Change A=added D=deleted M=modified	Domains	Regulation						Standardisation						Version:	20/11/2017
		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, supporting material etc.)	Status		
1	General														
		NPA 2017-05	**Art. 2 Definitions**	EASA	Dec-18	open and specific									
								AS6523 Data Dictionary for Quantities Used in Unmanned Systems	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-4UCS Unmanned Systems (UxS) Control Segment Architecture	Mar-18	Standard	ongoing		
								ARP6128 Unmanned Systems Terminology Based on the ALFUS Framework	This SAE Aerospace Recommended Practice (ARP) describes terminology specific to unmanned systems (UMSs) and definitions for those terms. It focuses only on terms used exclusively for the development, testing, and other activities regarding UMSs. 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-4JAUS Joint Architecture for Unmanned Systems Committee		Recommended Practice	published		
								AS#### UAS Propulsion System Terminology		SAE E-39 Unmanned Aircraft Propulsion Committee	May-19	Standard	planned		
								ISO 21895 - 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		
								ISO 21384-1 - 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		
2	**UAS Traffic Management**														
	Electronic Identification	TBD	It is linked to th U-Space	EASA	TBD	Open category and Specific									
								MASPS for UAS e-identification	Minimun Aviation Systems Performance Standard for the UAS e-identification function (System Level requirements)	EUROCAE WG-105	Nov-18	Standard	ongoing		
								MOPS for UAS e-identifcation	Minimum Operational Performance Standard for the UAS e-identification function (component/"box" level)	EUROCAE WG-105	Jun-19	Standard	planned		
								ASTM WK27055 New Practice for UAS Remote ID and Tracking	Identify the requirements for meeting the security and public safety needs of the law enforcement, homeland defense, and national security communities for the remote identification and tracking of UAS. Evaluate the need to provide information that could assist in threat discrimination and determination of hostile intent.	ASTM F38 Unmanned Aircraft Systems	TBD	Standard	Working group forming		
								AIR6388 Remote Identification and Interrogation of Unmanned Aerial Systems	The information presented in this AIR is intended to provide information about current remote identification methods and practical considerations for remotely identifying UAS. Depending on rigor and adherence requirements, Aerospace Standard (AS) and Aerospace Recommended Practice (ARP) documents may be developed. For example, ARPs may provide methods to remotely identify UAS using existing hardware technologies typically available to most consumers. ARPs may also specify the information exchange and message format between unmanned aerial systems and remote interrogation instruments. An AS, however, may highlight the wireless frequency band, message type, message encoding bits, and message contents.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture	Dec-18	Information Report	ongoing		
	Local Identification	NPA 2017-05	**Appendix I.6** An electronic identification system shall provide in real time the following information through electronic data, which is compliant with standards acceptable to the Agency: (a) the UAS operator and UA registration; (b) the UAS class; (c) the type of the UAS operation; (d) the status of the UAS geofencing function; and (e) the geographical position of the UA and its altitude above ground level.	EASA	Dec-18	Open category and Specific	ongoing									
	Marking	NPA 2017-05	**UAS.OPEN.20(e)** (e) UAS operator shall display the registration information on the UA	EASA	Dec-18	Open category and Specific	ongoing								
								ASTM F2851-10 Standard Practice for UAS Registration and Marking (Excluding Small Unmanned Aircraft Systems)	This practice follows ICAO Annex 7 SARPS except in areas where the unique aspects of UAS may not allow compliance. In these cases, this document will address the issue and recommend the need for an alternate compliance method.	ASTM F38 Unmanned Aircraft Systems		Standard	published		

	Registration	NPA 2017-05	**UAS.OPEN.20 Registration** (a) Except when already registered in accordance with the specific-category requirements, UAS operators shall register themselves and the UA, pursuant to Article 3 of this Regulation, in a manner and format established by the Agency. (b) By way of derogation from point (a), UAS operators shall not register themselves and the UA when that UA has an MTOM, including payload, of less than 250 g. (c) UAS operators shall update their registration every time data is changed.	EASA	Dec-18	Open category and Specific	ongoing						
							ASTM F2851-10 Standard Practice for UAS Registration and Marking (Excluding Small Unmanned Aircraft Systems)	This practice follows ICAO Annex 7 SARPS except in areas where the unique aspects of UAS may not allow compliance. In these cases, this document will address the issue and recommend the need for an alternate compliance method.	ASTM F38 Unmanned Aircraft Systems		Standard	published
	Geofencing	NPA 2017-05	Art 12.2 Member States shall publish the information on prohibited or restricted airspace and/or designated special zones for UAS operations, as well as on the required authorisations, in a manner and format established by the Agency. **Appendix I.6.a — Geofencing system** A geofencing system should include the following functionalities and performance characteristics so as to provide: (a) an interface to update data containing information on airspace limitations and requirements, as well as to ensure the integrity and validity of this data; (b) information about the airspace limitations and requirements where the UA operates, as well as the position and movement of the UA relative to those limitations; and (c) information on the status of the system as well as on the validity of its position or navigation data. If the UA has a functionality that limits its access to certain airspace areas or volumes, this functionality shall be used in a manner that it interacts smoothly with the flight control without adversely affecting flight safety. In addition, sufficient information shall be provided to the remote pilot when the UA approaches areas with airspace limitations or when the geofencing system engages with the UA flight control system.	EASA	Dec-18	Open category and Specific	ongoing						
							MASPS for UAS Geo-Fencing	Minimun Aviation Systems Performance Standard for the UAS Geo-Fencing function (System Level requirements)	EUROCAE WG-105	Nov-18		ongoing
							MOPS for UAS Geo-Fencing	Minimum Operational Performance Standard for the UAS Geo-Fencing function (component/"box" level)	EUROCAE WG-105	Jun-19		planned
3	**Command, Control and Communication**											
	RPAS C2 Datalink (Terrestrial and Satellite)						MOPS (Terrestrial LOS)	Minimum Operational Performance Standard for the terrestrial Line of Sight Command and Control Data Link	EUROCAE WG-105	Dec-17		ongoing
							MOPS (SATCOM)	Minimum Operational Performance Standard for the satellite Command and Control Data Link	EUROCAE WG-105	Apr-18		ongoing
							MASPS	Minimum Aviation System Performance Standard for the Command and Control Link	EUROCAE WG-105	Jun-18		ongoing
	C3						AIR6514 UxS Control Segment (UCS) Architecture: Interface Control Document (ICD)	This interface control document (ICD) specifies all software services in the Unmanned Systems (UxS) Control Segment Architecture, including interfaces, messages, and data model.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Information Report	published
							AIR6515 Unmanned Systems (UxS) Control Segment (UCS) Architecture: EA Version of UCS ICD Model	This User Guide describes the content of the Enterprise Architect (EA) version of the UCS Architectural Model and how to use this model within the EA modeling tool environment. The purpose of the EA version of the UCS Architectural Interface Control Document (ICD) model is to provide a working model for Enterprise Architect tool users and to serve as the source model for the Rational Software Architect (RSA) and Rhapsody models (AIR6516 and AIR6517). The AIR6515 EA Model has been validated to contain the same content as the AS6518 model for: - all UCS ICD interfaces - all UCS ICD messages - all UCS ICD data directly or indirectly referenced by ICD messages and interfaces - the Domain Participant, Information, Service, and Non Functional Properties Models. Preconditions for using the AIR6515 EA Model include:-access to / experience with Enterprise Architect 10 or higher, Corporate Edition. -experience with the Unified Modeling Language (UML) -an understanding of the UCS Architectural Model as originally created in the EA Model AS6518-MODEL	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Information Report	published
							AIR6516 Unmanned Systems (UxS) Control Segment (UCS) Architecture: RSA Version of UCS ICD Model	This User Guide describes the content of the Rational Software Architect (RSA) version of the UCS Architectural Model and how to use this model within the RSA modeling tool environment. The purpose of the RSA version of the UCS Architectural Interface ICD model is to provide a model for Rational Software Architect (RSA) users, derived from the Enterprise Architect (EA) ICD model (AIR6515). The AIR6515 EA Model, and by derivation, the AIR6516 RSA Model, have been validated to contain the same content as the AS6518 model for: - all UCS ICD interfaces - all UCS ICD messages - all UCS ICD data directly or indirectly referenced by ICD messages and interfaces - the Domain Participant, Information, Service and Non Functional Properties Models. Preconditions for using the AIR6516 RSA Model include:-access to Rational Software Architect. Version 9.0 or higher. This release was checked with version 9.1.1. -experience with the Unified Modeling Language (UML) -an understanding of the UCS Architectural Model as originally created in the EA model AS6518 MODEL.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Information Report	published

							AIR6517 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Rhapsody Version of UCS ICD Model	This User Guide describes the content of the Rhapsody version of the UCS Architectural Model and how to use this model within the Rhapsody modeling tool environment. The purpose of the Rhapsody version of the UCS Architectural Interface Control Document (ICD) model is to provide a model for Rhapsody users, derived from the Enterprise Architect (EA) model (AIR6515). The AIR6515 EA Model, and by derivation, the AIR6517 Rhapsody Model, have been validated to contain the same content as the AS6518 model for: - all UCS ICD interfaces - all UCS ICD messages - all UCS ICD data directly or indirectly referenced by ICD messages and interfaces - the Domain Participant, Information, Service and Non Functional Properties Models. Preconditions for using the AIR6517 Rhapsody Model include: -access to / experience with the Rhapsody Modeling Tool Environment version 8.1 or higher. This product was validated using Rational Rhapsody Architect for System Engineers, version 8.1.1. -experience with the Unified Modeling Language (UML) -an understanding of the UCS Architectural Model as originally created in the EA model AS6518-MODEL.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Information Report	published
							AIR6519 UxS Control Segment (UCS) Architecture: UCTRACE	The Use Case Trace (UCTRACE) is SAE publication AIR6519 of the Department of Defense Unmanned Control Segment (UCS) Architecture. This document is the SAE publication of the Department of Defense UAS Control Segment (UCS) Architecture: Use Case Trace (UCTRACE) Version 3.4(PR) approved for Distribution A public release 15.5-1859. This information is produced from a script run against the System Use Case Model contained in the UCS Architecture Model AS6518-MODEL.eap configuration item. The System Use Case Model includes, at its lowest level of elaboration, use cases Level 2/3 (L2/L3) that describe specific scenarios of message exchanges between Actors and internal system Participants via ServiceInterfaces. These message exchanges provide a way to create	20-Dec-16		Information Report	published
							AIR6520 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Version Description Document	Governance of the Unmanned Aircraft System (UAS) Control Segment (UCS) Architecture was transferred from the United States Office of the Secretary of Defense (OSD) to SAE International in April 2015. Consequently, a subset of the UCS Architecture Library Release 3.4(PR) has been published under SAE as the Unmanned Systems (UxS) Control Segment (UCS) Architecture, AS6512. This Version Description Document (VDD) describes the correspondence and differences between the two architecture libraries.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Information Report	published
							AIR6521 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Data Distribution Service (DDS)	This platform specific Interface Control Document (ICD) provides an example mapping to the Object Management Group's (OMG) Data Distribution Service (DDS) infrastructure middleware. The mapping is based on the Unmanned Systems (UxS) Control Segment (UCS) Architecture: Model, AS6518. A series of non-normative implementation choices 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 result of this mapping and implementation choices are provided with AIR6521. 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 (UxS) Control Segment Architecture		Information Report	published
							AS6512 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Architecture Description	This document is the Architecture Description (AD) for the SAE Unmanned Systems (UxS) Control Segment (UCS) Architecture. This AD serves as the official designation of the UCS Architecture - SAE AS6512. The UCS Architecture is expressed by a library of SAE publications as referenced herein. The other publications in the UCS Architecture Library are: AS6513, AIR6514, AIR6515, AIR6516, AIR6517, AS6518, AIR6519, AIR6520, AIR6521, and AS6522.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Standard	published
							AS6513 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Conformance Specification	This document is the authoritative specification within the SAE Unmanned Systems (UxS) 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 artifacts.	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Standard	published
							AS6518 Unmanned Systems (UxS) Control Segment (UCS) Architecture: UCS Architecture Model	This brief User Guide recaps the content of the AS6518 UCS Architectural Model described in detail in AS6512 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 shown in the AS6512 UCS Architecture: Architecture Description. Preconditions for using the AS6518 EA Model include: -access to / experience with Enterprise Architect 10 or higher, Corporate Edition. -experience with the Unified Modeling Language (UML) -installation of the [included] UCS_MDG.xml add in for Sparx Enterprise Architect per instructions below	SAE AS-4UCS Unmanned Systems (UxS) Control Segment Architecture		Standard	published

							AS6522 Unmanned Systems (UxS) Control Segment (UCS) Architecture: Architecture Technical Governance	The UCS technical governance comprises a set of policies, processes, and standard definitions to establish consistency and quality in the development of architecture artifacts and documents. It provides guidance for the use of adopted industry standards and modeling conventions in the use of Unified Modeling Language (UML) and Service Oriented Architecture Modeling Language (SoaML), including where the UCS Architecture deviates from normal UML conventions. This document identifies the defining policies, guidelines, and standards of technical governance in the following subjects: - Industry standards adopted by 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 intentionally minimal. The object 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 that 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 SoaML 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 (UxS) Control Segment Architecture		Standard	published
							WK58931 Evaluating AerialResponse RobotManeuvering: Maintain Position and Orientation	A suite of standard test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58932 Evaluating AerialResponse RobotManeuvering: Orbit a Point	A suite of standard test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58933 Evaluating AerialResponse RobotManeuvering: Avoid Static Obstacles	A suite of standard test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58934 Evaluating AerialResponse RobotManeuvering: Pass Through Openings	A suite of standard test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58935 Evaluating AerialResponse RobotManeuvering: Land Accurately (Vertical)	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58942 Evaluating AerialResponse RobotRadio Communication Range : Line of Sight	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58941 Evaluating AerialResponse RobotRadio Communications Range: Non Line of Sight	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							STANAG 4660 - INTEROPERABLE COMMAND AND CONTROL DATA LINK FOR UNMANNED SYSTEMS	Common standard Line-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 NNAG/JCGUAS		Standard	published
							Report: C3 LOS + BLOS band planning – Considerations affecting future use of the 5030/5091 MHz band	Internal report describing considerations that led to the provisions in the MASPS on the 5030/5091 MHz band	EUROCAE WG-105	Sep-17		ongoing
							SAE6856 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

								SAE6857 Requirements for a Terrestrial 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 terrestrial-based PNT system to improve vehicle (e.g. unmanned, aerial, ground, maritime) positioning/navigation solutions and ensure critical infrastructure security, complementing GNSS technologies.	SMCPNT Position, Navigation, and Timing Committee	Mar-19	Standard	ongoing
	Spectrum							MASPS on C3 Spectrum Management for the 5030/5091 MHz band	Requirements for the management of the 5030/5091 MHz band fir use by C2 Link Services	EUROCAE WG-105	Dec-18	Standard	planned
								Guidance on Spectrum Access, Use and Management	Guidance material describing considerations for the use of spectrum for UAS purposes	EUROCAE WG-105	Nov-17	Guidance	ongoing
								Report: C2 Link Security Requirements	Internal Report	EUROCAE WG-105	Mar-17		finalized
	Security							MASPS on RPAS C3 Security	Requirements for the application fo Security to the UAS C3 Link	EUROCAE WG-105	Jun-19	Standard	ongoing
								Guidance on RPAS C3 security	Guidance material for the application of the MASPS listed above	EUROCAE WG-105	Jun-18	Guidance	ongoing
4	**Detect and Avoid**												
		SORA Step#9 Tactical Mitigation		EASA	Sep-18	Specific	ongoing						
								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level)	EUROCAE WG-105	Dec-17	Standard	ongoing
	DAA in IFR flight in Class A-C airspace							MOPS	Minimum Operational Performance Standard (Requirements at equipment level)	EUROCAE WG-105	Dec-18	Standard	ongoing
								OSED	Operational Services and Environment Description in Class D-G airspaces under VFR/IFR	EUROCAE WG-105	Dec-17	Standard	ongoing
	DAA against conflicting traffic for RPAS operating under IFR and VFR in all airspace classes	SORA Step#9 Tactical Mitigation		EASA	Sep-18	Specific	ongoing						
								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level	EUROCAE WG-105	Dec-18	Standard	ongoing
								MOPS	Minimum Operational Performance Standard (Requirements at equipment level)	EUROCAE WG-105	Jun-20	Standard	planned
								OSED	Operational Services and Environment Description in Class D-G airspaces under VFR/IFR	EUROCAE WG-105	Jun-18	Standard	ongoing
	DAA in VLL	SORA Step#9 Tactical Mitigation		EASA	Sep-18	Specific	ongoing						
								MOPS	Minimum Operational Performance Standard (Requirements at equipment level)	EUROCAE WG-105	Dec-19	Standard	planned
								STANREC 4811 Ed. 1/ AEP-. 101 Ed. A Ver.1 "UAS sense and avoid"	To detail comprehensive guidance and recommended practice for the development of Sense and Avoid systems, referencing and providing guidance regarding application of existing standards and best practice.	NATO FINAS	Feb-18	Guide	Under development
								WK60936 Specification for Acoustic-based Detect and Avoid for sUAS	This specification defines the requirements for acoustic-based Detect And Avoid systems used in small Unmanned Aircraft Systems (sUAS).	ASTM F38 Unmanned Aircraft Systems	Jun-18	Standard	Workgroup draft complete
5	**RPAS Automation**												
								OSED	Operational Services and Enironment Description	EUROCAE WG-105	Nov-17		ongoing
								ASTM F3269 Standard Practice for Methods to Safely Bound Flight Behavior of Unmanned Aircraft Systems Containing Complex Functions	This practice will have the benefit of enabling highly automated UAS operations. It is envisioned that applicants will use this practice as a means of compliance for safe implementation of complex functions for routine operations.	ASTM F38 Unmanned Aircraft Systems		Sstandard	Published
	Automatic Take-off and Landing							MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level	EUROCAE WG-105	Jun-20	Sstandard	planned

								OSED	Operational Services and Enironment Description	EUROCAE WG-105	Nov-17	Sstandard	ongoing
	Automatic Taxiing							MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level	EUROCAE WG-105	Jun-20	Sstandard	planned
								OSED	Operational Services and Enironment Description	EUROCAE WG-105	Nov-17	Sstandard	ongoing
	Emergency Recovery	NPA 2017-05	**Appendix I 3 (k)** **Appendix I 4 (f)** (k) in case of loss of data link, have a reliable and predictable method for the UA to recover or terminate the flight in a way that reduces the effect on third parties in the air or on the ground;	EASA	Dec-18	open category and specific	ongoing						
								MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level	EUROCAE WG-105	Jun-20	Standard	planned
6	**Design & Airworthiness**												
		NPA 2017-05	**Appendix I.1 (g)(1)** **Appendix I.2 (a)** **Appendix I.3 (a)** **Appendix I.4 (b)** **Appendix I.5 (b)** be designed and manufactured to fly safely;	EASA	Dec-18	open	ongoing						
								Report: Inputs to RPAS AMC 1309		EUROCAE WG-105	Jun-17	Supportive material	planned
								AS6009A JAUS Mobility Service Set	This document defines a set of standard application layer interfaces called JAUS Mobility 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 Mobility Services represent the vehicle platform-independent capabilities commonly found across all domains and types of unmanned systems (referred to as UxVs). At present, over 15 services are defined in this document many of which were updated in this revision to support Unmanned Underwater Vehicles (UUVs).	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								AS5684B JAUS Service Interface Definition Language	The SAE Aerospace Information Report AIR5315 – Generic Open Architecture (GOA) defines "a framework to identify interface classes for applying open systems to the design of a specific hardware/software system." [sae] JAUS Service (Interface) Definition Language defines an XML schema for the interface definition of services at the Class 4L, or Application Layer, and Class 3L, or System Services Layer, of the Generic Open Architecture stack (see Figure 1). The specification of JAUS services shall be defined according to the JAUS Service (Interface) Definition	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								AS6062 JAUS Mission Spooling Service Set	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 (more services are planned for future versions of this document): • Mission Spooler: Stores mission plans, coordinates mission	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								AS6060 JAUS Environment Sensing Service Set	This document defines a set of standard application layer interfaces called JAUS Environment Sensing 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 Environment Sensing Services represent typical environment sensing capabilities commonly found across all domains and types of unmanned systems in a platform-independent manner. At present, five services are defined in this document: • Range Sensor: Determine the proximity of objects in the platform's	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								AS6040 JAUS HMI Service Set	This document defines a set of standard application layer interfaces called JAUS HMI 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 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: • Drawing • Pointing Device • Keyboard • Digital Control • Analog Control Each service is described by a JAUS Service	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								AS5710A JAUS Core Service Set	This document defines a set of standard application layer interfaces called JAUS Core 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 Core Services represent the infrastructure commonly found across all domains and types of unmanned systems. At present, eight services are defined in this document: • Transport Service: Abstracts the functionality of the underlying communication transport layer • Events Service: Establishes a	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
								ARP6012A JAUS Compliance and Interoperability Policy	This document, the JAUS Compliance and Interoperability Policy (ARP6012), recommends an approach to documenting the complete interface of an unmanned system or component in regard to the application of the standard set. While non-SAE AS-4 JAUS documents are referenced in this ARP they are not within the scope of this document and should be viewed as examples only.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Recommended Practice	published
								AIR5645A JAUS Transport Considerations	This SAE Aerospace Information Report (AIR) discusses characteristics of data communications for the Joint Architecture for Unmanned Systems (JAUS). This document provides guidance on the aspects of transport media, unmanned systems and the characteristics of JAUS itself that are relevant to the definition of a JAUS transport specification.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Information Report	published
								AS5669A JAUS/SDP 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 (JAUS) or other Software Defined Protocols (SDP). This Transport Specification defines the formats and protocols used for communication between compliant entities for all supported link-layer protocols and media. Although JAUS is the SDP used as the example implemented throughout this document, AS5669 can be used for any SDP that meets the required capabilities. A Software Defined Protocol is defined	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published

							AS6091 JAUS Unmanned Ground Vehicle Service Set	This document defines a set of standard application layer interfaces called JAUS Unmanned Ground Vehicle 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 Unmanned Ground Vehicle Services represent the platform-specific capabilities commonly found in UGVs, and augment the Mobilty Service Set [AS6009] which is platform-agnostic. At present ten (10) services are defined in this document.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
							AS6057A JAUS Manipulator Service Set	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-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published
							ARP6227 JAUS Messaging over the OMG Data Distribution Service (DDS)	This document defines a standard representation of JAUS AS5684A 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-4JAUS Joint Architecture for Unmanned Systems Committee		Recommended Practice	published
							AIR5665B 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	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Information Report	published
							AIR5664A JAUS History and Domain Model	The purpose of this SAE Aerospace Information Report (AIR) is two-fold: to inform the reader of the extent of effort that went into the development of the Joint Architecture for Unmanned Systems (JAUS); and to capture for posterity the domain analysis that provides the underpinnings for the work by the AS-4 Committee (Unmanned Systems).	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Information Report	published
							AS6062A JAUS Mission Spooling Service Set	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 (more services are planned for future versions of this document): • Mission Spooler: Stores mission plans, coordinates mission plans, and parcels out 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 [JSIDL].	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee	May-19	Standard	ongoing
							AS6111 JAUS Unmanned Maritime Vehicle Service Set	This document defines a message-passing interface for services representing the platform-specific capabilities common across unmanned maritime vehicles.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee	Jun-19	Standard	ongoing
							AS6971 Test Protocol for UAS Reciprocating (Intermittent) Engines as 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 rate 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	SAE E-39 Unmanned Aircraft Propulsion Committee	May-19	Standard	ongoing
							AS#### Ground support equipment (preheaters, starters, fuel pumps, fuel couplings, fuel mixing, fuel filters, preflight		SAE E-39 Unmanned Aircraft Propulsion Committee	Jun-19	Standard	planned
							AS#### Propeller hubs		SAE E-39 Unmanned Aircraft Propulsion Committee	Jul-19	Standard	planned
							ARP#### Propeller Information Report		SAE E-39 Unmanned Aircraft Propulsion Committee	Aug-19	Information Report	ongoing
							AIR6962 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 E-39 Unmanned Aircraft Propulsion Committee	Dec-18	Information Report	ongoing
							ARP94910 Aerospace - Vehicle Management Systems - Flight Control Design, Installation and Test of, Military Unmanned	This document establishes recommended practices for the specification of 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), the airborne element of Unmanned Aircraft Systems (UAS), as defined by ASTM F 2395-07. The document is written for military unmanned aircraft	SAE A-6 Aerospace Actuation, Control and Fluid Power Systems		Recommended Practice	published
							ARP5724 Aerospace - Testing of Electromechanical Actuators, General Guidelines 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	A-6 Aerospace Actuation, Control and Fluid Power Systems		Recommended Practice	published
							AIR744™ 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 use in aircraft, space vehicles, missiles, remotely piloted vehicles, air cushion vehicles, surface effect ships, 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	A-6 Aerospace Actuation, Control and Fluid Power Systems		Information Report	published
							AS50881F Wiring Aerospace Vehicle	This specification covers all aspects in electrical wire interconnection systems (EWIS) from the selection through installation of wiring and wiring 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
							AS50881G Wiring Aerospace Vehicle	This specification covers all aspects in electrical wire interconnection systems (EWIS) from the selection through installation of wiring and wiring 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

							AS#### Artificial simulant standards for drone or FOD impact/ingestion	planned	SAE G-28 Simulants for Impact and Ingestion Testing	Dec-19	Standard	planned
							ASTM WK59171 New Specification for SUAS parachutes	Develop a draft standard that defines the requirements for a parachute system that would allow an applicant/proponent to obtain approval to operate a small Unmanned Aircraft System (sUAS) directly over people.	ASTM F38 Unmanned Aircraft Systems	Feb-18	Specification	Pending approval of ASTM WK57659 as foundational document. Additional inforamtion will be available after F38 Committee meeting Nove 7-9.
							F2799-14 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, important that maintenance be accomplished using the best techniques and practices to minimize the possibility of failure.	ASTM F39 Aircraft Systems		Standard	Published
							ASTM F2910-14 Standard Specification for Design and Construction of a Small Unmanned Aircraft System	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). Unless otherwise specified by a nation's GAA, this specification applies only to UA that have a maximum takeoff gross weight of 55 lb/25 kg or less	ASTM F38 Unmanned Aircraft Systems		Standard	Published
							ASTM F2911-14e1 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
							ASTM F3002-14a Standard Specification for Design of the Command and Control System for Small Unmanned Aircraft	This specification is provided as a consensus standard in support of an application to a nation's governing aviation authority (GAA) for a permit to operate a small unmanned aircraft system (sUAS) for commercial or public use purposes. This standard outlines the general, spectrum and link requirements for C2.	ASTM F38 Unmanned Aircraft Systems		Standard	Published
							ASTM F3003-14 Standard Specification for Quality Assurance of a Small Unmanned Aircraft System (sUAS)	This standard definesthe quality assurance requirements for the design, manufacture, and production of a small unmanned aircraft system (sUAS).	ASTM F38 Unmanned Aircraft Systems		Standard	Published
							WKWK60937 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 generatinhg systems for application in UAS.	ASTM F38 Unmanned Aircraft Systems		Standard	
							ASTM F3201-16 Standard Practice for Ensuring Dependability of Software Used in Unmanned Aircraft Systems (UAS)		ASTM F38 Unmanned Aircraft Systems	Published	Standard	
							ASTM WK16285 New Specification for Design and Performance of an Unmanned Aircraft System-Class 1320	The specification covers airworthiness requirements for an acceptable powered fixed wing aircraft UAS.	ASTM F38 Unmanned Aircraft Systems	TBD		This work item will be continued using guidelines from ASTM F37 Light Sport Aircraft Committee
							ASTM WK31391 New Specification for Testing of a Small Unmanned Aircraft System (sUAS)		ASTM F38 Unmanned Aircraft Systems	TBD	Standard	
							ASTM WK60352 Design, Construct, and Test of VTOL	This specification establishes the design, construction, and test requirements for a VTOL unmanned aircraft system (sUAS). It is intended for all UAS that are permitted to operate over a defined area and in airspace authorized by a nation's governing aviation authority (GAA). Unless otherwise specified by a nation's GAA.	ASTM F38 Unmanned Aircraft Systems	Mar-18	Standard	
							ASTM WK57659 Design, Construction and Verification of Fixed Wing UAS	This specification establishes the design, construction, and test requirements for a fixed wing unmanned aircraft system (sUAS). It is intended for all UAS that are permitted to operate over a defined area and in airspace authorized by a nation's governing aviation authority (GAA). Unless otherwise specified by a nation's GAA.	ASTM F38 Unmanned Aircraft Systems	Jan-18	Standard	
							ASTM F2909-14 Standard Practice for Maintenance and Continued Airworthiness of Small Unmanned Aircraft Systems (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 visual observer(s) will provide for the sense and avoid requirement to avoid collisions with other aircraft and that the maximum 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 UA that have a maximum take off 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
RPAS System Safety Assessment Criteria	CS-UAS		EASA	2019	Certified category							
Remote Pilot Station (RPS)	CS-UAS		EASA	2019	Certified category							
							MASPS	Minimum Aviation System Performance Standard (End-to-end Requirements at system level	EUROCAE WG-105	Jun-19	Standard	ongoing

Height Limitation	NPA 2017-05	**Appendix I.2 c),** **Appendix I.3 c),** **Appendix I.4 c),** (c) have a maximum altitude performance limited to 120 m or be equipped with a system limiting the height above the ground or above the take-off point to a value selectable by the remote pilot; in the latter case, clear information about the UA height from the ground during flight shall be provided to the remote pilot; **Appendix I.1 g)2)** (2) be designed to be operated below 50 m or have an active system limiting the attainable height of the UA to a maximum of 50 m above take-off level;	EASA	Dec-18	open	ongoing						
Aircraft&Avionics	NPA 2017-05	**Appendix I.1** (d) if equipped with a follow-me mode, when this function is on, keep a distance not exceeding 50 m from the remote pilot, and allow the remote pilot to regain control of the UA or to activate an emergency procedure that terminates the flight;	EASA	Dec-18	open	ongoing						
							ISO 21384-2 - Requirements for ensuring the safety and quality of the design and manufacture of UAS	Requirements for ensuring the quality and safety of the design and manufacture UAS. It includes information regarding the UA, any associated remote control station(s), 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
							STANAG 4671 "UAV System Airworthiness Requirements (USAR)". (Fix wing UAV, MTOW>1 50Kg).	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 FINAS	Feb-17		published
							STANAG 4702 "Rotary Wing Unmanned Aerial Systems Airworthiness Requirements" (Rotorcraft UAV, 150Kg<MTOW< 3125Kg	set of technical airworthiness requirements intended for the airworthiness certification of rotary-wing military UAV Systems with a maximum take-off weight between 150 and 3175 kg that intend to regularly operate in non-segregated airspace	NATO FINAS	Nov-16		published
							STANAG 4703 "Light Unmanned Aircraft Systems Airworthiness Requirements". (Fix wing UAV, 150Kg<MTOW).	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 150 kg and an impact energy1 greater than 66 J (49 ft-lb) that intend to regularly operate in non-segregated airspace	NATO FINAS	Nov-16		published
							STANAG 4746 "Unmanned Aerial Vehicle System Airworthiness Requirements for Light Vertical Take Off and Landing Aircraft"	Set of technical airworthiness requirements intended for the airworthiness certification	NATO FINAS	2018		under development
Height Limitation	NPA 2017-05	**Appendix I.2 c),** **Appendix I.3 c),** **Appendix I.4 c),** (c) have a maximum altitude performance limited to 120 m or be equipped with a system limiting the height above the ground or above the take-off point to a value selectable by the remote pilot; in the latter case, clear information about the UA height from the ground during flight shall be provided to the remote pilot;	EASA	Dec-18	open	ongoing						
Drone injury protection for C0 class	NPA 2017-05	**Appendix I.1 (g), (3)** **Appendix I.2 (f)** be designed without sharp edges that may constitute a danger to people on the ground; Appendix I.2 (f)	EASA	Dec-18	open	ongoing						
Propeller injury protection for C0 class	NPA 2017-05	**Appendix I.1 (g), (4)** **Appendix I.2 (f)** (4) if equipped with propellers, be designed in a way to limit any injury that may be inflicted by blades;	EASA	Dec-18	open	ongoing						
information to the remote pilot of battery status	NPA 2017-05	**Appendix I.2(l)** **Appendix I.3 (g)** provide to the pilot clear information about the battery status of the UA and its control station;	EASA	Dec-18	open	ongoing						
mechanical strength	NPA 2017-05	**Appendix I.3, (j)** A UAS Class C2 shall: (j) have the requisite mechanical strength and, where appropriate, stability to withstand any stress to which it is subjected during use without breakage or deformation, which may interfere with its safe flight;	EASA	Dec-18	open	ongoing						
Lights to ensure controllability	NPA 2017-05	**Appendix I.2(n)** **Appendix I.3(l)** **Appendix I.4(l)** (n) be equipped with lights, as required for its controllability;	EASA	Dec-18	open	ongoing						
							ARP6336 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 (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 Aircraft Lighting Committee	Dec-18	Recommended Practice	ongoing

Reduction of energy transferred to human body at impact	NPA 2017-05	**Appendix I.2 (b)** A UAS Class C1 shall: (b) be made of materials and have performance and physical characteristics such as to ensure that in the event of an impact with a human body, the energy transmitted to the human body is less than 80 J, or, as an alternative, have an MTOM, including payload, of less than 900 g and a maximum cruising speed of 18 m/s;	EASA	Dec-18	open	ongoing						
Evaluation of the energy transferred to human body at impact	NPA 2017-05	**Appendix I.2 (b)** A UAS Class C1 shall: (b) be made of materials and have performance and physical characteristics such as to ensure that in the event of an impact with a human body, the energy transmitted to the human body is less than 80 J, or, as an alternative, have an MTOM, including payload, of less than 900 g and a maximum cruising speed of 18 m/s;	EASA	Dec-18	open	ongoing						
Follow me mode	NPA 2017-05	**Appendix I.1, (d)** Appendix I.2, (j) if equipped with a follow-me mode, when this function is on, keep a distance not exceeding 50 m from the remote pilot, and allow the remote pilot to regain control of the UA or to activate an emergency procedure that terminates the flight;	EASA	Dec-18	open	ongoing						
Maximum voltage	NPA 2017-06	**Appendix I.1 (g)(5)** Appendix I.2 (i) be powered by electricity of a nominal voltage not exceeding 24 V direct current (DC) or the equivalent alternating current (AC) voltage; its 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	Dec-18	open	ongoing						
							WK58939 Evaluating AerialResponse RobotEnergy/Power: Endurance Range and Duration	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
	NPA 2017-06	**Appendix I.3 (i)** A UAS Class C2 shall: (i) be powered by electricity of a nominal voltage not exceeding 48 V DC or the equivalent AC voltage; its accessible parts shall not exceed 48 V DC or the equivalent AC voltage; internal voltages shall not exceed 48 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	Dec-18	open	ongoing						
							WK58940 Evaluating AerialResponse RobotEnergy/Power: Endurance Dwell Time	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58943 Evaluating AerialResponse RobotSafety: Lights and Sounds	A suite of standards test methods has been developed to measure manueverability, endurance,communications, durability, logisitics,autonomy, and safety to guide purchasing decisions,support operator training and measure proficiency.	ASTM E54 Homeland Security Applications		Standard	Published
							F2639-15 Standard Practice for Design, Alteration, and Certification of Aircraft Electrical Wiring Systems	This practice covers design configuration procedures for aircraft electrical wiring systems.	ASTM F39 Aircraft Systems		Standard	Published
							F2696-14 Standard Practice for Inspection of Aircraft Electrical Wiring Systems	This practice covers basic inspection procedures for electrical wiring interconnect systems for aircraft electrical wiring systems.	ASTM F39 Aircraft Systems		Standard	Published
							ASTM F3005-14a Standard Specification for Batteries for Use in Small Unmanned Aircraft Systems (sUAS)		ASTM F38 Unmanned Aircraft Systems		Standard	Published Revision scheduled for Feb 2018.
							F2490-05(2013) 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/
7	**Operations**											
							AS6062 - Mission Spooling Service Set	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 (more services are planned for future versions of this document): • Mission Spooler: Stores mission plans, coordinates mission plans, and parcels out 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 [JSIDL].	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee		Standard	published

							ASTM F2908-16 Standard Specification for Aircraft Flight Manual (AFM) for a Small Unmanned Aircraft System (sUAS)	This specification provides the minimum requirements for an Aircraft Flight Manual (AFM) for an unmanned aircraft system (UAS) designed, manufactured, and operated in the small UAS (sUAS) category as defined by a Civil Aviation Authority (CAA). Depending on the size and complexity of the sUAS, an AFM may also contain the instruction for maintenance and continuing airworthiness for owner / operator authorized maintenance.	ASTM F38 Unmanned Aircraft Systems		Standard	published
							WK58931 Evaluating AerialResponse RobotManeuvering: Maintain Position and Orientation	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to accurately maintain position and orientation (pose) in open space relative to an object of interest. This test method applies to aerial systems operated remotely from a standoff distance appropriate for the intended mission. The system includes a remote operator in control of all functionality and any assistive features or autonomous behaviors that improve the effectiveness or efficiency of the overall system. This test method may be performed anywhere the specified apparatuses and environmental conditions can be implemented as described. Results should be considered within the context of related test methods in the Maneuvering suite when comprehensively evaluating robotic system capabilities.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58932 Evaluating AerialResponse RobotManeuvering: Orbit a Point	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to accurately orbit an object of interest . Results should be considered within the context of related test methods in the Maneuvering suite when comprehensively evaluating robotic system capabilities. This test method applies to aerial systems operated remotely from a standoff distance appropriate for the intended mission. The system includes a remote operator in control of all functionality and any assistive features or autonomous behaviors that improve the effectiveness or efficiency of the overall system. This test method may be performed anywhere the specified apparatuses and environmental conditions can be implemented as described.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							WK58933 Evaluating AerialResponse RobotManeuvering: 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	Jan-18	Standard	ongoing
							WK58934 Evaluating AerialResponse RobotManeuvering: Pass Through Openings	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	Jan-18	Standard	ongoing
							WK58935 Evaluating AerialResponse RobotManeuvering: Land Accurately (Vertical)	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to accurately land vertically within a defined area.	ASTM E54 Homeland Security Applications	Jan-18	Standard	ongoing
							Specifications for the Use of Military Unmanned Aerial Vehicles (UAV) as Operational Air Traffic (OAT) outside segregated airspace specification, 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 explaining the nature of UAV airspace requirements. It also summarises a number of national UAV ATM regulations, albeit none were suitable for adaptation into EUROCONTROL specifications	EUROCONTROL		Specification	published
							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 GH/EH operators to use them as the basis for negotiating access to national airspace within Europe. The Guidelines envisage the isolation of GH/EH from other airspace users by requiring it to climb-out and recover in segregated airspace and to fly IFR/OAT in the cruise in non-segregated airspace at high altitudes that are above those occupied by manned aviation.	EUROCONTROL		Guidance material	published
Requirements for Specific operations												
							ASTM F3196-17 Standard Practice for Seeking Approval for Extended Visual Line of Sight (EVLOS) or Beyond Visual Line of Sight (BVLOS) Small Unmanned Aircraft System (sUAS) Operations	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) to fly extended visual line of sight (EVLOS) or 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		Stamdard	published
							ASTM F2849-10 Standard Practice for Handling of Unmanned Aircraft Systems at Divert Airfields		ASTM F38 Unmanned Aircraft Systems		Stamdard	published
							ASTM WK28019 New Practice for Selecting sUAS Launch and Recovery		ASTM F38 Unmanned Aircraft Systems		Stamdard	

							ISO 21384-3 - Requirements for safe civil RPAS/UAS operations and applies to all types, categories, classes, sizes and modes of operation of UAS	Requirements for safe commercial UAS operations and applies to all types, categories, classes, sizes and modes of operation of UAS.	ISO	Dec-18	Standard	Ongoing
Standard scenarios	EASA Decision		EASA	Sep-18	specific							
							ARP#### Access to controlled airspace		SAE G-30 UAS Operator Qualifications Committee	May-19	Recommended Practice	planned
							ARP#### Flight beyond visual line of sight		SAE G-30 UAS Operator Qualifications Committee	May-19	Recommended Practice	planned
							ARP#### Night operations		SAE G-30 UAS Operator Qualifications Committee	May-19	Recommended Practice	planned
							ARP#### Aerial photography		SAE G-30 UAS Operator Qualifications Committee	Jun-19	Recommended Practice	planned
							ARP#### Power line inspection		SAE G-30 UAS Operator Qualifications Committee	Jul-19	Recommended Practice	planned
							ARP#### Precision agriculture		SAE G-30 UAS Operator Qualifications Committee	Aug-19	Recommended Practice	planned
							ARP#### Bridge inspection		SAE G-30 UAS Operator Qualifications Committee	Sep-19	Recommended Practice	planned
							ARP#### Train right-of-way's		SAE G-30 UAS Operator Qualifications Committee	Oct-19	Recommended Practice	planned
							ARP#### Flare stack inspections		SAE G-30 UAS Operator Qualifications Committee	Nov-19	Recommended Practice	planned
							WK58243 New Guide for Visual Inspection of Building Facade using Drone	This standard consists of guidelines for utilizing drones with cameras to document facade conditions with video and still photography. The purpose of this standard is to establish procedures and methodologies for conducting visual inspections of building facades via drone, and documenting such inspections.	ASTM E06 Performance of Buildings	Jan-18	Guide	ongoing
							WK58677 Evaluating AerialResponse 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) image acuity of the system as viewed through a control station. This test method applies to aerial systems operated remotely from a standoff distance appropriate for the intended mission. The system includes a remote operator in control of all functionality and any assistive features or autonomous behaviors that improve the effectiveness or efficiency of the	ASTM E06 Performance of Buildings	Jan-18		ongoing
							WK58925 Evaluating AerialResponse 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 E06 Performance of Buildings	Jan-18		ongoing
							WK58926 Evaluating AerialResponse 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 E06 Performance of Buildings	Jan-18		ongoing
							WK58927 Evaluating AerialResponse 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 bi-directionally between a control station and aerial robot in flight.	ASTM E06 Performance of Buildings	Jan-18		ongoing
							WK58928 Evaluating AerialResponse 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 remotely from a standoff distance appropriate for the intended mission	ASTM E06 Performance of Buildings	Jan-18		ongoing
							WK58929 Evaluating AerialResponse 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 E06 Performance of Buildings	Jan-18		ongoing
							WK58930 Evaluating AerialResponse 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 E06 Performance of Buildings	Jan-18		ongoing
							WK58936 Evaluating AerialResponse RobotSituational Awareness: Identify Objects (Point and Zoom Cameras)	The purpose of this test method is to specify the apparatuses, 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 altitudes in open space.	ASTM E06 Performance of Buildings	Jan-18		ongoing

							WK58937 Evaluating AerialResponse RobotSituational Awareness: Inspect Static Objects	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to inspect objects of interest in close proximity .	ASTM E06 Performance of Buildings	Jan-18		ongoing
							WK58938 Evaluating AerialResponse RobotSituational Awareness: Map Wide Areas (Stitched Images)	The purpose of this test method is to specify the apparatuses, procedures, and performance metrics necessary to quantitatively evaluate the system capability to accurately map wide areas with objects of interest in the environment .	ASTM E06 Performance of Buildings	Jan-18		ongoing
							ASTM WK52858 Small Unmanned Aircraft Systems (sUASs) for Land Search and Rescue	This classification defines small unmanned aircraft system (sUAS) land search and rescue resources in terms of their capabilities. It provides a means by which resource managers and sUAS pilots/operators can convey to emergency management the tasks for which their systems are capable of performing.	ASTM E06 Performance of Buildings	Jan-18		ongoing
							ASTM WK54226 sUAS Operations in Search and Rescue 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)/Incident Command System (ICS). 1.2 The requirements of this guide shall apply to individuals, agencies, and organizations that respond to SAR operations, including those not regulated by government mandates.	ASTM E06 Performance of Buildings	Jan-18		ongoing
							ASTM WK52089 New Specification for Operation over Peoplee	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 mitigations such as deployable sUAS parachutes to be incorporated into standard.	ASTM F38 Unmanned Aircraft Systems	Feb-18	specification	Pending approval of ASTM WK57659 as foundational document. Additional inforamtion will be available after F38 Committee meeting Nove 7-9.
SORA	Decision on SORA		EASA	Sep-18	specific							
							ASTM F3178-16 Standard Practice for Operational Risk Assessment of Small Unmanned Aircraft Systems (sUAS)	Preparation of an ORA 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 for harm to people or property, though present, is reduced to an acceptable level. As mission complexity increases, the operational environment may become less risk tolerant.A.	ASTM F38 Unmanned Aircraft Systems		standard	published
							ASTM WKWK60938 Specifications for Developing an Enterprise UAS Operations Manual	This Standard contains the guidance to develop an enterprise Operations Manual to ensure safety and efficiency in operating UAS and contains procedures, instructions and guidance for use by operational personnel in the execution of their duties.	ASTM F38 Unmanned Aircraft Systems		specification	
							ASTM WK59317 Vertiport Design	Tto support the design of civil vertiports and vertistops for the landing and takeoff of VTOL aircraft boarding 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 scalable to address aircraft ranging in size and kinetic energy, including unmanned and optionally piloted aircraft.	ASTM F38 Unmanned Aircraft Systems		specification	New draft in work
							ASTM WK49619 New Practice for Operational Risk Assessment (ORA)		ASTM F38 Unmanned Aircraft Systems			
							STANAG 7234 Remotely Piloted Aircraft Systems (RPAS) Airspace Integration (AI) - AATMP-51		NATO FINAS	2018	standard	Under development
							STANAG 7232 UNMANNED AERIAL SYSTEMS TACTICS TECHNIQUES AND PROCEDURES - ATP-3.3.8.2 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 MCASB/JCGUAS OS	2018	standard	Under development
8	**FCL**											
	Remore pilot competence	NPA 2017-05	UAS.OPEN.40 and UAS.OPEN.60 (ii) by a remote pilot having demonstrated the basic competence defined by the Agency to fly the UAS, by successfully completing an online training as well as an online test in provided by the competent authority and demonstrating the competences in a manner and format established by the Agency.	EASA	Dec-18	open and specific	ongoing					
							ARP5707 - Pilot Training Recommendations for 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 regulators. The identification of training topics 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 commercial pilot operations and a PTS for a UAS pilot instrument rating. The UAS commercial pilot rating would contain restrictions on the types of operations that could be flown that would be dependent on 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 requirements for other crewmembers, such as observers, payload operators, or ground personnel, nor does it distinguish between different levels of pilot authority or discuss the roles for pilot-in-command, supplemental pilot, or observer.	SAE G-30 UAS Operator Qualifications Committee & G-10U Unmanned Aerospace Vehicle Committee		Recommended Practice	published
							ARP#### Common operator qualifications		SAE G-30 UAS Operator Qualifications Committee	May-19	Recommended Practice	planned
		NPA 2017-05	**UAS.OPEN.50** holding a certificate of competence after successfully completing a theoretical test with an entity approved by the competent authority and demonstrating the competences defined by the Agency in a manner and format established by the Agency;	EASA	Dec-18	open and specific	ongoing	WK55596 Guide for Training of sUAS Pilots and Crew Members for Land Search and Rescue		ASTM F32 Search and Rescue		

		NPA on Remote Pilot License		EASA	Jun-18	specific and certified		ASTM WK60659 UAS Maintenance Technician Qualification	Will outline qulaifications 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	Apr-18		Pending approval of ASTM WK57659 as foundational document. Additional inforamtion will be available after F38 Committee meeting Nove 7-9.
								ASTM WK29229 New Practice for Certification of Pilots, Visual Observers, and Instructor Pilots and Training courses for Small Unmanned Aircraft Systems (sUAS)	Establish criteria for Training and Certification of sUAS Pilots, Instructors, and School Houses. This practice defines the knowledge, skills, and abilities sUAS pilots require for the conduct training and flight operations for Small Unmanned Aircraft Sytems (sUAS) in the NAS. The Training and Certification of sUAS Pilots, Instructors, and School Houses include areas to cover pilot qualifications, training and proficiency, instructor certification, and sUAS flight training facility operations. This document sets forth standards to meet the requirements to establish quality training and certification programs, and failitate aviation safety.	ASTM F38 Unmanned Aircraft Systems	In Balllot /Feb 2018		Pending approval of ASTM WK57659 as foundational document.
								ARP5707 Pilot Training Recommendations for 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 regulators. The identification of training topics 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 commercial pilot operations and a PTS for a UAS pilot instrument rating. The UAS commercial pilot rating would contain restrictions on the types of operations that could be flown that would be dependent on the type of UAS used.	G-30 UAS Operator Qualifications Committee & G-10U Unmanned Aerospace Vehicle Committee		Recommended Practice	published
								STANAG 7192 Ed: 1 PRINCIPLES UNDERPINNING MEDICAL STANDARDS FOR OPERATORS OF UNAMMANNED AERIAL SYSTEMS (UAS) - AAMedP-1.25, EDITION A	Highlight the medical factors involved in the medical aspects of Flight Crew Licensing to enable individual nations to further their own medical standards for safe UAS operation.	NATO		Standard	published
9	Environment												
	Noise level	NPA 2017-05	**Appendix I.2(h)** **Appendix I.3(h)** have a sound power level not exceeding 80 dB (measured at 3 m distance from the UA);	EASA	Dec-18	open	ongoing						
	Manuals	NPA 2017-05	**Appendix I.1(c)** **Appendix I.2(o)** **Appendix I.3(m)** **Appendix I.4(h)** **Appendix I.5(c)** 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	Dec-18	open	ongoing						
		NPA 2017-05	**Appendix I.1(b)** **Appendix I.2(e)** **Appendix I.3(f)** **Appendix I.4(d)** be safely controllable by a remote pilot following the manufacturer's instructions;	EASA	Dec-18	open	ongoing						
10	Autonomous operations												
								AS6386 JAUS Autonomous Behaviors Service Set	This document, the JAUS Automated 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 (AS5710) and are frequently referenced herein.	SAE AS-4JAUS Joint Architecture for Unmanned Systems Committee	May-19	Standard	ongoing
								ASTM WK53403 Methods to Safely Bound Flight Behavior of UAS Containing Adaptive Algorithms		ASTM F38 Unmanned Aircraft Systems			