

Change Approval Or Deleted/ Modified	Domains	Regulatory activity	Content of the Regulation	Regulatory organisation	Target date for regulatory material publication	EASA UAS categories	Status	Standardisation activity	Short description of the deliverable	SDO	Target date for publication	Type of document (standard, guide, specification, test method, supporting material etc.)	Status	Comments	
General															
1	Definition and classification								AS6699	This SAE document provides a harmonized, coherent set of definitions for quantity types used in data models for unmanned systems. In this data dictionary, a quantity is defined as a property of a phenomenon, substance, or body whose value has magnitude.	SAC AS-4LC5 Unmanned Systems (UAS) Control Segment Architecture	Jun-18	standard	ongoing	
	Definition and classification								ARP128 Unmanned Systems Terminology Based on the AFUFS Framework	This SAE Aerospace Recommended Practice (ARP) describes terminology specific to unmanned systems (UAS) and definitions for those terms. It focuses on terms used exclusively for the UAS industry. It also includes terms that are commonly used in the community but can be understood with common dictionary definitions that are not included in this document. Further efforts to expand the scope of the terminology are being planned.	SAC AS-4LC5 Joint Architecture for Unmanned Systems Committee	recommended practice	published		
	Definition and classification								AS400 UAS Propulsion System Domains	This terminology covers definitions of terms and concepts related to unmanned aircraft systems (UAS). It is intended to encourage the consistent use of terminology throughout all UAS stakeholders (industry, government, and the global community). 1.2 This terminology contains a listing of terms and definitions that are commonly used by Committees F38 standards. Cross-referenced terms (for example, see or compare) are for information only and provide scope for classification.	SAC AS-4LC5 Propulsion Committee	May-19	standard	planned	
M	Definition and classification								ASTM IWG-54-1: New Standard Terminology for Unmanned Aircraft Systems	This terminology covers definitions of terms and concepts related to unmanned aircraft systems (UAS). It is intended to encourage the consistent use of terminology throughout all UAS stakeholders (industry, government, and the global community). 1.2 This terminology contains a listing of terms and definitions that are commonly used by Committees F38 standards. Cross-referenced terms (for example, see or compare) are for information only and provide scope for classification.	F38 ASTM Unmanned Aircraft Systems	Mar-18	standard	ongoing	Under development. A new description of the deliverable. Sub-committee comments and negatives being adjudicated.
	Definition and classification								IISO 1890 - Requirements for the categorization and classification of civil UAS	Requirements for the categorization and classification of civil UAS. The standard applies to their industrial regulation, development and production, delivery and usage.	ISO TC20/SC16/WG1	Dec-18	standard	ongoing	
	Definition and classification								IISO 21344 - General requirements for UAS for civil and commercial applications, UAS Terminology and Classification	Provides the foundation and common terms, definitions and references relevant to the whole Standard, the purpose of which is to provide a safety quality standard for the safe operation of all UAS through the provision of synergistic standards for manufacturing and operations.	ISO TC20/SC16/WG1	Dec-18	standard	ongoing	
	Definition and classification								ASTM IWG-744: General Operations Manual for Professional Operators of Small Unmanned Aircraft Systems (UAS)	This standard defines the requirements for General Operations Manual for Professional Operator of Light Unmanned Aircraft Systems (UAS). The standard specifies the minimum requirements for the design, documentation and organization of a professional operator (i.e., for compensation and hire). The intent for this standard to support the safe operation of small UAS. It is intended to support the CAA and provide standards of practice for self- or third-party audit of operations of operators and identify gaps that are not currently addressed as it relates to Part 107 in jurisdictions that do not separately certify Operators who want to voluntarily comply with a higher standard, and (2) Operators, who want to voluntarily comply with a higher standard, and (3) Small UAS Systems, who want to voluntarily comply with an industry standard (3) Public agencies interested in developing unmanned aircraft systems programs.	F38 ASTM Unmanned Aircraft Systems	Mar-19	standard	ongoing	
M	Manuals								ASTM IWG-745: Development and Maintenance Manual for Small UAS	This specification provides the minimum requirements for a General Operations Manual (GOM) for an unmanned aircraft system (UAS) designed, manufactured, and operated in the small UAS category as defined by a Civil Aviation Authority (CAA).	F38 ASTM Unmanned Aircraft Systems	Jan-19	standard	ongoing	Subcommittee comments being adjudicated
	Manuals	Opinion No. 1/2018	Appendix 2, 3, 4, UAS in class C1, C2 and C3 shall be placed on the market with a user's manual providing the characteristics of the UA (including but not limited to the mass of the UA, its MTOM, including its payload, the frequency of the electronic identification emission), the general characteristics of the UA in case of a loss of data link, clear operational instructions and operational limitations (including but not limited to meteorological conditions and day/night operations) as well as an appropriate description of all the risks related to UAS operations;	EASA	Mar-19	open	Opinion published								
	Manuals	Opinion No. 1/2018	Appendix 1 to delegated act UAS in class C0 shall be placed on the market with clear operational instructions and warnings highlighting the risks related to UAS operations, which shall be adapted to the age of the user;	EASA	Mar-19	open	Opinion published								
	Manuals	Opinion No. 1/2018	Appendix 6 to delegated act UAS in class C4 shall be placed on the market with a user's manual providing the characteristics of the UA (including but not limited to the mass of the UA and its MTOM, including its payload, the frequency of the electronic identification emission), the general characteristics of the UA in case of a loss of data link, clear operational instructions and operational limitations (including but not limited to meteorological conditions and day/night operations) as well as an appropriate description of all the risks related to UAS operations;	EASA	Mar-19	open	Opinion published								
	Manuals	Opinion No. 1/2018	Appendix 1, 2, 3, 4, to delegated act UAS in class C1, C2, C3 and C4 shall be safety controllable by a remote pilot following the manufacturer's instructions;	EASA	Mar-19	open	Opinion published								
	Definition and classification	Opinion No. 1/2018	Appendix 2, 3, 4, 6 to delegated act UAS in class C1, C2, C3 and C4 shall have unique identifier that must be affixed in a legible manner on the UAS and the packaging or the user's manual;	EASA	Mar-19	open	Opinion published								
	Definition and classification								IASI/ETRA - 2003 Serial Unmanned Aerial Systems Serial Numbers	This standard outlines the elements and characteristics of a serial number to be used by small unmanned aerial systems.	CTA/R6 Portale Harmonisé et Interopérable Electronique Committee WG 23 Unmanned Aerial Systems		standard	published	
	Definition and classification	EASA Decision	IISO#23 Environmental conditions for safe operations defined, measurable and adhered to (Section #1 Definition)	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO#1 Ensure the operator is competent and/or proven	EASA	May-19	Specific	ongoing								
	Manufacturer organisation	EASA Decision	IISO#2 UAS manufactured by competent and/or proven entity	EASA	May-19	Specific	ongoing								
	Maintenance organisation	EASA Decision	IISO#3 UAS maintained by competent and/or proven entity (e.g. industry standards) (Section #2 Proven)	EASA	May-19	Specific	ongoing								
	Maintenance organisation	EASA Decision	IISO#4 UAS maintained by competent and/or proven entity (e.g. industry standards) (Section #2 Proven)	EASA	May-19	Specific	ongoing								
	Service provider	EASA Decision	IISO #13 - External services supporting UAS operations are adequate to the operation	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO #07 - Inspection of the UAS (product inspection) to ensure consistency in the ConOps	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO #08 - Operational procedures are defined, validated and adhered to (to address technical issues with the UAS) Criteria 1-2.5	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO #11 - Procedures are in-place to handle the deterioration of external systems supporting UAS operation: Criteria 1, 2.3	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO #14 - Operational procedures are defined, validated and adhered to (to address Human Errors) Criteria 1, 2.3	EASA	May-19	Specific	ongoing								
	Operator organisations	EASA Decision	IISO #21 - Operational procedures are defined, validated and adhered to (to address Adverse Operating Conditions) Criteria 1, 2.3	EASA	May-19	Specific	ongoing								

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ASTM

ASTM Test method - a definitive procedure that produces a test result.**Guide** - information or series of options that does not recommend a specific course of action.**Practice** - a definitive set of instructions for performing one or more specific operations that does not produce a test result.**Classification** - a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.**Terminology** - a document comprising definitions of terms; explanations of symbols, abbreviations, or acronyms.**EUROCAE****Minimum Aviation Systems Performance Standards (MASPS)** - describes and specifies the operational and/or functional requirements of a complete end-to-end system, which may include airborne, on-ground and space segments. It should provide a high-level architecture describing the individual components, and should allocate between those components the performance, safety and interoperability requirements.**Operational Services and Environment Definition (OSED)** - a document dedicated to the operational concept description; it provides the definition of the considered services and of the environment, in which they have to be provided. It is usually published as an annex to the SPR.**Safety and Performance Requirements Standard (SPR)** - a standalone document dedicated to operational safety and performance issues; it provides an allocation of the requirements between the segments for the different approval types.**Interoperability requirements standard (INTEROP)** - a standalone document dedicated to interoperability issues between the different segments; for each of them, it identifies the technical interface and related functional requirements.**Process Standard** - specifies generic methods, which are not specific to individual components, e.g. software or hardware development, environmental testing.**Minimum Operational Performance Standard (MOPS)** - specifies the performance of a component (piece of equipment, protocols, exchange formats, ...), which is the minimum necessary performance to satisfy a regulatory requirement. In particular, it specifies the tests to be made to ensure that the specified performance is achieved.**Technical Standard** - specifies performance of a component, which reflects the best industrial practice.**Guidance Document** - supplements the information contained in the types of documents described above. Usually illustrative information to another EUROCAE document.**Internal Report** - represents the opinion of a WG on a certain technical topic. It is identified with a WG reference number and date only.**EUROCONTROL** **Specifications** - Define technical and/or operational procedures that advance ATM**Guidelines** - Provide more general implementation support to stakeholders.**NOTE:** Standards are developed and maintained as both harmonising standards and as means of compliance. Standards are used as reference material by ICAO and EASA, and continue to provide the basis of Community Specifications for the extant EU SES regulations in accordance with regulation EC 552/2004 (Interoperability Regulation).**ISO****International Standard** - provides rules, guidelines or characteristics for activities or for their results, aimed at achieving the optimum degree of order in a given context. It can take many forms. Apart from product standards, other examples include: test methods, codes of practice, guideline standards and management systems standards.**Technical Specification** - addresses work still under technical development, or where it is believed that there will be a future, but not immediate, possibility of agreement on an International Standard. A Technical Specification is published for immediate use, but it also provides a means to obtain feedback. The aim is that it will eventually be transformed and republished as an International Standard.**Publicly Available Specification** - is published to respond to an urgent market need, representing either the consensus of the experts within a working group, or a consensus in an organization external to ISO. As with Technical Specifications, Publicly Available Specifications are published for immediate use and also serve as a means to obtain feedback for eventual transformation into an International Standard. Publicly Available Specifications have a maximum life of six years, after which they can be transformed into an International Standard or withdrawn.**International Workshop Agreement** - is a document developed outside the normal ISO committee system to enable market players to negotiate in an "open workshop" environment. International Workshop Agreements are typically administratively supported by a member body. The published agreement includes an indication of the participating organizations involved in its development. An International Workshop Agreement has a maximum lifespan of six years, after which it can be either transformed into another ISO deliverable or is automatically withdrawn.**Guides** - help readers understand more about the main areas where standards add value. Some Guides talk about how, and why, ISO standards can make it work better, safer, and more efficiently.

SAE

Standards - these Technical Reports are a documentation of broadly accepted engineering practices or specifications for a material, product, process, procedure or test method.

Recommended Practices - these Technical Reports are documentations of practice, procedures and technology that are intended as guides to standard engineering practice. Their content may be of a more general nature, or they may propound data that have not yet gained broad acceptance.

Information Reports - these Technical Reports are compilations of engineering reference data or educational material useful to the technical community.

Aerospace Material Specifications - these Technical Reports identify material and process specifications conforming to sound, established engineering and metallurgical practices in aerospace sciences and practices.

	Development assurance (Software)						ASIM F3151 Specification for Verification of Mission Systems	This specification provides a process by which the intended function and compliance with safety objectives of avionics systems may be verified by system-level testing. Software and hardware components of the system under development fall within the scope of this specification and this specification should not be used if a development assurance process is required.	ASIM Aircraft Systems		standard	published	This will be reference in AC 29-10 Special Class 101-17(b) To be used where appropriate in lieu of DO 178c NEW DELIVERABLE
	UA Design and Airworthiness						AS6009A JAU5 Mobility Service Set	This document defines a set of standard application layer interfaces called JAU5 Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Mobility Service Set contains the message set and protocol required for communication across all domains and types of unmanned systems (referred to as UA's) found in the AS-4 JAU5 Service Interface Definition Language document.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6564B JAU5 Service Interface Definition Language	The SAE Aerospace Information Report AR65615 - Generic Open Architecture (GOA) defines "transmission protocols and interfaces for passing open systems to the benefit of a specific class of software systems" [saep]. JAU5 Service (Interface) Definition Language defines an interface for the exchange of information between the Application Layer, and Class 3, or System Services Layer, of the Generic Open Architecture stack (see Figure 1). The specification of JAU5 Service (Interface) Definition Language according to the JAU5 Service (Interface) Definition Language document.	SAE E-30 Unmanned Aircraft Propulsion Committee		standard	published	
	UA Design and Airworthiness						AS6002 JAU5 Mission Splicing Service Set	This document defines a set of standard application layer interfaces called JAU5 Mission Splicing Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Mission Splicing Services represent the platform-independent capabilities commonly found across all domains and types of unmanned systems. A mission plan is defined in this document (more services are planned for future versions of this document) • Mission Splicer: Stores mission plans, coordinates mission execution, and manages individual digital images. The Mission Splicer service is described by a JAU5 Service (Interface) Definition Language (JSD) which specifies the message set and protocol required for compliance. The JSD is fully compliant with the JAU5 Service Interface Definition Language (AS6564).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6003 JAU5 Environment Sensing Service Set	This document defines a set of standard application layer interfaces called JAU5 Environment Sensing Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Environment Sensing Services represent typical environmental sensing capabilities commonly found across all domains and types of unmanned systems in a passive manner. A sensor service is described by a JAU5 Service (Interface) Definition Language (JSD) which defines the message set and setup for different types of imaging systems • Digital Video • A type of Visual Sensor that manages digital video • Analog Video • A type of Visual Sensor that manages analog video • 3D Sensor • A type of Sensor that manages individual digital images Each service is described by a JAU5 Service (Interface) Definition Language (JSD) which specifies the message set and protocol required for compliance. Each JSD is fully compliant with the JAU5 Service Interface Definition Language (AS6564).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	HMI						AS6040 JAU5 HMI Service Set	This document defines a set of standard application layer interfaces called JAU5 HMI Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The HMI Services represent the platform-independent Human Machine Interface (HMI) capabilities commonly found across all domains and types of unmanned systems. Five services are defined in this document • Keyboard • Digital Control • Analog Control Each service is described by a JAU5 Service (Interface) Definition Language (JSD) which specifies the message set and protocol required for compliance. Each JSD is fully compliant with the JAU5 Service Interface Definition Language (AS6564).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS5710A JAU5 Core Service Set	This document defines a set of standard application layer interfaces called JAU5 Core Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Core Services represent the infrastructure commonly found across all domains and types of unmanned systems. At present, eight services are defined in this document • Event Service • Event Listener • Event Manager • Event Management • Event Handler • Event Listener • Event Handler • Event Handler Provides a means to maintain connection liveness between communicating entities. The Event Listener service facilitates discovery of remote entities and their capabilities • List Manager • Encapsulates behavior common to doubly linked lists. Each service is described by a JSD in the Document. Each service is described by a JAU5 Service (Interface) Definition Language (JSD) which specifies the message set and protocol required for compliance. Each JSD is fully compliant with the JAU5 Service Interface Definition Language (AS6564).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						ARP6012A JAU5 Compliance and Interoperability Policy	This document, the JAU5 Compliance and Interoperability Policy (ARP6012), recommends an approach to documenting the complete interoperability of the JAU5 Service (Interface) Definition Language (JSDL) of the application of the standard set. While non-SAE AS-4 JAU5 documents are referenced in this ARP they are not within the scope of this document and should be viewed as examples only.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		recommended practice	published	
	UA Design and Airworthiness						AS6663A JAU5 Transport Considerations	This SAE Aerospace Information Report (AIR) discusses characteristics of the JAU5 Service (Interface) for the Joint Architecture for Unmanned Systems (JAU5). This document focuses on the transport of messages, media, unmanned systems and the characteristics of JAU5 itself that are relevant to the definition of a JAU5 transport specification.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		information report	published	
	UA Design and Airworthiness						AS6565A JAU5 Transport Specification	This SAE Aerospace Standard (AS) specifies a data communications layer for the transport of messages defined by the Joint Architecture for Unmanned Systems (JAU5) over a network (e.g., local area network, wide area network, etc.) This Transport Specification defines the formats and protocols used for JAU5 message transport. It is based on the Simple Object Access Protocol (SOAP) and its associated XML schema. Although JAU5 is the SDOP used as the example implemented throughout this document, AS6565 can be used for any SDOP that supports the JAU5 message set. The Transport Specification is defined as an application data interface for communicating between entities. The Transport Specification defines the message exchange protocol and in fact communicates in much the same manner regardless if the communicating entities are collocated in the same memory space or separated by a serial link.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6501 JAU5 Unmanned Ground Vehicle Service Set	This document defines a set of standard application layer interfaces called JAU5 Unmanned Ground Vehicle Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Unmanned Ground Vehicle Services represent the platform-specific capabilities commonly found across all domains and types of unmanned systems. At present, ten services are defined in this document.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6502TA JAU5 Manipulator Service Set	This document defines a set of standard application layer interfaces called JAU5 Manipulator Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Manipulator Services represent platform-independent capabilities commonly found across all domains and types of unmanned systems. At present, twenty-five services are defined in this document.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6522T JAU5 Messaging over the CMG (Common Message Distribution Service (CMOS))	This document defines a standard representation of JAU5 AS6564A message data in DOD IDL, defined by the Object Management Group (OMG) as the Common Message Distribution Service (CMOS). This document also defines how JAU5 transport considerations or JAU5 service protocols are implemented on the CMG DODS path.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		recommended practice	published	
	UA Design and Airworthiness						AS6565B Architecture Framework for Unmanned Systems	This SAE Aerospace Information Report (AIR) describes the Architecture Framework for Unmanned Systems (AFUS). AFUS comprises a Conceptual View, a Capabilities View, and an Interoperability View. The Conceptual View defines the architecture for the AFUS. The Capabilities View uses terms and concepts from the Conceptual View to describe the functional requirements for the AFUS. The Interoperability View defines the system domain. The Interoperability View provides guidance on how to design and develop systems in a way that supports interoperability.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		information report	published	
	UA Design and Airworthiness						AS6566A JAU5 History and Domain Model	The purpose of this SAE Aerospace Information Report (AIR) is two-fold. The first is to record the results of the work that were involved in the development of the JAU5 Service (Interface) for Unmanned Systems (JAU5) and to capture for posterity the domain analysis that provides the underpinnings for the work by the AS-4 Committee (Unmanned Systems).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		information report	published	
	UA Design and Airworthiness						AS6562A JAU5 Mission Splicing Service Set	This document defines a set of standard application layer interfaces called JAU5 Mission Splicing Services. JAU5 Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Mission Splicing Services represent the platform-independent capabilities commonly found across all domains and types of unmanned systems. At present, one service is defined in this document (more services are planned for future versions of this document) • Mission Splicer: Stores mission plans, coordinates mission execution, and manages individual digital images. The Mission Splicer service is described by a JAU5 Service (Interface) Definition Language (JSD) which specifies the message set and protocol required for compliance. The JSD is fully compliant with the JAU5 Service Interface Definition Language (AS6564).	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee		standard	published	
	UA Design and Airworthiness						AS6511 JAU5 Unmanned Maritime Vehicle Service Set	This document defines a message-passing interface for services representing the platform-specific capabilities common across unmanned maritime vehicles.	AS-4 JAU5 Joint Architecture for Unmanned Systems Committee	Jun-19	standard	ongoing	
	UA Design and Airworthiness						AS65971 Test Preparation (JAU5 Recognition (Instrument) Engines and Thrust Mechanism)	This standard is intended to provide a method (or methods) to obtain repeatable and consistent measurements to reflect true engine performance and durability in customer. Standardized methodology is needed to measure engine performance and durability using existing variables and parameters. Operational protocols will be defined according to engine class and will be based on those developed for on-highway engines. The scope will include the measurement of engine thrust and load combinations and/or sequences will be determined. The scope will include the measurement of engine performance and durability for reciprocating engines as the main (or sole) provider of power. These include engine-battery systems that are expected to have different operational requirements than other power sources. The scope will include a main thrust provider, but allowances will also be considered for hybrid designs. The scope will include power connection methodologies to provide a more accurate description of performance.	E-30 Unmanned Aircraft Propulsion Committee	May-19	standard	ongoing	
	UA Design and Airworthiness						AS6555 Ground support equipment (power, starters, fuel pumps, fuel tanks, cooling systems, air compressors, lighting, fuel filters, preflight weight/balance, bore-sighting, alignment, storage containers, maintenance equipment, wheel chocks, "hardware before flight", thermal, electrical and software links)		E-30 Unmanned Aircraft Propulsion Committee	Jun-19	standard	planned	

M	UAS Design and Airworthiness						Aerospace series - Unmanned Aircraft Systems (UAS) Product requirements	This European standard will provide means of compliance to cover Part 1 to 5 of the delegated act. This standard will provide with product requirements for all UAS authorized to operate in the "operational category (class C0, C1, C2 and C3) of UAS". This document does not cover the "non-operational categories" of UAS, which are not currently addressed by the existing UAS standard. It covers technical requirements and covers, but is not limited to, physical and electrical safety, software, readability of instructions and electronic components. It also covers the impact of third party safety payloads are excluded.	ASD-STAN DSWG8	Jun-19	preEN / European standard	ongoing	
A							Aerospace series - Unmanned Aircraft Systems (UAS) - Product requirements	This European standard will provide means of compliance to cover geo-awareness related requirements for Part 2 & 4 of the delegated act. More specifically, the standard will provide requirements related to the main characteristics of the geo-awareness function, namely: • The ability to detect and avoid other aircraft and objects in the airspace limitations which ensures that the process of loading or updating of this information is safe and reliable. • A warning alert to the pilot when a potential breach of airspace limitations is detected. • The ability to plan the pilot's status as well as a warning alert when its positioning or navigation cannot ensure the proper functioning of the system. • The ability to detect and avoid other aircraft and objects in the airspace in the context of this standard, geo-awareness is defined as an UAS function that warns the remote pilot if the UAS is going to enter into an unauthorised area.	ASD-STAN DSWG8	Jun-19	preEN / European standard	ongoing	
A							Aerospace series - Unmanned Aircraft Systems (UAS) - Product requirements	The standard will be developed in coordination with EUROCAEWG-105 / 2019.	ASD-STAN DSWG8	Jun-19	preEN / European standard	ongoing	
A							Guidelines	This European standard will provide means of compliance to cover lighting related requirements for part 2 & 4 of the delegated act. The purpose is to be able to verify that an UAS is equipped with lights when required. <ul style="list-style-type: none">▪ increase controllability of the UAS▪ allow a person on the ground to distinguish a UAS from a manned aircraft▪ The standards will address the following technical requirements and parameters of UAS lights (e.g. position of lights for different UA categories, intensity for different UA categories, etc.)▪ Definition of purpose, test procedures, requirements and compliance rules to evaluate UAS lights	EUROCAE WG-105	Sep 2019	Guidance	ongoing	
Ground control station							MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level) for the Remote Pilot Station Interface to Air Traffic Control (ATC)	EUROCAE WG-105	Jun-19	standard	ongoing	
A							Guidelines	Guidelines on the use of multi-GNSS for UAS	EUROCAE WG-105	Dec-19	standard	ongoing	
A							Guidelines	Guidelines on the Automatic protection of the flight envelope from human errors for UAS of multi-GNSS for UAS	EUROCAE WG-105	Dec-19	standard	ongoing	
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 1, 2 to delegated act A UAS Class C0, C1, C2 and C3 shall have a maximum allowable height above the take-off point (height = 120 m) to be determined by the system that limits the height above the surface or above the take-off point to a value selected by the manufacturer. The maximum allowable height above the surface or take-off point during flight shall be provided to the remote pilot.	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 1, 2 to delegated act A UAS Class C0 and C1 shall have a maximum allowable height above the take-off point (height = 120 m) to be determined by the system that limits the height above the surface or above the take-off point to a value selected by the manufacturer. The maximum allowable height above the surface or take-off point during flight shall be provided to the remote pilot.	EASA	Mar-19	open	Opinion published							
Manufacturer organisation							ISO 21384-2 - Requirements for assessing the quality and quality of the design and manufacturing of medical devices	Requirements for ensuring the quality and safety of the design and manufacturing of medical devices intended for use in the field (or associated remote control stations), the C2 links, any other required data links and any other system elements as may be required.	ISO TC20/SC16/WG2	Dec-17	standard	ongoing	
UAS Design and Airworthiness							STANAG 4741 "UAS System Airworthiness Requirements Standard for Flying UAV, MTOEW<15kg"	Set of technical airworthiness requirements intended primarily for the airworthiness certification of flying military UAS with a maximum take-off weight between 10 kg and 20,000 kg that intend to regularly operate in non-segregated airspace.	NATO FINAS		published		
UAS Design and Airworthiness							STANAG 4742 "Rotary Wing Unmanned Aerial Systems Airworthiness Requirements (For Light UAVs, MTOEW<150kg) MTOEW<150kg-MTOW<150kg"	set of technical airworthiness requirements intended for the airworthiness certification of rotary-wing military UAV Systems with a maximum take-off weight between 10 kg and 3175 kg that intend to regularly operate in non-segregated airspace	NATO FINAS		published		
UAS Design and Airworthiness							STANAG 4743 "Light Unmanned Aircraft Systems Airworthiness Requirements (For Light UAVs, MTOEW<150kg)"	Minimum set of technical airworthiness requirements intended for the airworthiness certification of flying Light UAVs with a maximum take-off weight not greater than 150 kg and an impact energy greater than 68 J (69 kJ-0) that intend to regularly operate in non-segregated airspace	NATO FINAS		published		
UAS Design and Airworthiness							STANAG 4745 "Unmanned Aerial Vehicle System Airworthiness Requirements for Light UAVs, MTOEW<150kg"	Set of technical airworthiness requirements intended for the airworthiness certification	NATO FINAS	2018		ongoing	
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 1 and 2 to delegated act A UAS Class C0, C1, C2 and C3 shall be designed and constructed in such a way to minimise injury risk to humans. Sharp edges shall be avoided; if equipped with propellers, the UAS shall be designed in such a way as to limit any injury that may be inflicted by the propeller.	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 2, 3, 4 to delegated act A UAS Class C1, C2 and C3 shall be designed with a remote control unit with a class rating when the battery of the remote control station reaches a low level such that the remote pilot has sufficient time to safely land the UAS.	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 2 to delegated act A UAS Class C2 and C3 shall be equipped with lights that cannot be confused with the navigation lights of a manned aircraft as required for certification: (i) during day conditions; (ii) during night, if designed for night operation;	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 3, 4 to delegated act A UAS Class C2, C3 shall be designed to ensure the purpose of controllability or visibility of the UAS, the design of the lights shall not be confused with the navigation lights of manned aircraft;	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness							ARP4136 U lighting Applications for Unmanned Aircraft Systems (UAS)	This SAE Aerospace Recommended Practice (ARP) provides technical recommendations for the application, design and development of lighting for Unmanned Aircraft (UAS). The recommendations set forth in this document are intended to aid in the design of UAS lighting for the type or size of aircraft and the operation in the National Aerospace System for which the aircraft is intended.	SAC-A20 Aircraft Lighting Committee	Dec-18	Recommended Practice	ongoing	ongoing
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 2 to delegated act A UAS Class C1 shall:	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 1 to delegated act A UAS Class C1 shall:	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 1 to delegated act A UAS Class C0, C1, C2 and C3 shall:	EASA	Mar-19	open	Opinion published							
UAS Design and Airworthiness	Opinion No.1 2018	If powered by electricity, the nominal voltage shall not exceed 24 V DC or the equivalent AC voltage. Its accessible parts shall not exceed 24 V DC or the equivalent AC voltage. If powered by battery, the nominal voltage shall not exceed 48 V DC or the equivalent AC voltage unless it is ensured that the voltage and current combination generates does not lead to any risk or harmful electric shock even when the UAS is damaged;	EASA	Mar-19	open	Opinion published	IEC60068-2 Evaluating AerobicResponse RobotEnergy/Power Endurance Range and Duration	A suite of standards test methods has been developed to measure performance, endurance, reliability, durability, logistics, autonomy and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Standard Security Applications	TBD	standard	ongoing	EU4 Full Committee adjudication February 26 to March 2, 2018
UAS Design and Airworthiness	Opinion No.1 2018	Appendix 3, 4 to delegated act A UAS Class C2 and C3 shall:	EASA	Mar-19	open	Opinion published							

	Detect and avoid						WIK8933 Evaluating AircraftResponse RobotSensing Avoid Static Obstacles	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to avoid static obstacles.	ASTM E54 Homeland Security Applications	TBD	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Detect and avoid						WIK8934 Evaluating AircraftResponse RobotSensing Pass Through Obstacle	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to pass through openings of various sizes and orientations.	ASTM E54 Homeland Security Applications	TBD	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Automatic modes, takeoff, Landing, taxiing						WIK8935 Evaluating AircraftResponse RobotSensing Land Accuracy (Vertical)	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to land accurately vertically within a range of orientations.	ASTM E54 Homeland Security Applications	TBD	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	UAS-ATM						Specifications for the Use of Military Unmanned Ground Vehicles (UAV) as Unmanned Air Traffic Control (UATC) outside Integrated Aerospace, v 1.0, 2007	This specification addresses aspects of military UAV ATM, dealing briefly with extant regulations that impact upon the UAV specifications and then detailing the UAV ATM requirements. It also summarizes a number of relevant UAV ATM regulations, albeit more were available for adaptation into EUROCONTROL specifications.	EUROCONTROL		specification	published		
	UAS-ATM						Air Traffic Management Guidelines for Global Hawk in European Airspace, v 1.0, 2010	These Guidelines establish a set of minimum ATM requirements for Global Hawk (GH) Euro Hawk (EH) flight in European airspace, with the primary purpose of enabling GHEN operators to use them as the basis for their own internal ATM procedures. The Guidelines envisage the isolation of GHEN from other airspace users by requiring it to fly in non-segregated airspace at low altitude and to maintain a safe cruise in non-segregated airspace at high altitudes that are above those occupied by manned aircraft.	EUROCONTROL		guidance material	published		
M	Local E-identification						Aerospace series - Unmanned Aircraft Systems (UAS) - Frequency Requirements	The European states will provide input of compliance to cover Part 6 and the frequency requirements from part 1 to 5 of the delegated act. DIRECT REMOTE IDENTIFICATION shall comply with the following: Ensure, in real time during the whole duration of the flight, the UAS to which the identification signal is sent, can be identified by an unique and documented transmission protocol, of the following data in a way that they can be distinguished by external devices within the broadcasting range : (a) the UAS operator's call sign; (b) the unique serial number of the unit-on-compliant with standard ANSI/CTA-2063; (c) the geographical position of the UAS, its height above the take-off point and associated date and time; (d) the direction in which the UAS is flying; (e) the geographical position of the UA pilot or, if not available, the take-off point;	ASD-STAN DSWG8	Jun-19	preEN / European standard	ongoing		
M	Standard scenarios						ASTM F3196-18 Standard Practice for Seeking Approval for Extended Visual Line of Sight (BVLOS) Small Unmanned Aircraft System (sUAS) Generators	Compliance with this practice is recommended as one means of seeking approval from a civil aviation authority (CAA) to operate a small unmanned aircraft system (sUAS) in BVLOS mode, either beyond visual line of sight (BVLOS) or both. Any regulatory application of this practice to sUAS and other unmanned aircraft systems (UASs) is at the discretion of the appropriate CAA.	ASTM F38 Unmanned Aircraft Systems		standard	published	body of documents revised and published incorporating feedback is pending	
D	Standard scenarios						ASTM WIK80748 Standard Practice for Standard Practice for Extended Visual Line of Sight (BVLOS) Small Unmanned Aircraft System (sUAS) Generators	The main purpose of this revision is to add an Appendix A that provides revisions from the FAA/EVLOS Pathfinder program to the original EVLOS operations. This revision also provides a reference to Unmanned Systems International's best practices for developing proposed risk mitigation strategies for both EVLOS and BVLOS operations.	ASTM F38 Unmanned Aircraft Systems	Jun-18	standard	published	To be revised and amended to include use cases for delivery, infrastructure inspection, linear inspection, search and rescue, emergency response, agriculture, and agriculture. First of these appendices completed Jan 2018. Final available but revisions to standard will be completed in 2019	
M	Standard scenarios						ASTM F3946-17 Standard Practice for Package Delivery as an Appendix to F3196-17	Appendix to ASTM F3196-17. The main purpose of this revision is to add an Appendix that can be used in developing proposed risk mitigation strategies for package delivery sUAS BVLOS operations.	ASTM F38 Unmanned Aircraft Systems	Jun-19	standard	ongoing	Working group formed and continues	
	Operations						ASTM F2846-10 Standard Practice for Handling of Unmanned Aircraft Systems at Divert Airfields		ASTM F38 Unmanned Aircraft Systems		practice	published		
	Operations						IEC 21384-3-1 Requirements for safety civil RPAS/UAS operations and inspection activities: categories, classes, sizes and modes of operation of UAS	Requirements for safe commercial tasks operations and applies to all types, categories, classes, sizes and modes of operation of UAS.	ISO	Dec-18	standard	ongoing		
	UAS-ATM						ARP#8# Access to controlled airspace	SAE G-30 UAS Operator Qualifications Committee	May-19	recommended practice	planned			
	Standard scenarios						ARP#8# Flight beyond visual line of sight	SAE G-30 UAS Operator Qualifications Committee	May-19	recommended practice	planned			
	Standard scenarios						ARP#8# Night operations	SAE G-30 UAS Operator Qualifications Committee	May-19	recommended practice	planned			
	Standard scenarios						ARP#8# Aerial photography	SAE G-30 UAS Operator Qualifications Committee	Jun-19	recommended practice	planned			
	Standard scenarios						ARP#8# Power line inspection	SAE G-30 UAS Operator Qualifications Committee	Jul-19	recommended practice	planned			
	Standard scenarios						ARP#8# Precision agriculture	SAE G-30 UAS Operator Qualifications Committee	Aug-19	recommended practice	planned			
	Standard scenarios						ARP#8# Bridge inspection	SAE G-30 UAS Operator Qualifications Committee	Sep-19	recommended practice	planned			
	Standard scenarios						ARP#8# Train right-of-way's	SAE G-30 UAS Operator Qualifications Committee	Oct-19	recommended practice	planned			
	Standard scenarios						ARP#8# Flare stack inspections	SAE G-30 UAS Operator Qualifications Committee	Nov-19	recommended practice	planned			
	Standard scenarios						WIK89243 New Guide for Building Facade using Drone	This standard consists of guidelines for using a drone with cameras to document facade conditions for repair and inspection. The purpose of this standard is to establish procedures and methodologies for the use of a drone for inspecting building facades via a drone, and documenting such inspections.	ASTM E81 Performance of Buildings	Jan-18	guide	ongoing		
	Navigation						WIK89277 Evaluating AircraftResponse RobotSensing Visual Image Acuity	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the visual (electro-optical) acuity of the system as viewed through a control station. This test method applies to aerial systems operated from a standstill distance appropriate for the intended mission. The system may have any number of sensors and/or cameras, and any auxiliary features or autonomous behaviors that may be present. The system may be viewed directly or indirectly. This method may be performed anywhere the specified apparatuses and environmental conditions can be implemented as described. Results should be considered in conjunction with related methods in the maneuvering suite when comprehensively evaluating robotic system capabilities.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Ground control station						WIK8925 Evaluating AircraftResponse RobotSensing Visual Color Acuity	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the visual (electro-optical) color acuity of the system as viewed through a control station.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Ground control station						WIK8926 Evaluating AircraftResponse RobotSensing Visual Dynamic Range	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the visual (electro-optical) dynamic range of the system as viewed through a control station.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	C3 datalink and communication						WIK8927 Evaluating AircraftResponse RobotSensing Audio Speech Acuity	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the audio speech acuity of the system as heard by the operator from a standstill distance appropriate for the intended mission.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Ground control station						WIK8928 Evaluating AircraftResponse RobotSensing Thermal Image Acuity	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the thermal image acuity of the system as viewed through a control station. This test method applies to aerial systems operated from a standstill distance appropriate for the intended mission.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Ground control station						WIK8929 Evaluating AircraftResponse RobotSensing Thermal Dynamic Range	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the thermal dynamic range of the system as viewed through a control station.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	
	Ground control station						WIK8930 Evaluating AircraftResponse RobotSensing Latency of Video, Audio, and Control	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the latency of video, audio, and control sub-systems as viewed through a control station.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till April-18	

	Detect and avoid						WKS0801 Evaluating Aircraft/Unmanned Aerial Vehicle/Aircraft Objects (Point and Zoom Camera)	The purpose of this test method is to specify the apparatus, procedures, and performance metrics necessary to quantitatively evaluate the system capability to identify objects of interest in the environment using cameras (electro-optical and thermal) from defined attitudes in open space.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till Apr-19	
	Standard scenarios						WKS0807 Evaluating Aircraft/Unmanned Aerial Vehicle/Aircraft Objects (Point and Zoom Camera)	The purpose of this test method is to specify the apparatus, procedures, and performance metrics necessary to quantitatively evaluate the system capability to inspect objects of interest in close proximity.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till Apr-18	
	Standard scenarios						WKS0808 Evaluating Aircraft/Unmanned Aerial Vehicle/Aircraft Objects (Wide Areas (Stitch Images))	The purpose of this test method is to specify the apparatus, procedures, and performance metrics necessary to quantitatively evaluate the system capability to inspect objects of interest in the environment using wide area (stitch images).	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	ES4 Full Committee adjudication February 26 to March 2, 2018. Delayed till Apr-18	
	Standard scenarios						ASTM WKS0258 Unmanned Aircraft Systems (UAS) for Land Search and Rescue	This classification defines small unmanned aircraft system (sUAS) land search and rescue operations in terms of the capabilities and means by which resource managers and sUAS pilots/operators can convey to emergency management the tasks for which their systems are intended to be used.	ASTM F32 Search and Rescue	TBD	standard	ongoing		
	Standard scenarios						ASTM WKS0426 Unmanned Aircraft Operations in Special Operations	This guide establishes a framework within which sUAS search and rescue (SAR) operations shall be conducted as part of the National Incident Management System (NIMS) and the Incident Command System (ICS). 1.2 The purpose of this guide shall apply to individual agencies and organizations that respond to SAR operations, including those that respond to other types of emergency incidents.	ASTM F32 Search and Rescue	TBD	standard	ongoing		
M	Standard scenarios						ASTM WKS0502 New Specification for Operation over People	Recent research conducted on risk, safety, design, operations and impact to inform development of standard with supporting documentation from Pathfinder studies. Using results of the Pathfinder Program, impact testing and analysis will be developed and the applicable ASTM paragraphs to be incorporated into standard.	ASTM F38 Unmanned Aircraft Systems	Mar-19	specification	ongoing	Final draft for ballot in October 2018, adjudicating comments	
	UA Design and Airworthiness						ASTM WKS0338 Unmanned Aircraft Systems for Flying Over People	Develop a draft standard for product marking of UAS weighing 250 grams or less for flight over people for use in sections 3.3, 3.4, 3.5, 3.6, 3.7 Establishes a test methodology to measure typical or likely impact energy of small unmanned aircraft when the aircraft is operating in the most severe fall condition. The standard will also define the required impact energy threshold. Testing may be subject to manufacturer defined impact energy thresholds. The standard will also define the impact energy threshold. The standard will also define the impact energy threshold. The standards may account for the energy dissipation caused by the physical design of the small unmanned aircraft and likely impact scenarios.	ASTM F38 Unmanned Aircraft Systems	TBD	standard	ongoing	Adjudicating ballot comments	
	Risk Assessment						ASTM F3170-16 Standard Practice for Operational Risk Assessment of Small Unmanned Aircraft Systems (sUAS)	Presentation of an SRA in accordance with this practice is intended to reduce the risk of an operation in which system complexity is minimal, the operation is conducted in a lower risk environment, and the likelihood of an adverse outcome is low. This practice is intended to provide an acceptable level of risk. As mission complexity increases, the operational assessment may become less risk tolerant.	ASTM F38 Unmanned Aircraft Systems		standard	published	This will be reference in AC for Special Class §21-170	
	Manuals						ASTM WKS0338 New Practice for General Operator Qualifications for Professional Operator of Light Unmanned Aircraft Systems (sUAS)	This standard defines the requirements for General Operations Manual for Professional Operator of Light Unmanned Aircraft Systems (sUAS) to support the safe operation of professional operators (i.e., for compensation and hire).	ASTM F38 Unmanned Aircraft Systems	Sep-18	specification	ongoing	Draft Complete - will be balloted Jun 2018	
	Take off/Landing zones						ASTM WKS0317 Vertical Design	To support the design of civil vertiports and heliports for the landing and takeoff of VTOL aircraft, boarding and deboarding passengers or cargo. The standard will also address the design of vertical landing areas in the development of this document. The standard must be scalable to address aircraft ranging in size and kinetic energy, including unmanned and optionally piloted aircraft.	ASTM F38 Unmanned Aircraft Systems	TBD	specification	ongoing	New draft in work	
	UAS-ATM						STANAG 7234 Unmanned Aircraft Systems Tactics Techniques and Procedures - ATM-51	Provide standardized tactics, techniques, and procedures (TTP) for the planning, command and control (C2), and employment of unmanned aircraft systems 218 (UAS) in NATO operations	NATO RINAS	2018	standard	ongoing	Under development	
	C3 datalink and communication						STANAG 7232 Unmanned Aircraft Systems Tactics Techniques and Procedures - ATM-5.2 Edition A	Provide standardized tactics, techniques, and procedures (TTP) for the planning, command and control (C2), and employment of unmanned aircraft systems 218 (UAS) in NATO operations	NATO MCAS/JOQUAS CS	2018	standard	ongoing	Under development	
FCL														
	Remote pilot competence	Opinion No 1 2018	UAS OPEN 30 and UAS OPEN 30 by a remote pilot who holds a commercial or remote-pilot certificate issued by a competent authority, and	EASA	Mar-19	open and specific	Opinion published							
	Remote pilot competence						ARP5177 - Pilot Training Recommendation for Commercial Unmanned Aircraft Systems (UAS) Civil Operations	This document provides an approach to the development of training topics for pilots of Unmanned Aircraft Systems (UAS) for use by operators, manufacturers, and training organizations. The approach is based initially on Practical Test Standard (PTS) topics for manned aircraft pilots. The topics identified could be used for the construction of a PTS for UAS pilots. The PTS topics will be used to develop a commercial rating. The UAS commercial pilot rating would contain restrictions on the training topics that would be covered. The PTS topics will be used to determine the type of UAS used. The UAS type would also influence the specific training topics that would be covered. This document is not intended to outline the minimum training requirements for UAS operators, flight instructors, or ground personnel, nor does it distinguish between different levels of pilot certification or discuss the roles for pilot-in-command, supplemental pilot, or observer.	SAE G-30 UAS Operator Qualifications Committee & IUA Unmanned Aerospace Vehicle Committee		recommended practice	published		
	Remote pilot competence						ARP#### Common operator qualifications		SAE G-30 UAS Operator Qualifications Committee	May-19	recommended practice	planned		
	Remote pilot competence	Opinion No 1 2018	UAS OPEN 440 by a remote pilot who has demonstrated the competencies necessary to ensure a safe flight, respecting privacy, data protection, security, and environmental requirements, after having completed an online training course and passed an online test, according to a manner and format established by EASA, and provided by an entity recognised by the competent authority.	EASA	Mar-19	open and specific	Opinion published							
	maintenance						ASTM WKS0259 UAS Maintenance Technician Qualification	Very routine maintenance required for skilled UAS maintenance technicians with broad understanding of supporting the continued airworthiness of UAS platforms and their subsystems.	ASTM F38 Unmanned Aircraft Systems	Jun-18	standard	ongoing	Undergoing revisions prior to ballot	
	Remote pilot competence						WKS1141 Training for Public Safety Remote Pilot of UAS Endorsement	To develop a standard that defines the requirements for Training for Public Safety Remote Pilot of UAS Endorsement. The guide describes the knowledge, skills, and abilities required to operate unmanned aircraft for public safety purposes. A CAA may, at their discretion, accept the training and certification requirements of this approved ASTM guide that describes required education, training, and continuous professional development for the remote pilot.	ASTM F38 Unmanned Aircraft Systems	TBD	standard	ongoing		
	Remote pilot competence						ASTM F3260-17 Standard Practice for Training of the Pilot in Command of Unmanned Aircraft Systems (UAS) Endorsement	Establish criteria for training and certification of UAS Pilots, Instructors and School Houses. This practice defines the knowledge, skills, and abilities sUAS pilots require for the conduct training and flight operations of sUAS. The knowledge, skills, and abilities required for the training and certification of sUAS Pilots, Instructors and School Houses include tests to cover pilot qualifications, training and proficiency. Instructor and student evaluation criteria are included. This document sets forth standards to meet the requirements to establish quality training and certification programs and maintain them.	ASTM F38 Unmanned Aircraft Systems	Apr-18	standard	published		
A							ASTM WKS0753 Training for Remote Pilot Instructor (RPI) of Unmanned Aircraft Systems (UAS) Endorsement	To develop an ASTM standard that defines the requirements for Training for Remote Pilot Instructor (RPI) of Unmanned Aircraft Systems (UAS) Endorsement. The guide describes the knowledge, skills, and abilities required to train and certify remote pilot instructors to operate unmanned aircraft for commercial purposes. A CAA may, at their discretion, accept the training and certification requirements of this approved ASTM guide that describes required education, training, and continuous professional development for the remote pilot instructor.	ASTM F38 Unmanned Aircraft Systems	Jul-19	standard	ongoing		
A							ASTM WKS0753 Training for Remote Pilot Instructor (RPI) of Unmanned Aircraft Systems (UAS) Endorsement	1.1 This specification defines the requirements for training and the development of training materials for the unmanned aircraft systems (UAS) operator. 1.2 This specification addresses the requirements or best practices for training and the development of training materials for a professional entity that is, for compensation and hire. 1.3 This specification supports professional entities that will receive operator certification by a CAA. 1.4 This specification defines the requirements for training and a third-party audit of operators of UAS. 1.5 The case study used to develop the development of regulations for training and certification of UAS operators to fly beyond visual line of sight (BVLOS) up to 200 kg as defined by EASA, but this specification may be applied to larger aircraft for using other methods of classification (i.e., risk-based classification). 1.6 This specification may be applied to UAS up to 200 kg. 1.7 This specification may be applied to UAS up to 200 kg. 1.8 This specification may be applied to UAS up to 200 kg. 1.9 This specification may be applied to UAS up to 200 kg. 1.10 This specification may be applied to UAS up to 200 kg. 1.11 This specification may be applied to UAS up to 200 kg. 1.12 This specification may be applied to UAS up to 200 kg. 1.13 This specification may be applied to UAS up to 200 kg. 1.14 This specification may be applied to UAS up to 200 kg. 1.15 This specification may be applied to UAS up to 200 kg. 1.16 This specification may be applied to UAS up to 200 kg. 1.17 This specification may be applied to UAS up to 200 kg. 1.18 This specification may be applied to UAS up to 200 kg. 1.19 This specification may be applied to UAS up to 200 kg. 1.20 This specification may be applied to UAS up to 200 kg. 1.21 This specification may be applied to UAS up to 200 kg. 1.22 This specification may be applied to UAS up to 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	Remote pilot competence	EASA Decision	(OSO #09 - Remote crew trained and current and able to control the abnormal and emergency situations (i.e. Technical issue with the UAS))	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO #15 - Remote crew trained and current and able to control the abnormal and emergency situations (i.e. Human Error))	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO #22 - The remote crew is trained to identify critical environmental conditions and to avoid them)	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO#16 Multi crew coordination. (Criterion #2 Training))	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO#17 Remote crew fit for the operation)	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO#19 Safe recovery from Human Error (Criterion #2 Training))	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	(OSO#23 Environmental conditions for safe operations defined, measurable and adhered to (Criterion #1 Procedure))	EASA	May-19	Specific	ongoing						
	Remote pilot competence	EASA Decision	M4.1 An Emergency Response Plan (ERP) is in place, operator validated and effective (Criterion #4 Remote Pilot Competence)	EASA	May-19	Specific	ongoing						

9 Environment

Noise&Environment	Opinion No. 1 2018	Appendix 2, 3 to Delegated Act (UAS in class C2 and C3 shall have a sound pressure level not exceeding 60 dB(A) (measured at a 3-m distance from the UAS))	EASA	Mar-19	open	Opinion published							
10 Autonomous operations													
Autonomous operations							AS6388 JAUS Autonomous Behaviors Service Set	This document, the JAUS Autonomous Behaviors and Diagnostics Service Set, defines a message-passing interface for services commonly found in mobile unmanned systems. These services represent the platform-independent capabilities common across all domains. Additional capabilities are specified in the JAUS Core Service Set (AS6710) and are frequently referenced herein.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee	May-19	standard	ongoing	
Autonomous operations							ASTM Aviation Autonomy Roadmap	This task group to matrix autonomy technologies and standards between manned and unmanned aircraft.	ASTM F38 Unmanned Aircraft Systems	TBD	standards and practices	ongoing	Task Group Formed
Development assurance (Software)							ASTM F3830 Standard Practice for Methods to Safety Verify and Validate the Flight Behavior of Unmanned Aircraft Systems Containing Complex Functions	This standard practice defines design and test best practices that, if followed, would provide guidance to the developer of products related to the flight behavior of an unmanned aircraft system (UAS) containing complex functions (i.e. constrained autonomy) to ensure that the product (TA) architecture to maintain an acceptable level of flight safety.	F38 Unmanned Aircraft Systems		standard	published	
Autonomous operations							AS6024 JAUS Autonomous Behaviors Service Set	This document, the JAUS Autonomous Behaviors and Diagnostics Service Set, defines a message-passing interface for services commonly found in mobile unmanned systems. These services represent the platform-independent capabilities common across all domains. Additional capabilities are specified in the JAUS Core Service Set (AS6710) and are frequently referenced herein.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee	May-19	standard	ongoing	The title will change to "JAUS Autonomous Capabilities Service Set"