establish a contract with one certified USSP of their choice that provides the mandatory set of U-space services in that airspace. At pre-tactical level, they are asked to submit their flight authorisation request form to the USSP they have a contract with if they want to operate in U-space airspace, and to ensure that they do so in accordance with the terms and conditions of the flight authorisation once it is granted by the USSP. Certain conditions need to be met prior to the flight: they are not allowed to commence their flight until they have been granted with a flight authorisation by the USSP and they have to ensure that they are able to comply with the terms and conditions given by the USSP in the granted flight authorisation. In case they cannot comply with the one granted by the USSP, they have to amend their original flight authorisation request.

Compliance with the instructions of the USSP is required, as well as ensuring that their UAS are technically capable of receiving the U-space services and of operating in the U-space airspace. The obligations are based on today's technical capability requirements for the 'open' category in the drone regulations but are additionally mandatory for the 'specific' category when flying in the U-space airspace (Regulations (EU) Nos 2019/945 and 2019/947).

GM1 to Article 6(1)(e) UAS operators

SUBMISSION OF THE FLIGHT AUTHORISATION REQUEST FORM

Unless otherwise determined by the competent authority, the UAS flight authorisation request form should normally be submitted at least 5 minutes prior to estimated take-off time.

GM1 to Article 7 Obligations for operators of manned aircraft operating in U-space airspace

MINIMUM INFORMATION TO BE PROVIDED

This article covers the cases when a manned aircraft operator operates in U-space airspace that is in uncontrolled airspace and where UAS operate. In order to allow the USSPs to safely manage the unmanned aircraft in that U-space airspace and provide the UAS operator with manned traffic information, they need to know where the manned aircraft will be in the U-space airspace. They will then be able to take the necessary measures to ensure that the air risk is mitigated.

The information that manned aircraft operators need to provide is their position at regular intervals, with the necessary level of performance in terms of integrity, accuracy, continuity and availability as well as security to allow the USSPs to make use of this data for the provision of U-space services. EASA intends to propose some AMC in that regard, to define which means can be used by manned aircraft

operators for the purpose of U-space airspace. These AMC will be developed together with the affected manned aviation community (e.g. general aviation, helicopter operators and military/State stakeholders).

GM1 to Article 8 U-space service providers

GENERAL REQUIREMENTS

A USSP is a new entity created by the regulation proposed with this Opinion. It is an organisation that is certified by the relevant competent authority to provide U-space services in U-space airspace(s) designated by the Member States. When the USSP provides services of a pan-European nature, the certification authority is EASA. USSPs provide services to UAS operators or to other USSPs.

It is important to note that in order to be a USSP, the interested entity needs to demonstrate its capability of providing at least the four mandatory U-space services (network identification, geo-awareness, traffic information and UAS flight authorisation). They can contract out the provision of some or all U-space services to other entities as long as it remains under their management control. There can also be associations of USSPs or equivalent mechanisms as long as it is clear that there is one single entity responsible for providing the minimum set of services towards the UAS operators. In relation to the flight authorisation management, USSPs are required to take actions with regard to the flight authorisation request of the UAS operators (e.g. checking for completeness, plausibility and accuracy, accept it or not, notify the UAS operator, etc.). To provide their services, they have to use the information from the CIS (e.g. airspace restrictions, status of the airspace and available traffic information) and exchange information such as UAS traffic and flight authorisation requests when necessary with ANSPs. They can do this using the relevant technical interface means in order to exchange the information between themselves.

USSPs need to be certified if they want to provide U-space services, but they do not need to be designated for the U-space airspace in which they aim to provide U-space services. Once they are certified, they can provide services in any U-space airspace in the EU. In order to be certified, they need to provide all mandatory U-space services, namely network identification, geo-awareness, traffic information and UAS flight authorisation as listed in Chapter IV.

In the short term, it is not considered that USSPs would provide ATC-like service in controlled airspace. If USSPs would provide ATC-like services (e.g. separation services for manned aircraft) within controlled airspace, they would need to meet the same certification requirements that ATS providers meet today and be designated as stipulated in the SES Regulation. This is not foreseen in the near future but as soon as U-space services similar to tactical separation services are mature (developed and validated), EASA would review the applicable regulations and defined the appropriate regulation proportionate to the safety risks associated with the service providers (e.g. with requirements equivalent to those applicable to ATS providers).

In uncontrolled airspace, USSPs provide services to UAS operators but the airspace being uncontrolled for manned aircraft, the manned aircraft need to be provided with information on where U-space airspace is established so that they can make available their position to the USSPs. This will allow

USSPs to provide U-space services to UAS with the view to resolving potential conflict and ultimately avoiding collisions.

All the requirements in this article are meant to ensure that USSPs can provide services to support the safe and efficient movement of aircraft in the U-space airspace. They are also meant to ensure coordination with the relevant ANSPs so that manned aircraft movements are safe and efficient.

AMC1 to Article 8(2) U-space service providers

RETENTION OF DATA

The data retained should consist of, as a minimum:

- exchange with the UAS operators relevant to the UAS flight plan acceptance;
- requested and issued flight authorisations/re-authorisations;
- traffic information provided to UAS operators;
- coordination exchange with the ATS units and between U-space service providers;
- flown trajectory by the UAS operators;
- status and the level of service of the infrastructure used for the provision of the service

GM1 to Article 8(5) U-space service providers

CONTINUITY OF SERVICE

U-space service providers should ensure the provision of service in which the services are available without interruption for the period of time declared in advance by the U-space service providers. The degradation of the service does not mean that the continuity of service is broken.

AMC1 to Article 8(6) U-space service providers

UAS FLIGHT AUTHORISATION REQUEST FORM

When receiving a UAS flight authorisation request form, the U-space service provider should be equipped with applications that allow automatic syntax and semantic check of the received UAS flight authorisation request form. If one or more errors would be identified in the flight authorisation request form, all the errors in it should be identified with a single check. The errors should be notified to the UAS operator and the originator of the UAS flight authorisation request form in order to be corrected and the status of the UAS flight authorisation request form should be rejected. If rejected, for other reasons than syntax or semantic errors, these reasons should be notified to the originating UAS operator.

GM1 to Article 8(12) U-space service providers

PRIORITY RULES

The priority rules referred to in this article are contained in Article 12 (Flight authorisation service). Such priority rules are given for the flight authorisation only and do not mean that U-space service providers will ensure aircraft separation.

GM1 to Article 9 Occurrence reporting

REPORTING SYSTEM

This article requires USSPs to report occurrences, based on the current regulation on the occurrence reporting, analysis and follow-up of occurrences in civil aviation. This is applicable to all aviation actors and domains to which the regulation applies and it is considered important for safety that the occurrences in which U-space activities are involved also need to be reported. It is important to note that the present occurrence reporting regulation does not define all the U-space-related occurrences but EASA will make proposals to the European Commission on the relevant U-space occurrences in the very near future.

AMC1 to Article 9(1) Occurrence reporting

REPORTING PROCEDURES

The service provider should establish procedures to be used for reporting to the competent authority and any other organisation required which include:

- (a) description of the applicable requirements for reporting;
- (b) description of the reporting mechanism, including reporting forms, means and deadlines;
- (c) personnel responsible for reporting; and
- (d) description of mechanism and personnel responsibilities for identifying root causes, and the actions that

GM1 to Article 10 Network identification service

GENERAL EXPLANATION

This article clarifies that the identification service proposed in the U-space framework is based on the requirements for remote identification contained in Regulation (EU) 2019/945 to avoid requiring additional UAS equipment or capabilities. Nevertheless, the purpose of the service is complementing the original intent of the one in Regulation (EU) 2019/945. Whereas the remote identification in Regulation (EU) 2019/945 supports the authorities in aspects related to security and privacy, the network identification service within U-space airspace operationally supports traffic safety and the traceability of the unmanned aircraft during its flight. Indeed, based on this information, the USSPs can share UAS traffic information between themselves and therefore provide traffic information to UAS operations. This service meets the objective of providing advice and information useful for the safe and efficient conduct of UAS flights. The content of the information is based on the list included in Regulation (EU) 2019/945 for consistency and in order to avoid additional UAS equipment or

capabilities in particular for the ‘open’ category. In addition, it is now specified that both broadcast and network information shall be received. This is consistent with the upcoming amendment to Regulation (EU) 2019/945 and supports the redundancy under certain use cases, although limited to certain cases of U-space airspace implementation.

GM1 to Article 11 Geo-awareness service

GENERAL EXPLANATION

This article contains the service requirements when USSPs provide geo-awareness service to UAS operators. The geo-awareness contained in Regulation (EU) 2019/945 is related to the UAS capabilities and the requirements for the Member States when they decide to establish geographical zones or for the UAS operators to follow and comply with the specification of these zones. This services aims to support UAS operators in fulfilling these obligations as it provides this information (where it is allowed to fly and where not) with the level of accuracy and other performance for which it has been certified. By using this service in a U-space airspace, the UAS operators can discharge part of their responsibility related to this UAS operator obligation.

GM1 to Article 12 Flight authorisation service

GENERAL EXPLANATION

This article provides the description for the flight authorisation service. This service is mandatory in both controlled and uncontrolled airspace and applies to UAS operators only, not to manned aircraft — like the rest of the U-space services. The reason for being mandatory also in uncontrolled airspace is the need for situational awareness of the USSPs of all the UAS traffic intending to operate in the U-space airspace. This allows USSPs to apply the prioritisation rules prior to providing the authorisation. It also allows them to pre-tactically manage traffic flow. With the information about the intended flight and other information about the type of the operations and its endurance as well as some related aircraft performance, the USSPs should be able to de-conflict the potentially conflicting flights before these flights take place. In order to do so, when there is more than one USSP providing U-space services in the U-space airspace, all USSPs are obliged to share the flight authorisation requests between themselves (of course adhering to the GDPR requirements). The platform that was foreseen for all USSPs providing services in a certain case of U-space airspace implementation was named in the previous draft ‘USSP platform’. Based on the comments received during the consultation which indicated that EASA’s proposal was going too much into an architecture, the requirements related to the USSP platform have been included into the USSPs’ obligations and some other are proposed as requirements for the CIS provider. Still, the objective is the same. In some cases of U-space airspace implementation, this obligation for the USSPs to be able to identify and share information between all the USSPs providing services within U-space airspace is fulfilled with the so-called discovery and synchronisation service. This approach will be included by EASA in the associated AMC and GM in the near future.

As mentioned above, in Article 6 (UAS operators), the flight authorisation service is provided on the basis of the UAS operator having filled in the flight authorisation request form (former flight plan) that

UAS operators need to fill in before flight departure. The content of this form is provided in Appendix 2 to the Regulation.

GM1 to Article 13 Traffic information service

GENERAL EXPLANATION

This article contains the requirements for the provision of known air traffic information relevant to the UAS operator's flight (those in close proximity to the position or intended route of the UAS flight). To provide this service, the USSP may use the information on other traffic available to them through the network identification system or through other technical means (e.g. from manned aircraft ADS-B, transponders, etc.) implemented in the U-space airspace. The main objective of this service is to alert and to help the UAS operator to avoid a collision.

This service provides the alerts, air situation and known/predicted (e.g. if tracking service is available) traffic to the UAS operator.

Detailed and accurate information about the position of other unmanned aircraft and the update frequency of the information will need to be identified and being assessed during the USSP certification process for the specific U-space airspace implementation.

GM1 to Article 14 Tracking information service

GENERAL EXPLANATION

This article contains the requirements when tracking service is used as a supporting service to provide traffic information services and support, for instance, the flight authorisation service. This service can be used to track the real-time and historical telemetry data of the UAS if the necessary supporting infrastructure exists and the UAS is flying in the range of the service capability. The providers of such service can track UAS through the signal between the aircraft and its remote controller as well as through additional surveillance observations available for the same UAS flight. They can then fuse all this information to calculate/estimate a UAS flight track. To be able to provide this service, there is a need to have different UAS flight information sources. The performance expected from this service will be based on the performance of the UAS flight information sources and the method and algorithm used for the tracking fusion. They shall be commensurate with the specific U-space airspace implementation and this shall be assessed during the certification process.

In practical terms, this service receives data from the different tracking sources coming from the USSPs (e.g. e-identification), UAS or the CIS provider to fuse it into unique and reliable UAS flight tracks.

GM1 to Article 15 Weather information service

GENERAL EXPLANATION

This article lays down the requirements for the weather services and what weather information should be provided by USSPs providing weather service. This service collects the weather information necessary to support UAS operational decisions in a specific U-space airspace and support the provision of other U-space services such as the flight authorisation service.

It is recognised that the weather information for UAS operations may be different from the one provided by today's meteorological service providers; in particular, as regards support of operations under the 'open' and 'specific' categories. UAS can fly near buildings and in areas where current aeronautical meteorological information is not always provided. Therefore, this article specifies a minimum content of weather information to be available for the purpose of UAS operations in the near future. It does not exclude the possibility that current aeronautical meteorological service providers can also provide this service.

The proposed regulation does not specify who may provide this service. Regulation (EU) 2017/373¹ contains the provisions on aeronautical meteorological services for MET providers that provide aeronautical meteorological services within ATM/ANS. In accordance with Regulation (EC) No 550/2004 (the SES service provision regulation), MET providers have to be certified to provide MET services; however, they may be designated (or not) by Member States to provide services. This is the case for MET providers providing aeronautical meteorological services within ATM/ANS. The legal basis for U-space services and their providers does not require any designation of these organisations and, therefore, this leaves the door open as to which organisation may provide weather services in the U-space airspace.

GM1 to Article 16 Conformance monitoring service

GENERAL EXPLANATION

This article includes a general description of the objective of the conformance monitoring service and what the requirements are for the USSPs providing this service. This service checks the current track of each UAS with respect to its planned mission as defined in the approved flight authorisation and compares it with it. It also considers the existence of new geo-fencing areas dynamically established and not existing before the flight authorisation was approved and alerting the UAS operators when detecting non-conformities. The monitoring is performed per UAS flight. When non-conformities of the UAS flight are detected, and potential hazardous situations are evident, the USSPs shall also alert other traffic (manned or UAS) and other USSPs or other relevant authorities with the available means. It is acknowledged that for some VLOS flights in areas of very low traffic, the monitoring service will be of little added value. This is however a U-space service that supports achieving the objectives of the Regulation as soon as traffic density and complexity increase.

GM1 to Article 17 Application for a CIS provider and U-space service provider certificate

GENERAL REQUIREMENTS

The provision of U-space services /CIS within the EU shall be subject to certification by the relevant competent authority established by the Member States. In the case of USSPs that wish to provide U-

¹ Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1582472923004&uri=CELEX:32017R0373>).

space services across the EU (pan-European services), the certifying authority is EASA. This article provides the framework for the recognition of certificates at EU level. In order to provide the CIS as well as U-space services, both the CIS provider and the USSP have to be certified by the competent authority. The certification scheme aims at preserving public interest requirements, most notably in terms of safety, and the certificate confirms that the CIS provider or USSP meets the requirements contained in the Regulation for providing specific services to the level of performance defined for the particular U-space airspace implementation and commensurate with the risk associated with the services they provide.

The competent authority issues the certificate provided they comply with the requirements referred to in Article 6 and those contained in Chapter IV for the U-space services they provide. Certificates are issued for a bundle of such services (network identification, geo-awareness, traffic information and flight authorisation plus any supporting U-space services used to provide the mandatory ones) and the competent authority shall check the validity of the certificate on a regular basis. The certificates shall specify the rights and obligations of the CIS provider and USSP, with particular regard to safety and also with regard to security of information (e.g. cybersecurity). In order to maintain their certificate valid once it has been issued, the USSP and CIS provider shall respect the conditions and limitations set out by the certifying competent authority in Appendices 2 and 3 for the USSP (see paragraph below) and CIS provider respectively. Such conditions should be objectively justified, non-discriminatory, proportionate and transparent.

Appendices 2 and 3 introduce the standard certificate forms for the USSP and the CIS provider. By introducing this single certificate concept, all the privileges of a USSP are to be mentioned in the attachment to the certificate specifying the types of U-space services, the respective conditions and associated limitations. For the CIS provider, the certificate form does not include an attachment with the type of services, conditions and limitations of the certificate because the CIS provider shall always provide the required CIS for the U-space airspace for which the CIS provider has been designated. This facilitates the mutual recognition of certificates across the EU.

GM1 to Article 18 Conditions for obtaining a certificate

GENERAL

This article lists the conditions for obtaining a CIS or a USSP certificate. It is based on criteria and requirements similar to those used for ATM/ANS providers (those contained in Subpart B of Annex III to Commission Implementing Regulation (EU) 2017/373) to obtain and maintain their certificate. These requirements are considered to be also applicable to CIS providers and USSPs providing services to UAS operators in the U-space airspace as their services are of a similar nature to that of the ones provided by ATM/ANS providers.

As both the CIS provider and USSPs are organisations that directly contribute to safe UAS operations within U-space airspace, it is important that they have a risk-based management system in place. In order to apply this system and to take into account the different types of CIS providers/USSPs and the performance of the services they manage, the proposal lists some necessary requirements for the management system. The elements of this management system are therefore harmonised for all the different types of CIS providers or USSPs, but their application may be different depending on the

different services provided. Therefore, the proposed management system provides a proportionate application of requirements to both providers.

Subpart B of Annex III to Commission Implementing Regulation (EU) 2017/373 is referenced as it includes the elements of the management system, the procedures to manage the changes to such system and what to do in case some activities are contracted to other organisations. In addition, personnel and facilities requirements, the storage and protection of records as well as the provision of an operations manual are also important elements to assess as a prerequisite for granting a certificate.

The management system required for USSPs and CIS providers is focused on managing the performance of the services they provide and as such is focused on quality and managing the relevant interfaces with those providers and organisations that have the safety view (ATC providers and UAS operators). Similarly to ANSPs, when the USSPs provide ATC-like services such as tactical de-confliction services to UAS operators and therefore they have the safety view, they will be required to have a safety management system in place.

Once they can demonstrate that the way they are organised corresponds to the provision of their services and those are provided to the level of the required performance, CIS providers/USSPs may be granted with a certificate by the competent authority.

CIS providers and USSPs are also required to implement an information security management system which is quite important for these organisations as in order to provide their services, they will use highly automated systems with a high degree of digitalisation. In addition, they will need to implement the necessary liability and insurance covers corresponding to their services and the relevant emergency response as conditions to obtain a certificate.

GM1 to Article 18(1) Conditions for obtaining a certificate

TECHNICAL AND OPERATIONAL CAPACITY

Technical and operational capacity should include a sufficient number of personnel to perform its tasks and discharge its responsibilities.

AMC1 to Article 18(2) Conditions for obtaining a certificate

QUALITY OF U-SPACE SERVICES

When the Common Information service provider uses systems and equipment to ensure the quality of the U-space services, it should ensure that such systems and equipment can provide the following quality performance: reliability, accuracy, integrity, responsiveness, assurance (to be further completed/improved)

AMC1 to Article 18(5) Conditions for obtaining a certificate

INFORMATION SECURITY THREAT

Information security threat may be any circumstance or event with the potential to adversely impact the operation, systems and/or constituents due to human action (accidental, casual or purposeful,

intentional or unintentional, mistaken) resulting from unauthorised access, use, disclosure, denial, disruption, modification, or destruction of information and/or information system interfaces. This should include malware and the effects of external systems on dependent systems, but does not include physical threats.

AMC1 to Article 18(6) Conditions for obtaining a certificate

SAFETY ASSESSMENT

- (a) The CIS/U-space service provider should ensure that the safety assessment comprises:
 - (1) the identification of hazards;
 - (2) the risk analysis of the effects related to a change;
 - (4) the risk evaluation and, if required, risk mitigation for a change;
 - (5) the verification that any change meets the safety criteria;
 - (6) the specification of the monitoring criteria necessary to demonstrate that the service delivered by the changed functional system will continue to meet the safety criteria.
- (b) The safety assessment should be conducted by the CIS/U-space services provider itself. It may also be carried out by another organisation, on its behalf, provided that the responsibility for the safety assessment remains with the CIS/U-space services provider.

GM1 to Article 18(6) Conditions for obtaining a certificate

SAFETY ASSESSMENT

- (a) A safety assessment needs to be performed before a CIS/U-space service provider is granted a certificate and when a change affects a part of the management system of the CIS/U-space service provider and that is being used in the provision of its services.
- (b) The safety assessment or the way it is conducted does not depend on whether the change is a result of a business decision or a decision to improve safety.

AMC1 to Article 18(8) Conditions for obtaining a certificate

INSURANCE COVER

The method employed to provide the cover should be appropriate to the potential loss and damage in question, taking into account the legal status of the providers concerned and the level of commercial insurance cover available.

GM1 to Article 19 Validity of the certificate

CONDITIONS OF VALIDITY

This article mitigates the situations where a CIS provider or USSP does no longer comply with the requirements applicable to it. Two major elements are taken into account: the operational and financial performance.

If the competent authority finds that the holder of a certificate no longer satisfies the requirements, it can act appropriately to ensure that safety is not compromised. Such measures may include the revocation of the certificate.

The validity of the certificate is unlimited provided that the CIS provider or USSP continues to operate in compliance with the requirements of this Regulation. This approach should facilitate and promote the implementation of a risk-based oversight scheme by the competent authority, and also allow for continuous oversight based on the identified risks instead of oversight aiming at ensuring compliance and closing the findings only at the stage of the re-certification process.

A specific paragraph reflects the situation where the provider is not active, either at the beginning or during its activities. This is to ensure that the certificate serves its main purpose which is to ensure that the provider operates and continues to operate under the applicable requirements.

AMC1 to Article 19(3) Validity of U-space service provider certificate

CRITERIA FOR THE ASSESSMENT OF THE FINANCIAL PERFORMANCE OF U-SPACE SERVICE PROVIDERS

- (a) U-space service providers should be able to meet their financial obligations, such as fixed and variable costs of operation or capital investment costs. They should use an appropriate cost-accounting system.
- (b) They should demonstrate their ability through balance sheets and accounts, as applicable under their legal statute, and regularly undergo an independent financial audit.

GM1 to Article 20 Competent authority

RESPONSIBILITIES

The main objective of this article is to ensure that the competent authorities have the capacity to assess the resources needed to effectively perform their certification, oversight and enforcement tasks and to act accordingly should this not be the case. It also specifies that EASA is the competent authority for the CIS providers or USSPs providing pan-European services, that is if they provide services within more than one Member State or when the services are provided from outside the territory to which the EU Treaty applies.

GM1 to Article 21 Tasks of the competent authorities

CERTIFICATION, OVERSIGHT AND OPERATIONAL RESPONSIBILITIES

This article proposes requirements for competent authorities that perform certification, oversight and enforcement tasks in respect of the CIS provider and USSPs. It also lists a number of obligations that are directly related to the functioning of the U-space system.

With a view to ensuring that the requirements for the CIS provider or USSPs are complied with at all times while ensuring that the competent authorities can effectively perform their tasks, those authorities are granted certain specific investigatory powers. Those powers should be exercised in

accordance with the applicable national rules and procedures, while having due regard to a number of specific elements which are meant to ensure a fair balance between all rights and interests.

Competent authorities also need to act in order to ensure that the U-space system as a whole can function properly. This is why they are mandated to establish and maintain a registration system to record the service providers involved in the U-space, to determine the type of data to be made available to those who need it, and the way this data can be exchanged in order to guarantee interoperability of the systems.

GM1 to Article 21(1)(h) Task of the competent authorities

AVAILABILITY OF THE INFORMATION

[Guidance material to be further developed to provide examples of the relevant information to be provided].

GM1 to Article 22 Exchange of safety information and safety measures

COOPERATION, COLLECTION AND ANALYSIS OF SAFETY INFORMATION

This article highlights the importance of safety information exchange between the national authorities and EASA so that they can take the necessary measures to address the safety issues and notify them to the persons or organisations concerned.

GM1 to Article 23 Pricing of U-space services

PRICING FREEDOM

A UAS operator should be able to rely on a single contract with a USSP of its choice that covers all required U-space services in a U-space airspace. USSPs can decide to conclude subcontracts with other USSPs or other organisations if they are not able to provide all mandatory services themselves. However, the USSP remains responsible for all mandatory services provided in the particular U-space airspace implementation.

U-space services should be provided in a competitive market. USSPs should be allowed to offer their services on the European market and be free to set prices in line with market demand and in all transparency.

Airspace users within the ATM system should not contribute to the financing of the U-space services. The regulation should avoid any cross-subsidisation between the provision of ANS and U-space services.

GM1 to Article 24 Pricing of CIS

ECONOMIC REGULATION

The CIS provider designated per U-space airspace is one. This is a monopoly and the price of the CIS thus needs to be regulated. The price should reflect the cost for the management of the CIS, with a

markup reflecting the risks associated with its activities. ANSPs and USSPs should exchange safety information through the CIS for free.

GM1 to Article 25 Amendments to Commission Implementing Regulation (EU) 2017/373

AIR NAVIGATION SERVICE PROVIDERS

This article proposes two amendments to Regulation (EU) 2017/373 that lays down common requirements for ANSPs. As the interaction of USSPs with ANSPs is necessary to ensure the exchange of information and the coordination for air traffic management in the U-space airspace, it is necessary to put requirements on the ANSPs. Because these entities are regulated under the said Regulation, it is proposed to amend the relevant provisions of this Regulation to include such ANSP obligations.

GM1 to Article 26 Entry into force and applicability

TRANSITION PERIOD

It is important to provide Member States, potential USSPs and CIS providers as well as ANSPs, UAS and unmanned aircraft operators with sufficient time to allow them to effectively implement the Regulation. However, it is also important to ensure that the implementation of what it is considered to be the first-phase regulation on U-space does not lead to obsolete technical solutions. Therefore, the proposal is that the implementation time is 1 year after Regulation enters into force. It is equally important to ensure that the implementation of this first-phase regulation provides valuable results based on which more advanced services and procedures can be developed at regulatory and standardisation level.

The proposal of 1 year for transition period considers also the fact that there are already some industry standards developed related to the mandatory U-space services, as well as the fact that there are similar cases of implementation already within the different Member States.