

Change Aired/ Deleted/ Monocified	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	DDO	Target date for publication	Type of document standard, supporting material etc.	Status	Comments
General														
	Definition and classification							AS000	This data dictionary provides a mathematically 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.	SAE AS-41UCS Unmanned Systems (UAS) Control Segment Architecture	Jun-18	standard	ongoing	
	Definition and classification							AS001	This SAE Aerospace Recommended Practice (ARP) defines terminology specific to unmanned systems (UMS) and definitions for those terms. It focuses only on terms used exclusively for the development, testing, and other activities regarding UMS. Terms that are used in the community but can be understood with common dictionary definitions are not included in this document. Further efforts to expand the scope of the terminology are being planned.	SAE AS-41UCS Joint Architecture for Unmanned Systems Committee		recommended practice	published	
	Definition and classification							AS002	AS002 UAS Propulsion System Terminology	SAE E-30 Unmanned Aircraft Propulsion Committee	May-10	standard	planned	
M	Definition and classification							F341F3418a-20	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 ASTM International UAS standards. Audience: Committee F34, ASTM International, the UAS industry, and the global community. 1.2 This terminology contains a list of terms, abbreviations, acronyms, and symbols related to aircraft covered by Committee F34 standards. Cross-referenced terms (for example, use or compare) are for information only and provide support or clarification.	ASTM F34 Unmanned Aircraft Systems	Mar-18	standard	published	
	Definition and classification							ISO 21895	Requirements for the categorization and classification of civil UAS. The standard applies to their industrial regulation, development and production, delivery and usage.	ISO TC205SC16WG1	Oct-19	standard	ongoing	At DIS stage and publicly available first week of April 2019.
	Definition and classification							ISO 21384-1	General requirements for UAS for civil and commercial applications. UAS terminology and classification.	ISO TC205SC16WG1	May-20	standard	ongoing	At DIS stage and publicly available first week of April 2019.
	Definition and classification							ISO 21348-4	Unmanned aircraft systems – Part 4: Terms and definitions.	ISO TC205SC16WG1	Jul-20	standard	ongoing	At DIS stage and publicly available first week of April 2019.
	Definition and classification							ASTM F3024	This standard defines the requirements for General Operations Manual for Professional Operator of Light Unmanned Aircraft Systems (UAS). The standard addresses the requirements and/or best practices for documentation and organization of a professional operator (i.e., for compensation and hire). The intent is for this standard to support professional entities that will require operator certification by a CAA, and provide standards of practice for self- or third-party audit of operators of UAS that CAA's have operator certificates. This would provide a standard for operators and identify gaps that are not currently addressed in it related to: (1) individuals who are currently pilots (in FAA under Part 107) in jurisdictions that do not currently certify Operators, who are seeking certification from a CAA for Light Unmanned Aircraft Systems, who want to voluntarily comply with an industry standard; (2) public agencies interested in developing unmanned aircraft systems programs.	ASTM F34 Unmanned Aircraft Systems	Mar-19	standard	ongoing	
	Manuals							ASTM F3346-19	Specification for General maintenance Manual (GMM) for small Unmanned Aircraft Systems.	ASTM F34 Unmanned Aircraft Systems		standard	published	
	Manuals	EU 2019/945	Part 108, UAS in class C0 shall be placed on the market with a user's manual providing: (a) the characteristics of the UA including but not limited to the: — UA class; — UA mass (with a description of the reference configuration) and the maximum take-off mass (MTOM); — general characteristics of allowed payloads in terms of mass, dimensions, interfaces with the UA and other possible restrictions; — equipment and software to control the UA remotely; — and a description of the behaviour of the UA in case of a loss of data link; (b) clear operational instructions; (c) operational limitations (including but not limited to meteorological conditions and daylight operations); and (d) appropriate description of all the risks related to UAS operations adapted for the age of the user.	EASA	Jun-19	open	Regulation applicable							September 2019: the characteristics of the UA including but not limited to the: — UA class; — UA mass (with a description of the reference configuration) and the maximum take-off mass (MTOM); — general characteristics of allowed payloads in terms of mass, dimensions, interfaces with the UA and other possible restrictions; — equipment and software to control the UA remotely; and — a description of the behaviour of the UA in case of a loss of the command and control link.
	Manuals	EU 2019/945	Part 108, Direct remote identification shall be placed on the market with a user's manual providing the reference of the transmission protocol used for the direct remote identification emission and the instruction to: (a) install the module on the UA; (b) upload the UAS operator registration number.	EASA	Jun-19	open	Regulation applicable							
	Manuals	EU 2019/945	Part 108, UAS in class C4 shall be placed on the market with a user's manual providing: (a) the characteristics of the UA including but not limited to the: — class of the UA; — UA mass (with a description of the reference configuration) and the maximum take-off mass (MTOM); — general characteristics of allowed payloads in terms of mass, dimensions, interfaces with the UA and other possible restrictions; — equipment and software to control the UA remotely; — and a description of the behaviour of the UA in case of a loss of data link; (b) clear operational instructions; (c) maintenance instructions; (d) troubleshooting procedures; (e) operational limitations (including but not limited to meteorological conditions and daylight operations); and (f) appropriate description of all the risks related to UAS operations.	EASA	Jun-19	open	Regulation applicable							

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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 specifies 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.

Manuals	EU 2019/945	Part 216), 319 and 415) UAS in class C1, C2 and C3 shall be placed on the market with a user's manual providing: (a) the characteristics of the UAS including but not limited to the — class of the UAS, — UAS mass (with a description of the reference configuration) and the maximum take-off mass (MTOOM), — general characteristics of allowed payloads in terms of mass, dimensions, interface of with the UAS and other possible restrictions, — equipment and software to control the UAS remotely, — reference of the transmission protocol used for the direct remote identification emission, — sound power level, — and a description of the behaviour of the UAS in case of a loss of data link. (b) clear operational instructions, (c) procedures to govern the airspace limitations, (d) maintenance instructions, (e) troubleshooting procedures, (f) operational limitations (including but not limited to meteorological conditions and strength operational) and (g) appropriate description of all the risks related to UAS operations.	EASA	Jun-19	open	Regulation applicable												Opinion 02-2019 [a] the characteristics of the UAS including but not limited to the: — class of the UAS, — UAS mass (with a description of the reference configuration) and the maximum take-off mass (MTOOM), — general characteristics of allowed payloads in terms of mass, dimensions, interface of with the UAS and other possible restrictions, — equipment and software to control the UAS remotely, — the procedures to upload the UAS operator registration number into the electronic identification system, — reference of the transmission protocol used for the direct remote identification emission; — sound power level; — description of the behaviour of the UAS in case of a loss of the command and control link and the
Manuals	Opinion 05-2019	Part 167) UAS class C3 shall, in addition to the information indicated in point 170(a) of Part 4, include in the user's manual a description of the means to terminate the flight	EASA	Jun-20	Specific	Opinion published												
Manuals	Opinion 05-2019	Part 170) UAS class C3 shall, in addition to the information indicated in point 170(a) of Part 4, include in the user's manual: (a) a description of the means to terminate the flight, (b) a description of the function that limits the access of the UAS to certain airspace areas or volumes, and (c) the distance most likely to be travelled by the UAS after activation of the means to terminate the flight defined in paragraph (b), to be considered by the UAS operator when defining the ground risk buffer	EASA	Jun-20	Specific	Opinion published												
Manuals	Opinion 05-2019	Part 16 UAS class C3 accessories kit shall be accompanied by a user's manual providing: (a) the list of all class C3 UAS to which the kit can be applied, and (b) instructions on how to install and operate the accessory kit.	EASA	Jun-20	Specific	Opinion published												
Definition and classification	EU 2019/945	Part 211), 319, 409 and 422) UAS in class C1, C2, C3 and the direct remote identification aids on shall have a unique physical serial number compliant with standard ANSI/CTA-2063 Small Unmanned Aerial Systems Serial Numbers.	EASA	Jun-19	open	Regulation applicable												Opinion 02-2019 have a unique serial number of the UAS compliant with standard ANSI/CTA-2063-A Small Unmanned Aerial Systems Serial Numbers
Definition and classification							ANSI/CTA - 2063 Small 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 (by Horsting, Haveland and Dr. Verena Electronic Committee WG 23) Unmanned Aerial Systems.	standard	published							
Definition and classification	EASA Decision 2019/021/R	05043 Environmental conditions for safe operations defined, measurable and adhered to (Annex 4.1. Definitions)	EASA	Oct-19	Specific	published												
Operator organisations	EASA Decision 2019/021/R	05041 Ensure the operator is competent and/or proven	EASA	Oct-19	Specific	published												
manufacturer organisation	EASA Decision 2019/021/R	05040 UAS manufactured by competent and/or proven entity	EASA	Oct-19	Specific	published												
Maintenance organisation	EASA Decision 2019/021/R	05043 UAS maintained by competent and/or proven entity (e.g. industry standards) (Annex 4.2. Procedures)	EASA	Oct-19	Specific	published												
Maintenance organisation	EASA Decision 2019/021/R	05043 UAS maintained by competent and/or proven entity (e.g. industry standards) (Annex 4.2. Procedures)	EASA	Oct-19	Specific	published												
service provider	EASA Decision	ISO #13 - External services supporting UAS operations are adequate to the operation	EASA	Oct-19	Specific	published												

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 EASA and EASA, and continue to provide the basis of Community Specifications for the entire 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.

Technical Report - contains information of a different kind from that of the previous two publications. It may include data obtained from a survey, for example, or from an informative report, or information of the perceived 'state of the art'.

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 an 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.

C3 datalink and communication									AR6021 Unmanned Systems (US) Control Segment (UCS) Architecture Data Distribution Service (DDS)	This platform specific Interface Control Document (ICD) provides an overview mapping to the Digital Management Group (DMG) Data Distribution Service (DDS) (Architecture middleware). The mapping is based on the Unmanned Systems (US) Control Segment (UCS) Architecture Model, AR6014. A series of non-normative implementation issues have been made that are specific to this ICD. These implementation choices may not be appropriate for different system implementations. The machine readable ICD and read of this mapping and implementation choices are provided in AR6021. Use and understanding of this document assumes a working knowledge of the UCS Architecture, the model structure and its contents.	SAE AS-4UCS Unmanned Systems (US) Control Segment Architecture		Information report	published	
C3 datalink and communication									AR6012 Unmanned Systems (US) Control Segment (UCS) Architecture Architecture Description	This document is the Architecture Description (AD) for the SAE Unmanned Systems (US) Control Segment (UCS) Architecture. This AD represents the official description of the UCS Architecture. SAE AR6012. The UCS Architecture is expressed by a library of SAE publications as referenced herein. The other publications in the UCS Architecture Library are AR6011, AR6014, AR6015, AR6016, AR6017, AR6018, AR6019, AR6020, AR6021, and AR6022.	SAE AS-4UCS Unmanned Systems (US) Control Segment Architecture		standard	published	
C3 datalink and communication									AR6013 Unmanned Systems (US) Control Segment (UCS) Architecture Conformance Specification	This document is the authoritative specification within the SAE Unmanned Systems (US) Control Segment (UCS) Architecture for establishing conformance requirements for UCS products. The UCS products addressed by this specification are UCS software components and UCS software configurations that provide one or more UCS services, and UCS systems that employ one or more UCS services. The conformance of UCS products is determined by assessing the conformance of the UCS product description to the UCS Architecture. The UCS product description includes test articles.	SAE AS-4UCS Unmanned Systems (US) Control Segment Architecture		standard	published	
C3 datalink and communication									AR6018 Unmanned Systems (US) Control Segment (UCS) Architecture Model	This brief User Guide recaps the content of the AR6018 UCS Architecture Model described in detail in AR6012 UCS Architecture Architecture Description. The purpose of the UCS Architecture Model is to provide the authoritative source for other models and products within the UCS Architecture as defined in the AR6012 UCS Architecture Architecture Description. Precedence for using the AR6018 EA Model includes: - access to the model with Enterprise Architect 10.14 Higher Corporate Edition, - experience with the Unified Modeling Language (UML), - installation of the [optional] UCS_MDO and add in for Sparc Enterprise Architect per instructions below.	SAE AS-4UCS Unmanned Systems (US) Control Segment Architecture		standard	published	
C3 datalink and communication									AR6022 Unmanned Systems (US) Control Segment (UCS) Architecture Architecture Technical Governance	The UCS technical governance comprises a set of policies, processes, and standard additions to establish consistency and quality in the development of architecture artifacts and documents. It provides guidance on the use of adopted industry standards and modeling conventions in the use of Unified Modeling Language (UML), including when the UCS Architecture deviates from normal UML conventions. This document describes the defining policies, guidelines, and standards of technical governance in the following subjects: - industry standards adopted for the AS-4UCS Technical Committee. These are the industry standards and specifications adopted by AS-4UCS in the generation and documentation of the architecture - UCS Architecture Development UCS specific policies on the development of the UCS Architecture. The AS-4UCS Technical Committee governance policies are hierarchically nested. The subject is to provide direction specific to the intent and scope of developing architecture artifacts that follow a consistent set of specifications and industry best practices. Standards are referenced within policies. Standards may place constraints on policies and are implemented by processes. Each process is intended to guide the development of architecture artifacts. For example, a standard may dictate that a UML diagram be modeled in a particular methodology using only approved stereotypes from the SAE UML profile. UCS technical governance applies to the following technical work products that are generated within the AS-4UCS Technical Committee. It is not applicable to third party developers, programs, or any other consumer of the UCS Architecture.	SAE AS-4UCS Unmanned Systems (US) Control Segment Architecture		standard	published	
Navigation									WK8031 Evaluating Aero/Response Pilot/Maneuvering Maintain Position and Orientation	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
Navigation									WK8032 Evaluating Aero/Response Pilot/Maneuvering Drib a Point	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
Navigation									WK8033 Evaluating Aero/Response Pilot/Maneuvering Avoid Static Obstacles	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jun-18	standard	ongoing	
Navigation									WK8034 Evaluating Aero/Response Pilot/Maneuvering Pass Through Swarms	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
Navigation									WK8035 Evaluating Aero/Response Pilot/Maneuvering and Accuracy (Vertical)	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
C3 datalink and communication									WK8042 Evaluating Aero/Response Pilot/Radio Communications Change - Line of Sight	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
C3 datalink and communication									WK8041 Evaluating Aero/Response Pilot/Radio Communications Change - Non Line of Sight	A suite of standard test methods has been developed to measure maneuverability, endurance, communications, durability, logistics, autonomy, and safety to guide purchasing decisions, support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	Publication Delayed - Full Committee Meeting Feb 28-Mar 2 2018 for adjudication of comments
C3 datalink and communication									ETANGL 4000 - Interoperable Command and Control Datalink for Unmanned Systems	Common standard Link-Of-Sight command and control data link for the safe and reliable operation of unmanned systems within a joint, coalition and controlled airspace operating environment.	NATO NN40000044		standard	published	
Navigation									BAE606 Improving Navigation Solutions Using Raw Measurements from Global Navigation Satellite System (GNSS) Receivers	This recommended practice provides users with the technical requirements and methods for accessing, viewing, and processing raw GNSS receiver measurements for improved unmanned vehicle navigation solutions.	SMCPNT Position, Navigation, and Timing Committee	Mar-19	standard	ongoing	

	Navigation								RAE887 Requirements for a Terminal Based Position, Navigation, and Timing (PNT) System to Improve Navigation Solutions and Ensure Critical Infrastructure Security	This recommended practice defines the technical requirements for a terminal-based PNT system to improve vehicle (e.g. unmanned, aerial, ground, maritime) positioning/navigation solutions and ensure critical infrastructure security, complementing GNSS technologies.	EMCPNT Position, Navigation, and Timing Committee	Mar-19	standard	ongoing	
M	C3 datalink and communication								MASPS on C3 Spectrum Management for the 5030/501 MHz band	Minimum Aviation Systems Performance Standard defining requirements for the management of the 5030/501 MHz band for use by C2 Link Services	EUROCAE WG-105	Dec-20	standard	ongoing	
	C3 datalink and communication								Distance on Spectrum Access File and Management	Distance material describing considerations for the use of spectrum for UAS purposes	EUROCAE WG-105	Mar-19	guidance	published	
	Cyber security	EU 2019/45	Part 3(b) and 4(12) UAS in class C2 and C3 shall be equipped with a data link protected against unauthorized access to the command and control functions.	EASA	Jun-19	open	Regulation application								Approved for use - Unmanned Aircraft shall be equipped with a command and control link protected against unauthorized access to the
M	Cyber security								MASPS on RPAS C3 Security	Minimum Aviation Systems Performance Standard defining system level requirements for the application of security measures to the UAS C3 Link	EUROCAE WG-105	Jun-19	standard	on hold	
M	C3 datalink and communication								Distance on RPAS C3 security	Distance material for the application of the MASPS listed above	EUROCAE WG-105	Dec-19	guidance	on hold	
	C3 datalink and communication	EASA Decision	03046: C3 link performance is appropriate for the operation	EASA	Oct-19	Specific	published								
	C3 datalink and communication	EASA Decision	03044: Multi crew coordination (Crewwork #3 Communication Access)	EASA	Oct-19	Specific	published								
4 Detect and Avoid															
M	Detect and avoid								MASPS	Minimum Aviation System Performance Standard for DAA (Traffic) in Class A-C airspace under IFR	EUROCAE WG-105	Jun-20	standard	ongoing	
D	Detect and avoid								MDPS	Minimum Operational Performance Standard (Requirements at equipment level) for DAA of IFR flights in class A-C airspace	EUROCAE WG-105	Dec-19	standard		
	Detect and avoid								OSED	Operational Services and Environment Description for DAA for DAA in Class D-G airspace under VFR/IFR	EUROCAE WG-105	Jan-19	standard	published	
M	Detect and avoid								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level) for DAA against conflicting traffic for RPAS operating under IFR and VFR in all airspace classes	EUROCAE WG-105	Dec-21	standard	ongoing	
M	Detect and avoid								MDPS	Minimum Operational Performance Standard (Requirements at equipment level) for DAA against conflicting traffic for RPAS operating under IFR and VFR in all airspace classes	EUROCAE WG-105	Jun-23	standard	planned	
M	Detect and avoid								OSED	Operational Services and Environment Description for DAA in very Low Level Operations	EUROCAE WG-105	Jun-20	standard	ongoing	under WG-105 peer review
M	Detect and avoid								MDPS	Minimum Operational Performance Standard (Requirements at equipment level) for DAA at Very Low Level (VLL)	EUROCAE WG-105	Dec-23	standard	planned	
	Detect and avoid								STANREC 4811 Ed. 1/ AEP, 101 Ed. A, 1011 UAS sense and avoid	To detail comprehensive guidance and recommended practice for the development of Sense and Avoid systems, reviewing and providing guidance regarding application of existing standards and best practice.	NATO FINAS	Feb-18	guide	published	
M	Detect and avoid								F3443-20 Identification for Detect and Avoid Performance Requirements	Defines minimum performance standards Comprehensive DAA Standard under annex to define test methods AND minimum performance standards for DAA systems and sensors applicable to smaller UAS BLVD operations for the protection of manned aircraft over altitude airspace	ASTM F38 Unmanned Aircraft Systems	Jun-19	standard		Publication expected
	Detect and avoid								WG3260 Test Method for DAA	Covering systems and sensors Comprehensive DAA Standard under annex to define test methods AND minimum performance standards for DAA systems and sensors applicable to smaller UAS BLVD operations for the protection of manned aircraft over altitude airspace	ASTM F38 Unmanned Aircraft Systems	Jun-19	standard	ongoing	Working Group formed under terms of reference. Number changed to WG3260 instead of WG3268
5 RPAS Automation															
	Development assurance (Software)								ASTM F3269 Standard Practice for Methods to Safely Board 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 an applicant for providing evidence to the civil aviation authority (CAA) that the flight behavior of an unmanned aircraft system (UAS) containing complex functions is contained through a non-linear assurance (NLS) architecture to maintain an acceptable level of flight safety.	ASTM F38 Unmanned Aircraft Systems		standard	published	FAA Notice Of Availability (NOA) Pending approval of ASTM WG3769 as foundational document
	Automatic modes, takeoff, Landing, taxiing								ASTM WG6056 Revision to ASTM F3269 Standard Practice for Methods to Safely Board Flight Behavior of Unmanned Aircraft Systems Containing Complex Functions	Goal is to develop the standard to a level of capability that defines runtime monitoring (RTA) attributes to level that the FAA or CAA will agree that monitors developed to this standard are sufficient to allow the UAS to perform the complex function with its associated avoidance equipment and sensors without requiring vehicle certification as the CONOPS evolve after initial certification. Provide additional guidance on Safety Monitor design best practices, to explicitly include guidance on partitioning, partitioning and the role for multiple individual safety monitors comprising the Safety Monitor function, as well as defining safety monitor bases and key attributes. Provide additional use cases as Appendices. Provide additional information contrasting the F3269 approach with other architectural approaches (e.g. SAE ARP 4754A, RTCA DO-78C). Modify requirements to performance based to allow multiple re-implementation and implementation architectures. Make additional updates as required.	ASTM F38 Unmanned Aircraft Systems	September 2019	standard	ongoing	Draft Under Development
	Automatic modes, takeoff, Landing, taxiing								ED-252 OSED	Operational Services and Environment Description for Automatic Take-Off and Landing	EUROCAE WG-105		standard	published	
	Automatic modes, takeoff, Landing, taxiing								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level) for Automatic Take-Off and Landing	EUROCAE WG-105	Jun-20	standard	ongoing	
	Automatic modes, takeoff, Landing, taxiing								ED-251 OSED	Operational Services and Environment Description for Automatic Taxiing	EUROCAE WG-105		standard	published	
	Automatic modes, takeoff, Landing, taxiing								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level) for Automatic Taxiing	EUROCAE WG-105	Jun-20	standard	ongoing	

Emergency recovery/termination systems	EU 2019/945	Part 27, 37) and 45) A UA's Class C1, C2 and C3 shall, in case of a loss of data link, have a reliable and predictable method for the UA to recover the data link or terminate the flight in a way that reduces the effect on third parties in the air or on the ground.	EASA	Jun-19	open category and specific	Regulation applicable									Sponsor 05-2019: in case of a loss of the command and control link, have a reliable and predictable method for the UA to recover the command and control link or terminate the flight in a way that reduces the effect on third parties in the air or on the ground.
Emergency recovery/termination systems							ED-253 OSED	Operational Services and Environment Description for Automation and Emergency Recovery	EUROCAE WG-105	Dec-18	standard	published			Currently under Council approval
Emergency recovery/termination systems							MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level) for automation and Emergency Recovery	EUROCAE WG-105	Jun-20	standard	planned			
6 Design & Airworthiness															
Development assurance (Software)							ASTM F3151	Standard Specification for Verification of Software Systems	ASTM F30 Aircraft Systems		standard	published			This will be reference in AC for Special Case 921.178) To be used where appropriate in lieu of CS 176. NEW DELIVERABLE
UA Design and Airworthiness							AS6009A JAUS	Mobility Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6948B JAUS	Service Interface Definition Language	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6902 JAUS	Mission Spooling Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6900 JAUS	Environment Sensing Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
PMI							AS6901 JAUS	PMI Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6710A JAUS	Core Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6702A JAUS	Compliance and Interoperability Policy	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		recommended practice	published			
UA Design and Airworthiness							AS6945A JAUS	Transport Conventions	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		information report	published			
UA Design and Airworthiness							AS6960A JAUS	UDP Transport Specification	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			
UA Design and Airworthiness							AS6901 JAUS	Unmanned Ground Vehicle Service Set	SAE AS-AJAUS Joint Architecture for Unmanned Systems Committee		standard	published			

IA Design and Awareness								AS607A JAUS Manipulator Service Std	This document defines a set of standard application layer interfaces called JAUS Manipulator Services. JAUS 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 domains and types of unmanned systems. At present, twenty-five (25) services are defined in this document.	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee		standard	published
IA Design and Awareness								ASR027 JAUS Messaging over the OMC Data Distribution Service (DDS)	This document defines a standard representation of JAUS AS608A message data in DDS IDL, defined by the Object Management Group (OMG) CORBA 3.2 specification. This document does NOT address how JAUS transport considerations or JAUS service protocols are implemented on OMG DDS platforms.	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee		recommended practice	published
IA Design and Awareness								ASR088B 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 provides definitions and background for key terms and concepts used in the unmanned systems domain. The Capabilities View uses terms and concepts from the Conceptual View to describe capabilities of unmanned systems and of other entities in the unmanned systems domain. The Interoperability View provides guidance on how to design and develop systems in a way that supports interoperability.	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee		information report	published
IA Design and Awareness								ASR088A JAUS History and Domain Model	The purpose of this SAE Aerospace Information Report (AIR) is to help inform the reader of the extent of effort that went into the development of the Joint Architecture for Unmanned Systems (JAUS), and to capture or preserve the domain analysis that provides the underpinning for the work by the AS-A Committee (Unmanned Systems).	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee		information report	published
IA Design and Awareness								ASR092A JAUS Mission Spooling Service Std	This document defines a set of standard application layer interfaces called JAUS Mission Spooling Services. JAUS Services provide the means for software entities in an unmanned system or system of unmanned systems to communicate and coordinate their activities. The Mission Spooling Services represent the platform-independent capabilities commonly found across all domains and types of unmanned systems. At present, 1 service is defined in this document: these services are planned for future versions of this document: Mission Spooler. Splice mission plans, coordinate mission plans, and provide set elements of the mission plan for execution. The Mission Spooler service is described by a JAUS Service Definition (JSD) which specifies the message set and protocol required for compliance. The JSD is fully compliant with the JAUS Service Interface Definition Language (JSDL).	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee		standard	published
IA Design and Awareness								ASR111 JAUS Unmanned Maritime Vehicle Service Std	This document defines a message-passing interface for services representing the platform-specific capabilities common across unmanned maritime vehicles.	SAE AS-A JAUS Joint Architecture for Unmanned Systems Committee	Jun-19	standard	ongoing
IA Design and Awareness								ASR071 Test Protocol for UAS Rotating Engines and Primary 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 normalize engine performance to fairly test engine operating variables and parameters. Operational protocols will be defined according to engine class and will be based on those developed for on-highway applications. Based on typical engine operation, a series of speed and load combinations and/or sequences will be determined. The scope will include dynamometer based testing and static propeller based experiments. The test also consists of a significant number of hybrid test engines as the main (or sole) provider of rotational energy to propel. There also exists a significant number of hybrid test engine-battery systems that are expected to have different operational requirements. This standard will focus on those using the engine as the main thrust provider, but allowances will also be considered for hybrid designs. The scope will include power control methodologies to provide a more accurate description of performance.	SAE E-30 Unmanned Aircraft Population Committee	May-19	standard	ongoing
IA Design and Awareness								ASR888 Ground support equipment operations, starters, fuel pumps, fuel cockpit, fuel mixing fuel filters, fuel filter backpressure, back-sighting of payload, strings containers, alignment hardware, fuel checks, "remove before flight" items, electronic and software links.		SAE E-30 Unmanned Aircraft Population Committee	Jun-19	standard	planned
IA Design and Awareness								ASR888 Propeller tests		SAE E-30 Unmanned Aircraft Population Committee	Jul-19	standard	planned
IA Design and Awareness								ASR888 Propeller Information Report		SAE E-30 Unmanned Aircraft Population Committee	Aug-19	information report	ongoing
IA Design and Awareness								AIR062 Ice Protection for Unmanned Aerial Vehicles	A review of icing materials that would be educational to a designer of a UAV ice protection system is provided. Additionally, the differences between unmanned and manned ice protection systems are explored along with a discussion on how these differences can be addressed.	SAE AC-9C Aircraft Icing Technology Committee	Dec-18	information report	ongoing
IA Design and Awareness								ASR94910 Management - Vehicle Management - Vehicle Systems - Flight Control Design, Installation and Test of Military Unmanned Aircraft. Specification Guide For	This document establishes recommended practices for the specification general performance, design, test, development, and quality assurance requirements for the flight control related functions of the Vehicle Management Systems (VMS) of military Unmanned Aircraft (UA), as defined by ASTM F 2325-07. The document is written for military unmanned aircraft intended for use primarily in military operational areas. The document provides a foundation for considerations applicable to safe flight in all phases of aircraft.	SAE A-6 Aerospace Actuation, Control and Fluid Power Systems		recommended practice	published
IA Design and Awareness								ASR773A Aerospace Testing of Electromechanical Actuators, General Subtypes For	This document provides an overview of the tests, and issues related to testing, that are unique to Electromechanical Actuators (EMAs). The tests, and issues documented, are not necessarily all-inclusive. This document discusses both the tests applicable to EMAs and the test methodologies to accomplish the test objectives. EMAs may be used in a wide variety of applications such as utility, secondary flight controls and primary flight controls in a wide variety of markets including manned and unmanned civil and military aircraft, small missiles for direct vector control applications up to high powered utility and flight controls. EMAs may also have either a rotary or a linear output, be servo controlled or use simple open loop point-to-point or other control topologies. As such this document covers a wide range of potential applications, the application of any given test requires to be determined by the application and the user. This document attempts to provide basic guidance on which tests should be considered for various applications. This document also lists tests that are not unique to EMAs, but are still applicable to EMAs. In these instances a discussion of such tests is not contained in this document, and as applicable, the reader may reference the appropriate documents as indicated in the text. While many EMA configurations include digital power drive electronics (PDE), the specific tests required for the electronic hardware, software, or firmware are outside the scope of this document.	A-6 Aerospace Actuation, Control and Fluid Power Systems		recommended practice	published
IA Design and Awareness								ASR744** Aerospace Auxiliary Power Sources	This SAE Aerospace Information Report (AIR) is a review of the general characteristics of power sources that may be used to provide secondary, auxiliary, or emergency power for uses in aircraft, space vehicles, missiles, remotely piloted vehicles, or unmanned vehicles, surface effect craft, or other vehicles in which aerospace technology is used. The information contained herein is intended for use in the selection of the power source most appropriate to the needs of a particular vehicle or system. The information may also be used in the presentation of a power source specification. Considerations for use in making a trade study and an evaluation of the several power sources are included. More detailed information relating to specific power sources is available in other SAE Aerospace Information Reports or in Aerospace Recommended Practices.	A-6 Aerospace Actuation, Control and Fluid Power Systems		information report	published

	UA Design and Airworthiness								AS50881F Wiring Aerospace Vehicle	This specification covers all aspects in electrical wire interconnection systems (EWS) from the selection through installation of wiring and wire devices and optical cabling and termination devices used in aerospace vehicles. Aerospace vehicles include manned and unmanned airplanes, helicopters, lighter-than-air vehicles, missiles and external pods.	SAE AE-8A Elec Wiring and Fiber Optic Interconnect Sys Install Committee		standard	published	
	UA Design and Airworthiness								AS50881G Wiring Aerospace Vehicle	This specification covers all aspects in electrical wire interconnection systems (EWS) from the selection through installation of wiring and wire devices and optical cabling and termination devices used in aerospace vehicles. Aerospace vehicles include manned and unmanned airplanes, helicopters, lighter-than-air vehicles, missiles and external pods.	SAE AE-8A Elec Wiring and Fiber Optic Interconnect Sys Install Committee	Dec-18	standard	ongoing	
	UA Design and Airworthiness								AS888F Artificial stimulus standards for Hone or FOD Identification	planned	SAE G-29 Stimulants for Impact and Ingestion Testing	Dec-19	standard	planned	
	Emergency recovery/terminations systems								F322-18 Standard Specification for Small Unmanned Aircraft System (sUAS) Parachutes	This specification covers the design and manufacturing requirements for parachutes for small unmanned aircraft (sUA). This specification defines the design, fabrication, and test requirements of parachute, parachute recovery systems (PRS) that are designed to be integrated into sUA to lessen the impact energy of the system should sUA fail to recover normal stable safe flight. Compliance with this specification is intended to support an applicant in obtaining permission from a civil aviation authority (CAA) to fly a sUA over-people.	ASTM F38 Unmanned Aircraft Systems	Sept-18	specification	Published	
	UA Design and Airworthiness								F2400-052013 Standard Guide for Aircraft Electrical Load and Power Source Capacity Analysis	This guide covers how to prepare an electrical load analysis (ELA) to meet Federal Aviation Administration (FAA) requirements.	ASTM F39 Aircraft Systems		standard	published	Light Sport Aircraft preference will be revised to apply to UAS.
	maintenance								F2709-14 Standard Practice for Maintenance of Aircraft Electrical Wiring Systems	Damaged wiring or equipment in an aircraft, regardless of how minor it may appear to be, cannot be tolerated. It is, therefore, required that maintenance be accomplished using the best techniques and practices to minimize the possibility of failure.	ASTM F39 Aircraft Systems		standard	published	
	UA Design and Airworthiness								ASTM W602070 New Specification for Large UAS Design and Construction	To develop an ASTM design and construction standard for larger mass leading Unmanned Aerial Systems (UAS). Design and Construct standards are currently in existence for Part 23 General Aviation Aircraft as well as for Fixed Wing and VTOL Small UAS (sUAS). There currently exists a gap for Large Fixed Wing Unmanned Aerial Systems (UAS). This ASTM standard will serve to fill that gap by including design and construction requirements, test methods, and proposed methods of compliance specific to Large UAS (up to 10,000 lbs).	ASTM F38 Unmanned Aircraft Systems	Jun-19	standard	under development	
	UA Design and Airworthiness								ASTM F3010-14 Standard Specification for Design and Construction of a Small Unmanned Aircraft System (sUAS)	This specification establishes the design, construction, and test requirements for a small unmanned aircraft system (sUAS). It is intended for all sUAS that are permitted to operate over a defined area and in airspace authorized by a nation's governing aviation authority (GAA). It applies to sUAS that are identified by a nation's GAA. This specification applies to sUAS that have a maximum takeoff gross weight of 55 lb/25 kg or less.	ASTM F38 Unmanned Aircraft Systems		standard	published	This will be reference in AC for Special Class G21-17(b)
M	UA Design and Airworthiness								F3208-19 Standard Specification for Design, Construction, and Verification of Lightweight Unmanned Aircraft Systems (UAS)	This specification covers the airworthiness requirements for the design of fixed-wing unmanned aircraft systems. This specification defines the baseline design, construction, and verification requirements for an unmanned aircraft system (UAS).	ASTM F38 Unmanned Aircraft Systems		standard	published	Title change
	UA Design and Airworthiness								ASTM W602076 R904619 Revision of F3208-19 Standard Specification for Design, Construction and Verification of Fixed-Wing Unmanned Aircraft Systems (UAS)	The initial standard only addressed Fixed-Wing UAS. Response from the FAA required both vertical lift and fixed-wing in order to be accepted as a method of compliance for UAS airworthiness verification in the forthcoming advisory circular (ac 21-17b). This required a rapid-action interpretation of the standard, inclusion of VTOL-specific items and a title change.	ASTM F38 Unmanned Aircraft Systems	19-Nov	standard	In progress	Ballot pending Sub-Committee approval
	Manufacturer organization								ASTM F2911-14a1 Standard Practice for Production Acceptance of Small Unmanned Aircraft System (sUAS)	This standard defines the production acceptance requirements for a small unmanned aircraft system (sUAS). This standard is applicable to sUAS that comply with design, construction, and test requirements identified in Specification F2910. No sUAS may enter production until such compliance is demonstrated.	ASTM F38 Unmanned Aircraft Systems		standard	published	
	Manufacturer organization								ASTM F3003-14 Standard Specification for Quality Assurance of a Small Unmanned Aircraft System (sUAS)	This standard defines the quality assurance requirements for the design, manufacture, and production of a small unmanned aircraft system (UAS).	ASTM F38 Unmanned Aircraft Systems		standard	published	
	Batteries/fuel cell power generating system								W6006037 Standard Specification for Design of Fuel Cells for Use in Unmanned Aircraft Systems (UAS)	This standard will outline specification for the use of fuel cell power generating systems for application in UAS.	ASTM F38 Unmanned Aircraft Systems	TBD	standard	ongoing	
	Development assurance (Software)								ASTM F2025-16 Standard Practice for Ensuring Reproducibility of Software Used in Unmanned Aircraft Systems (UAS)	This standard practice intends to ensure the dependability of UAS software. Dependability includes both the safety and security aspects of the software. This practice will focus on the following areas: (a) Organizational controls (for example, management, training, in place during software development); (b) Use of the software in the system, including its architecture and contribution to overall system safety and security; (c) Metrics and design analysis related to assessing the code; (d) Techniques and tools related to code review; (e) Quality assurance; (f) Testing of the software.	ASTM F38 Unmanned Aircraft Systems		standard	published	
	UA Design and Airworthiness								ASTM WK16285 New Specification for Design and Performance of an Unmanned Aircraft System-Class 1200 (5000 Gross Weight to 12000 Gross Weight)	The specification covers airworthiness requirements for an acceptable powered fixed wing aircraft UAS.	ASTM F38 Unmanned Aircraft Systems	TBD	standard	ongoing	This work item will be continued using guidelines from ASTM F37 Light Sport Aircraft Committee
	maintenance								ASTM F2900-14 Standard Practice for Maintenance and Continued Airworthiness of Small Unmanned Aircraft System (sUAS)	This standard is written for all sUAS that are permitted to operate over a defined area and in airspace authorized by a nation's governing aviation authority (GAA). It is assumed that a small sUAS will provide the same sense and avoid requirement to avoid collisions with other aircraft and that the minimum range and altitude at which the sUAS can be flown will be specified by the nation's GAA. Unless otherwise specified by a nation's GAA, this standard applies only to UAS that have a maximum takeoff gross weight of 25 kg (55 lb) or less. The sUAS shall be maintained for continued airworthiness to meet sUAS limitations and performance capabilities required by the nation's GAA.	ASTM F38 Unmanned Aircraft Systems		standard	published	Updated revision underway under WK W603901
M	UA Design and Airworthiness								prEN4700-14 Unmanned Aircraft Systems (UAS) - Product and Certification Requirements	This European standard will provide means of compliance to cover Part 1 to 5 of the delegated act. This includes compliance with product requirements for all UAS authorized to operate in the 'open' category (class C1, C2, C3 and C4 UAS). This document does not cover "Specific" or "Certified" category of UAS. Compliance with this document exists in complying with CE marking technical requirements and covers, but is not limited to, physical and mechanical properties, flammability, electrical properties, functional safety, software, readability of the instructions and manual etc. Additional factors that occur from the characteristics of third party payloads are excluded.	AED-STAN DSWG6	Nov-20	prEN / European standard	ongoing	

M									Guidelines	Applicability of safe design standards for UAS in Specific Operations Category 'Low/Medium robustness'	EUROCAE WG-105	Jun-20	Guidance	ongoing	
M	Ground control station								MABSP	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-20	standard	ongoing	
M									Guidelines	Guidelines on the use of multi-ONES for UAS low robustness	EUROCAE WG-105	Mar-20	standard	ongoing	
M									Guidelines	Guidelines on the Automatic protection of the flight envelope from human errors for UAS	EUROCAE WG-105	Dec-20	standard	ongoing	
	Emergency recovery/return-to-home systems	Opinion 05-2019	Part 18(b) and 18(7) UAS in class C0 and C1 shall provide the remote pilot with means to continuously monitor the quality of the command and control link and receive an alert when it is likely that the link is going to be lost or degraded to the extent of compromising the safe conduct of the operation, and another alert when the link is lost.	EASA	Jun-20	Specific	Opinion published								
	UA Design and Airworthiness	EU 2019/945	Part 18) UAS in Class C0 shall have a maximum attainable height above the take-off point limited to 120 m.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 23), 32) and 42) UAS in Class C1, C2 and C3 shall have a maximum attainable height above the take-off point limited to 120 m or be equipped with a system that limits the height above the surface or above the take-off point to 120 m to a value selectable by the remote pilot. If the value is selectable, clear information about the height of the UA above the surface or take-off point during flight shall be provided to the remote pilot.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 17) and 217) UAS in Class C0 and C1 shall, if equipped with a follow-me mode and when the function is on, be in a range not exceeding 50 m from the remote pilot, and make it possible for the remote pilot to regain control of the UA.	EASA	Jun-19	open	Regulation applicable								
	Manufacturer organisation							ISO 21384-2	Requirements for ensuring the quality and safety of the design and manufacture of UAS. It includes information regarding the UAS, any associated remote control stations, the C2 links, any other required data links and any other system elements as may be required.	ISO TC30/SC16/WG2	May-20	standard	ongoing		
	UA Design and Airworthiness							STANAG 4671 UAV System Airworthiness Requirements	Set of technical airworthiness requirements intended primarily for the airworthiness certification of fixed-wing military UAS with a maximum take-off weight between 150 and 20,000 kg that intend to regularly operate in non-segregated airspace	NATO FNAS			published		
	UA Design and Airworthiness							STANAG 4702 Fixed-Wing Unmanned Aerial System Airworthiness Requirements	Set of technical airworthiness requirements intended for the airworthiness certification of fixed-wing military UAV Systems with a maximum take-off weight between 150 and 3775 kg that intend to regularly operate in non-segregated airspace	NATO FNAS			published		
	UA Design and Airworthiness							STANAG 4703 Light Unmanned Aerial System Airworthiness Requirements	Minimum set of technical airworthiness requirements intended for the airworthiness certification of fixed-wing Light UAS with a maximum take-off weight not greater than 700 kg and an impact energy greater than 95 (400 ft-lb) that intend to regularly operate in non-segregated airspace	NATO FNAS			published		
	UA Design and Airworthiness							STANAG 4746 Unmanned Aerial Vehicle System Airworthiness Requirements for Flight Vertical Take Off and Landing aircraft	Set of technical airworthiness requirements intended for the airworthiness certification	NATO FNAS	2018		ongoing		
	UA Design and Airworthiness	EU 2019/945	Parts 10), 36) and 46) UAS in Class C0, C1 and C2 shall be designed and constructed in such a way as to minimise injury to people during operation. Sharp edges shall be avoided, unless technically unavoidable under good design and manufacturing practice. If equipped with propellers, it shall be designed in such a way as to limit any injury that may be inflicted by the propeller blades.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 216), 317) and 413) A UAS Class C1, C2 and C3 shall provide the remote pilot with clear warnings when the battery of the UA or its control station reaches a low level so that the remote pilot has sufficient time to safely land the UA.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 23) and 34) UAS in class C1 and C2 shall have the requisite mechanical strength, including any necessary safety factor, and, where appropriate, ability to withstand any abuse to which it is subjected to during use without any leakage or deformation that might interfere with its safe flight.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 216), 318) and 414) UAS in Class C1, C2 and C3 shall be equipped with lights for the purpose of: (a) the controllability of the UA, (b) the conspicuity of the UA at night, the design of the lights shall allow a person on the ground, to distinguish the UA from a manned aircraft.	EASA	Jun-19	open	Regulation applicable								operator must or require the requirement allow to specific category when operated in VLL. be equipped (a) with lights for the purpose of controllability of the UA and (b) with at least one green light.
	UA Design and Airworthiness							ARP038 Lighting Applications for Unmanned Aerial Systems (UAS)	This SAE Aerospace Recommended Practice (ARP) provides technical recommendations for the application, design and development of lighting for Unmanned Aircraft (UA). The recommendations set forth in this document are to aid in the design of UA lighting for the type or size of aircraft and the operation in the National Aerospace System for which the aircraft is intended.	SAE A-20 AeroNet Lighting Committee	Dec-18	Recommended Practice	ongoing	ongoing	
	UA Design and Airworthiness	EU 2019/945	Part 21) UAS in class C1 shall be made of materials and have performance and physical characteristics such as to ensure that in the event of an impact at terminal velocity with a human head, the energy transmitted to the human head is less than 80 J, or, as an alternative, shall have an MTDM of less than 500 g including payload.	EASA	Jun-19	open	Regulation applicable								
	UA Design and Airworthiness	EU 2019/945	Parts 18) and 210) UAS in class C0 and C1 shall be powered by electricity and have a nominal voltage not exceeding 24 V direct current (DC) or the equivalent alternating current (AC) voltage; the accessible parts shall not exceed 24 V DC or the equivalent AC voltage; internal voltages shall not exceed 24 V DC or the equivalent AC voltage unless it is ensured that the voltage and current combination generated does not lead to any risk or harmful electric shock even when the UAS is damaged.	EASA	Jun-19	open	Regulation applicable								

	Standard scenarios								ADP9888 Precision agriculture	SAE C30 UAS Operator Qualifications Committee	Aug-19	recommended practice	planned	
	Standard scenarios								ADP9888 Bridge inspection	SAE C30 UAS Operator Qualifications Committee	Sep-19	recommended practice	planned	
	Standard scenarios								ADP9888 Train right-of-way	SAE C30 UAS Operator Qualifications Committee	Oct-19	recommended practice	planned	
	Standard scenarios								ADP9888 Fire stack inspections	SAE C30 UAS Operator Qualifications Committee	Nov-19	recommended practice	planned	
	Standard scenarios								WKSR43 New Guide for Visual Inspection of Building Facades using Drone	ASTM E06 Performance of Buildings	Jan-18	guide	ongoing	
	Navigation								WKSR07 Evaluating AeroResponse Visual Image Acuity	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Ground control station								WKSR25 Evaluating AeroResponse Visual Color Acuity	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Ground control station								WKSR26 Evaluating AeroResponse Visual Dynamic Range	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	C3 datalink and communication								WKSR27 Evaluating AeroResponse Robustness Audio Speech Acuity	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Ground control station								WKSR28 Evaluating AeroResponse Robustness Thermal Image Acuity	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Ground control station								WKSR29 Evaluating AeroResponse Robustness Thermal Dynamic Range	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Ground control station								WKSR30 Evaluating AeroResponse Robustness Latency of Video, Audio, and Control	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Detect and avoid								WKSR36 Evaluating AeroResponse Robustness Awareness Identify Objects (Visual and Audio Content)	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Standard scenarios								WKSR37 Evaluating AeroResponse Robustness Awareness Inspect Static Objects	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Standard scenarios								WKSR38 Evaluating AeroResponse Robustness Awareness Map Risk Areas (Blended Images)	ASTM E54 Homeland Security Applications	Apr-18	standard	ongoing	E54 Full Committee justification February 26 to March 2, 2018. Delayed till Apr-18
	Standard scenarios								ASTM WKSR68 Small Unmanned Aircraft Systems (sUAS) for Land Search and Rescue	ASTM F32 Search and Rescue	TBD	standard	ongoing	
	Standard scenarios								ASTM WK5426 UAS Operations in Search and Rescue Operations	ASTM F32 Search and Rescue	TBD	standard	ongoing	
	Standard scenarios								ASTM WK6542 New Specification for Operation over People	ASTM F38 Unmanned Aircraft Systems	Mar-19	specification	ongoing	Final draft for ballot in October 2018, adjudicating comments.
M	UA Design and Airworthiness								ASTM F3389-20 Test Methods for Assessing the Safety of Small Unmanned Aircraft System	ASTM F38 Unmanned Aircraft Systems		standard	published	
	Risk Assessment								ASTM F3176-16 Standard Practice for Operational Risk Assessment of Small Unmanned Aircraft Systems (sUAS)	ASTM F38 Unmanned Aircraft Systems		standard	published	This will be reference in AC for Special Cases 52.1.7(b)
	Manuals								ASTM WK6038 New Practice for General Operations Manual for Professional Operator of Light Unmanned Aircraft Systems (LUAS)	ASTM F38 Unmanned Aircraft Systems	Sep-18	specification	ongoing	Draft Complete - will be balloted Jun 2018

	Take off/Landing phase								ASTM WK6317 Precept Design	To support the design of core vehicles and vehicles for the landing and takeoff of VTOL aircraft bearing and discharging passengers or cargo. The proliferation of electric-powered VTOL should be carefully considered in the development of this document. The standard must be suitable to address aircraft ranging in size and kinetic energy, including unmanned and manned, piloted aircraft.	ASTM F38 Unmanned Aircraft Systems	TBD	specification	ongoing	New draft in work
	UAS-ATM								STANAG 7234 Remotely Piloted Aircraft Systems (RPAS) Airspace Integration (AI) - AATMF-51		NATO FINAS	2018	standard	ongoing	Under development
	C3 data link and communication								STANAG 7232 Unmanned Aerial Systems Tactics Techniques and Procedures - ATP 5.3.3.2 Edition A	Provide standardized tactics, techniques, and procedures 217 for the planning, command and control (C2), and employment of unmanned aircraft systems 218 (UAS) in NATO operations	NATO MCASIS-COUBS-OS	2018	standard		
									ASTM F38 Unmanned Aircraft Systems Manual for Professional Operator of Light Unmanned Aircraft Systems (LUAS)	This standard defines the requirements for national operations Manual for Professional Operator of Light Unmanned Aircraft Systems (LUAS). The standard addresses the requirements and/or best practices for identification and organization of a professional operator (i.e., pilot).	ASTM F38 Unmanned Aircraft Systems	Mar-19	standard	ongoing	Under development
									WK6935 Framework for Using ASTM Standards for UAS	This guide provides some major themes and examples for consideration related to compliance which are not necessarily captured in any single standard pertinent to UAS. The outline of this document is intended to loosely reflect the process that an organization would go through in order to reach and maintain production of UAS that is demonstrably compliant with the applicable consensus-based standards. The guide describes the current standards and identifies gap areas to support unmanned aircraft operations for commercial purposes. A CAI may, at their discretion, use this guide to aid the development of regulations. A commercial operator may, at their discretion, use this guide to aid their applications for regulatory approval, for example, when submitting a safety case as part of a Specific Operations Risk Assessment (SORA)	ASTM F38 Unmanned Aircraft Systems	Mar-19	guide	ongoing	
M									AEIEM709-4 Unmanned Aircraft Systems (UAS) - Security requirements	This European standard specifies the minimum requirements for the design and development of UAS systems. The purpose is to be able to verify that an UA is equipped with lights which ensure controllability of the UA. The design of the light shall allow a person on the ground to distinguish a UA from a manned aircraft. The standard will address:	ASD-STAN DSWGB	Nov-20	prEN / European standard	ongoing	
FCL															
	Remove pilot competence	EU 2019/947	ISO OPER 0100 be performed by a remote pilot: (a) familiarised with the user's manual provided by the manufacturer of the UAS; (b) in the case of an unmanned aircraft class C1, as defined in Part 2 of the Annex to Delegated Regulation (EU) 2019/947.	EASA	Jun-19	open and specific	Regulation applicable from July 2020								
	Remove pilot competence								ISO 29665 Unmanned aircraft systems - Training for personnel involved in UAS operations	The purpose of this international standard is that the persons who work for UAS operation receive appropriate education and obtain required knowledge and skills. Persons or educational organizations qualified according to this standard will be internationally regarded. It will enhance international exchange and international trade.	ISO/TC 20/SC 16WG.3	01/01/2022	Standard	ongoing	
	Remove pilot competence								RPSP707 - Pilot Training Recommendations for Unmanned Aircraft Systems (UAS) Civil Operations	This document provides an approach to the development of training for pilots of Unmanned Aircraft Systems (UAS) for use by operators, manufacturers, and regulators. The identification of training topics is based initially on Practical Test Standards (PTS) topics for manned aircraft pilots. The topics identified could be used for the construction of a PTS for UAS commercial pilot operations and a PTS for a UAS pilot instrument rating. The UAS commercial and rating specific content restrictions can be:	SAE O-30 UAS Operator Qualifications Committee & C-101 Unmanned Aircraft Vehicle		recommended practice	published	
	Remove pilot competence								ARP4000 Common operator qualifications		SAE O-30 UAS Operator Qualifications Committee	May-19	recommended practice	planned	
	Remove pilot competence	EU 2019/947	UAS OPER 0100 be performed by a remote pilot who is familiar with the user's manual provided by the manufacturer of the UAS and holds a certificate of remote pilot competency issued by the competent authority or by an entity recognized by the competent authority of the Member State of registration of the UAS operator. This certificate shall be obtained after complying with all of the following conditions and in the order indicated: (a) completing an online training course and passing the online theoretical knowledge examination as referred to in point (a)(ii).	EASA	Jun-19	open and specific	Regulation applicable from July 2020								
M	maintenance								ASTM WK7691 New Guide for Lightweight UAS Maintenance Technician Qualification	The purpose of this guide is to address the basic fundamental subject knowledge, task performance, and task knowledge activities and functions for UAS maintenance professionals to be used UAS Maintenance Technicians	ASTM F38 Unmanned Aircraft Systems and F46 Aerospace Personnel	Jun-18	standard	ongoing	Undergoing revisions prior to ballot
M	Remove pilot competence								ASTM F38 Unmanned Aircraft Systems Endorsement	To develop a 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 operate unmanned aircraft for public safety purposes. A CAI may, at their discretion, use this guide to aid the development of regulations. An approved ASTM guide that describes required education, training, and continuing professional development for those performing as:	ASTM F38 Unmanned Aircraft Systems		standard	published	
	Remove pilot competence								ASTM F38 Unmanned Aircraft Systems Endorsement	Establish criteria for Training and Certification of sUAS Pilots, Instructors, and Remote Pilots. This practice defines the knowledge, skills, and abilities sUAS pilots require for the correct training and flight operations for Small Unmanned Aircraft Systems (sUAS) on the NAS. The Training and Certification of sUAS Pilots, Instructors, and Remote Pilots include areas cover pilot qualifications, training and proficiency instructor certification and sUAS flight training facility operations. The document sets forth standards to meet the requirements to establish quality training and certification programs, and follows aviation safety.	ASTM F38 Unmanned Aircraft Systems	Apr-18	standard	published	
									ASTM WK61763 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 safely instruct remote pilots to operate unmanned aircraft for commercial purposes. A CAI may, at their discretion, use this guide to aid the development of regulations.	ASTM F38 Unmanned Aircraft Systems	Jul-19	standard	ongoing	

	Noise&Environment	EU 2019/945	Part 460 LMAI in class C3 shall have, unless it is a fixed-wing UA, the indication of the guaranteed A-weighted sound power level LWA determined as per Part 13 affixed on the UA section.	EASA	Jun-19	open	Regulation applicable								
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