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ICAReS Task Force Group Regulations & Legislation -

Strategy – lobby action plan, harmonisation drone rules

2S02-032 ICAReS

Content

Version control

Version	Date	Description
1.0	30/08/2019	Initial draft by Peter van Blyenburgh
1.1	26/09/2019	Revision by Daan Koetsenruijter (PP4 – GeoInfra)
1.2	27/09/2019	Revision by Rob van Nieuwland (PP10-DARPAS) insertion of new text.
1,3	20/01/2020	More contributions of Peter van Blyenburgh
Def	20/01/2020	Put in the right format and editing

"Developing a network of regulatory bodies, government, and RS sector associations regarding regulation and legislation"

Common challenges

Within the 2 Seas area the three major sectors (agriculture, nature and water) constantly face important challenges which require innovation to help tackle them. Greater use and development of remote sensing (RS) and data processing methods will help provide this innovation, and both will create and support new solutions to face these challenges. Moreover, it will greatly improve the efficiency of these sectors.

However, there are obstacles in the way when looking at remote sensing. For example, there is a lack of knowledge and awareness of the possibilities remote sensing can bring; there is a lack of suitable testing and demonstration locations for companies to further innovations; and the policy on legislation and the use of drones for remote sensing is unclear.

From this the following challenges need to be addressed: the aggregation of sector demands, communication with RS companies and knowledge institutions, creation and advertisement of sites for demonstrating new remote sensing applications, harmonisation of legislation and regulations and finally the formation of a durable cluster to work together on these issues.

Overall Objective

The overall object of the ICAReS project is:

To develop a cross-border innovation cluster and create the necessary conditions for innovation in the field of remote-sensing and advanced data-communication and - processing, based on the needs of the priority sectors: nature, agriculture and water & infrastructure.

A durable cluster will result in some key benefits. There will be cross-border collaboration within the sectors allowing the demands to be aggregated and jointly tackled. The innovation of remote sensing products and services will accelerate. This will allow business operations to improve through the increased use of remote sensing. Finally, the cluster will bring clarification of different national legislations and a joint lobby for better regulations to create business opportunities.

Summary Work package 3

Based on the information gathered in work packages 1 and 2, the RS innovation cluster will develop two strategies and two action plans within this work package 3. One of the strategies and action plans is about the further innovation and usage of RS technologies in selected sectors, first per sector and then of the 3 selected sectors together. The focus of these actions is not only to explore new opportunities for innovative applications based on the aggregated demands, but also to strengthen the cluster itself. Another main issue is to develop a strategy and action plan for harmonisation of legislation and regulation in the 4 MS and if possible, in the whole EU. The partnership realises that this is not an easy job and that they will not achieve such a harmonisation in the time of this project, but the action plan of this strategy will also be executed beyond the end of the project. A third issue to be investigated in this work package is if there are other interesting sectors with demands for solutions that can be provided by the RS and data processing sector. An inventory will be made within different branches/sectors and if there is such a demand in specific sectors also for these sectors a concept strategy and agenda will be developed.

Activity A 3.2

Based on the information gathered in work packages 1 and 2, the RS innovation cluster will develop a strategy and lobby-action plan for harmonisation of legislation and regulations of the usage of RS technologies after the project period. At this moment it is not clear how far this process in MS and the EU is underway. But, there are definitely actions necessary after this period.

Introduction

The Task Force Group Regulations/ Legislation (TFG-RL) about drones is a group set up by the partners of the Interreg 2Seas ICAReS project to contribute to the harmonisation of legislation within the EU, to create a level playing field within the EU drone market and to stimulate innovation and usage in the EU drone sector. The Task Force Group will use, support, and build on existing EU structures (e.g. Civil Drone Council; drone-rules.eu) to achieve its objectives.

This document firstly describes the objectives of the group, secondly lists the members of TFG-RL and lastly expands on future action related to the sustainability of the group in terms of organisation and business model.

Objective

The objective of the TFG-RL is getting the right information on actual drone-rules in the different member states for those who need to know it (e.g. SMEs; end-users like farmers). Also, the TFG-RL receives information from the demanding sectors regarding operational needs, demands concerning airspace usage, technological needs, etc. This information can be used in the contact made with regulatory bodies to try to expand the possibilities of using drones for professional purposes.

Roles and responsibilities

The Task Force Group consists of the following members:

- Gemeente Woensdrecht (LP): Petra Lauwerijssen; icares@woensdrecht.nl; +31628797803
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DARPAS is the coordinator of the group. The other members contribute and represent the following territories:

- Netherlands: Gemeente Woensdrecht, GeoInfra, ZLTO and DARPAS.
- United Kingdom: Skeye/Terra-Drone
- Belgium: ILVO
- France: DARPAS and ILVO

The Task Force Group is responsible for the deliverables as stated in the application form of the Interreg 2Seas ICAReS project (A.2.3), these are repeated below. In case of discrepancies the latest version of the application form is leading.

While TFG-RL was gearing up, we learned about the intention of UVS International to set up a cluster of working groups. This was a result of many conversations by telephone and discussions during the conferences in Madrid (Jan. 2019) and Brussels (July 2019). The intent laid down in the "Madrid Declaration" and agreed on by the participants in the RPAS CivOps 2019 conference, including the attending national regulatory authorities & air navigation service providers (ANSPs) was to endeavour to:

- Coordinate their national drone-related regulatory activities.
- Cooperate to define consensual positions on drone-related matters, by means of joint working groups, and by sharing documents of relevance.
- Explore coordinated contributions to the creation of an institutional framework for U-Space services.
- Share knowledge and exchange information on funded drone-related R&D & demonstrator programmes.
- Share their respective experiences on possible standard scenarios for the "Specific" operational category.
- Share knowledge & experience, and exchange information on nationally defined positions relative to drone-related safety, and if possible, on security, data protection & privacy, and environmental matters, and to come to consensual positions relative to these matters.
- Share knowledge & experience, and exchange information on drone-related operational matters with the objective to be able to inform the press and the general public on the societal benefits and demonstrate compliance with societal expectations.

As overall objective, the drone community agreed that a pan-European coordination & cooperation effort, involving all stakeholders (including SMEs/SMIs), as well as the national regulatory authorities & ANSPs, was required to tackle clearly identified topics, in order to avoid the risk of duplication of effort (and the related cost).

In addition, the drone community agreed that the standardisation organisations CEN, CENELEC, ETSI, and ASD-STAN, which has been tasked by EC DG GROW to produce the standards (C€ marking) for the "open" operational drone category, as required in the new EU drone regulation, had failed to make sufficient progress, principally due to a lack off the necessary technical competences. In addition, it should be noted that industry can only contribute to the ASD-STAN work through the national normalisation institutes in the EU. The SMEs/SMIs, which are the prime holders of the required technical competences, have to be a paying member of these institutes in order to have the privilege of being able to contribute with their time & expertise (The only exception to this rule is France). Participation in face-to-face meetings is also a major obstacle for SMEs/SMIs (because of the time & financial implications relative to travel and hotel expenses). This situation has resulted in the fact that only large aerospace companies and representatives of large non-EU stakeholders like DJI, Google, Amazon, were able to participate. It was judged not right that the companies and institutes that are involved in the current drone work, are not SMEs/SMIs. At the RPAS CivOps 2020 conference (Jan. 2020), it came to light [by the French civil aviation authority (DGAC)], that due to its lack of competence and the lack of remaining time, ASD-STAN is principally adapting standards produced by the American ASTM standards organisation. This has as a result that specific European product concepts and processes are not being taken into account.

The "Madrid Declaration" triggered the creation of Drone REGIM (REGulation IMplementation) initiative. It was possible for UVS International to get this initiative going thanks to its longstanding & recognised central role in the drone community, as well as its enormous database of drone community contacts. Drone REGIM focuses on the topics of prime importance for the entire drone operator community, that are not covered by the new EU drone regulation and that have been left to the EU Member States to tackle. Drone REGIM strives to contribute, in coordination with the national aviation authorities

in the EU, to the harmonisation of the national approaches relative to the implantation of the EU drone regulation, by addressing the identified topics.

It is noteworthy to mention that UVS International, is duly recognised by the International Civil Aviation Organization (ICAO), Organisation for Cooperation and Economic Development (OECD), Joint Authorities for Rulemaking on Unmanned Systems (JARUS), European Parliament, European Commission (EC), European Aviation Safety Agency (EASA), Single European Sky ATM Research (SESAR) Joint Undertaking (JU), and EUROCONTROL, as representative of the European drone community. As such, UVS International currently has a seat on the following panels, committees & working group:

- ICAO RPAS Panel
- OECD's Drone Group
- EC's RPAS Roadmap Implementation Coordination Group
- EC's UAS Standards Coordination Group
- EASA's RMT.023 RPAS Expert Group

- ICAO Space Learning Group
- JARUS Stakeholders Consultation Body
- EASA's General Aviation Sectorial Committee
- EC Expert Group on Drones
- SESAR's U-Space Demonstrator Network

In view of the foregoing, it is clear that UVS International has significant experience in dealing with regulatory and regulatory organisations, their working methodologies, as well as working in a multi-cultural environment.

Meanwhile, the ICAReS TFG-RL was facing the tasks prescribed in the ICAReS project plan, which are very much in line with the goals of the Drone REGIM initiative. Within ICAReS it was decided not to strive for an independent process, but to team up and strengthen the Drone REGIM process as much as possible, because of the following reasons:

- Thanks to its long-lasting existence (founded in 1998) UVS International has far more connections in the drone arena than ICAReS. Consequently, it can reach more stakeholders. In addition, UVS International covers the entire EU, whereas ICAReS had to focus on the 4 participating countries.
- In addition, UVS International has been involved in ALL rulemaking & regulation producing committees, panels and commissions, as the recognised representative of the drone operator community, on the European level (EC, EASA, SESAR, EUROCONTROL), as well as the international level (ICAO, JARUS, OECD).

- The envisaged process shall have to be persistent in order to be effective after ICAReS ends in February 2020.
- It is of the utmost importance that SMEs/SMIs obtain pan-European harmonised drone-related rules & regulations, and not only in the four ICAReS countries.
- It would be very ineffective and confusing to set up a separate path striving for the same goals.
- We were looking for a sustainable organisation with a structure that will permit it to continue after the ICAReS funding has ended. Given the status, reputation & involvement of UVS International and its Drone REGIM initiative, we believe it can fulfil this role in the coming years.
- Strengthening an already widely acknowledged organisation and an agreed upon working process, which directly involves the national aviation authorities, can be effective more rapidly than creating a new structure and process proposed by a group representing only a part of Europe and not having the recognition that UVS International has.

The week after the publication of the "Madrid Declaration", UVS International conducted a Europe-wide "Call for Interest", which closed on 1 March 2019. The ICAReS partners were stimulated to react and to help finding possible contributors. In view of the large amount of positive responses received, UVS International launched a "Call for Participation" on 2 March 2019; the reply deadline was 20 March 2019. 104 persons representing 81 companies & organisations in 20 countries registered to participate in 8 Focus Groups, which in total consisted of 48 Working Groups (150 Active Members & 347 Observers). 22 candidacies for Working Group Leaders were received. All details were published on 15 April 2019, and subsequently 3 updates (incorporating late replies) appeared on 23 April, 5 May 2019 and 21 May 2019. This was done in coordination and support of the ICAReS TFG-LG

On 24 April 2019, a Drone REGIM delegation met with the EASA Drone Team (Maria Algar Ruiz, Natale Di Rubbo, Alexandra Florin, Yves Morier) at EASA headquarters in Cologne, Germany. The purpose of the meeting was for EASA to give an update on their programmed actions relative to the upcoming European drone regulation, and for the Drone REGIM team to give an update on its initiative. The objective of the meeting was to make sure that Drone REGIM avoids duplication of effort and is attuned to the ongoing and upcoming EASA activities.

On 30 April 2019, a meeting at the office of BeNeLux General Secretariat in Brussels, Belgium, brought together, on instigation of the Ministry of Infrastructure & Water Management, The Netherlands, the NAAs of Belgium, France, Germany, The Netherlands and Spain (later to be referred to as NAARIC Group), with the purpose to evaluate the interest to coordinate their national approaches relative to the implementation of the EU drone regulation. With reference to the "Madrid Declaration", the group agreed on the interest to continue to hold regular meetings, coordinate their national approaches, pool relevant documents & exchange relevant information, and a list of action points was defined. On request of the Dutch Ministry of Infrastructure & Water management, this meeting was organized and chaired by UVS International.

Subsequently, the registered Drone REGIM participants were invited to supply their written views on & suggestions relative to the activities of the Working Groups for which they had registered. The replies received were compiled and published in a 14-page document on 22 May 2019 and made available to all registered participants.

The conclusion of an online survey set out with the registered Drone REGIM participants indicated that a significant number of them desired to have a face-to-face Drone REGIM kick-off meeting to discuss practicalities. This kick-off meeting took place at the BeNeLux General Secretariat in Brussels, Belgium on 23 May 2019 and the ICAReS partner representing the TFG-LG contributed. With the intent of making the initiative more effective, and taking into account the declared participation and the large number of working groups, as well as recently published documents and recently received information, the meeting attendees consensually agreed to:
a) Refocus the Drone REGIM activities on several key points.
b) Reduce the quantity of the Focus Groups & Working Groups.
c) Redefine the composition of the Focus Groups.

On 11 June 2019, the European Union's drone regulation was published (in 23 languages). It consists 2 documents:
https://rpas-regulations.com/community-info/european-union-drone-regulation-commission-delegated-regulation-190611/
https://rpas-regulations.com/community-info/european-union-drone-regulation-commission-implementing-regulation-190611/

These common rules will help drone operators, whether professional or recreational, to have a clear understanding of what is allowed, or not. At the same time, it enables them to operate across borders. Once drone operators have received an authorisation in the state of registration, they are allowed to freely circulate within the European Union. This means that they can operate their drones seamlessly when travelling across the EU, or when developing a business involving drones around Europe.

The new rules include technical, as well as operational requirements, for drones. On one hand they define the capabilities a drone must have to be flown safely. For instance, new drones will have to be individually identifiable, allowing the authorities to trace a particular drone, if necessary. On the other hand, the rules cover each operation type, from those not requiring prior authorisation, to those involving certified aircraft and operators, as well as recommended minimum remote pilot training requirements. The new rules will replace existing national rules in all EU Member States.

The EU regulation entered into force on 1 July 2019, but will only be applicable starting 1 July 2020, in order to give Member States and drone operators the time to prepare & implement it. Starting 1 July 2020, drone operators will need to register in the Member State where they have their residence or their main place of business. The regulation applicability will be gradual. See timeline on the EASA Drone Page - https://www.easa.europa.eu/easa-and-you/civil-drones-rpas

EUROCAE and UVS International (a EUROCAE member) have found an arrangement, which will permit members of UVS International and affiliated associations (without having to be a EUROCAE member), to:
a)   Contribute to the standards work of EUROCAE WG105; and/or
b)   Comment on the draft standards produced by EUROCAE WG105.
This agreement was announced by the EUROCAE General Secretary at the European Standards Coordination Group (EUSCG) meeting in Paris, France on 20 March 2019.

BNAE (French national office for aeronautical & space normalization and a member of ASD-STAN) and UVS International prepared a Memorandum of Understanding (MoU) between ASD-STAN and UVS International, under which the two organisations would agree to exchange information, coordinate & cooperate on subjects of common interest (e.g. standards development) with the objective of contributing to EU harmonisation with their respective complementary expertise & coordinated activities. This MoU (and supporting documents) was submitted by BNAE to the ASD-STAN Board for review. In June 2019, UVS

International was informed that the proposal had not been approved. However, at the AW-Drones Consortium meeting in Brussels, Belgium on 19 September 2019, ASD-STAN informed UVS International that they would like to reconsider their initial position.

In follow-up to the Drone REGIM Kick-off Meeting on 23 May 2019, and taking its conclusions into consideration, the initial 8 Focus Groups were brought down to 5, and the initial 48 Working Groups were decreased to 15.

The election of the Working Group (Co-) Leaders was concluded on 5 October 2019. It was stimulated and brought under the attention of ICAReS partners to position for candidacy.
The election of the Focus Group (Co-) Chairmen was concluded on 11 October 2019. The results of both elections, as well as the composition of the Steering Committee, were announced on 14 October 2019. Subsequently, the members of the Steering Group elected the Steering Group Chairman.

Late November 2019, on request of the relevant Drone REGIM Working Group Leaders, 2 x 2 Working Groups were bundled for reasons of efficiency. All this results in:

FG1   Focus Group 1 - Training & Qualification
WG1.1 Training Operators in the Use of SORA
WG1.2 Drone Operations Manual
WG1.3 Flight School & Examination Qualification
WG1.4 Specific Category Drone Pilot Training & Licensing (theory & practical) & Examination
WG1.5 Making Professional Drone Pilot an Officially Recognized Profession
WG1.6 Open Category: Online Pilot Training & Examination
WG1.7 Safety Rules for Training / Test / Validation / Demonstration Sites

FG2   Focus Group 2 - Operations
WG2.1 UTM / U-Space Implementation & U-Space Service Provision & Air Navigation Service Providers (ANSPs) (*ex WG2.3*)
WG2.2 Controlled Airspace Operations
WG2.4 Regulatory Oversight & Enforcement

FG3   Focus Group 3 - Awareness Creation
WG3.1   Awareness Creation & Communications (at national, European, international level)

FG4   Focus Group 4 - Standards
WG4.1   Review of EUROCAE (draft) documents

FG5   Focus Group 5 - Standard Scenarios
WG5.1   Standard Scenarios (EU & non-EU) & Database to Compare Them & Standard to
        Produce a Standard Scenario & Relevant Template (*ex WG5.2*)

During the process of the constitution of Drone REGIM, and also based on the same "Madrid Declaration", the regulatory authorities of Belgium[ANSP NAA], France[ANSP NAA], Germany[NAA], The Netherland[ANSP NAA] and Spain[ANSP NAA], constituted, under instigation of the Ministry of Infrastructure & Water Management of the Netherlands, the National Aviation Authority Regulation Implementation Coordination (NAARIC) group.

[ANSP]: ANSPs (Air Navigation Service Provider) of these countries are participating in Drone REGIM working groups.

[NAA]: NAAs (National Aviation Authority) of these countries are participating in Drone REGIM working groups.

NAARIC has as purpose to coordinate their national approaches to the implementation of the EU drone regulation. In view of the recognition of its European drone community representative role, UVS International was requested to organise & chair the NAARIC kick-off meeting, which took place at the BeNeLux General Secretariat in Brussels, Belgium in April 2019. The work priorities identified by NAARIC are practically identical to those defined by Drone REGIM.

Since then, NAARIC has grown out to now also include the NAAs of Austria, Italy, Luxembourg, Poland, United Kingdom, as well as the European Aviation Safety Agency (EASA). In January 2020, the following 7 Nordic countries joined NAARIC (instead of forming a separate Nordic group): Denmark, Estonia, Iceland, Latvia, Lithuania, Norway, and Sweden.

At RPAS CivOps 2020, the 8th European Civil Drone Operators & Operations Forum, took place in The Hague, The Netherlands on 14 & 15 January 2020. This conference was organised in coordination with the Ministry of Infrastructure & Water Management, The Netherlands, CAA [Human Environment & Transport Inspectorate (ILT)], The Netherlands; Directorate-General for Public Works and Water Management (Rijkswaterstaat), The Netherlands; INTERREG-ICAReS; IEDO (International Emergency Drone Organisation); DARPAS (Dutch Association for RPAS), The Netherlands; DCRO (Dutch Certified RPAS Operators Association), The Netherlands. In alignment with Drone REGIM, this conference focused on the harmonisation of the national approaches to the implementation of the new EU drone regulation. ICAReS had its own session during this two-day conference.

Drone REGIM Steering Committee members participated in the NAARIC meeting, which took place in The Hague, The Netherlands on 16 January 2020 (the day after the RPAS CivOps 2020 conference), to present Drone REGIM (structure & activities) and answer questions on its functioning. At this meeting, the NAARIC group consensually agreed to collaborate with Drone REGIM.

Access to the Drone REGIM "SharePoint" collaborative portal was granted to NAARIC. Furthermore, the NAARIC Group defined the urgent priorities that are to be addressed jointly by NAARIC and Drone REGIM (in view of the application date of the EU drone regulation):

• Defining the outline & creating an online examination for remote pilots in the «open» operational category (as required under the terms of the EU drone regulation). This implies, amongst others, collaboration to create a database of 800 examination questions. These questions will not only cover operational drone matters, but also knowledge in the fields of rules & regulation, insurance, as well as data protection & privacy. Drone REGIM has the required competence and expertise to supply significant structural, technical, and content inputs to this effort. It intends to create an inventory of the examination questions currently existing with schools and other relevant organisations in a significant number of countries, as an initial step towards creating the required database. In a second stage, in coordination with NAARIC a gap analysis will be conducted to identify what is missing. The third stage will imply defining the missing questions.

- Creating a technical subgroup on examination (lead by Nicolas Marcou, DGAC, France).
  Note: Nicolas Marcou also leads the EASA working group of national aviation authority representatives on this topic.
- Using the Drone REGIM «SharePoint» to gather all relevant information.
- Produce a contact list of the relevant national aviation authority representatives (lead by Gerry Corbett, CAA, UK), which is to be posted on the Drone REGIM «SharePoint». These persons will be given access to the Drone REGIM «SharePoint».
- Addressing the issue of updating and administrating www.dronerules.eu (an updated list of NAA representatives to be posted, update of regulatory situation in Europe, maintaining insurance + data protection & privacy sections) and taking this matter up with EASA.
- Creating an inventory of existing national standard scenarios & standard scenarios currently being worked on by NAAs (lead by Giovanni Di Antonio, ENAC Italy) and to be posted on the Drone REGIM «SharePoint».
- Creating a clear communication plan (in coordination with EASA) aimed at informing the general public, recreational drone users, the professional drone community [manufacturers (systems & sub-systems), operators, service suppliers, research organisations, flight schools, Qualified Entities/Notified Bodies, ANSPs, academia, regulatory authorities (at national & European level), training organisations, test / demo / training ranges, technology clusters, national & multi-national associations/federations], as well as all levels of government. This communication plan should take into account printed & electronic documents, web sites, social media, blogs, conferences and workshops. The text should be uniform and multi-lingual.

Strategy

It is important to note that the work to be performed within the Drone REGIM Working Groups, in coordination with a significant number of EU NAAs, shall have a strong impact in the EU. The diverse competencies bundled in Drone REGIM currently consist of:

Academia	Qualified Entity / Notified Body
Aeronautical Service Providers	Regulatory Matters
Air Navigation Service Providers	R&D and Science
Consulting	Risk Analysis
Drone Operator	Security Matters
Examination	Specialized Media
Flight Schools	Technology Cluster / Incubator
Legal Matters	Test / Assessment / Evaluation
Producer – Drone System	Test / Demo / Training Range
Producer – Drone Sub-system	Training (Various)

It is important to note that the work to be performed by the Drone REGIM Working Groups shall indeed have an impact on the formal EU process. The most important issues and urgently required matters are being addressed by experts with the right knowledge and experience, in a process that permits constant monitoring by the EU national aviation authorities, and with their active involvement. As most of the work is done online or by teleconferencing, the cost of contributing is dramatically reduced, and the cost of travel is kept to a minimum. This will facilitate participation and contributions by SMEs/SMIs and micro-companies.

The current number of working groups, each addressing a topic specified by the implicated communities, can be increased as we progress in time, if a justifiable requirement is identified.

Participation in the working groups is voluntary. The representatives of the EU drone community [manufacturers (systems & sub-systems), operators, service suppliers, research organisations, flight schools, Qualified Entities/Notified Bodies, ANSPs, academia, regulatory authorities (at national & European level), training organisations, test / demo / training ranges, technology clusters, national & multi-national associations/federations], participate in their personal capacity as experts shall perform their work, preferably remotely, using Skype (or similar free teleconferencing tools), in order to keep travel cost down and time spent away from the office as low as possible.

A "SharePoint" restricted access collaborative web portal will be used for document commenting and creation. This "SharePoint" will permit each of the Working Groups to have their specific working space and allow the members of a Working Group to jointly & simultaneously work on the same document (with nominally identified & timed change tracking). After evaluation of various possible systems, this system has been selected in order to avoid the risk of multiple versions of the same document being emailed around. The "SharePoint" has been created and is administered on a voluntary & no-cost basis by one of the organisations contributing to Drone REGIM (ExPlain); it has a library of reference documents.

Each Drone REGIM Working Group will gather information (including existing best practices) and already available material (including e.g. training courses, safety rules for test / demo sites) on the topic at hand from the various countries, and post these documents on the Drone REGIM "SharePoint". When required, the translation of the documents into English will be undertaken by members of the relevant Working Group. Subsequently, the Working Groups take over the best parts from each of the existing documents and produce, in coordination with the participating national aviation authorities, a final draft document that is reviewed by the Drone REGIM Steering Committee and the NAARIC Steering Committee. After approval by both Steering Committees, the final draft document becomes a "deliverable" document, which will then be submitted by the national aviation authorities (NAARIC members) to the European Commission and EASA. This process will guarantee that documents duly harmonized between industry (Drone REGIM) and the national aviation authorities (NAARIC) are submitted taken into account.

The validation process that has been put in place for draft standards produced by EUROCAE will permit industry (Drone REGIM) and the national aviation authorities (NAARIC) to evaluate the acceptability of these standards, prior to them be published. It is to be hoped that a similar process can be agreed on for the standards produced by ASD-STAN.

All Drone REGIM working groups feed into Focus Group 3, Awareness Creation, which will define the communications to be published for open dissemination. Focus Group 3 will also be responsible to constitute a comprehensive network of specialized and general press contacts.

In the case of Drone REGIM participants commenting on draft standard documents (respecting the required comment format), these comments will be submitted through the Drone REGIM Steering Committee to the relevant Standard Development Organisations.

In the case of Drone REGIM participating in a working group of a Standard Development Organisation, no feedback to Drone REGIM will be required.

We consider that this strategy, which places a strong emphasis on industry/NAA harmonisation, will be beneficial to the entire EU drone community (specifically SMEs/SMIs) and will significantly contribute to meeting the timing requirements that now weight on the shoulders of the national aviation authorities in the EU.

Actions

Besides the urgent subject matters defined by NAARIC (see above), the following topics have been defined and will be addressed by the Drone REGIM participants.

Training & Qualification and how to use SORA

Training Operators in the Use of SORA

The practical use of SORA (Specific Operations Risk Assessment) to carry out a Risk Assessment is still a complex task out of the reach for most small and medium-sized drone operators. Therefore there is an urgent need to develop harmonised training material to support familiarisation with the SORA process and an effective use by drone operators.

- Review of the current situation relative to the use of SORA and PDRA (Pre-Defined Risk Assessment) by drone operators through an online survey, identify the problems relative to the use of SORA and the causes of these problems.
- Review the guidelines that have been prepared by JARUS (JARUS-STS-01 - Standard Scenario for Aerial Work Operations), as well as guidelines proposed by ASTM, EUROCAE, GUTMA.
- Produce a document with best practices, real use-cases, and examples to improve its understanding for drone operators.
- Identify & review currently ongoing projects to develop online tools for applying SORA.
- Identify & produce a list of training organisations (and their qualifications) that are delivering or can deliver training in the use of SORA.
- Produce recommendations for SORA training courses and online tools on the basis of the review carried out.

Drone Operations Manual

- Review the AMC (Acceptable Means of Compliance) and GM (Guidance Material) draft documents to be released by EASA concerning the Specific Category.
- Provide recommendations relative to the minimum requirements, standards & (a) template(s) for the operational manuals in the specific operation category.
- Address & draw up recommendations relative to general high-level topics such as:
    - Can generic templates be used by operators or should each create their own?
    - Will a specific format be described so as to obtain uniformity?
    - Should the operational manuals be audited and determine the types of changes that require an audit.
    - Are manuals other than in English acceptable?
    - What additional information should the manual contain for a LUC qualified operator?
    - Should elements of a safety management system be part of the operational manual?

Flight School & Examination Qualification

- Bring into map currently existing drone flight schools in the EU & beyond (Australia, Canada, South Africa, UK).
- Create a depository of the currently existing syllabuses/courses (theoretical & practical).
- Produce a comparison of proposed theoretical & practical courses, indicating:
  - The type of drones concerned.
  - The certificates issued.
  - The flight schools currently approved/accepted by their national aviation Identify the standards (criteria) to which flight schools are approved/accepted by their national aviation authority.
- Identify according to what criteria instructors are qualified.
- Identify how & by whom are the exams conducted.
- Identify what type(s) of insurance is/are obligatory.
- Identify if the issued pilot licenses are recognized by the insurance companies?

Specific Category Drone Pilot Training & Licensing (theory & practical) & Examination

- Review the «Remote Pilot Competency for Category A & Category B» document to be published by JARUS.
- Create a depository of the currently existing training tools (syllabus/course manuals) & best practices in the EU & beyond (Australia, Canada, South Africa, UK).
- Create a comparison matrix.
- Produce recommended guidelines concerning training course syllabus.
- Provide a position paper with recommendations on:
  - Drone pilots: Legal requirements EASA
    Legal requirements Member State

    Theoretical & practical requirements/skills

    Medical requirements

  - Training institute: Determine:
    - Legal requirements EASA
    - Legal requirements Member State
    - Open air training facility

- Examination: Determine:
  - o Independent examination board
  - o Inspection rules and execution
  - o Examination protocol
  - o Legal documents fail/pass examination
  - o Qualified examination staff
  - o Secured theoretical examination facility
  - o Open air examination facility

- Registration: Public registration body
- License certificate: How to exclude fraud (illegal copies)
- Duration of license: Determine renewal periods & how renewals should be obtained

Making Professional Drone Pilot an Officially Recognised Profession

- Identify the European legal requirements of the drone pilot profession.
- Identify the additional legal requirements per Member Sate.
- Identify the EU countries where professional drone pilot is already a recognised profession.
- Identify the national authorities & organisations that should be involved in training & licensing drone pilots.
- Describe the levels of drone pilot profession in a profession competence document.
- Describe required competencies and knowledge to become a (fully) licensed drone pilot.
- Propose a European wide coordination platform for licensing authorities.
- Propose a European standard for the actual license document.
- Identify the required legal framework and the steps required to make professional drone pilot a recognised profession on a national & European level (and the organisations that are/should be involved).
- Identify the harmonisation actions required on EU level.
- Produce guidelines relative to the required national & EU procedures.
- Propose a European register of qualified drone pilots per license type.

Open Category: Online Pilot Training & Examination

- Based on EU legislation for online pilot training, provide a position paper addressing:
  - The format of the exams & the questions to be asked
  - The interest of creating a database of questions & answers
  - How to secure the exams against cheating
  - How to assess the identity of the person passing the exam
- Define what is required to obtain mutually recognised drone pilot licenses
- Define recommendations for the criteria/standards for online training institutes to be judged acceptable
- Provide a proposal for an EU-wide license registration system
- Provide a position paper with recommendations on:
  - Drone pilots: Legal requirements EASA

    Legal requirements Member State

    Theoretical & practical requirements/skills

    Medical requirements

  - Training institute: Determine:
    - o Legal requirements EASA
    - o Legal requirements Member State
    - o Open air training facility
  - Examination: Determine:
    - o Independent examination board
    - o Inspection rules and execution
    - o Examination protocol

    Legal documents fail/pass examination criteria

    Qualified examination staff & required accreditation

    Secured theoretical examination facility

    Open air examination facility

  - Registration: Public registration body
  - License certificate   How to exclude fraud (illegal copies).
  - Duration of license Determine renewal periods & how renewals should be
    obtained.

Safety Rules for Training / Test / Validation / Demonstration Sites

- Produce an explanatory document defining:
  - What is meant by «training / test / validation / demonstration sites»,
  - Why such training / test / validation / demonstration sites are important,
  - Who uses/can use them (drone & non-drone related),
  - Required infrastructure & safety systems,
  - How the training / test / validation / demonstration sites are used (incl. flight envelopes & accessible airspace blocks),
  - What type of insurance is required for training / test / validation / demonstration sites?
- Produce a listing of the training / test / validation / demonstration sites in the EU with indication which have take-off & landing strips, control towers, official approval from national aviation authority.
- Identify the safety rules + best practices currently applicable at training / test / validation / demonstration sites in the EU.
- Draw up a comparison matrix of the currently applicable safety rules & best practices.
- Produce recommended guidelines & community-based standards for a harmonized EU approach & ensuring national & EC regulatory compliance. Operational scalability should be observed (proportional to the operation risk) (all technically feasible operations should be accommodated, irrespective of the product/technology maturity). The following topics should be addressed:
  - Site/ground requirements; required infrastructure & facilities, emergency services and third party risk.
  - Airspace: (local) de-confliction / segregation, flight procedures, low/medium/high risk flight zones.
  - Radio Frequencies; including intended and unintended interference.
  - Operator qualification, manuals, airworthiness assurance, pilot & crew proficiency, obligatory insurance.
  - Liability, to ensure a level European playing field.

Operations

UTM / U-Space Implementation & U-Space Service Provision

U-Space has to be integrated with pre-existing traffic management organisations operated by trained controllers and used by many licensed pilots of manned aircraft. These stakeholders will have to be aware of the new proposed rules, airspace structure and operational procedures.

In coordination with WG2.3 Air Navigation Service Providers, identify & catalogue the results of U-Space related projects in the EU (incl. those financed by the SESAR), in order to better understand what U-Space & U-Space related services consists of and how we can progress with integration into the manned airspace.

- Identify what services are required in the short term and the relevant operational standards.
- Analyse how U-Space can be implemented in all current classes of airspace in order to define who (ATC, UTM, Pilots…) will be in charge of providing the separation and collision avoidance functions.
- Define an overall description of the equipment required (ground, on-board) taking into account the very low level flight environment that makes BVLOS communications difficult and draw up a tentative operational cost evaluation (manpower and cost of equipment).

Prerequisite: Definition of Very Low Level flight rules & Very Low Level altitude/height reference system.

Pro Memoria: *U-Space is a set of new services relying on a high level of digitalisation and automation of functions and specific procedures designed to support safe, efficient, and secure access to airspace for large numbers of drones. As such, U-Space is an enabling framework designed to facilitate any kind of routine mission, in all classes of airspace and all types of environment - even the most congested – while addressing an appropriate interface with manned aviation and air traffic control (ATC) - SESAR JU*

Air Navigation Service Providers (ANSPs)

- Identify and bring into map the current situation relative to ANSP involvement with drones (all categories).
- Produce recommendations for standardization and working methods between ANSPs.
- Analyse the role ANSPs can/will play in drone operations and how they connect to new U-Space service providers.
- Analyse the responsibilities of ANSPs and U-Space service providers in accordance with the European legislation and national adaptions concerning security.
- Taking the conclusions of the CORUS project into account, propose a recommendation for a clear boundary between ANSP and U-Space Service Providers.
- Analyse the current ATM working methods & define if there is a need for change (mobile/remote towers, …)

Controlled Airspace Operations

Today all flights in controlled airspace are bound to IFR so that ATC can safely separate traffic. Once drones start entering the CTR, ATC may not be able to separate all traffic anymore. Various methods of separation are available, and a variety of solutions could be considered. In many cases, drones do not need to fly higher than natural or man-made obstacles, or drone flights can be contained in geo-cages etc.

- Should in such cases, drones be required to be under ATC control?
- Is there a need for a tracking system (ADS-B; FLARM; WIFI to 4G/5G)?

Flying (unmanned) in the CTR needs to be redefined. Taking the conclusions of the CORUS project into account and analyse the possible solutions will be made and recommendations will be proposed on how drone flights can be allowed in the CTR with low, medium, or high ATC involvement.

Regulatory Oversight & Enforcement

- Define the (legal) framework for drone detection by law enforcement.
- Define the (legal) framework for counter-drone intervention by law enforcement.
- Define the framework for the law enforcement usage of drone and pilot identification.
- Define the enforcement of geo-restricted areas.
- Define the requirements & procedures for performing border crossing BVLOS flights.

Awareness Creation & Communications (at national, European, international level)

- Define the target audience(s):
  - (current & future drone operators (commercial & non-commercial), drone manufacturers, flight schools, drone operator customers, land owners & farmers, agricultural cooperatives, general public, government authorities (including regulators & law enforcement), ANSPs, European Commission & EC agencies, specialised associations, stakeholder federations, technology clusters, NGOs, academia, news agencies, general & specialised press, etc).
- Define the various categories of information
  - (e.g. regulatory, current & potential use cases, best practices, positive use cases, insurance-related, data protection & privacy-related, correct terminology) that should be put out.
- Identify the concerns of the target audiences relative to the current & future use of drones and prioritise them.
- Obtain an understanding of the social acceptance/risk perception related to drone usage.
- Identify & document the positive community efforts that address the public risk perception.
- Create an online library of relevant reference documents.
- Define the means (email, web site, specialised blogs, LinkedIn, Twitter & other social media).
- Identify possible communication channels (including specialised & general press (written & electronic), news agencies & television stations).
- Create a database of persons (inside & outside of Europe) to whom the information can be fed.

- Define a strategy & communication plan to:
    - Make the target audiences understand the current & upcoming drone eco-system.
    - Objectively discuss the critical aspects of the upcoming drone eco-system.
    - Dispel misconceptions.
    - Highlight the societal benefits of drones.
    - Highlight the economic benefits of responsible drone usage.
    - Play an educational role relative to the use of the correct terminology.
    - Gather & acknowledge where «bad guys»/inappropriate use has given drones a bad reputation. Highlight what measures/strategies are being installed to avoid this in the future.
- Research if/how getting support from a knowledgeable, well-connected, specialised PR agency involved to contribute to this effort is a viable option.
- Seek financial support for the aforementioned.

Standards

Review of EUROCAE (draft) Documents

Within the context of an agreement between UVS International (a member of EUROCAE) and EUROCAE, the members of Drone REGIM employed by companies and organisations that are not a member of EUROCAE, may now comment on EUROCAE documents without their employer being obliged to pay a membership fee to EUROCAE.

Members of this working group will receive:

- Notification when documents are available for review
- The deadline for comment submission.
- The relevant document
- The template to be used to supply comments

Standard Scenarios

Standard Scenarios (EU & non-EU) & Database to Compare Them

- Identify and create a depository of national & regional & sectorial standard scenarios.
- Define a matrix permitting to compare national standard scenarios.

Standard to Produce a Standard Scenario & Relevant Template

- Create a standard for the creation of a standard scenario.
- Create a template permitting to create a standard scenario.
- Create an online tool incorporating the aforementioned template.

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