

Safety and Airspace Regulation Group



# Unmanned Aircraft System Operations in UK Airspace: Abbreviations and Master Glossary

**CAP 722D**



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First Edition	16 October 2020
Second Edition	7 December 2022
Third Edition	16 April 2024

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# Revision history

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## Third Edition

16 April 2024

Document update, including regulatory reference updates and an addition to the abbreviations section.

## Second Edition

7 December 2022

Full document review and update. Incorporates abbreviations and terms from a complete CAP 722 document series review, introducing Art 16: UAS Operations in the Framework of Model Aircraft Clubs and Associations and aligning with the new Acceptable Means of Compliance and Guidance Material to the Assimilated Regulation (EU) 2019/947.

## First Edition

16 October 2020

# Foreword

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## Aim

CAP 722D is the abbreviations list and glossary of terms and for all documents in the CAP 722 series and is the single source of reference.

This document also contains additional abbreviations and terms that may be useful for the UAS Regulated Community.

This document does not replace definitions and abbreviations contained in relevant UAS Regulations

## Content

The terminology relating to UAS operations continues to evolve and therefore the abbreviations and glossary of terms sections are not exhaustive.

Terms and definitions in this document are drawn from a combination of applicable UAS regulation, emerging ICAO definitions, EASA and other 'common use' terms which are considered to be acceptable alternatives. Where possible, a reference has been provided, in italics below the definition.

## Availability

The latest version of CAP 722D can be located within the [publications](#) section of the CAA website.

Updated information can be found within the [Updates about Drones](#) section of the CAA website's UAS webpages.

The CAA also provides a more general aviation update service via the [SkyWise](#) system which can be filtered by subject matter for relevant UAS related information.

## Points of Contact

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# Abbreviations

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## A

A2 CofC	A2 Certificate of Competency
AAIB	Air Accidents Investigation Branch
ACAS	Airborne Collision Avoidance System
ACP	Airspace Change Proposal
AD	Airworthiness Directive
ADS-B	Automatic Dependent Surveillance - Broadcast
ADQ	Aeronautical data quality
AEC	Airspace Encounter Categories (JARUS SORA)
AFIS	Aerodrome Flight Information Service
AGL	Above Ground Level
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
Airprox	Air Proximity Hazard
AIS	Aeronautical Information System
ALARP	As Low As Reasonably Practicable
ALoSP	Acceptable Level of Safety Performance
AltMoC	Alternative Means of Compliance
AM	Accountable Manager
AMC	Acceptable Means of Compliance
AMSL	Above Mean Sea Level
ANO	Air Navigation Order
ANSP	Air Navigation Service Provider
AO	Airspace Observer
AOC	Air Operator Certificate
APU	Auxiliary Power Unit



ARC	Air Risk Class (JARUS SORA)
AR Ops	Airspace Regulation Operations (CAA)
ASL	Above Surface Level
ASTM	American Society for Testing and Materials
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATM	Air Traffic Management
ATPL	Airline Transport Pilot Licence
ATS	Air Traffic Service
ATSU	Air Traffic Service Unit
ATZ	Aerodrome Traffic Zone
AUP	Airspace User Portal

**B**

BASA	Bilateral Aviation Safety Agreement
BGA	British Gliding Association
BMFA	British Model Flying Association
BITE	Built In Test Equipment
BR	Basic Regulation
BRLOS	Beyond Radio Line of Sight
BSI	British Standards Institution
BVLOS	Beyond Visual line of Sight

**C**

C2	Command and Control
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAT	Commercial Air Transport
CG	Centre of Gravity

CofA	Certificate of Airworthiness
CofC	Certificate of Conformance
ConOps	Concept of Operations
COTS	Commercial Off The Shelf (JARUS SORA)
CPL	Commercial Pilot Licence
CRM	Crew Resource Management
CS	Certification Specification
CU	Command Unit

## D

DA	Danger Area (Airspace)
DA	Design Approval (Airworthiness)
DAA	Detect and Avoid
DAAIS	Danger Area Activity Information Service
DACS	Danger Area Crossing Service
DAL	Design Assurance Level
DfT	Department for Transport
DG	Dangerous Goods
DMARES	Drone and Model Aircraft Registration and Education Service
DOA	Design Organisation Approval

## E

EASA	European Union Aviation Safety Agency
EC	Electronic Conspicuity
EC	European Commission
ECCAIRS	European Co-ordination Centre for Accident and Incident Reporting Systems
ELS	Emergency Landing Site
EMI	Electromagnetic Interference
ENR (X.X)	En-Route (AIP section)

ENSF	Enhanced Non-Standard Flight
ERF	Emergency Restriction of Flying
ERP	Emergency Response Plan
ESD	Electrostatic Discharge
ETSO	European Technical Standard Order (EASA)
EU	European Union
EUROCAE	European Organisation for Civil Aviation Equipment
EVLOS	Extended Visual Line of Sight
e-VTOL	Electric Vertical Take-Off and Landing

**F**

FAA	Federal Aviation Administration
FIR	Flight Information Region
FISO	Flight Information Service Officer
FL	Flight Level
FLARM	Flight Alarm
FMC	Flight Management Computer
FMS	Flight Management System
FSTD	Flight Simulation Training Devices
FPV	First Person View
FRTOL	Flight Radio Telephony Operators' Licence
FRZ	Flight Restriction Zone
FSTD	Flight Simulation Training Device

**G**

GM	Guidance Material
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GRC	Ground Risk Class (JARUS SORA)

GVC General VLOS Certificate

## H

HF Human Factors

HF High Frequency (Radio Communication)

HIRF High Intensity Radiated Field

HLS Helicopter Landing Site

HOD Hook-On Device

HMI Human-Machine Interface

HZ Hertz

## I

ICAO International Civil Aviation Organisation

ICO Information Commissioner's Office

ID Identification

IFR Instrument Flight Rules

IMC Instrument Meteorological Conditions

IMU Inertial Measurement Unit

IP Ingress Protection

ISA International Standard Atmosphere

ISO International Organization for Standardisation

ITU International Telecommunication Union

## J

JARUS Joint Authorities for Rulemaking on Unmanned Systems

## K

KE Kinetic Energy

**L**

LIDAR	Light Detection and Ranging
LMA	Large Model Association
LOC	Loss of Control
LODA	Letter of Design Approval
LUC	Light Unmanned Aircraft System Operator Certificate

**M**

MAA	Military Aviation Authority
MAC	Mid-Air Collision
MASPS	Minimum Aviation System Performance Standards
MOD	Ministry of Defence
MOPS	Minimum Operational Performance Specification
MOR	Mandatory Occurrence Report
MoU	Memorandum of Understanding
MTOM	Maximum Take-Off Mass

**N**

NAA	National Aviation Authority
NATS	National Air Traffic Services
NOTAM	Notice to Airmen
NM	Nautical Miles

**O**

OAT	Outside Air Temperature
Ofcom	Office of Communications
OM	Operations Manual
OA	Operational Authorisation
OC	Operating Certificate

OM	Operations Manual
ORA	Operational Risk Assessment
OSC	Operating Safety Case (Legacy Term superseded by ORA)

**P**

PBO	Performance-Based Oversight
PBR	Performance Based Regulation
PDRA	Pre-Defined Risk Assessment
PfCO	Permission for Commercial Operations (Legacy Term superseded by OA)
PSR	Primary Surveillance Radar
PTF	Permit to Fly

**R**

R(TC)	Restricted Type Certificate
R&D	Research and Development
RA	Risk Assessment
RA(T)	Restricted Area (Temporary)
RADAR	Radio Detection and Ranging
RADALT	Radio Altimeter
RAE	Recognised Assessment Entity
RF	Radio Frequency
RLOS	Radio Line of Sight
RMZ	Radio Mandatory Zone
RP	Remote Pilot
RPA	Remotely Piloted Aircraft
RPAS	Remotely Piloted Aircraft System
RPL	Remote Pilot's Licence
RPS	Remote Pilot Station (ICAO)
RPZ	Runway Protection Zone

<u>RSMS</u>	<u>Regulatory Safety Management System</u>
RT	Radiotelephony
RTCA	Radio Technical Commission for Aeronautics (US)
RT	Radiotelephony
RTH	Return to Home
RTSA	Railway and Transport Safety Act

**S**

S&A	See and Avoid
SAA	Scottish Aeromodellers Association
SARPs	Standards and Recommended Practices
SARG	Safety and Airspace Regulation Group (CAA)
SB	Service Bulletin
SC	Safety Culture
SC	Special Conditions
SD	Safety Directive (CAA)
SERA	Standardised European Rules of the Air
SI	Statutory Instrument
SIL	Service Information Letter
SLA	Service Level Agreement
SMM	Safety Management Manual
SMS	Safety Management System
SN	Safety Notice (CAA)
SOP	Standard Operating Procedure
SORA	Specific Operational Risk Assessment
SPI	Safety Performance Indicator
SPOF	Single Point of Failure
SPT	Safety Performance Target
SSD	Significant Standards Differences

SSR Secondary Surveillance Radar

STANAG Standardization Agreement

STC Supplemental Type Certificate

## T

TAF Terminal Area Forecast

TC Type Certificate

TCB Type Certification Basis

TCDS Type Certificate Data Sheet

TCAS Traffic Alert and Collision Avoidance System

TDA Temporary Danger Area

TIP Technical Implementation Procedures

TLOS Target Level of Safety

TMZ Transponder Mandatory Zone

TPM Technical Procedures Manual

TSO Technical Standard Order (FAA)

## U

UA Unmanned Aircraft

UAM Urban Air Mobility

UAS Unmanned Aircraft System(s)

UHF Ultra High Frequency

UIR Upper Flight Information Region

UK United Kingdom of Great Britain and Northern Ireland

UN United Nations

## V

VFR Visual Flight Rules

VHF Very High Frequency



VLOS Visual Line of Sight  
VO Visual Observer  
VTOL Vertical Take-Off and Landing  
VMC Visual Meteorological Conditions

**W**

WA Working Arrangement

# Glossary of terms

---

## A

### Abnormal Situation

One in which it is no longer possible to continue the flight using normal procedures but the safety of the aircraft or persons on board or on the ground is not in danger.

*JARUS SORA*

### Acceptable Risk

The level of risk that individuals or groups are willing to accept given the benefits gained. Each organisation will have its own acceptable risk level, which is derived from its legal and regulatory compliance responsibilities, its threat profile, and its business/organisational drivers and impacts.

*JARUS SORA*

### Accident

An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

a. a person is fatally or seriously injured as a result of:

- being in the aircraft, or,

- in direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or, direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew;  
or

b. the aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike, (including holes in the radome); or

c. the aircraft is missing or is completely inaccessible.

*Assimilated Regulation (EU) 996/2010, hereafter referred to as UK Regulation (EU) 996/2010*

#### Accountable Manager

A nominated person who has the authority for ensuring that all activities are carried out in accordance with the applicable requirements and regulations. The Accountable Manager is also responsible for establishing and maintaining an effective Safety Management System.

#### Aeronautical Information Circular (AIC)

A notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

*ICAO Annex 15*

#### Aeronautical Information Publication (AIP)

A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

*ICAO Annex 15*

#### Aircraft

Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the Earth's surface.

#### Air Navigation Order (ANO)

The legal document established as a United Kingdom (UK) Statutory Instrument (SI) that is made for the purposes of regulating air navigation within the UK.

#### Airprox

A situation in which, in the opinion of a pilot or a controller, the distance between aircraft, as well as their relative positions and speed, was such that the safety of the aircraft involved was, or may have been, compromised.

ICAO Doc 4444: PANS - ATM

#### Airspace Change Process

The staged process an airspace change sponsor follows to submit an airspace change to the CAA for a decision. Certain unmanned aircraft airspace restrictions are processed as an airspace change.

### *CAP 1616*

#### Airspace Change Proposal (ACP)

Requests from a 'change sponsor', usually an airport or a provider of air navigation services (including air traffic control), to change the notified airspace design. Airspace change proposals must follow the CAA's airspace change process.

#### Airspace Classification

Airspace is broken down into different classes, defined by ICAO. In the UK, Classes A, C, D and E are controlled airspace and Class G is uncontrolled airspace. Classes B and F are currently unused in the UK.

#### Airspace Observer

A person who assists the remote pilot by performing unaided visual scanning of the airspace in which the unmanned aircraft is operating for any potential hazard in the air.

*Assimilated Regulation (EU) 2019/947 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018, hereafter referred to as UK Regulation (EU) 2019/947*

#### Airworthiness

The condition of an item (aircraft, aircraft system, or part) in which that item operates in a safe manner to accomplish its intended function.

#### Airworthy

A UAS is airworthy if the aircraft and all its associated elements are in condition for safe operation.

#### Applicant

An applicant refers to the individual or organisation who desires to operate a UAS in a limited or restricted manner and submits the necessary technical, operational and human information related to the intended use of the UAS for the NAA to evaluate the risks associated with the operation for the purpose of authorising the operation in an agreed upon manner according to established conditions and limitations of the operation.

### *JARUS SORA*

### Approved

Accepted by the certification authority as suitable for a particular purpose.

*JARUS SORA*

### As Low As Reasonably Practicable (ALARP)

A Risk can be said to be reduced to a level that is ALARP when the sacrifice of further reduction is “grossly disproportionate” to the decrease in Risk that would be achieved. This sacrifice may include more than just financial cost and will include the time and trouble involved in taking measures to avoid that Risk. Therefore, an ALARP argument must balance the “sacrifice” (in time, money or effort) of possible further Risk reduction measures with their expected safety benefit (incremental reduction in Risk exposure). The balance must be weighted in favour of safety, with a greater “disproportion factor” for higher levels of Risk exposure.

### Assurance

The planned and systematic actions necessary to provide adequate confidence that a product or process satisfies given requirements.

### Approved Body

A conformity assessment body which has been approved by the Secretary of State under Article 18 of the UAS Delegated Regulation.

*Assimilated Regulation (EU) 2019/945 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018, hereafter referred to as UK Regulation (EU) 2019/945*

### Assemblies of People

Gatherings where persons are unable to move away due to the density of the people present.

UK Regulation (EU) 2019/947

### Authorised Representative

Any natural or legal person established in the United Kingdom who has received a written mandate from a manufacturer to act on his behalf in relation to specified tasks.

*UK Regulation (EU) 2019/945*

### Automatic (Function)

The execution of predefined processes or events that do not require direct UAS crew initiation and/or intervention.

### Autonomous Aircraft

An unmanned aircraft that does not allow pilot intervention in the management of the flight.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

### Autonomous Operation

An operation during which an unmanned aircraft operates without the remote pilot being able to intervene.

*UK Regulation (EU) 2019/947*

## B

### Barrier

A material object or set of objects that separates, demarcates, or services as a barricade; or something immaterial that impedes or separates. Both physical and non-physical barriers are utilised and applied in hazard control, i.e. anything used to control, prevent or impede unwanted adverse energy flow and / or anything used to control, prevent or impede unwanted event flow.

### Beyond Visual Line of Sight (BVLOS)

A type of UAS operation which is not conducted in VLOS.

*UK Regulation (EU) 2019/947*

## C

### Catastrophic

Failure conditions that could result in one or more fatalities.

### Cause

Something that brings about an event; a person or thing that is the occasion of an action or state; a reason for an action or condition.

### Certificate

Any certificate, approval, licence, authorisation, attestation, or other document issued as the result of a certification attesting compliance with the applicable requirements.

*Assimilated Regulation (EU) 2018/1139 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018, hereafter referred to as UK Regulation (EU) 2018/1139*

## Certification

Any form of recognition in accordance with the UK Regulation (EU) 2018/1139, based on an appropriate assessment, that a legal or natural person, product, part, non-installed equipment, equipment to control unmanned aircraft remotely, aerodrome, safety-related aerodrome equipment, ATM/ANS system, ATM/ANS constituent or flight simulation training device complies with the applicable requirements of this Regulation and of the delegated and implementing acts adopted on the basis thereof, through the issuance of a certificate attesting such compliance.

*UK Regulation (EU) 2018/1139*

## Certification Specifications

Non-binding technical standards adopted by the CAA to meet the essential requirements of the Basic Regulation. CSs are used to establish the certification basis (CB) as described below. Should an aerodrome operator not meet the recommendation of the CS, they may propose an Equivalent Level of Safety (ELOS) that demonstrates how they meet the intent of the CS. As part of an agreed CB, the CS become binding on an individual basis to the applicant.

## Certified Category

A category of UAS operation that is described in Article 3 of the UAS Implementing Regulation.

## Certified Equipment

Considered to be any equipment for which the relevant design organisation has demonstrated compliance with the applicable certification specifications and received a form of recognition from the CAA that attests such compliance (e.g., a TSO approval).

GM1 UAS.SPEC.100 to UK Regulation (EU) 2019/947

## Collision Avoidance

Averting physical contact between an aircraft and any other object or terrain.

## Command and Control (C2) Link

The data link between the remotely piloted aircraft and the Remote Pilot Station for the purposes of managing the flight.

Note: Remote Pilot Station is a legacy term and has been replaced by Command Unit.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

### Command and Control (C2) Link Service

A communication service supplied by and third party, providing Command and Control between the unmanned aircraft and the Command Unit.

UK Regulation (EU) 2019/947

### Command Unit (CU)

The equipment or system of equipment to control unmanned aircraft remotely as defined in point 32 of Article 3 of Regulation (EU) 2018/1139 which supports the control or the monitoring of the unmanned aircraft during any phase of flight, with the exception of any infrastructure supporting the command and control (C2) link service.

Note: Command Unit is now the preferred term and replaces Ground Control Station and Remote Pilot Station. CAA UAS Unit documents containing these terms will be updated in due course.

UK Regulation (EU) 2019/947

### Commercial/Components off the Shelf (COTS)

Components designed to be implemented into existing systems without extensive customisation and for which design data are not always available to the customer.

*JARUS SORA*

### Complexity

An attribute of systems or items which makes their operation difficult to comprehend. Increased system complexity is often caused by such items as sophisticated components and multiple interrelationships.

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### Compliance

Successful performance of all mandatory activities; agreement between the expected or specified result and the actual result.

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### Component

Any self-contained part, combination of parts, subassemblies, or units which perform a distinct function necessary to the operation of the system.

*JARUS SORA*

### Concept of Operations (ConOps)

Describes the characteristics of the organisation, system, operations and the objectives of the user.



### Configuration

The requirements, design and implementation that define a particular version of a system or system component.

*JARUS SORA*

### Configuration Control/Management

The process of evaluating, approving or disapproving, and coordinating changes to configuration items after formal establishment of their configuration identification.

*JARUS SORA*

### Conformity Assessment

The process demonstrating whether the specified requirements relating to a product have been fulfilled.

*UK Regulation (EU) 2019/945*

### Conformity Assessment Body

A body that performs conformity assessment activities including calibration, testing, certification and inspection.

*UK Regulation (EU) 2019/945*

### Congested Area

In relation to a city, town or settlement, means any area which is a substantially used for residential, industrial, commercial or recreational purpose.

### Consensus Standard

Consensus standards are industry developed standards that define minimum safety and performance requirements of an acceptable product or a means of compliance to specific requirements. Standards organisations include, but are not limited to, the Radio Technical Commission for Aeronautics (RTCA), SAE International (SAE), ASTM International (ASTM), and the European Organisation for Civil Aviation Equipment (EUROCAE).

*JARUS SORA*

### Contingency Area

The projection of the contingency volume on the surface of the earth.

*UK Regulation (EU) 2019/947*

### Contingency Procedures

Planned course of action designed to help an organisation respond effectively to a significant future event or situation that may or may not happen.

*JARUS SORA*

### Contingency Volume

The volume of airspace that provides a buffer around the Flight Volume.

Note: If the UA leaves the Flight Volume and enters the Contingency Volume, then the contingency procedures, documented in the OM, must be activated.

*GM1 UAS.SPEC.050(1)(h) to UK Regulation (EU) 2019/947*

### Continued Airworthiness

The monitoring, reporting and corrective action processes used for in-service aircraft to assure they maintain the appropriate safety standard defined during the initial airworthiness processes throughout their operational life.

### Continuing Airworthiness

The set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.

*ICAO Annex 8*

### Controlled Airspace

An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

Note: Controlled airspace is a generic term which covers Classes A, C, D and E airspace in the UK.

*ICAO Annex 11*

### Controlled Ground Area

The ground area where the UAS is operated and within which the UAS operator can ensure that only involved persons are present.

*UK Regulation (EU) 2019/947*

### Cooperative Aircraft

Aircraft that have an electronic means of identification (i.e., a transponder) aboard and operating.

*JARUS SORA*

### Critical (Function)

A function whose loss would prevent the continued safe flight and landing of the unmanned aircraft (UA).

*JARUS SORA*

### Critical Infrastructure

Systems and assets vital to national defence, national security, economic security, public health or safety including both regional and national infrastructure.

*JARUS SORA*

### Critical Systems

Systems needed to perform one or more safety functions, in which failure would cause a significant increase in the safety risk for the third parties and/or environment involved.

*JARUS SORA*

## D

### Danger Area (DA)

Airspace which has been notified as such within which activities dangerous to the flight of aircraft may exist at specified times.

*ICAO Annex 11*

### Dangerous Goods (DG)

Articles or substances, which are capable of posing a hazard to health, safety, property or the environment in the case of an incident or accident, that the unmanned aircraft is carrying as its payload, including in particular:

- a. explosives (mass explosion hazard, blast projection hazard, minor blast hazard, major fire hazard, blasting agents, extremely insensitive explosives);
- b. gases (flammable gas, non-flammable gas, poisonous gas, oxygen, inhalation hazard);
- c. flammable liquids (flammable liquids; combustible, fuel oil, gasoline);
- d. flammable solids (flammable solids, spontaneously combustible solids, dangerous when wet);
- e. oxidising agents and organic peroxides;
- f. toxic and infectious substances (poison, biohazard);
- g. radioactive substances;

h. corrosive substances;

*UK Regulation (EU) 2019/947*

#### Datalink

A term referring to all interconnections to, from and within the remotely piloted aircraft system. It includes control, flight status, communication, and payload links.

*JARUS SORA*

#### Declaration

A formally and legally binding statement.

*Oxford Dictionary*

#### Demonstration

A method of proof of performance by observation.

*JARUS SORA*

#### Designated Standard

A technical standard:

- a. which is adopted by the British Standards Institution for repeated or continuous application; and
- b. which has been designated by the Secretary of State by publishing its reference number in a manner the Secretary of State considers appropriate.

*UK Regulation (EU) 2019/945*

#### Detect and Avoid (DAA)

The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action to comply with the applicable rule of the air.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

#### Direct Remote Identification

A system that ensures the local broadcast of information about a UA in operation, including the marking of the UA, so that this information can be obtained without physical access to the UA.

*UK Regulation (EU) 2019/945*

## Distributor

Any natural or legal person in the supply chain, other than the manufacturer or the importer, who makes a product available on the market.

*UK Regulation (EU) 2019/945*

## E

### Economic Operators

The manufacturer, the authorised representative of the manufacturer, the importer, and the distributor of the UAS.

*UK Regulation (EU) 2019/945*

### Electronic Conspicuity (EC)

Electronic Conspicuity (EC) is an umbrella term for a range of technologies that can help airspace users to be more aware of other aircraft in the same airspace.

### Emergency Procedures

Procedures that are executed by the UA pilot in command or by the aircraft to mitigate the effect of failures that cause or lead to an emergency condition.

*JARUS SORA*

### Emergency Recovery Capability (ERC)

UAS safety feature that provides for the cessation UA flight in a manner that minimises risk to persons on the ground, other airspace users and critical infrastructure.

*JARUS SORA*

### Emergency Response Plan (ERP)

*Plan of actions to be conducted, in a certain order or manner, in response to an emergency event.*

### Environment

a. The aggregate of operational and ambient conditions to include the external procedures, conditions, and objects that affect the development, operation, and maintenance of a system. Operational conditions include traffic density, communication density, workload, etc. Ambient conditions include weather, EMI, vibration, acoustics, etc.

b. Everything external to a system which can affect or be affected by the system.

*JARUS SORA*

## Equipment

A complete assembly - operating either independently or within a system/sub-system - that performs a specific function.

*JARUS SORA*

## Equipment to Control Unmanned Aircraft Remotely

Any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory that is necessary for the safe operation of an unmanned aircraft, which is not a part, and which is not carried on board of that unmanned aircraft.

*UK Regulation (EU) 2018/1139*

## Evaluate

A comprehensive review of an applicant's UAS and all associated elements of the system. The applicant is expected to provide all information necessary to allow the CAA to objectively determine if the aircraft can be safely operated in accordance with the proposed ConOps.

## F

### Failure

An event which affects the operation of an item such that it can no longer function as intended.

*JARUS SORA*

### Failure Condition

A condition having an effect on the UAS, both direct and consequential, which is caused or contributed to by one or more failures. Where relevant, a failure condition should consider flight phases (Take-off, climb, cruise, descent, approach, landing), adverse operational conditions, adverse environmental conditions, or external events where they may trigger, contribute to, or worsen the effect of the failure condition.

### Failure Mode

The way an item fails to perform its intended function, i.e. the externally observable manifestation of the item failure.

*JARUS SORA*

### Fatal Injury

An injury which is sustained by a person in an accident and which results in his or her death within 30 days of the date of the accident.

*UK Regulation (EU) 996/2010*

### Flight Volume

A volume of airspace that should encompass the entire operation, with sufficient buffer for any operational movement around the flight path, due to navigational errors, expected weather conditions and any other reason for deviating from the flight path.

*GM1 UAS.SPEC.050(1)(h) to UK Regulation (EU) 2019/947*

### Flight Restriction Zone (FRZ)

Airspace of defined dimensions around a protected aerodrome consisting of the aerodrome traffic zone, any runway protection zones and any additional boundary zones, within which the permission of the relevant ATS unit or aerodrome operator, as appropriate, is required before a UAS flight can take place.

*ANO 2016: Articles 94A and 94B*

### Flight Termination (system)

Flight termination is a system, procedure or function which aims to immediately end the flight.

### Follow-Me Mode

A mode of operation of a UAS where the unmanned aircraft constantly follows the remote pilot within a predetermined radius.

*UK Regulation (EU) 2019/947*

### Frangibility

The property of a material through deformation to tend to break into fragments rather than deforming elastically or plastically and retaining its cohesion as a single object.

### Frequency

The number of times that something happens during a particular period.

*JARUS SORA*

## G

### Geo-Awareness

A function that, based on the data provided by the CAA, detects a potential breach of airspace limitations and alerts the remote pilots so that they can take immediate and effective action to prevent that breach.

*UK Regulation (EU) 2019/947*

### Geographical Zone

A UAS Geographical zone is an airspace restriction, established under Article 15.

UK Regulation (EU) 2019/947

### Geo-Fencing

An automatic limitation of the airspace a UA can enter.

### Ground Risk Buffer

An area over the surface of the earth, which surrounds the operational volume and that is specified in order to minimise the risk to third parties on the surface in the event of the unmanned aircraft leaving the operational volume.

*UK Regulation (EU) 2019/947*

### Guaranteed Sound Power Level

A sound power level determined in accordance with the requirements laid down in Part 13 of the Annex which includes the uncertainties due to production variation and measurement procedures and where the manufacturer, or his authorised representative, confirms that according to the technical instruments applied and referred to in the technical documentation it is not exceeded.

*UK Regulation (EU) 2019/945*

### Guidelines

Recommended procedures for complying with regulations.

## H

### Handover

The act of passing piloting control from one remote pilot station to another.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

### Hardware

An object that has physical being. Generally, refers to LRUs, circuit cards, power supplies etc.

*JARUS SORA*

### Harm

The term harm, for the purpose of the SORA, relates to undesired events defined as:

- a. Fatal injuries to third parties on the ground.
- b. Fatal injuries to third parties in the air (Catastrophic MAC with a manned aircraft)



- c. Damage to critical infrastructure.

*JARUS SORA*

#### Harm Identification

The identification of the harm for which the risk needs to be assessed. For the purposes of the SORA three categories of harm have been identified:

- a. Fatal injuries to third parties on the ground.
- b. Fatal injuries to third parties in the air (Catastrophic MAC with a manned aircraft)
- c. Damage to critical infrastructure.

*JARUS SORA*

#### Harm Likelihood Estimation

The estimation (qualitative or quantitative) of the likelihood of the retained harm.

*JARUS SORA*

#### Hazard

The condition, object or activity with the potential of causing injuries to personnel, damage to equipment or structures, loss of material or reduction of ability to perform a prescribed function.

ICAO Doc 9859: Safety Management Manual

#### Height

The vertical distance of a level, a point or an object considered as a point measured from a specified datum.

*ICAO Annex 5*

#### High Authority

Those systems that can evaluate data, select a course of action and implement that action without the need for human input.

#### Highly Automated

Those systems that still require inputs from a human operator (e.g. confirmation of a proposed action) but which can implement the action without further human interaction once the initial input has been provided.

#### Holistic

Characterised by comprehension of the parts of something as intimately interconnected and explicable only by reference to the whole.

*JARUS SORA*

### Holistic Risk Model

Provides a generic framework to identify the threats, hazards and controls applicable to any UAS operation.

*JARUS SORA*

### Hovering

Staying in the same geographical position in the air.

*UK Regulation (EU) 2019/945*

### Human Error

Human action with unintended consequences.

*JARUS SORA*

### Human Factors (HF)

Human-machine interface issues with UAS control station displays, controls, functionality, automation, operator workload and system maintainability.

*JARUS SORA*

### Human Factors Principles

Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

*JARUS SORA*

### Human Performance

Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

*JARUS SORA*

## I

### Importer

Any natural or legal person established in the United Kingdom who places a product from a third country on the United Kingdom market.

*UK Regulation (EU) 2019/945*

## Incident

An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

*UK Regulation (EU) 996/2010*

## Initial Airworthiness

The system used to determine the applicable requirements and establish that an aircraft design is demonstrated to be able to meet these requirements.

## Inspection

An examination of an item against a specific standard.

## Integrity

Attribute of a system or an item indicating that it can be relied upon to work correctly on demand.

*JARUS SORA*

## J

### Just Culture

Culture in which front-line operators or other persons are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but in which gross negligence, wilful violations and destructive acts are not tolerated.

*Assimilated Regulation (EU) 376/2014 as retained (and amended in UK domestic law) Under the European Union (Withdrawal) Act 2018, hereafter referred to as UK Regulation (EU) 376/2014 (Article 2)*

## K

### Kinetic Energy

Kinetic energy is energy of an object due to its motion. It is directly related to the mass or weight of the objective. Kinetic Energy =  $\frac{1}{2}$  Mass x Velocity<sup>2</sup>.

*JARUS SORA*

## L

### Large Model Aircraft

A model aircraft with a maximum take-off mass greater than 25Kg.

### Latency

This is defined by the time it takes for a request to travel from the transmitter (Command Unit) to the receiver (UA) and for the receiver to process that request. This is the total round-trip time from the Command Unit to the UA and back again. In reliable two-way communication systems, latency limits the maximum rate that information can be transmitted.

### Legal Person

An individual, company, or other entity which has legal rights and is subject to obligations.

### Light UAS Operator Certificate (LUC)

A certificate issued to a UAS operator by the CAA as set out in Part C of the Annex to the UAS Implementing Regulation.

*UK Regulation (EU) 2019/947*

### Likelihood

Estimation of the degree of confidence one may have in the occurrence of an event.

*JARUS SORA*

### Likelihood Estimation

The estimation (qualitative or quantitative) of the likelihood of the retained undesired event's harm.

*JARUS SORA*

### Lost C2 Link

The loss of Command-and-Control link with the remotely piloted aircraft such that the remote pilot can no longer manage the aircraft's flight.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

## M

### Maintenance

Inspection, overhaul, repair, preservation, and the replacement of parts.

*JARUS SORA*

**Making Available on the Market**

Any supply of a product for distribution, consumption or use on the United Kingdom market in the course of a commercial activity, whether in exchange of payment or free of charge.

*UK Regulation (EU) 2019/947*

**Malfunction**

The occurrence of a condition whereby the operation is outside specified limits.

*JARUS SORA*

**Manufacturer**

Any natural or legal person who manufactures a product or has a product designed or manufactured and markets that product under their name or trademark.

*UK Regulation (EU) 2019/945*

**Market Surveillance**

Activities carried out and measures taken by public authorities to ensure that products comply with the requirements set out in any relevant enactment and do not endanger health, safety or any other aspect of public interest protection.

*UK Regulation (EU) 2019/945*

**Market Surveillance Authority**

An authority responsible for carrying out market surveillance in the United Kingdom.

*UK Regulation (EU) 2019/945*

**Maximum Take-Off Mass (MTOM)**

The maximum unmanned aircraft mass, including payload and fuel, as defined by the manufacturer or the builder, at which the unmanned aircraft can be operated.

*UK Regulation (EU) 2019/947*

**Measured Sound Power Level**

A sound power level as determined from measurements as laid down in Part 13 of the Annex; measured values may be determined either from a single UA representative for the type of equipment or from the average of a number of UA.

*UK Regulation (EU) 2019/945*

**Methodology**

A set of methods and principles used to perform a particular activity.

*JARUS SORA*

### Mid-Air Collision (MAC)

An accident where two aircraft come into contact with each other while both are in flight.

*JARUS SORA*

### Minimum Aviation System Performance Standards (MASPS)

A MASPS specifies characteristics that should be useful to designers, installers, manufacturers, service providers and users of systems intended for operational use within a defined airspace. Where the systems are global in nature, the system may have international applications that are taken into consideration. The MASPS describes the system (subsystems / functions) and provides information needed to understand the rationale for system characteristics, operational goals, requirements and typical applications. Definitions and assumptions essential to proper understanding of the MASPS are provided as well as minimum system test procedures to verify system performance compliance (e.g., end-to-end performance verification).

*JARUS SORA*

### Minimum Operational Performance Specification (MOPS)

A MOPS provides standards for specific equipment(s) useful to designers, manufacturers, installers and users of the equipment. The word "equipment" used in a MOPS includes all components and units necessary for the system to properly perform its intended function(s). The MOPS provides the information needed to understand the rationale for equipment characteristics and requirements stated. The MOPS describes typical equipment applications and operational goals and establishes the basis for required performance under the standard. Definitions and assumptions essential to proper understanding are provided as well as installed equipment tests and operational performance characteristics for equipment installations.

*JARUS SORA*

### Mitigation

A means to reduce the risk of a hazard.

*JARUS SORA*

### Model Aircraft

An unmanned aircraft used for sporting and recreational purposes, flown by direct control inputs made by the remote pilot without any autonomous capability other than for flight stabilisation purposes.

Note: The definition of a model aircraft may include multi-rotor type drones. Any unmanned aircraft being flown in accordance with the definition above is considered a model aircraft. The use of any automation, such as automatic flight modes which alter the position of the aircraft, places the operation outside the definition of a model

aircraft, and therefore outside the scope of Article 16. The aircraft **must** be flown with direct control inputs from the remote pilot.

It is acknowledged that many unmanned aircraft have built in failsafe modes, which may be activated in some instances, for example- loss of control link. Activation of such a mode, although possibly automatic in nature, does not necessarily place the aircraft outside the scope of the definition of a model aircraft.

*Appendix A: GM1 Article 16 to UK Regulation (EU) 2019/947*

#### Model Aircraft Club or Association

An organisation legally established in the United Kingdom for the purpose of conducting leisure flights, air displays, sporting activities or competition activities using UAS.

*UK Regulation (EU) 2019/947*

#### Model Aircraft Flying Display

Any flying activity deliberately performed, by model aircraft, for the purpose of providing an exhibition or entertainment at an advertised event.

*UK Regulation (EU) 2019/947*

## N

#### Natural Person

A human being as distinguished from a person (as a corporation) created by operation of law.

#### Night

The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority. Note: Civil twilight degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.

*JARUS SORA*

#### Notice to Airmen (NOTAM)

A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

*ICAO Annex 11*

## O

### Occurrence

Any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person and includes in particular an accident or serious incident.

*UK Regulation (EU) 996/2010*

### Open Category

A category of UAS operations that is described in Article 4 of the UAS Implementing Regulation.

### Operating Safety Case (OSC)

A risk assessment methodology intended for use in the Specific category, which is described in CAP 722A.

*UK Regulation (EU) 2019/947*

### Operational Authorisation

A document issued by the CAA that authorises the operation of an unmanned aircraft system, subject to the conditions outlined within the authorisation, having taken into account the operational risks involved.

### Operational Risk Assessment

See Operating Safety Case

### Operational Volume

The combination of the flight volume and the contingency volume.

*UK Regulation (EU) 2019/947*

### Operations Manual

A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties. (See CONOPS)

*JARUS SORA*

### Operator

See unmanned aircraft system operator.

### Oversight

The verification, by or on behalf of the competent authority, on a continuous basis that the requirements of this Regulation and of the delegated and implementing acts



adopted on the basis thereof, on the basis of which a certificate has been issued or in respect of which a declaration has been made, continue to be complied with.

*UK Regulation (EU) 2018/1139*

## P

### Parachute

A device used or intended to be used to retard the fall of a body or object through the air.

*JARUS SORA*

### Payload

Instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is installed in or attached to the aircraft, and is not used or intended to be used in operating or controlling an aircraft in flight, and is not part of an airframe, engine, or propeller.

*UK Regulation (EU) 2019/947*

### Performance-Based Oversight (PBO)

There are two primary functions of the Performance Based Oversight (PBO) approach:

1. To consistently, proportionately, and efficiently allocate the use of our operational safety oversight teams or 'field force'
2. To modify the volume, type and focus of our oversight according to risk and organisational performance

The PBO process allows Sector Managers from each capability area to use the information gleaned from oversight and other safety intelligence sources to build a single cross-capability risk picture, covering all operational aspects of each regulated entity

### Pilot

See Remote Pilot.

### Placing on the Market

The first making available of a product on the United Kingdom market.

*UK Regulation (EU) 2019/945*

### Population Density

The number of people living per unit of an area (e.g. per square mile); the number of people relative to the space occupied by them.

*JARUS SORA*

### Practice

Recommended methods, rules, and designs for voluntary compliance.

*JARUS SORA*

### Pre-Defined Risk Assessment (PDRA)

A PDRA is a shortened set of prescriptive conditions that must be complied with by a UAS operator in order to conduct a pre-determined type of operation.

### Privately Built UAS

A UAS assembled or manufactured for the builder's own use, not including UAS assembled from a set of parts placed on the market by the manufacturer as a single ready-to-assemble kit.

### Procedure

Standard, detailed steps that prescribe how to perform specific tasks.

*JARUS SORA*

### Process

Set of inter-related resources and activities, which transform inputs into outputs.

*JARUS SORA*

### Prohibited Area

An airspace of defined dimensions over the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

*ICAO Annex 11*

### Protected Aerodrome

A CAA certified aerodrome or a UK Government aerodrome or other aerodromes prescribed for the purpose (by the Secretary of state) in relation to a Flight Restriction Zone.

*Air Navigation Order*

## Q

### Qualification

Process through which a State/approval authority/applicant ensures that a specific implementation satisfies applicable requirements with a level of confidence.

*JARUS SORA*

### Qualified Entity

Accredited legal or natural person which may be charged with certain certification or oversight tasks under this Regulation by and under the control and the responsibility of the CAA.

*UK Regulation (EU) 2018/1139*

### Quantification

The act of assigning a numerical value to or measuring the probability that a specific event will occur.

*JARUS SORA*

### Qualitative

Examples of qualitative data are engineering judgement or judgement based on operational experience.

### Quantitative

Examples of quantitative data are calculation, statistics or testing.

## R

### Radio Line of Sight (RLOS)

A direct radio link point-to-point contact between a transmitter and a receiver.

### Requirement for the Accreditation of Market Surveillance (RAMS)

Regulation (EC) No 765/2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products.

*UK Regulation (EU) 2019/945*

### Recognised Assessment Entity (RAE)

An organisation approved by the CAA to submit reports and/or issue certificates on the CAA's behalf in relation to remote pilot competency.

*CAP 722B*

### Recovery Area

An alternative area identified for the purpose of landing the swarm in the event of an emergency.

*CAP 722E*

### Redundancy

The presence of more than one independent means for accomplishing a given function.

### Reliability

The probability that an item will perform a required function under specified conditions, without failure, for a specified period of time.

*JARUS SORA*

### Remote Pilot

A natural person responsible for safely conducting the flight of an unmanned aircraft by operating its flight controls, either manually or, when the unmanned aircraft flies automatically, by monitoring its course and remaining able to intervene and change the course at any time.

*UK Regulation (EU) 2018/1139*

### Remote Pilot Station (RPS)

See Command Unit (CU).

### Remotely Piloted Aircraft (RPA)

An unmanned aircraft which is piloted from a Remote Pilot Station.

Note: Remote Pilot Station is a legacy term and has been replaced by Command Unit.

Note: RPA is a subset of unmanned aircraft.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

### Remotely Piloted Aircraft System (RPAS)

A remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design.

Note: Remote pilot station is a legacy term and has been replaced by command unit.

Note: RPAS is a subset of Unmanned Aircraft System.

*ICAO Doc 10019: Manual on Remotely Piloted Aircraft Systems*

### Restricted Area

Airspace of defined dimensions over the land areas or territorial waters of a State within which the flight of aircraft is restricted in accordance with certain specified conditions.

*ICAO Annex 11*

### Risk

*Is a measure of exposure to a possible hazard and it combines the severity of the consequences at the realisation of the hazard (how bad) and the likelihood of suffering those consequences (how often).*

### Risk Management

Process that encompasses: Hazard Identification; Risk Assessment; Hazard Risk Matrix; Risk reduction; and Risk monitoring and review.

*Military Aviation Authority (MAA) 02 – Master Glossary*

### Risk Ratio

The risk ratio is the ratio between a conditional probability with a mitigating system, divided by a conditional probability without a mitigating system. The conditional probability is, given an encounter, an NMAC occurs. An encounter is defined as proximity of 3000 ft horizontally and  $\pm$  350 ft vertically. An NMAC is defined as proximity of 500 ft horizontally and  $\pm$ 100 ft vertically.

*JARUS SORA*

### Robustness

The property of mitigation measures resulting from combining the safety gain provided by the mitigation measures and the level of assurance and integrity that the safety gain has been achieved.

*UK Regulation (EU) 2019/947*

### Rotorcraft

A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

*JARUS SORA*

### Runway Protection Zone (RPZ)

A zone, which comprises part of the UAS Flight Restriction Zone. It is the airspace extending from the surface to a height of 2,000 feet above the level of the aerodrome within the area bounded by a rectangle:

- a. whose longer sides measure 5 km,

- b. whose shorter sides measure:
  - (i) 1 km (except in the case of Heathrow Airport), or;
  - (ii) 1.5 km, in the case of Heathrow Airport, and;
- c. which is positioned so that:
  - (i) one of the shorter sides of the rectangle (“side A”) runs across the runway threshold, and;
  - (ii) the two longer sides of the rectangle are parallel to, and equidistant from, the extended runway centre line as it extends from side A out to, and beyond, the runway end to which the runway threshold relates.

*ANO 2016: Article 94B*

## S

### Safety

Safety is the state in which the risk of harm to persons or property is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management.

*JARUS SORA*

### Safety Culture

An Engaged Air Safety Culture is that set of enduring values and attitudes, regarding Air Safety issues, shared by every member, at every level, of an organisation. It refers to the extent to which each individual and each group of the organisation seeks to be aware of the risks induced by its activities; is continually behaving so as to preserve and enhance safety; is willing and able to adapt when facing safety issues; is willing to communicate safety issues; and continually evaluates safety related behaviour.

*Military Aviation Authority (MAA) 02 – Master Glossary*

### Safety Management System (SMS)

A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.

### Safety Objective

A measurable goal or desirable outcome related to safety.

### Safety Risk

See Risk

### Safety Risk Level

*The Initial Safety Risk Level is a combination of the 'likelihood' of a Safety Risk occurring and the 'severity' of harm to people whilst considering the existing mitigations present. If necessary, further mitigations may be applied which result in a Revised Safety Risk Level.*

### See and Avoid

The requirement of the pilot of an aircraft to "see" conflicting aircraft and then take appropriate actions to "avoid" a collision, and to remain well clear of other aircraft in accordance with, 14 CFR 91.113, SERA 3201, and ICAO Annex 2 section 3.2.

*JARUS SORA*

### Segregated Airspace

*Airspace of specified dimensions allocated for exclusive use to a specific user(s).*

*Note: This definition is currently under review and subject to change.*

*ICAO Doc 10088*

### Sense and Avoid

See Detected and Avoid

### Separation

Maintaining a specific minimum distance between an aircraft and another aircraft or terrain to avoid collisions, normally by requiring aircraft to fly at set levels or level bands, on set routes or in certain directions, or by controlling an aircraft's speed.

*JARUS SORA*

### Serious Incident

An incident involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft, which in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down.

*UK Regulation (EU) 996/2010*

### Serious Injury

An injury which is sustained by a person in an accident and which involves one of the following:

- a. hospitalisation for more than 48 hours, commencing within 7 days from the date the injury was received;
- b. a fracture of any bone (except simple fractures of fingers, toes, or nose);
- c. lacerations which cause severe haemorrhage, nerve, muscle or tendon damage;
- d. injury to any internal organ;
- e. second or third degree burns, or any burns affecting more than 5 % of the body surface;
- f. verified exposure to infectious substances or harmful radiation.

*UK Regulation (EU) 996/2010*

### Severity

The consequence or impact of a hazard's effect or outcome in terms of degree of loss or harm.

*JARUS SORA*

### Software

Computer programs, procedures, rules, and any associated documentation pertaining to the operation of a computer system.

*JARUS SORA*

### Sound Power Level $L_{WA}$

The A-weighted sound power in dB in relation to 1 pW as defined in EN ISO 3744:2010.

*UK Regulation (EU) 2019/947*

### Specific Category

UAS operations in the 'Specific' category shall require an Operational Authorisation issued by the CAA pursuant to Article 12, or an Authorisation received in accordance with Article 16.

*UK Regulation (EU) 2019/947: Article 3*

### Standard

A published document established by consensus and approved by a recognised body that sets out specifications and procedures to ensure that a material, product, method or service meets its purpose and consistently performs to its intended use.

*JARUS SORA*



### Standard Operating Procedure (SOP)

A set of instructions covering those features of operations which lend themselves to a definite or standardised procedure without loss of effectiveness.

*JARUS SORA*

### Sterile Ground Area

An area on the ground or water within which only people that are involved in the operation are permitted.

*CAP 722E*

### Strategic Conflict Mitigation

For the purposes of the SORA, strategic conflict mitigation consists of procedures aimed at reducing the UAS encounter rates prior to UAS take-off. Strategic mitigation is about controlling or mitigating risk by reducing local aircraft density or time of exposure of an individual UAS. These mitigations tend to take the form of operational restrictions of time or space. Strategic Mitigation does not fulfil the 14 CFR 91.113, SERA 3201, or ICAO Annex 2 section 3.2 to "See and Avoid." (Examples of strategic mitigation; an operational restriction to fly between the hours of 10PM and 3 AM; operational restriction to stay below 500 feet AGL; operational restriction to stay within 1 mile of a geographic location; etc.). Strategic Mitigation traces to the strategic layer of ICAO's conflict management concept.

*JARUS SORA*

### System

A combination of inter-related items arranged to perform a specific function(s).

*JARUS SORA*

### System Safety

System safety is a specialty within system engineering that supports program risk management. It is the application of engineering and management principles, criteria and techniques to optimise safety. The goal of System Safety is to optimise safety by the identification of safety related risks, eliminating or controlling them by design and/or procedures, based on acceptable system safety precedence.

*JARUS SORA*

### Swarming

Operation of more than one UA which are controlled collectively rather than individually.

*CAP 722E*

## T

### Tactical Conflict Mitigation

For the purposes of the SORA, tactical conflict mitigation is the act of mitigating collision risk over a very short time horizon (minutes to seconds). Tactical mitigations take the form of SDAF loop's (See, Decide, Action, and Feedback Loop). Tactical Mitigation systems operate using a sensor to "see" the threat, "deciding" how to mitigate the risk, "acting" on the decision, and then having system feedback in order to monitor the risk and implement new corrections if needed. Tactical mitigation may fulfil the 14 CFR 91.113, SERA 3201 and ICAO Annex 2 section 3.2 "See and Avoid" requirement. (Examples of Tactical Mitigation; TCAS, ATC, ACAS, MIDCAS, DAA, ABSAA, GBSAA, See and Avoid, etc.). Tactical mitigation traces to the separation provision and collision avoidance layers of ICAO's conflict management concept.

*JARUS SORA*

### Take-Off Mass

For the purposes of Article 22, it is the mass of the UA at the point of take-off for that particular flight. See maximum take-off mass (MTOM).

### Technical Procedures Manual (TPM)

A manual used to describe all procedures and processes followed by the organisation in support of the organisational scope of work.

### Technical Specification

A document that establishes technical requirements to be fulfilled by a product, process or service.

### Testing

The process of operating a system under specified conditions, observing or recording the results, and making an evaluation of some aspect of the system.

*JARUS SORA*

### Tethered Unmanned Aircraft

An unmanned aircraft that remains securely attached (tethered) via a physical link to a person, the ground or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the aircraft as well.

### Third Country

Any country or territory other than the United Kingdom.

*UK Regulation (EU) 2019/945: Article 41*

### Third Parties

See Uninvolved Persons.

### Threat

In the context of the holistic risk model, a threat is defined as an occurrence that in the absence of appropriate threat barriers can potentially result in the hazard.

*JARUS SORA*

### Tolerable

*Risk management term; see also ALARP. The threshold levels of risk appetite that can be accepted. The Health and Safety Executive defines Tolerable as a “willingness by society as a whole to live with a risk so as to secure certain benefits and in the confidence that the risk is one that is worth taking and that it is being properly controlled”.*

### Toy

Re-org into a def: To be classed as a toy, a product must be able to comply with the ‘Toys (Safety) regulations 2011. Essentially, a ‘toy’ is a product that is considered to be suitable for use by a person who is under the age of 14 years. Therefore, if the product is not marked as such within its packaging, then it cannot be considered to be a toy.

### Transponder Mandatory Zone (TMZ)

Airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory.

## U

### Uncontrolled Airspace

Airspace with a classification that does not fall under Controlled Airspace. E.g. Class G airspace.

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### Uninvolved Persons

Persons who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator.

*UK Regulation (EU) 2019/947*

### Unmanned Aircraft (UA)

Any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board.

*UK Regulation (EU) 2018/1139*

### Unmanned Aircraft Observer

A person, positioned alongside the remote pilot, who, by unaided visual observation of the unmanned aircraft, assists the remote pilot in keeping the unmanned aircraft in VLOS and safely conducting the flight.

*UK Regulation (EU) 2019/947*

### Unmanned Aircraft System (UAS)

An unmanned aircraft and the equipment to control it remotely.

Note: The UAS comprises individual 'system elements' consisting of the unmanned aircraft (UA) and any other system elements necessary to enable flight, such as a command unit (CU), communication link and launch and recovery element. There may be multiple UAs, CUs or launch and recovery elements within a UAS.

*UK Regulation (EU) 2019/947*

### Unmanned Aircraft Systems Delegated Regulation (UAS DR)

Assimilated Regulation (EU) 2029/945 on unmanned aircraft systems and on third country operators of unmanned aircraft systems, as retained in UK domestic law.

### Unmanned Aircraft System (UAS) Geographical Zone

A portion of airspace established by the Secretary of State that facilitates, restricts or excludes UAS operations in order to address risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from UAS operations.

*UK Regulation (EU) 2019/947*

### Unmanned Aircraft System Implementing Regulation (UAS IR)

Assimilated Regulation (EU) 2019/947 on the rules and procedures for the operation of unmanned aircraft, as retained in UK domestic law.

### Unmanned Aircraft System (UAS) Operator

Any legal or natural person operating or intending to operate one or more UAS.

*UK Regulation (EU) 2019/947*

### United Kingdom (UK) Marking

Marking in the form published in accordance with Article 30(1) of Requirements for Accreditation and Market Surveillance (RAMS).

Note: See Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) 339/93.

*UK Regulation (EU) 2019/945*

### Unmanned Sailplane

An unmanned aircraft that is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine. It may be equipped with an engine to be used in case of emergency.

*UK Regulation (EU) 2019/947*

## V

### Validated

A term used to describe controls/safety requirements that are unambiguous, correct, complete, and verifiable.

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### Variation

Change of an operation or technical data that requires an application to the CAA.

### Verified

A term used to describe controls/safety requirements that are objectively determined to have been met by the design solution.

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### Visual Line of Sight (VLOS) Operation

A type of UAS operation in which, the remote pilot is able to maintain continuous unaided visual contact with the unmanned aircraft, allowing the remote pilot to control the flight path of the unmanned aircraft in relation to other aircraft, people and obstacles for the purpose of avoiding collisions.

*UK Regulation (EU) 2019/947*

### Visual Observer

See airspace observer and/or unmanned aircraft observer as appropriate.