NPA 2021-14 U-SPACE WORKSHOP | Q&A

Ref.	QUESTIONS	ANSWERS*
	GENERAL	
1	I do not see any provision for a direct traffic information from manned traffic to unmanned traffic, thus allowing faster TCAS like warnings. Is this the scope of the NPA or is it considered as a viable solution?	Direct traffic information from manned and unmanned aircraft is not in the scope of this NPA.
2	Will Open category operators be allowed to fly in U-space zones? If yes, under what conditions? Or will this be covered later on?	Yes, open category drones are allowed but if and only if the conditions of open are met – distance from people etc. In addition, to fly in U-space airspace the conditions of U-space airspace must be met: the flight must receive a flight authorisation, meaning a flight authorisation request must be made and then followed. The flight must supply network identification during the flight. The pilot must subscribe to geo-awareness, traffic information service and if mandated, weather and conformance monitoring services
3	Why is the Open A1 category outside the scope? If not part of the system, they could cause accidents in high density areas?	The regulation 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 or limited in their weight and speed (the UAS within the 'open' subcategory A1). Such types of operations are not considered to be high-risk and therefore they are exempted from the application of this regulation and therefore from this NPA.
4	Who, in your opinion, should be involved in the airspace risk assessment besides NAA?	GM4 has a list of possible National/state entities that may be involved in the airspace risk assessment. For example, ANSPs, USSPs, Operators, Law enforcement, local governments etc.
5	Just a comment. Is it considered that economic is one of the reasons to establish a U-space	GM1 provides a few examples in line with R664 Art3.1 derived from the safety, security, privacy and environmental reasons. Economic may also be a reason for establishment of a U-space airspace.
6	373 calls "aviation undertakings" those "stakeholders". Any particular reason to use a different terminology?	The definition in the regulation 373 of aviation undertaking equally applies here: 'aviation undertaking' means an entity, person or organisation, other than the service providers

		regulated by this Regulation, that is affected by or affects a service delivered by a service provider. There is no particular reason to have a difference between the two terms.
7	Regulation 664 only excludes drones with class c0 (category A1) and privately built drones of less than 250g which also fall into category A1. Class C1 (less than 900g) drones in category A1 are not excluded by the regulation. If a U-space airspace is designated for privacy reasons, why exclude drones under 250g with a camera? Their drone operator must be registered in the operator register as well...	U-space will not be designated for privacy reasons. Privacy aspects need to be taken into account when the member state designate a U-space airspace. But it is not the only element. Subcategory A1 in the Open category operations are not considered to be high-risk operations and this is the reason why they are excluded, even they have a camera.
8	Nothing is said about the cost of the service in terms of USSPs or CISP in general. Does the EU plan to set charging principles or will charges be set at market conditions. Obviously, if market-based charging is applied for the next 5-10 years, the charges would be enormous high, unless critical mass of services would be achieved.	The costs related to USSP are not regulated at EU level as it is considered that market principles should apply. For the CIS, the economic aspects are covered through the Single European Sky regulations. The mechanism for the financing of the CIS is under the SES2+ recast. In the meantime, it will be subject to national approaches.
9	Regulation (EU) No 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services provides that Member States shall exempt from en route charges (and may exempt from terminal charges) flights performed by aircraft with a maximum authorised take-off weight which is less than two metric tons. What is approach with regards to U-space and users of that space?	In order to fly in U-space airspace the UAS operator must obtain the services of an authorised U-space service provider. The contractual arrangements between the UAS operator and the U-space Service Provider are not "en-route charges" and are not covered by 391/2013. Please see answer above as well.
AIRSPACE RISK ASSESSMENT		
10	Please clarify the relationship between U-space specialised operations... I personally believe that as far as ground risk is concerned, we should apply SORA criteria to the ground below U-space.	SORA applies to particular cases within or without U-space airspace as far as the operation fulfil the requirements in the specific category and the ground/air risk determined in such assessment. In any case, SORA is an AMC for such operations and USSPs might allow operators flying in the airspace under responsibility to conduct their flight in accordance to this methodology or to define an equivalent manner to assess and mitigate risks.
11	Any flying object is a potential safety risk - therefore all possible objects should be visualised (even though they are not subject to service/charging)	Currently, not every flying object is tracked, and this does not imply to have more accident that are already determined by the reasonable level of safety. In an uncontrolled airspace this generally is the case. Visualization or tracking is a resource demanding practice that should be apply when the ratio cost/benefit (including safety is in the equation) has a positive outcome and this will not be in every case. Similarly, to manned aviation - VFR flights, mean having to identify flying objects in a visual manner with no additional tracking or detection tools.

12	EASA has done a good work in adding security, privacy and environment together with Safety. Why do you not change or extend the term TLS to TLSSPE?? For instance, will we have a target level of privacy?	Target level of Safety (TLS) is a term used generally in Safety methodologies. Security, privacy and environment might not use the same terminology/methodology. Hence setting a common target value might not be the approach in those other areas. Security, privacy and environment experts of the member states should evaluate the best approach and coordinate with the rest of the areas. If after all the discussion, assessment they find an agreement to have such a common target for the different areas of the assessment this is not incompatible with the AMC/GM proposed material.
13	We have had several reports in Germany of collisions or closed encounters of paragliders with drones. There were 5 line-cuts – so far with no fatal outcome. We suggest removing the lower limit of 250gr for drones if they fly near air-sports flying sites. The same applies to helicopter operations on heliports. (I don't want to have a 250gr drone hit the Robinson R22 that I am flying either). Several studies have shown that a collision with a drone is far more serious for a helicopter than for a fixed wing aircraft. Is it envisaged or possible to remove the lower limit of 250gr for drones if they are operated near manned aircraft such as paraglider / hang-glider flying sites?	Noted. Regulation 2019/947 allows MS to establish geographical zones to protect flying sites and heliport and, where needed, impose different limits. Procedures and guidance for establishing such zones are available on the EASA regulatory material.
14	One of the criteria for the establishment of U-space airspace was mentioned as UAS traffic density. Why are proximity of aerodromes not counted as a factor for establishment of U-space airspace?	The four main reasons are safety, security, privacy and environment. The consideration of proximity to aerodromes is taken into account mainly inside those four areas. For instance, the limits of the U-space airspace might be enlarge or reduce because of the safety and security implications of having an aerodrome in the vicinity.
15	If we can help with the safety analysis regarding airspace users in the lowest airspace by balloons you can contact EBF European Ballooning Federation. KAA@ballooning-federation.eu	Noted.
	DYNAMIC AIRSPACE RECONFIGURATION	
16	I have one question about separation. ATCO should separate from the U-space airspace or U-space is kind of restricted airspace, that4s why ATCO shall use separate between UAV and manned traffic in Class C controlled airspace with dynamic airspace configuration?	ATCO shall not clear manned traffic into U-space airspace. U-space airspace limits may be those published at designation or may be varied by ATC through dynamic reconfiguration. How close to U-space airspace can manned aircraft be cleared to fly depends on buffer application (AMC1 Art. 4). If a buffer is applied internally, they can fly anywhere outside the U-space airspace; if not, they can fly to a specified distance from the U-space airspace limits. This

		should be established at the time of U-space airspace designation.
17	ATM buffers are bigger than needed for UAS therefore overlays of U-space areas becomes difficult	(GM2 Art.2). This is a crucial point. Buffers applicable to UAS operations should be determined with reference to their performance capabilities, and they are expected to be smaller than ATM buffers. If standard buffers applicable to aircraft in flight are applied to drones as well, the designation of U-space airspace in controlled airspace in proximity to busy airports will not be practicable, as manned and unmanned operations would be incompatible and ATC would constantly deactivate the U-space airspace.
18	For the protection buffer Q2 is related to, is it not enough with the Deviation Threshold already provided in the UAS Flight Authorization?	The aim of buffers is to make sure that unmanned and manned traffic do not come too close to each other at the U-space airspace border. FA deviation thresholds (GM1 Art.10 2 d) refer to the accepted risk of a UAS not flying exactly it's authorised nominal path. If an FA is granted so that a drone, within the applicable deviation threshold, would acceptably fly in a position at the U-space airspace border, and no buffer is applied, it could find itself unsafely close to manned traffic outside the U-space airspace. The issue is addressed in AMC1 Art. 4 and GM2 Art.4.
19	There are rumours of some States intending to turn their entire airspace into U-Space airspace, what is your opinion on that, especially with regards to the DAR?	Scenarios may vary. In principle, this would imply a considerable risk assessment, able to address all the relevant issues for any controlled airspace (volumes and sub-volumes of U-space airspaces, applicable buffers and procedures, etc.) on a national scale. Of course, generic criteria could be applied, e.g. no U-space above a certain level and next to high/medium density airports, but once again things may be arranged in many ways.
20	Did you consider that even in controlled airspace, it is possible for drones and manned air traffic to share the airspace, with the condition that any drones allowed to fly in such U-Space airspace need to be able to detect and avoid manned traffic? Thus, moving separation from ATCO's to drone operators. This will require manned traffic to be equipped with ADS-B, FLARM or similar devices?	This could be the future, but it is out of the scope set by the current U-space regulatory package. In controlled airspace, manned and unmanned are so far intended to be segregated.
21	About Buffer zones. Do we have to consider two side single process to define Buffer zone between U-space and ATC airspace. Both these parties apply buffers. In order to not lose airspace, can this be done in cooperation by U-space and ATZ side to apply optimum buffer zone?	Cooperation between U-space and ATM in determining the applicable criteria could be of great use. The issue of buffers is both strategic and, to a certain extent, tactical. Both U-space airspace designers and ATM airspace designers need criteria to determine if airspace volumes are segregated; both USSPs and ATCPs need criteria to determine if a flight authorisation or a

		clearance ensure that unmanned and manned operations are segregated, as no tactical separation between manned and unmanned is currently applied.
22	Isn't a risk of collision when 2 aircraft are in the same airspace without being separated, without being able to "see" each other and without having a common altitude reference system?	The current U-space regulatory package does not envisage the application of separation between manned and unmanned aircraft. In controlled airspace, safety is intendedly ensured by segregation, i.e., by making reasonably sure that manned and unmanned aircraft operate in volumes of airspace which do not interfere. Altitude reference is indeed an issue, addressed elsewhere in the NPA.
23	In what extend U-Space is expected to expand? All over national airspace, or where UAS traffic is dense? What airspace Categories is going to cover? How is the Airspace Classes ATS service provision foreseen to be implemented?	All those issues should be addressed in the relevant risk assessment. In principle, the designation of U-space is expected where services would be needed to support safe UAS operations towards other UAS operations and/or manned operations. Many studies on the expected UAS market evolution are available, they normally do not directly address forecasts about U-space airspace designation but could provide hints on where and how this is more likely to happen. In the end, it is up to Member States, although reasonably market driven.
24	Whenever a controlled flight needs to operate in U-Space airspace, ATC must always assume the risk of collision is unacceptably high. Ability of ATC to define a safety margin on a case-by-case basis will only be possible in advanced applications, and only once the performance characteristics (in particular, vertical and lateral navigational accuracy) of the UAS are standardised. In the initial application, the operational intent volumes of UAS (as defined in the ASTM F38 Standard for UTM/USS Interface) will have the containment criteria sufficient for the target safety level of the prevention of collision UAS-UAS, that is, not sufficient for the prevention of collision UAS-manned aircraft. Therefore, ATC cannot define its decisions based on the submitted operational intent volumes of UAS into account for the prevention of manned aircraft but has to refer exclusively to entire airspace volume.	Generally speaking, as no tactical separation between manned and unmanned will be applied under the current U-space regulatory package, ATC shall pursue segregation between manned operations and a volume of airspace designated as U-space – possibly reconfiguring such volume through DAR. Segregation criteria are to be set, as no case-by-case assessment by ATC is expected to take place. The issue is addressed in AMC1 Art. 4 and GM1/2 Art.4.
25	Alberto, did you consider the needed secret special operations, how do we keep those secret with CISP and USSP?	As military and State aircraft operations are normally excluded from the scope of Regulation 2018/1139 and its implementing and delegated regulations, this is obviously an issue – see GM1 Art. 1 (1). Unless those special operations can ensure some form of "due regard" in the new, mixed manned/unmanned operational environment, USSPs and ATSPs should somehow be involved, e.g.:

		- Unmanned secret special operation in U-space, a USSP (possibly identified as reliable) is made aware, grants a priority flight authorisation and, in controlled airspace, denies DAR if initiated by ATC, but no more info is opened to others; or - manned secret special operation in controlled U-space, ATC applies DAR without further details; etc. Variables are many, anyway service providers may help without being aware of too many details or remaining the only ones to know them.
26	Question related to DAR, it seems from the presentation that ANSP-USSP coordination is needed in tactical phase, even if a centralised architecture has been implemented. Shouldn't this be done through the CISP, taking into account that DAR is part of common information services as defined in Article 5?	In accordance with Reg. 2021/665, ATC shall ensure that USSPs and, where applicable, single CISPs are timely and effectively notified of any dynamic airspace reconfiguration (DAR). Information on DAR becomes part of CIS when it is actually applied. The coordination processes addressed by the NPA are intended to take place before that, to make sure that, when the final decision is taken and ATC actually reconfigures the U-space airspace, everything happens in a safe and efficient manner. This would be an instance of application of Reg 2021/664 Art. 7 (3). Nothing prevents Member States which would set single CISPs as the only data flow node, to do so for such coordination as well.
27	The lack of "Common Altitude Reference System" (CARS) is a major concern for Safety. This lack impacts any Dynamic reconfiguration system.	Altitude reference is indeed an issue. EASA is awaiting for validation and test by the industry to use an acceptable CARS that can be applied to allow safe separation in the U-space.
28	Do you think the ATCO will have a human being to call at the USSP for coordination or only an electronic automated address?	The whole U-space regulatory package is evidently intended for a fully automated environment. However, a human-in-the-loop scenario could be a valuable intermediate step, still compliant with the regulation.
29	When there is CISP, shouldn't be done ATC coordination through CISP? Instead of with each USSP	In accordance with Reg. 2021/665, ATC shall ensure that USSPs and, where applicable, single CISPs are timely and effectively notified of any dynamic airspace reconfiguration. Information on DAR becomes part of CIS when it is actually applied. The coordination processes addressed by the NPA are intended to take place before that, in order to make sure that, when the final decision is taken and ATC actually reconfigures the U-space airspace, everything happens in a safe and efficient manner. This would be an instance of application of Reg 2021/664 Art. 7 (3). Nothing prevents Member States which would set single CISPs as the only data flow node, to do so for such coordination as well.
30	Airspace reconfigurations as airspace management is not a part of objectives of ATS/ATC, basically ATS is not an airspace user it is a service provider. It is a ASM service according	Rather than an objective, DAR became an ATC task by Regulation 2021/665, amending Regulation 2017/373.

	to 2017/373 and 2150/2005. So are there any plans to change objectives of ATS (SERA.7001) and definitions (Article 2) in 923/2012 and 2017/373 (ATS.TR.100)? How dynamic reconfiguration relates to ASM service? How it relates to other services according 2017/373 as AIS, NAV (ESSP), FPD/ASD etc.?	DAR is not considered to be a ASM function. It is specific to U-space and should not be considered to follow the same principle as ASM.
31	There are no changes planned for 2017/373 about ASM and AIS or other services. Also ASM is everywhere mostly state service dealing with security	DAR is not considered to be a ASM function. It is specific to U-space and should not be considered to follow the same principle as ASM.
32	A question relating to DAR. When crossing a u-space outside controlled airspace my safety, as a manned traffic pilot, depends on being e-conspicuous. When entering a u-space in controlled airspace my safety depends on the ATCO reconfiguring the airspace. Why different approaches?	In uncontrolled airspace the density of manned traffic is assumed to be low, thus lowering the risk of an encounter with unmanned traffic, while in controlled airspace manned traffic density is higher, as well as relevant risks. This is why the regulatory framework establishes manned/unmanned integration in uncontrolled airspace and manned/unmanned segregation in controlled airspace. In controlled airspace, the only responsible entity to manage the airspace is the ATC. In uncontrolled airspace, such entity does not manage the airspace and thus, there is a need to ensure that manned aircraft will not come close to unmanned aircraft in the U-space and the USSP will provide the safety information to the UAS operator.
33	If the U-Space reservation impacts on the trajectory of commercial aircraft, then the U-Space reservation should be defined and managed in accordance with ICAO Annex 15, Annex 4, EU FUA Regulation and ECTL ASM Handbook. This point does not come out from the NPA. Therefore interoperability, which has an impact both on safety and in opening the market, is not ensured.	See answer to comment 31 above
NETWORK ID		
34	I assume the proposed Network ID protocol and interface will not only be applicable for USSP-to-USSP communication/coordination but also for USSP-to-CISP communication/coordination?	When designated, the CISP is an authorized user of the Network identification service (Art. 8.4). It is indeed assumed that the proposed interface will be applicable to all authorised users.
35	How to interpret Article 8 (2) item (f) what functionality is expected as NET-RID devices could be HOD and not connected to drone control?	The responsibility of providing all the required data to a USSP lies with the operator. The UAS (as a system) can comply in several ways, HOD devices being one option. This is not defined as part of Article 8.
36	Will the DSS implementation as per the R-ID standard reside in the CIS?	Implementation details are left to Member states. The standard can accommodate a centralized or decentralized approach, meaning that DSS functionality can be provided by a single entity or shared among USSPs (there is no need for an entity to oversee the network)

37	although the IR does not specifically foresee sharing this data through CIS, it appears to be a more advanced functional architecture - network distribution versus point-to-point data sharing	Implementation details are left to Member states. The standard can accommodate a centralized or decentralized approach equally.
38	What about 3G/LTE/5G comm layer for Network ID? There might be in the future some kind of protection in certain frequencies because U-space operations can be high risk operations.	The responsibility of providing all the required data to a USSP lies with the operator. The UAS (as a system) can comply in several ways, 3G/LTE/5G being one option. This is not defined as part of Article 8.
39	Have you already discussed the interface between the European ATM Network (EATMN) and the network of USSPs, particularly in controlled airspace?	This has not been discussed. This is not in the scope of the regulation (EU) 2021/664. However, the AMC/GM proposes a standard that supports data exchange with any authorised user.
	FLIGHT AUTHORISATION	
40	If the flight authorisation actually deconflicts flight plans in 4D then it is very much linked to the air risk assessment of the SORA. Would not the flight authorisation service be considered a valid tactical mitigation means after SORA Step 6 TMPR?	yes
41	Should this 4D volumes the same ones defined in SORA as Operational Volumes?	Yes and no. Yes: The planned 4D volume shall be contained in the SORA operational volume. No: the maximum size of each 4D volume may be limited in some airspaces for efficiency reasons, particularly in the time dimension. Hence a single SORA operational volume may be translated into a series of smaller volumes for the plan.
42	95% confidence of airspace volume is unsafe in controlled airspace. And what about geoloc of the airspace volume? Not acceptable from a safety perspective in controlled airspace.	95% is sufficient for target safety level for UAV/UAV collision within U-space airspace. The problem is that the same containment is with reference to an airspace restriction, where this airspace restriction is controlled airspace. The TLS for manned aircraft in uncontrolled airspace should be acceptable to the CA in accordance with 373/2017.
43	Just to be clear, should we understand that Article 10 is purely for deconfliction only (flight authorisations required by other UAS geographical zones are outside the scope of this service)?	yes
44	If possible, the CISP do the flight authorization examination based on single source of truth concept?	The flight authorisation is provided by the USSP. Building a different architecture would be a barrier to market entry for an existing USSP currently operating in another country with the standard configuration. If CISP provides U-space services, then they are also USSPs and shall be certified as such. Still there is a need to differentiate between the two roles and responsibilities and also allowed for other USSPs.

45	"airspace restrictions" are defined in IR2150/2005 (FUA) where they correspond to a specific concept...completely different from what it appears to be in the NPA 2021-14....any plans to address that?	The words "airspace restrictions" appear 2021/664 10(7) and in NPA 2021-14 both in GM1 Article 10 the AMC to 10(7) and are used in the general sense of the English language. However the meaning is similar as in 2005/2150 2(2c). this will be reviewed together during the comments review prior to finalising the AMC/GM
46	Between two flight requests, there must be no 4-D volume overlap. Are we considering buffer zones around the actual flight volume to be part of these 4-D volumes or may buffer zones of two separate operators overlap?	Yes. The "deviation thresholds" are these buffers.
47	first-come-first-served principle interpreted as "first to plan" favours certain types of operations - plannable, regular ones, and favours planning over execution. Do you plan on introducing protection mechanisms against excessive planning and airspace booking?	Ensuring equitable access is the responsibility of the competent authority who will have access to logged records of what has been done. At the current time many mechanisms have been proposed to discourage unwanted behaviour in U-space. More research and practical experience are needed before best practice can be identified.
48	In the case of passenger transport (eVTOL operation), who should ask for flight authorization? The pilot or the operator OCC?	It depends on the organisational structure of the aircraft operator. Sometimes it could be the operator, sometime the pilot.
49	Between two flight requests, there must be no 4-D volume overlap.	In controlled airspace buffer areas should be respected according to ICAO Doc 8168.
50	If the volume only requires an entry and exit time rather than a predicted position within the volume, isn't there a risk that volumes will be reserved for longer than necessary leading to issues in congested airspace?	Yes. The proposed solution is that the maximum size of the 4D volume may be limited by the competent authority. This is particularly relevant in the time dimension. A single large volume would thus be broken into a series of smaller volumes. At any moment some of these would be vacated or not yet entered.
51	Do you foresee the flight authorization can be withdrawn in cases where as an example Search and Rescue need the U-space to be cleared of UAS operations (and UAS operations thereby must cease)?	Yes. This is covered in 2021/664 10(8) and 10(10)
52	How will be managed UAS priorities managed by different USSPs in the same U-Space airspace? will there be some harmonize priority levels?	Yes. There are exactly two priority levels as explained in 2021/664 10(8). They are "not priority" and "priority"
53	Could you elaborate a little more on how a flight authorization could depend on more than one USSP? In cases of an operator with large fleets setting repetitive daily flight authorization, how is this managed against other requests ?	The recommended scheme for coordinating between USSP to detect conflicting flight authorisation requests is described in ASTM F3548-21. (Still not published! The text was approved in December 2021) This standard describes the use of the Inter-USS to detect conflicts. The resolution of conflicts is explained in 2021/664 10(9) which states "processed on a first come first served basis." Meaning the first to file succeeds. The only priority is defined in 10(8). Hence an operator with a large or small fleet flying frequently or infrequently can expect the same service.

54	What about HEMS flights with an open flight plan and unknown 4D trajectories?	Such a police or HEMS flight with a pilot on board flying VFR or IFR with an unknown course is expected to be covered by 2021/664 11(2) or 4.
55	How will the Drone Operator know that the flight activated by one USSP has been coordinated with the other USSPs working in the same area? In case any rejection from other USSP not giving the initial authorisation, which USSP will inform bout this to the drone operator?	In case two USSP (A and B) are operating, and a flight is authorised by A and then a conflicting flight authorisation request is received by B, B will discover the conflict by means of the mechanism established between them as per 10(6), most likely the as described in ASTM F3548-21. B will then reject the request. The rejection should indicate the exact place(s) and time(s) of conflict to help the UAS operator draft a revised, non-conflicting plan.
56	Shouldn't the USSP give additional information and guidance to the pilot on a BVLOS for safely save a contingency situation which deviate from the approved profile?	That is not currently proposed but seems like a reasonable idea.
57	Please confirm the understanding that ideally there should be one national Flight Information Management System (FIMS) in a country to interface all the UTMs data in the country via ASTERIX category 129 to process the 4D tracking and then interface with the ATMs via ASTERIX category 62 to notify ATC whenever a UAS is operating close or within controlled airspaces for approval of that operation to ensure manned aircraft airspace operations safety.	Article 8(4c) does not quite go to this level of detail.
58	The deviation threshold in controlled airspace should be adherent to ICAO Doc 8168 Volume II	Noted.
59	Flight Authorisation Q: In case of multiple 4D volumes, is a means foreseen to inform which 4D volumes segment is currently active and which are 'completed' at any moment during flight execution? Such a mechanism would be useful in case of conformance monitoring against the part of full operation....	Agreed.
60	GM1 Article 10 (7) (a) says "The UAS flight authorisation service can reject the authorisation because a flight penetrates a restricted airspace as there is no way for the UAS operator to indicate that they have already obtained permission to enter any restricted airspace." Shouldn't it be "can NOT reject"?	Correct. The word "not" has been lost somewhere. It should say "cannot reject".
61	Pag 69 of NPA: why can they reject? is it a typo?	You are correct, there is a typo. It should say "cannot reject".
62	AIRSPACE RESTRICTIONS AND LIMITATIONS (a) The UAS flight authorisation service can reject the authorisation because a flight penetrates a restricted airspace as there is no way for the UAS operator to indicate that they have already obtained permission to enter any restricted airspace. Hence the UAS flight authorisation service can only inform the UAS operator that permission is required.	Correct.

63	One question: the UAS has to be 95% of the time inside the volume defined in the UAS Flight Authorization Request, or inside the volume "increased" with the Deviation Threshold??	Inside the requested volume. The deviation threshold is not "free extra space" but rather an indication of what to expect if deviation does occur.
64	The nuclear power plants are already protected by Prohibited areas defined as in ICAO Annex 4 and Annex 15. Why you should not simply import in U-Space for prohibiting UASs in that areas?	The information provided by the geo-awareness service of U-space combines all the relevant parts of current aeronautical data plus some other restrictions which relate to features on the ground.
65	Are the USSP supposed to be "free market" competitors, or pretty much a government function?	The idea is that U-space services are provided commercially.
66	bigger 4d volumes would mean higher taxes? airspace is a limited resource. How do you presume this aspect?	The charging scheme may be a tool used by the competent authority to encourage efficient use of limited resources, however that is outside the scope of 2021/664 and the NPA.
	TRAFFIC INFORMATION	
67	What about Traffic Information for manned aircraft allowed to fly in U-space? E.g. a passenger helicopter bound for a heliport?	Reg. 2021/664 Art. 11 relates to "traffic information service provided to the UAS operator". The network identification service however (Art.8(2)) "shall allow for […] authorised users to receive [geographical position of the UAS etc]" and "authorised users shall be the general public as regards information that is deemed public". In consequence, to receive UAS traffic information, other aviation has to use publicly available information, go through air traffic services providers
68	If a flight is in its approved 4D trajectory, why would TI be necessary?	Because traffic information is about the other traffic which may have implications on one's own operation. Because not all traffic in the U-space airspace is subject to flight authorisation services i.e. manned traffic and therefore in order to ensure safety, this additional service is needed
69	Which entity approves/accepts the risk assessments in relation to risk between manned aircraft and UAS?	Competent authority approving and establishing the U-space airspace.
70	Is there any way for manned aircraft in U-space in uncontrolled airspace to electronically get a situation view of nearby UAS traffic?	See answer in comment 67 above.
71	Experience from ATC tells us that determining the distances that define "unsafe proximity" is a daunting task for which many states have no capacity and resources to perform. That's why ICAO separation standards are so widely used. It doesn't seem realistic that airspace risk assessment, per specific U-space airspace, would be able to answer that. AMC should provide more direction for this, especially linking it to specific UAS performance capabilities.	Noted. More on this will be developed in the future once we have mature concepts which have demonstrated.

72	How do you address position error of UAS due to positioning error due to quality of GPS/GNSS?	2021/664 Annex I: "[Member states] determine the UAS capabilities and performance requirements in accordance with Article 3(4)(a)."
73	Up to what point, upon receiving the traffic information services from USSPs, it is realistic a human pilot (or machine pilot) on BVLOS, with no further aid but traffic information around, can manage all the information and the traffic in proximity itself to avoid any collision or hazard?	Indeed, it seems responsibility is left to the UAS operator without providing any additional information on the flight intentions from the other UAS operators/manned aircraft. In this way, USSP should propose any recommendation or suggestion on the contingency (?) measures to take to avoid the collision. 2019/947 Annex Part B UAS.SPEC.060 (3b) "During the flight, the remote pilot shall avoid any risk of collision with any manned aircraft and discontinue a flight when continuing it may pose a risk to other aircraft […]." Flights that cannot be discontinued arbitrarily wouldn't be operationally authorised in the first place.
74	What about Traffic Information to the general public in order to identify UAS very close to people or malicious operation? One solution could be to provide Traffic Information to general public that is only located close to the observer position	see answer to comment 67.
75	Shouldn't we discuss with the same intensity about research and standards for effective Sense & Avoid Systems, or even Drone-TCAS-Systems as "last line of defence" when anything goes wrong in the U-Space-IT-Systems?	Agreed. As soon as we have more mature concepts and agreed standards for those, they sense and avoid capabilities and DAA capabilities should also be included.
76	Would it not be more efficient to have UAS sending their positions and velocities directly to nearby UAS, just as aircraft in the same area communicate on the same radio frequency (everything being also checked by USSP as a second check) to shorten data communication delay?	Agreed. This is a concept that should be included as well in the near future to also include how this information is shared with manned aircraft and how does this concept work in all airspace classes.
77	what altimeter setting is used for UAS? GND? AMSL?	No altimeter in drone (that is, no measurement of ambient air pressure to determine height above reference surface).
78	The concept is not mature. Unclear what it is the coordination ATC with ESSP and who takes the final decision about the quality of the traffic information.	As regards to final decision about the quality of the traffic information there is Annex I to 2021/664 that states "[Member states] determine the U-space services performances requirements in accordance with Article 3(4)(b)."
79	Considering the existing airspace congestion, is it foreseen that the reclassification of airspace is needed to provide more layers for manned and UAS operations including the upper layers for high altitude operations?	No, it is not foreseen to propose another classification of the airspace and the current one continues to apply as it is today.
80	FLARM is part of "the bunch" in SRD 860 which all USSP must receive. For battery life in the UAS it would be ideal to only have one frequency to monitor for "last resort" avoidance, e.g. using	Indeed. Let's start securing a U-space frequency for FLARM (which is already used by GA). Traffic information exchange without defining the channels of exchange makes no sense. 868,2

	low power VDL-mode4 (already ICAO specified for ATM, but could be assigned a new frequency for UAS). Core point that all need to use the same frequency.	MHZ is set for FLARM. If it is decided to use another frequency then all the existing nearly 60.000 official FLARM devices would be obsolete and pilots would have to buy new equipment. Acceptance by the pilots is necessary. On the other hand, by using the same equipment and frequency, it would be possible do a software upgrade.
81	The usage of 5G (slice) could be a solution for TIS for both GA and UAS.	Noted.
	WEATHER INFORMATION	
82	is it possible that CIS will provide the Weather information to USSP?	No, the weather information service is provided only by USSPs.
83	What you mean with trusted sources? WMMO recognised authorities?	The data and information should come from authoritative source. But weather data and information may also come from organisations not formally recognised by the MS to originate and/or publish data which meets the data quality requirements. In that case, the USSP should check through appropriate verification and validation methods that they conform with reliability and the data quality requirements.
84	MET authoritative sources: not only time, but also resolution of space. Range of 1 Miles?	This should be defined by the data quality requirements and the reliability of the weather information proposed by USSPs.
85	Can USSP use their own weather monitoring devices? And should the weather monitoring should be located 50+ meters above ground level?	The rules do not go into such details. It is up to the USSP to define their own requirements to ensure that they can make the information available for the purpose of UAS operations.
86	Does is needed Weather vertical profiles for drones?	To be assessed by the U-space service providers.
87	Do you have defined MET requirements for U-Space?	The NPA propose MET requirements that can be suitable for U-space but do not specifically provide weather data for U-space only. This might be available in the future when more technical solutions are demonstrated and validated.
88	Can we not use ADS-B UAT TIS-B for USSP to send the actual traffic to GA flying in U-Space and with the same infrastructure use MET office data both for the Drone operator AND with FIS-B /weather send this data to the GA- flying in U-airspace	To be confirmed but this was not discussed.
89	Why not using services of certified MET providers?	The regulation does not prohibit the use of services from certified MET providers
90	The quality of weather data that you ask are very demanding. Not achievable by EUMETSAT	The level of quality of the weather data is not defined. Only certain initial requirements are laid down to ensure that this quality can be met. The weather data providers are currently working on the best tools and equipment to provide the highest quality of data.
91	How should a network of instruments or model resolution be ever sufficient to cope with a resolution necessary for this type of operation?	Some organisations/companies are currently working on that to ensure that the weather data

		can be adapted to such UAS operations, especially in urban areas and at low-level.
92	Do we have specific weather minima for UAS ops in U-space; Do we have weather minima for UAS flights in U-SPACE? Visibility? Ceiling?	No there are no specific minima for UAS operations for the moment.
93	It sounds reasonable that there aren't weather data at the same level of availability and accuracy as they are from MET offices at controlled aerodromes. However, why then request USSPs to guarantee the reliability and quality? Wouldn't it be more consistent to say - data should be provided on the "best effort basis", whatever is out there; alternatively, only those data in accordance with ICAO Annex 3 may be included in the service provision.	The regulation 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 regulation does not specify who may provide this service. Regulation (EU) 2017/37311 contains the provisions on aeronautical meteorological services for MET providers that provide aeronautical meteorological services within ATM/ANS. MET providers have to be certified to provide MET services; however, they may be designated (or not) by Member States to provide services. 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.
96	Development of the aviation weather service is going to completely other direction. The block size of the determining grid is getting bigger and bigger	Noted. EASA will carefully follow these developments and ensure that weather data providers provide their services that meet their certification requirements.
97	Weather forecast for the energy grid (solar fields and windfarms) is moving in the right direction.	Noted.
	CONFORMANCE MONITORING	
98	What it means compliance to UAS trajectory? Do you have defined parameters for vertical, horizontal dimension and velocity?	UAS trajectory is a series of 4D volumes. UAS in any volume: compliant; UAS outside all volumes: non-compliant. Yes, there are defined parameters, called "deviation thresholds": 2021/664 Art. 10 (2d) "[When] notifying the UAS operator about the acceptance of the UAS flight authorisation request, [U-space service providers] indicate the allowed UAS flight authorisation deviation thresholds."
99	How far should go the alert to other users?	Alerts should go to other airspace users in the proximity (as required for traffic information service) of the non-compliant UA.
100	Please clarify why failure in non-conformance service triggers contingency operations mode on the operator's side? It is assumed that the operator would turn to contingency mode only in the event that the provision of conformance monitoring is due to the operator's failures (e.g. failure of remote ID, failure of UAS position reporting capability, if any). However, the failure on the USSP side, however, should not result in	The statement is correct and this is how this service should be applied.

		triggering the contingency scenario on the operator's side. On the other hand, if the importance of the conformance monitoring service is such that the absence of it downgrades the nominal operational mode for the operator into contingency mode, the conformance monitoring cannot be an optional service.	
101	Does non-compliance cause a report to authority/EASA	Leaving the 4d trajectory is sort of similar to "Level bust" "Unintentional deviation from intended or assigned track". Therefore, it would constitute a reportable occurrence".
102	In conformance monitoring how is conflict detection and resolution going to be handled? (UAS-UAS or UAS-Aircraft	No.
103	Could a GNSS failure be considered a contingency?	If it is part of a redundant setup, not necessarily. If the UA has lost its navigation function completely, yes definitely.
104	Is conformance only ensured against the route?	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.
105	What is the origin of the current date conformance service use to check? are they coming from the UAS? how conformance service knows if the data coming from the UAS are reliable?	The information is generated in the UA (see 2021/664 Art. 8(2c-g)). Axiom: The UA estimates its position etc with sufficient precision.
106	How do you plan to filter out and control unregistered, „rogue" drones in urban airspace that could be dangerous to registered drones, or anything else inside the city area?	EASA has developed a counter drone action plan.

COMMON INFORMATION SERVICE				
107	Could CISP centralize some services (e.g. flight authorization) based on single source of true concept? Is this possible scenario?	The single CISP – if in place – should collect the information of the USSP services and provide it to all relevant stakeholders (e.g. USSPs, ATSP).
108	Please clarify how the quality and safety is ensured in distributed CIS model. The scope of certification requirements is limited to USSP and single CIS providers, thus leaving out entities that participate in the CIS provision and are neither a USSP nor a single CIS provider.	The single CIS provision eases this challenge. In the distributed CIS model, the main providers of data (USSP, ANSP) are already certified, or that data come from the state.
109	Shouldn't the CISP also be able to provide the FULL picture over ALL active or planned flight authorisations, from all USSPs? This to provide a common awareness of the airspace situation to both ATS, manned and unmanned airspace users at any given moment.	Yes, and furthermore on withdrawn flight authorisations.
110	Please confirm if in general most classes of UAS should not use ADS-B due to the limited amount of 24 bit II codes which is 0 to 16,777,215 (FFFFFF16 in hexadecimal) which is mainly reserved for manned aircraft and most UAS should rather use IDs in IPv6 addresses for 4D location tracking.	LTE transponders should be considered.

111	don't you think that 2023 is too near considered that details are missing from the regulatory, technology and operational point of view? does EASA have any feedback on the readiness of States/CA?	There is no obligation to have U-space airspaces in place by 2023. EASA has some general overview of the development of U-space implementation in the EU but no in a very precise manner.
112	Do you think Common Information service could be a more global concept, gathering information concerning weather, airspace information, data from uas, data from aircraft etc. and where stakeholders could take and give relevant information in order to ensure services?	It should not be discarded in the future.
113	@Authorisation service and @CISP: There are both CISP architectures possible (centralised or decentralised). We suppose in the single CISP variant, the CISP should serve as the single point of truth where all the pending flight authorisation requests and all the accepted ones would be stored and where the other USSPs could "look" and check against with any new request.	Correct.
	USSP	
114	Should be used SWIM between CIS and USSP?	Yes. It is explicit that SWIM TI YP is intended to be used between USSP's (AMC1 Article 7(5)), and between USSP and ATSP (AMC 1 to Annex V(2)). The basis for this is in (EU) 2021/664 Article 7(5) and in Annex V. It is not explicitly written in NPA 2021-14 that communication between CIS and USSP should use SWIM YP TI, but Annex II to 2021/664 supports that the same means of compliance is recommended also between CIS and USSP, thus ensuring that all connections between ATSP, CIS and USSP adhere to SWIM YP TI. There is ongoing related work for example in SESAR PJ34 "AURA" to validate this approach.
115	As a general principle, should we not define what are the requirements on the interface and the performances instead of saying to use SWIM? Again I believe defining the minimum performances will cater for future improvements rather to rely on legacy systems from a regulatory framework. It is fully understood that SWIM is a very good starting point.	The performance requirements are currently defined on U-space service level in the various AMC/GM, without prescribing exact requirements on interface -level. The service descriptions foresee the definition of requirements. It would be good to clarify where in the actual U-space service sections (or other relevant sections in the AMC/GM) the minimum performance requirements are defined.
116	One would assume that "machine-readable" would require the whole landscape of codes and conventions, but there seems to be a gaping absence of it. For example, there is no standard code for UA types (comparable to ICAO Doc. 8643). Any intentions to work on standard codes for specific U-Space messages and data (e.g. emergency responses...)?	The proposed AMC/GM does not prescribe the codes/enumerations. It would indeed be beneficial to have standards to fall back on, and there is ongoing work in EUROCAE and ASTM to support this as well as research in several SESAR projects, such as PJ34 AURA and GOF2.0.

117	SWIM concept explains that they should use SOAP services, but in NPA you propose to use data in JSON format.	SOAP is one option in Yellow Profile, web service light profile is fully OK with "JSON". SWIM also allows for REST services.
118	Why should a contract between USSPs and ANSPs be necessary in the case a centralised architecture with a CISP is implemented? This implies an administrative burden which could be simplified.	While data and service integration questions can be handled by a CISP, it is necessary to agree directly with an ATSP on roles, responsibilities and coordination procedures in normal, non-normal and emergency conditions regarding manned and unmanned traffic when U-space airspace is established in controlled airspace as detailed in AMC2 Article 7(3).
119	The SWIM Yellow Profile supports Non-Real Time ground-ground services, SWIM Blue Profile supports Real Time ground-ground services, SWIM Purple Profile supports Real Time air-ground services, so why did you choose the Yellow profile?	Yellow Profile is available & U-space does not require real time – Blue and Purple profiles are still in development and would also lead to a significantly higher entry barrier and reduce chance of early adoption.
120	Is it mandatory for the USSP to be certified in all the services? Could it be possible to be certified in only three?	A USSP is certified as an entity. Individual services need to meet performance requirements, but individual services are not individually certified. GM1 to Article 7 outlines, that a USSP need to demonstrate its capability of providing the four mandatory U-space services either directly or by sub-contracting one or more of the services.
121	by excluding AIRM requirements in the service descriptions, aren't we risking that different service providers will use the nomenclature/terminology differently, making it subject to interpretation? And thus jeopardizing interoperability?	In one U-space airspace there's at least 3 stakeholders that need to agree on and publish service definitions (CISP, USSP, Authority). They complement well in skills, ways of working and focus. This will support high quality in the definitions. U-space airspace in different member states might differ in early phases of U-space implementations. While this initially might have downsides on especially semantics, it will allow enough flexibility to further grow and mature services as well as information models. There is already ongoing work on European / international level, SESAR, H2020, U-space program, etc. supporting convergence. Within this context, the risk of not using AIRM is worth taking, looking at the benefits of a more flexible framework, enabling ongoing "fast evolution" Nevertheless, getting AIRM on board mid-term should be considered, and it could in fact be added by member states right away.
122	how should be Asterix format implemented into SWIM?	SWIM Yellow Profile only mandates the infrastructure, i.e. the transport layer. The ASTERIX format describes how to encode records in a binary format. An ASTERIX record can be sent via e.g. the Web Service Light (using ReST and Web Sockets) or AMQP bindings described in SWIM Yellow Profile. Please see also Table 5 in SWIM Yellow Profile, as WS Light

			Service Interface Binding does allow to use binary formats.
123	SWIM Blue profile is still under R&D and it won't be ready by 2023 and neither by 2025.	Yellow Profile is currently the only profile that has been released and is used for many services by ANSPs.
124	We have SWIM not implemented in manned aviation, how do you expect it will be implemented and mandated in U-Space?	AMC/GM aim to reduce the entry barrier, e.g. by not mandating references to AIRM in service descriptions. Regarding SWIM, there is already available (public) work using U-space services and connections to ATM based on SWIM principles as described in the AMC/GM.
125	Is the Exchanges of Data/information among USSPs enough to ensure interoperability? Do we need other agreements to ensure a proper interpretations?	SWIM TI YP is intended to ensure interoperability of the technical infrastructure, whereas publicly available Service Descriptions are intended to ensure logic and semantic interoperability.
126	Is there a business case of these models? Who is foreseen to finance such a system?	Financial aspects are outside the scope of the U-space regulation.
127	Concerning controlled airspace, the definition and management of airspace is done in compliance with FUA regulation and ASM Handbook. Did you explore these mechanisms? How the U-coordinator could play a role in controlled airspace?	FUA is limited to encompass mainly civil-military coordination, focusing on manned operations. The mechanism is currently not applicable to U-space airspace.
128	If all data is made publicly available by the USSP, will some operators not complain due to confidentiality?	Service Descriptions of how each service operates shall be made public. The requirement to publish does not concern operational data.
129	Please provide some info about cost recovery!	Financial aspects are outside the scope of the U-space regulation.
CERTIFICATION		
130	How is going to be addressed "business plan" with no big market yet? It will be supported by big entities.	The business plan must show that the service delivery costs can be reconciled with the prices that can be achieved on the market. So the BP should be adapted to the pricing situation.
131	Do you have any rules for exemption of certification?	No such rules exist. However, in the certificate, limitations and conditions are foreseen.
132	What about the 20 % AMC of IR ATM/ANS with no equivalent in the NPA? Are they also applicable to USSP/CISP)? (if not tagged as applicable to a particular type of ATM/ANS providers)	The only AMC applicable to the USSP are those that are included in the NPA. The remaining ones in the context of 2017/373 are not applicable and remain solely for ANSPs.
133	Should the USSP and CISP fall under the ANSP organisation, will they be "automatically" certified in certain aspects, or do we need a full on certification process?	USSP/SCISP need to follow the certification process under the U-space regulation as they are providing different set of services than ANSPs.
134	If I understood the explanations right the differences in AMC/GM in 2021/664 and 2017/373 are intended	That is correct. The AMC/GM for USSP/single CISP have been adapted to their specificities.
135	What do you expect to see in the business plans of USSPs? Where is the business there??	Please see AMC1 to Article 15(1)(h) that defines what the Business plan should cover.
136	taking into account the first presentation can you elaborate a little AMC6 Article 15(1)(e)	A safety assessment is performed before a USSP or a single CIS provider is granted a certificate,

		and when a change affects a part of the management system used in the provision of its services. The safety assessment is usually conducted by the USSP or single CIS provider itself. It may also be carried out by another organisation, on its behalf, provided that the responsibility for the safety assessment remains with USSP or the single CIS provider.
137	Will the price of services economically regulated?	It is not expected that they will be regulated but rather be left to the market.
138	What is the process, if the remote pilot starts operation from outside U-space, but end of UAV operation ends to inside U-space? How could it handle?	The section of the flight which is inside U-space airspace will need a flight authorisation. The section which is outside U-space airspace will need to be operated according to the prevailing rules
139	If UAV operator shall use the general UTM application, but enter U-space change U-space Service Provider. This provider could be different.	That is correct.
140	In general aviation, if a pilot makes a mistake and invertedly violates an airspace, he/she can be detected on the radar of the concerned Air Traffic Controller. If there is a danger, radio contact can be attempted and after the event a report can be filed to investigate what was going on. However, how can we make sure that a pilot always complies with the flight authorisation in a U-Space?	It is not possible to ensure that a UAS operator will complying with the instructions of the USSP. The latter will trigger the conformance monitoring if the operator deviates from the flight path. This will also be subject to a report and, if necessary, an investigation.
141	Does EASA foresee a mechanism to ensure harmonisation of the "required level of performance" requested by the USSP in order to avoid the need for UAS manufacturers to design different UAS for different USSP (this could also include the definition of the connection to the USSP services (NRI))?	This is not planned for the moment.
142	In U-space airspace you only need SORA if the mission is in Specific category. Open category flights do not need SORA in U-space airspace. Maybe I missed the point of your question?	In U-space airspace, safety is mitigated through the provision of U-space services. SORA is only needed for the operational authorisation of the operator, both for ground and air risk mitigation. For the air risk, U-space services will be enough.
143	Could a flight be controlled by ATC, while the flight is in U-Space?	No, UAS are managed by USSP. ATC only manages manned aircraft flights.
	CONSPICUITY	
144	Could a surveillance radar be used an alternative means of compliance with SERA 6005 (c) requirements if such a radar is available in a U-space?	The surveillance radar technology was not considered because its operation is based on active interrogations that are not suitable for low level and urban environments.
145	Is airspace design of U-Space supposed to handle air risk buffer to manned aviation flying outside geographical zones? Are VFR separation minima in charge of manned AC and translated in distance to U-Space geographical zones, that are considered potential UAS operational volume?	The safety buffers should be set within U-space airspace. Actual safety margins may differ based on the actual performance of the on-board device and/or performance of the network collection transmitted position information.

146	Hello, how can the manned aircraft pilot test and verify that his electronic conspicuity transmission arrives at the USSP? I have only found a one-directional information flow in the NPA.	There is no means to verify that similarly as it is today in case of ADS-B out or SSR transponder.
147	@EASA: A proposal to mitigate the lack of ADS-B & SRD860 ground infrastructure to USSPs is to, e.g., limit UAS operations only equipped with "ADB-in" and "SRD860 receivers" in that scenario (Air-Air separation).	The regulation allows UAS operators to become USSPs to themselves and as such open a possibility for collection of position information transmitted by manned aircraft via UAS sensors connected to the UAS operator. Nevertheless, this may not be the most suitable and cost efficient option for a majority of UAS operations initially envisaged in low level airspace.
148	point c) : "not provided with ATC"; u-space airspace "segregated" there is no req to provide ATC in USPACE ever...correct? do you mean inside controlled airspace? even if ATC is provided the service is towards manned only	SERA.6005(c) applies only to uncontrolled manned aircraft. Traffic information service referred to in U-space context is provided to UAS operator by USSPs. The requirement does not set a new obligation for ANSPs to change or modify existing FIS.
149	Are there also performance requirements for aircraft position?	The performance of traffic information service will be continuously monitored. The safety margins between UAS and manned aircraft simultaneously operating in U-space may be adjusted based on the actual performance of TIS.
150	How will work Open Standards with Security issues? Jamming? Is this taken into account?	Security aspects are to be considered at the level of operations in U-space airspace, which may be reduced accordingly.
151	Is there an intended standard chosen by EASA for GA/unmanned e-Conspicuity means? Like ADS-B lite? There seems to be a lack of commitment to a direction, but great eagerness from GA as well to implement	ADS-L may effectively become the new standard for electronic conspicuity of manned aviation in U-space.
152	What are the rules of the air to be respected by pilots and remote pilots to avoid a collision?	According to Article 11.4 of Reg. (EU) 2021/664 UAS operators shall, upon receiving the traffic information services from the U-space service provider, take the relevant action to avoid any collision hazard.
153	When do you expect ADS-L SRD-860 and mobile to be available for use in aircraft? Assume not by January 2023 and hence U-space will be initially requiring ADS-B Out? Unmanned give way to manned. USSP responsible to clear the way for manned A/C based on iConspicuity	Final draft of EASA technical specification for transmissions using SRD860 frequency band should be completed in Q2 2022. The mobile telephony option depends on completion ongoing coordination among telecommunication regulators in Europe and their relevant decisions. The EASA feasibility study indicates these activities should be completed in Q4 2022. The roll-out of the mobile telephony will be coordinated with the relevant industry partners (USSPs, App Mobile developers, Mobile Network Operators) once the necessary regulatory steps are completed.
154	Why to stuck into most congested freq-band which suffer overloading already?	The proposal has no negative impact on the saturation of 1090 MHz frequency because the relevant onboard technology is subject to EASA

		certification. Many airspace users not yet equipped will likely choose a more affordable means of compliance than ADS-B out certified due to less complexity, lower costs and/or inability to install the equipment on board.
155	Is it possible for USSP's to contact GA using ADS-L?	SERA.6005(c) does not envisage such function. Nevertheless, It may be expected that uplink of information to cockpit of GA aircraft will be voluntarily adopted by OEMs based on the means proposed for compliance with SERA.6005(c).
156	GNSS based params only means very limited resolution on altitude. Will separation only be done horizontally?	GNSS altitude information also allows for vertical separation.
157	Is ads-l also compatible with ads-b? Otherwise the new standard is of no use, as it will not give GA no access to other airspaces and a double standard is being introduced. Also extra costs for GA...	ADS-L is a sub-set of ADS-B out standards and thus mutually interoperable thus easy to implement where the information based on ADS-B out is being processed. The other existing provisions of SERA.6005 allow ANSPs already today to implement alternative provisions to those specified in points (a) and (b).
158	Your proposal would mean that antennas for ADS-B and SRD 860 would have to be set up in order to be able to pick up the signals. Correct?	USSPs will need to ensure, directly or in collaboration (with third partners) collection of position information transmissions using all proposed means of transmission i.e., 1090 MHz, SRD860 and mobile telephony (via API) in case the coordination on latter will be completed.
159	Have You ever assess the 1030 MHz load? As well 1090 MHz load?	This proposal has no impact on 1030 MHz because this frequency is not considered. The proposal has no negative impact on 1090 MHz frequency because the relevant onboard technology is subject to EASA certification. Many airspace users not yet equipped will likely choose a more affordable means of compliance than ADS-B out certified due to less complexity, lower costs and/or inability to install the equipment on board.
160	My current ads-b transponder frequently experienced overload on 1090 in northern europe. How am I assured my data is received correctly to the specific USSP?	Use of a properly installed and certified ADS-B equipment will ensure reception of signal by USSP in U-space.
161	@Vladimir, do you think there is some discrepancy between the reliability and quality of data required for U-space services (e.g. for weather data) versus those for electronic conspicuity, using non-certified devices? We should be cautious not to create a complacent environment, where the actual performance will be far from what everyone hopes or expects to get	The safety margins from manned aircraft to be ensured by UAS will in U-space airspace will depend of actual performance of TIS that will be based on the actual the performance of on board devices. The TIS performance will be continuously monitored.
162	How can ADS-L cope with the very poor mobile network coverage in higher altitudes?	The U-space airspace is not envisaged to be introduced in higher altitudes and will at least initially focus on low level and urban airspace. The roll out of space based mobile telephony

		may allow for U-space implementation in higher altitudes in the future.
163	IS not "mobile telephony" what UAS will be using??	The inclusion of mobile telephony option as one of the means of compliance to SERA.6005(c) opens the opportunity to utilise that option also for UAS operation.
164	Why not use Network RemoteID devices on GA, entering U-space?	Mandating the use of Network Remote ID devices would put an undue burden on manned aviation without any clear benefits when compared to use of existing technology already installed in tens of thousands of aircraft or the affordable mobile technology.
165	What about Open Drone ID and sent ADS-L data via the ground station?	ADS-L specification is deemed as a foundation for exchange of position information between manned and unmanned aircraft.
166	Did you address the question of UAS DAA capability and the transfer of costs from new entrants to manned aviation?	DAA between manned and unmanned aircraft is not being addressed yet as that would require the capability to maintain higher safety levels. The proposal for electronic conspicuity instead allows UAS operators to avoid any collision hazard between UAS and manned aircraft within U-space using performance-based safety margins.
167	The CISP is an example of coordination between non-conspicous aviation and U-space in case of need.	The arrangements for operation of any non-conspicuous traffic (i.e., state and military aircraft) within U-space would need to be considered in U-space implementation plans and addressed in local arrangements.
168	Very interesting, with concrete proposal - although I long for studies regarding interference (especially for SRD-860 vs other users) and capacity.	The capability of SRD860 frequency band for this use case both in terms of capacity and interferences has been already demonstrated in real applications (e.g., OGN or Network of U-space demonstrators).
169	Are the GNSS devices on mobile telephony accurate enough for U-space management?	The performance of GNSS devices used in smart mobile phones is similar to the GNSS devices that are already used in existing SRD860 devices.
170	But really too bad UAT cannot be re-used; it is has been proven since years in the USA if I am not mistaken.	The UAT could be included once the frequency 978 MHz will be coordinate for this purpose in all EU Member States.
171	Shouldn't we discuss with the same intensity about research and standards for effective Sense & Avoid Systems, or even Drone-TCAS-Systems as "last line of defence" when anything goes wrong in the U-Space-IT-Systems?	EASA is research activities on iConspicuity and UAS standards will cover research on DAA related matters.
172	A BIG problem is that we are talking about one way data flow only. How to "see" active U-Space block, active UAV-route or single active UAV from manned aircraft?	The problem of fully connected air-vehicles is very complex and cannot be resolved to full satisfaction in on step. This proposal sets the necessary foundation for future evolution that will eventually also allow information uplink into cockpit of manned aircraft.
173	expanded use of ADSB might create saturation of surveillance infrastructure?	The proposal has no negative impact on 1090 MHz frequency because the relevant onboard technology is subject to EASA certification. Many airspace users not yet equipped will likely

		choose a more affordable means of compliance than ADS-B out certified due to less complexity, lower costs and/or inability to install the equipment on board.
174	What is the envisioned time frame for an ASD-L equipment mandate?	The requirement SERA.6005(c) will apply from January 2023 to any U-space airspace designated by Member States.
175	GA in U-space should follow the U-space rules. Therefor bi-directional communication is necessary. ADS-B Light will not do this.	Operation of uncontrolled manned aircraft in U-space airspace will not be affected other than what is required by SERA.6006 i.e., to be continuously electronically conspicuous to USSPs. The safety of manned aircraft is ensured by the requirement in Article 11.4 of Reg. (EU) 2021/664: *UAS operators shall, upon receiving the traffic information services from the U-space service provider, take the relevant action to avoid any collision hazard*.
176	manned aircraft in u-space are never provided with ATC...u-space is not served by ATSP, correct?	U-space can be implemented in any ICAO airspace class (from A to G). The requirement in SERA.6005(c) will apply only to traffic that is not subject to air traffic control provided by ANSP.
177	Don't the efforts to establish a reliable air-gnd data link using mobile telephony create a conflict with the efforts to protect radio altimeters?	The TIS provided by any USSP will need to support all proposed means (i.e. ADS-B out, SRD860 and mobile telephony (the latter if a Europe wide coordinated decisions will be completed)
	COORDINATION WITH LOCAL ENTITIES	
178		@ all interested to provide comments on Art 18(f): Please note that Figure 1 on p.94 is not the correct version. Please refer to the Figure presented today (to be available in the slides provided on the EASA website)

* Disclaimer: The answers in this document are provided following the questions raised in the chat box during the workshop held on 15.02.2022 on NPA 2021-14. They have been coordinated with the expert group team leaders. The provided responses are without prejudice to the comment-response document that will be released by EASA in the framework of the official outcome of the NPA 2021-14 public consultation process.