REPUBLIC OF MAURITIUS

DEPARTMENT OF CIVIL AVIATION

Sir Seewoosagur Ramgoolam International Airport, Plaine Magnien

MAURITIUS CIVIL AVIATION REQUIREMENTS

MCAR - 0

DEFINITIONS

ISSUE 1 | REV 3

31 July 2025

FOREWORD

This document is the current consolidated version of MCAR-Part 0 (DEFINITIONS) produced by the Department of Civil Aviation. It is compiled from the various ICAO Annexes and documents. While not all of the definitions has been covered by the Civil Aviation Act, the various Civil Aviation related regulations issued under the Act and the MCAR's issued by the Authority under the provisions of the Civil Aviation Regulations, the objective of this MCAR-Part-0 is to ensure that whenever a term is used in aviation not already covered by the Act or Civil Aviation Regulations or MCAR's, the definition should be consistent with the one in this document.

The Director of Civil Aviation, in exercise of the powers conferred on it under Regulation 135 of the Civil Aviation Regulations has adopted these definitions.

This Requirements shall be cited as the MCAR-Part 0 (Definitions) and shall be effective from 31 July 2025.

All terms used in aviation documents by the Authority and Service providers shall be construed to have the same definition as detailed in this requirement.

I POKHUN
Director of Civil Aviation

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ORIGINAL ISSUE	04 MARCH 2015	DCA
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ISSUE 1 REV 3	31 JULY 2025	DCA

DEFINITIONS

1.1 Definitions

When the following terms are used in the Mauritius Civil Aviation Requirements they have the following meanings:

Aberrant aircraft. Those aircraft which exhibit measured height-keeping performance that is significantly different from the core height-keeping performance measured for the whole population of aircraft operating in RVSM airspace.

Ab initio. Literally "from the beginning". Refers to trainees with no prior knowledge of, or exposure to, the subject or activity being taught.

ACAS I. An ACAS which provides information as an aid to “see and avoid” action but does not include the capability for generating resolution advisories (RAs).

Note.— ACAS I is not intended for international implementation and standardization by ICAO. Therefore, only ACAS I characteristics required to ensure compatible operation with other ACAS configurations and interference limiting are defined in 4.2.

ACAS II. An ACAS which provides vertical resolution advisories (RAs) in addition to traffic advisories (TAs).

ACAS III. An ACAS which provides vertical and horizontal resolution advisories (RAs) in addition to traffic advisories (TAs).

ACAS broadcast. A long Mode S air-air surveillance interrogation (UF = 16) with the broadcast address.

Accelerate-stop distance available (ASDA). The length of the take-off run available plus the length of stopway, if provided.

Accepting unit. Air traffic control unit next to take control of an aircraft.

Note — See definition of “transferring unit/controller”.

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 as 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

— 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 for 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.

Note 1 — For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.

Note 2 — An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

Note 3 — The type of unmanned aircraft system to be investigated is addressed in 5.1 of Annex 13 – Aircraft Accident and Incident Investigation

Note 4 — Guidance for the determination of aircraft damage can be found in Attachment E of Annex 13.

Accident investigation authority. The authority designated by a State as responsible for aircraft accident and incident investigation within the context of this Annex.

Accompanying person. An adult who is travelling with a minor. This person will not necessarily be the parent or legal guardian of the minor.

Note. — It is to be noted that this definition might need to be applied in light of any obligation resulting from the application of national regulations on border checks.

Accredited medical conclusion. The conclusion reached by one or more medical experts acceptable to the Licensing Authority for the purposes of the case concerned, in consultation with flight operations or other experts as necessary.

Accredited representative. A person designated by a State, on the basis of his or her

qualifications, for the purpose of participating in an investigation conducted by another State. The accredited representative would normally be from the State's accident investigation authority.

Accuracy. A degree of conformance between the estimated or measured value and the true value.

Note — For measured positional data the accuracy is normally expressed in terms of a distance from a stated position within which there is a defined confidence of the true position falling.

Acrobatic flight. Manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

Active RAC. An RAC is active if it currently constrains the selection of the RA. RACs that have been received within the last six seconds and have not been explicitly cancelled are active.

Active reflector. A device used in primary radar systems for geographical alignment and system performance checking. It generates a signal from a stationary installation with an artificial Doppler shift to ensure that a stationary target will be presented on an ATC screen after moving target detection (MTD) or moving target indicator (MTI) processing.

Active surveillance. The process of tracking an intruder by using the information gained from the replies to own ACAS interrogations.

Acts of unlawful interference. These are acts or attempted acts such as to jeopardize the safety of civil aviation and air transport, i.e.:

— unlawful seizure of aircraft in flight,

— unlawful seizure of aircraft on the ground,

— hostage-taking on board an aircraft or on aerodromes,

— forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,

— introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,

— communication of false information as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

Adapted competency model: A group of competencies with their associated description and performance criteria adapted from an ICAO competency framework that an organization uses to develop competency-based training and assessment for a given role.

Adaptive modulation: A system's ability to communicate with another system multiple burst profiles and a system's ability to subsequently communicate with multiple systems

using different burst profiles.

Adapted competency model: A group of competencies with their associated description and performance criteria adapted from an ICAO competency framework that an organization uses to develop competency-based training and assessment for a given role

Adequate. The state of fulfilling minimal requirements; satisfactory; acceptable; sufficient.

Adequate alternate aerodrome. An adequate alternate aerodrome is one at which the landing performance requirements can be met and which is expected to be available, if required, and which has the necessary facilities and services, such as air traffic control, lighting, communications, meteorological services, navigation aids, rescue and fire-fighting services and one suitable instrument approach procedure.

Admission. The permission granted to a person to enter a State by the public authorities of that State in accordance with its national laws.

Administrative partnership. Delegation of administering tasks in this Volume from one State to another State(s).

ADS agreement. An ADS reporting plan which establishes the conditions of ADS data reporting (i.e. data required by the air traffic services unit and frequency of ADS reports which have to be agreed to prior to the provision of the ADS services).

Note— The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.

ADS-C agreement. A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

Note — The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.

ADS service. A service using aircraft information provided by means of automatic dependent surveillance.

Advance Passenger Information (API) System. An electronic communications system whereby required data elements are collected and transmitted to border control agencies prior to flight departure or arrival and made available on the primary line at the airport of entry.

Advanced aircraft. An aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

Adviser. A person appointed by a State, on the basis of his or her qualifications, for the purpose of assisting its accredited representative in an investigation.

Advisory airspace. An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

Advisory route. A designated route along which air traffic advisory service is available.

Aerial work. An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Aerodrome. A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Note — The term "aerodrome" where used in the provisions relating to flight plans and ATS messages is intended to cover also sites other than aerodromes which may be used by certain types of aircraft, e.g. helicopters or balloons.

Aerodrome beacon. Aeronautical beacon used to indicate the location of an aerodrome from the air.

Aerodrome certificate. A certificate issued by the appropriate authority under applicable regulations for the operation of an aerodrome.

Aerodrome climatological summary. Concise summary of specified meteorological elements at an aerodrome, based on statistical data.

Aerodrome climatological table. Table providing statistical data on the observed occurrence of one or more meteorological elements at an aerodrome.

Aerodrome control radio station. A station providing radio- communication between an aerodrome control tower and aircraft or mobile aeronautical stations.

Aerodrome control. ***see***: aerodrome control tower

Aerodrome control service. Air traffic control service for aerodrome traffic.

Aerodrome control tower. A unit established to provide air traffic control service to aerodrome traffic.

Aerodrome elevation. The elevation of the highest point of the landing area.

Aerodrome facilities and equipment. Facilities and equipment, inside or outside the boundaries of an aerodrome, that are constructed or installed and maintained for the arrival, departure and surface movement of aircraft.

Aerodrome identification sign. A sign placed on an aerodrome to aid in identifying the aerodrome from the air.

Aerodrome manual. A manual that forms part of the safety assurance in an application for an aerodrome certificate, containing material required by a State's certification requirements as well as material for use by aerodrome operational personnel in the

execution of their duties.

Aerodrome mapping data (AMD). Data collected for the purpose of compiling aerodrome mapping information for aeronautical uses.

Note.— Aerodrome mapping data are collected for purposes that include the improvement of the user's situational awareness, surface navigation operations, training, charting and planning

Aerodrome mapping database (AMDB). A collection of aerodrome mapping data organized and arranged as a structured data set.

Aerodrome meteorological office. An office, located at an aerodrome, designated to provide meteorological service for international air navigation.

Aerodrome operator. In relation to a certificated aerodrome, means the aerodrome certificate holder.

Aerodrome operating minima. The limits of usability of an aerodrome for:

(a) take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;

(b) landing in precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation;

(c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and

(d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

Aerodrome pair. A group of two aerodromes composed of a departing aerodrome and an arrival aerodrome.

Aerodrome reference point. The designated geographical location of an aerodrome.

Aerodrome taxi circuit. The specified path of aircraft on the manoeuvring area during specific wind conditions.

Aerodrome traffic. All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

Note — An aircraft is in the vicinity of an aerodrome when it is in, entering or leaving an aerodrome traffic circuit.

Aerodrome traffic circuit. The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

Aerodrome traffic density.

a) *Light*. Where the number of movements in the mean busy hour is not greater than 15 per runway or typically less than 20 total aerodrome movements.

b) *Medium*. Where the number of movements in the mean busy hour is of the order of 16 to 25 per runway or typically between 20 to 35 total aerodrome movements.

c) *Heavy*. Where the number of movements in the mean busy hour is of the order of 26 or more per runway or typically more than 35 total aerodrome movements.

Note 1 — The number of movements in the mean busy hour is the arithmetic mean over the year of the number of movements in the daily busiest hour.

Note 2 — Either a take-off or a landing constitutes a movement.

Aerodrome traffic zone. An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

AeroMACS downlink (DL): The transmission direction from the base station (BS) to the mobile station (MS).

AeroMACS uplink (UL): The transmission direction from the mobile station (MS) to the base station (BS).

AeroMACS handover: The process in which a mobile station (MS) migrates from the air-interface provided by another BS. A break-before-make AeroMACS handover is where service with the target BS starts after a disconnection of service with the previous serving BS.

Aeronautical administrative communications (AAC). Communications necessary for the exchange of aeronautical administrative messages.

Aeronautical beacon. An aeronautical ground light visible at all azimuths, either continuously or intermittently, to designate a particular point on the surface of the earth.

Aeronautical broadcasting service. A broadcasting service intended for the transmission of information relating to air navigation.

Aeronautical chart. A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.

Aeronautical data. A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing.

Aeronautical fixed circuit. A circuit forming part of the aeronautical fixed service (AFS).

Aeronautical fixed service (AFS). A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient

and economical operation of air services.

Aeronautical fixed station. A station in the aeronautical fixed service

Aeronautical fixed telecommunication network (AFTN). A worldwide system of aeronautical fixed circuits provided, as part of the aeronautical fixed service, for the exchange of messages and/or digital data between aeronautical fixed stations having the same or compatible communications characteristics.

Aeronautical fixed telecommunication network circuit. A circuit forming part of the aeronautical fixed telecommunication network (AFTN).

Aeronautical ground light. Any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.

Aeronautical information. Information resulting from the assembly, analysis and formatting of aeronautical data.

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.

Aeronautical information management (AIM). The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.

Aeronautical information product. Aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media. Aeronautical information products include:

— Aeronautical Information Publication (AIP), including Amendments and Supplements;

— Aeronautical Information Circulars (AIC);

— aeronautical charts;

— NOTAM; and

— digital data sets.

Note. — Aeronautical information products are intended primarily to satisfy international requirements for the exchange of aeronautical information.

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.

Aeronautical information regulation and control; AIRAC a system aimed at advance notification based on common effective dates, of circumstances that necessitate significant changes in operating practices.

Aeronautical information service (AIS). A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.

Aeronautical meteorological station. A station designated to make observations and meteorological reports for use in international air navigation.

Aeronautical Mobile Airport Communications System (AeroMACS): A high-capacity data link supporting mobile and fixed communications on the aerodrome surface.

Aeronautical mobile service (RR S1.32). A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.

Aeronautical mobile (R)* service (RR S1.33). An aeronautical mobile service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.

Aeronautical mobile-satellite service (RR S1.35). A mobile satellite service in which mobile earth stations are located on board aircraft; survival craft stations and emergency position-indicating radio beacon stations may also participate in this service.

Aeronautical mobile-satellite (R) service (RR S1.36). An aeronautical mobile-satellite service reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes.

Aeronautical operational control (AOC). Communication required for the exercise of authority over the initiation, continuation, diversion or termination of flight for safety, regularity and efficiency reasons.

Aeronautical product. Any aircraft, aircraft engine, aircraft propeller or a part to be installed thereon.

Aeronautical telecommunication log. A record of the activities of an aeronautical telecommunication station.

Aeronautical radio navigation service (RR S1.46). A radio navigation service intended for the benefit and for the safe operation of aircraft.

Note— The following Radio Regulations are quoted for purposes of reference and/or clarity in understanding of the above definition of the aeronautical radio navigation service:

RR S1.10 **Radio navigation**: *Radio determination used for the purpose of navigation, including obstruction warning.*

RR S1.9 **Radio determination:** *The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.*

Aeronautical station (RR S1.81). A land station in the aeronautical mobile service. In

certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

Aeronautical study. A study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety.

Aeronautical telecommunication agency. An agency responsible for operating a station or stations in the aeronautical telecommunication service.

Aeronautical telecommunication network (ATN). A global internetwork architecture that allows ground, air-ground and avionic data subnetworks to exchange digital data for the safety of air navigation and for the regular, efficient and economic operation of air traffic services.

Aeronautical telecommunication service. A telecommunication service provided for any aeronautical purpose.

Aeronautical telecommunication station. A station in the aeronautical telecommunication service.

Aeroplane. A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aeroplane owner†. Person(s), organization(s) or enterprise(s) identified via Item 4 (Name of owner) and Item 5 (Address of owner) on the certificate of registration of an aeroplane.

Aeroplane owner††. Person(s), organization(s) or enterprise(s) identified either through Items 4a and 4b on the certificate of registration of an aeroplane (provided that the selected basis of registration be “ownership of aircraft”), or otherwise through Item 5 of the said certificate.

† Applicable until 25 November 2026.

†† Applicable as of 26 November 2026.

Aeroplane reference field length. The minimum field length required for take-off at maximum certificated take-off mass, sea level, standard atmospheric conditions, still air and zero runway slope, as shown in the appropriate aeroplane flight manual prescribed by the certificating authority or equivalent data from the aeroplane manufacturer. Field length means balanced field length for aeroplanes, if applicable, or take-off distance in other cases.

Note— Attachment A, Section 2, provides information on the concept of balanced field length and the Airworthiness Manual (Doc 9760) contains detailed guidance on matters related to take-off distance.

Aeroplane system. An aeroplane system includes all elements of equipment necessary for the control and performance of a particular major function. It includes both the equipment specifically provided for the function in question and other basic related aeroplane equipment such as that required to supply power for the equipment operation. The engine is not considered to be an aeroplane system.

Afterburning. A mode of engine operation wherein a combustion system fed (in whole or part) by vitiated air is used.

AFTN communication centre. An AFTN station whose primary function is the relay or retransmission of AFTN traffic from (or to) a number of other AFTN stations connected to it.

AFTN destination station. An AFTN station to which messages and/or digital data are addressed for processing for delivery to the addressee.

AFTN origin station. An AFTN station where messages and/or digital data are accepted for transmission over the AFTN.

AFTN station. A station forming part of the aeronautical fixed telecommunication network (AFTN) and operating as such under the authority or control of a State.

Agreement summary. When an aircraft is operating under an Article 83 bis agreement between the State of Registry and another State, the agreement summary is a document transmitted with the Article 83 bis Agreement registered with the ICAO Council that identifies succinctly and clearly which functions and duties are transferred by the State of Registry to that other State.

Note.— The other State in the above definition refers to the State of the Operator for commercial air transport operations.

AIP Amendment. Permanent changes to the information contained in the AIP.

AIP Supplement. Temporary changes to the information contained in the AIP which are published by means of special pages.

AIRAC. An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification based on common effective dates, of circumstances that necessitate significant changes in operating practices.

Air defence identification zone (ADIZ). Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services (ATS).

Airborne collision avoidance system (ACAS). An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

Note— SSR transponders referred to above are those operating in Mode C or Mode S. ACAS may also use automatic dependent surveillance — broadcast (ADS-B) signals received from other aircraft to improve its performance.

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.

Note.††— When the word aircraft is used, it includes the remotely piloted aircraft.

Aircraft address. A unique combination of twenty-four bits available for assignment to an aircraft for the purpose of airground communications, navigation and surveillance.

Note 1— SSR Mode S transponders transmit extended squitters to support the broadcast of aircraft-derived position for surveillance purposes. The broadcast of this type of information is a form of automatic dependent surveillance (ADS) known as ADS-broadcast (ADS-B).

Note 2— The aircraft address is also referred to as the Mode S address or the aircraft Mode S address.

Aircraft avionics. A term designating any electronic device — including its electrical part — for use in an aircraft, including radio, automatic flight control and instrument systems.

Aircraft-based augmentation system (ABAS). An augmentation system that augments and/or integrates the information obtained from the other GNSS elements with information available on board the aircraft.

Aircraft — category. Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon.

Aircraft certificated for single-pilot operation. A type of aircraft which the State of Registry has determined, during the certification process, can be operated safely with a minimum crew of one pilot.

Aircraft classification number (ACN) †. A number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.

Note— *The aircraft classification number is calculated with respect to the centre of gravity (CG) position which yields the critical loading on the critical gear. Normally the aftmost CG position appropriate to the maximum gross apron (ramp) mass is used to calculate the ACN. In exceptional cases the forward most CG position may result in the nose gear loading being more critical.*

Aircraft classification rating (ACR).†† A number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.

Note.— The aircraft classification rating is calculated with respect to the centre of gravity (CG) position which yields the critical loading on the critical gear. Normally the aftmost CG position appropriate to the maximum gross apron (ramp) mass is used to calculate the ACR. In exceptional cases the forwardmost CG position may result in the nose gear loading being more critical.

† Applicable until 27 November 2024.

†† Applicable as of 28 November 2024.

Aircraft earth station (AES). A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft

Aircraft equipment. Articles, including first-aid and survival equipment and commissary supplies, but not spare parts or stores, for use on board an aircraft during flight.

Aircraft identification. A group of letters, figures or a combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications.

Aircraft observation. The evaluation of one or more meteorological elements made from an aircraft in flight.

Aircraft operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Aircraft operating agency. The person, organization or enterprise engaged in, or offering to engage in, an aircraft operation.

Aircraft operating manual. A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

Note 1. — The aircraft operating manual is part of the operations manual.

Note 2. – For RPAS, this includes information related to the whole system, including the RPS

Aircraft operators' documents. Air waybills/consignment notes, passenger tickets and boarding passes, bank and agent settlement plan documents, excess baggage tickets, miscellaneous charges orders (M.C.O.), damage and irregularity reports, baggage and cargo labels, timetables, and weight and balance documents, for use by aircraft operators.

Aircraft proximity. A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. An aircraft proximity is classified as follows:

Risk of collision. The risk classification of an aircraft proximity in which serious risk of collision has existed.

Safety not assured. The risk classification of an aircraft proximity in which the safety of the aircraft may have been compromised.

No risk of collision. The risk classification of an aircraft proximity in which no risk of collision has existed

Risk not determined. The risk classification of an aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.

Aircraft required to be operated with a co-pilot. A type of aircraft that is required to be operated with a co-pilot, as specified in the flight manual or by the air operator certificate.

Aircraft security check. An inspection of the interior of an aircraft to which passengers may have had access and an inspection of the hold for the purposes of discovering suspicious objects, weapons, explosives or other dangerous devices, articles and substances.

Aircraft security search. A thorough inspection of the interior and exterior of the aircraft for the purpose of discovering suspicious objects, weapons, explosives or other dangerous devices, articles or substances.

Aircraft stand. A designated area on an apron intended to be used for parking an aircraft.

Aircraft stand taxilane. A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

Aircraft station (RR S1.83). A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft.

Aircraft tracking. A process, established by the operator, that maintains and updates, at standardized intervals, a ground-based record of the four dimensional position of individual aircraft in flight.

Aircraft — type of. All aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics.

Aircraft type groupings. Aircraft are considered to belong to the same group if they are designed and assembled by one manufacturer and are of nominally identical design and build with respect to all details which could influence the accuracy of height-keeping performance.

Air defence identification zone. Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services (ATS).

Air-ground communication. Two-way communication between aircraft and stations or locations on the surface of the earth.

Air-ground control radio station. An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

Airline. As provided in Article 96 of the Convention, any air transport enterprise offering or operating a scheduled international air service.

Airmanship. The consistent use of good judgement and well-developed knowledge, skills and attitudes to accomplish flight objectives.

AIRMET information. Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

Air navigation services. Services provided to air traffic during all phases of operations including air traffic management (ATM), communications, navigation and surveillance (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical information services (AIS).

Air operator certificate (AOC). A certificate authorizing an operator to carry out specified commercial air transport operations.

AIRPROX. The code word used in an air traffic incident report to designate aircraft proximity.

Air-report. A report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting.

Note— Details of the AIREP form are given in the PANS-ATM (Doc 4444).

Airside. The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

Airship. A power-driven lighter-than-air aircraft.

Air-taxiing. Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).

Note— The actual height may vary, and some helicopters may require air- taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo sling loads.

Air-to-ground communication. One-way communication from aircraft to stations or locations on the surface of the earth.

Air traffic. All aircraft in flight or operating on the maneuvering area of an aerodrome.

Air traffic advisory service. A service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

Air traffic control clearance. Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Note 1— For convenience, the term “air traffic control clearance” is frequently abbreviated to “clearance” when used in appropriate contexts.

Note 2— The abbreviated term "clearance" may be prefixed by the words "taxi", "take-off", "departure", "en route", "approach" or "landing" to indicate the particular portion of flight to which the air traffic control clearance relates.

Air traffic control instruction. Directives issued by air traffic control for the purpose of requiring a pilot to take a specific action.

Air traffic control service. A service provided for the purpose of:

(a) preventing collisions:

(1) between aircraft, and

(2) on the maneuvering area between aircraft and obstructions, and

(b) expediting and maintaining an orderly flow of air traffic.

Air traffic control unit. A generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

Air traffic controller schedule. A plan for allocating air traffic controller duty periods and non-duty periods over a period of time, otherwise referred to as a roster.

Air traffic flow management (ATFM). A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

Air traffic management (ATM). The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

Air traffic management system. A system that provides ATM through the collaborative integration of humans, information, technology, facilities and services, supported by air and ground- and/or space-based communications, navigation and surveillance.

Air traffic service. A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

Air traffic services airspaces. Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

Note— ATS airspaces are classified as Class A to G.

Air traffic services reporting office. A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

Note— An air traffic services reporting office may be established as a separate unit or combined with an existing unit, such as another air traffic services unit, or a unit of the aeronautical information service.

Air traffic services unit. A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

Air transit route. A defined route for the air transiting of helicopters.

Airline and operators' documents. Air waybills/consignment notes, passenger tickets and boarding passes, bank and agent settlement plan documents, excess baggage tickets, miscellaneous charges orders (M.C.O.), damage and irregularity reports, baggage and cargo labels, timetables, and weight and balance documents, for use by airlines and operators.

Airport security inspection. See: security inspection

Airway. A control area or portion thereof established in the form of a corridor.

Airworthiness approval. The process of assuring the State authority that aircraft meet an RVSM MASPS. Typically, this would involve an operator meeting the requirements of the aircraft manufacturer service bulletin for that aircraft and having the State authority verify the successful completion of that work.

Airworthiness Directive (AD). A regulatory document which identifies aeronautical products in which an unsafe condition exists, and where the condition is likely to exist or develop in other aeronautical products of the same type design. It prescribes mandatory corrective actions to be taken or the conditions or limitations under which the aeronautical products may continue to be operated. The AD is the common form of mandatory continuing airworthiness information mentioned in Annex 8.

Airworthiness Standards. Detailed and comprehensive design and safety criteria applicable to the category of the aeronautical product (aircraft, engine and propeller) that satisfy, at a minimum, the applicable standards of Annex 8.

Airworthy.† The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

Airworthy.†† The status of an aircraft, remote pilot station, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

† Applicable until 25 November 2026.

†† Applicable as of 26 November 2026.

AIS product. Aeronautical information provided in the form of the elements of the Integrated Aeronautical Information Package (except NOTAM and PIB), including aeronautical charts, or in the form of suitable electronic media.

ALERFA. The code word used to designate an alert phase.

Alert. An indication provided to other aircraft systems or annunciation to the pilot to

identify that an operating parameter of a navigation system is out of tolerance.

Alert limit. For a given parameter measurement, the error tolerance not to be exceeded without issuing an alert.

Alert phase. A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

Alerting post. Any facility intended to serve as an intermediary between a person reporting an emergency and a rescue coordination centre or rescue subcentre.

Alerting service. A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

Algorithm. A specified mathematical process for computation; a set of rules which, if followed, will give a prescribed result.

All-call. An intermode or Mode S interrogation that elicits replies from more than one transponder.

All-call (Mode AIC-only). An intermode interrogation that elicits replies from Mode A/C transponders only. Mode S transponders do not accept this interrogation.

All-call (Mode AIC/S). An intermode interrogation that elicits Mode A/C replies from Mode A/C transponders and all-call replies from Mode S transponders that are currently not in the lockout state.

All-call (Mode S-only). A Mode S interrogation that elicits all-call replies from Mode S transponders that are currently not in the lockout state.

All-call period. The time interval during which a Mode S interrogator issues all-calls (SSR only, Mode S only and intermode) to detect Mode A/C transponders and, for acquisition, Mode S transponders that have not been previously locked out.

All-call (stochastic). A Mode S-only all-call that elicits all-call replies from only a random subset of the Mode S transponders that are currently not in the lockout state.

Allocation, allocate. Distribution of frequencies, SSR codes, etc. to a State, unit or service. Distribution of 24-bit aircraft addresses to a State or common mark registering authority.

Along-track tolerance (ATT). A fix tolerance along the nominal track resulting from the airborne and ground equipment tolerances.

Alphanumeric characters (alphanumerics). A collective term for letters and figures (digits).

Alternate aerodrome. An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:

Take-off alternate. An alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

En-route alternate. An alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en-route.

ETOPS en-route alternate. A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shut-down or other abnormal or emergency condition while en route in an ETOPS operation. Automatic

Destination alternate. An alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing.

Note— The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

Alternate heliport. A heliport to which a helicopter may proceed when it becomes either impossible or inadvisable to proceed to or to land at the heliport of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate heliports include the following:

Take-off alternate. An alternate heliport at which a helicopter would be able to land should this become necessary shortly after take-off and it is not possible to use the heliport of departure.

En-route alternate. An alternate heliport at which a helicopter would be able to land in the event that a diversion becomes necessary while en route.

Destination alternate. An alternate heliport at which a helicopter would be able to land should it become either impossible or inadvisable to land at the heliport of intended landing.

Note— The heliport from which a flight departs may be an en-route or a destination alternate heliport for that flight.

Alternative means of communication. A means of communication provided with equal status, and in addition to the primary means.

Altimetry system error (ASE). The difference between the altitude indicated by the altimeter display, assuming a correct altimeter barometric setting, and the pressure altitude corresponding to the undisturbed ambient pressure.

Altimetry system error stability. Altimetry system error for an individual aircraft is considered to be stable if the statistical distribution of altimetry system error is within agreed limits over an agreed period of time.

Altitude. The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

Altitude crossing RA. A resolution advisory is altitude crossing if own ACAS aircraft is currently at least 30 m (100 ft) below or above the threat aircraft for upward or downward sense advisories, respectively.

Altitude-keeping device. Any equipment which is designed to automatically control the aircraft to a referenced pressure altitude.

Ampere (A). The ampere is that constant electric current which, if maintained in two straight parallel conductors of infinite length, of negligible circular cross-section, and placed 1 metre apart in a vacuum, would produce between these conductors a force equal to 2×10^{-7} newton per metre of length.

Analogue. In radar terms, a signal which has not been converted into digital values. Analogue signals are to be found at antenna and receiver level in radar systems.

Analogue-to-digital converter. A device for the conversion of analogue signals into digital values. Usually operates by sampling the analogue signal at regular time intervals and converting the measured value of the analogue sample to a binary encoded number

Angles of coverage

(a) Angle of coverage A is formed by two intersecting vertical planes making angles of 70 degrees to the right and 70 degrees to the left respectively, looking aft along the longitudinal axis to a vertical plane passing through the longitudinal axis.

(b) Angle of coverage F is formed by two intersecting vertical planes making angles of 110 degrees to the right and 110 degrees to the left respectively, looking forward along the longitudinal axis to a vertical plane passing through the longitudinal axis.

(c) Angle of coverage L is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the left of the first, when looking forward along the longitudinal axis.

(d) Angle of coverage R is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

Angular displacement sensitivity. The ratio of measured DDM to the corresponding angular displacement from the appropriate reference line.

Antenna (electronically scanned, E-Scan). An SSR antenna consisting of a number of planar arrays or a circular array of radiating elements. The antenna beams are electronically steered to the desired azimuth angle by applying phase-shifting techniques, without rotating the antenna mechanically.

Antenna elevation (tilt). An angle between the direction of maximum gain of the antenna and the tangent to the surface of the earth. A distinction is sometimes made between electronic (radio signal) and mechanical tilt, especially for SSR LVA antennas. In this case the mechanical tilt may be zero while the antenna is radiating at a different

electronic tilt (typically +3°).

Antenna (hog-trough). An SSR antenna comprising a horizontal linear array of radiating elements installed in an extended comer reflector assembly (resembling in shape a hog-trough). The linear array is usually of sufficient length to give an azimuth beam width of between 2° and 3° and the hog-trough reflector achieves typically between ± 40° and 45° vertical beam width. For special purposes shorter arrays can be used. These have increased azimuth beam width.

Antenna (large vertical aperture, LVA). An SSR antenna comprising two dimensional array radiating elements. A typical LVA consists of a number of columns (each consisting of a vertical linear array designed to produce beam shaping in the vertical plane) arranged in a horizontal linear array to produce between 2° and 3° azimuth beam width. Typically, LVA antennas are a prerequisite for monopulse SSR systems.

Antenna (linear array). An antenna cons1stmg of a "battery" or array of radiating elements in a straight line. The desired radiation characteristic of the antenna is obtained by the varied distribution of radio frequency energy in amplitude or phase so as to produce the shaped "beam" or wave front.

Antenna (omni-directional). An antenna with an approximately circular radiation pattern in the horizontal plane. In earlier SSR systems it was used to form the control pattern for ISLS by transmitting the P2 pulse and also for transmission of the P 1 pulse for I2SLS. Modern antennas for ground SSR form a control pattern that is omni-directional except for a null or "notch" in the direction of the antenna main beam (coinciding with the peak of the main beam sum pattern).

Antenna port. A point where the received signal power is specified. For an active antenna, the antenna port is a fictitious point between the antenna elements and the antenna pre-amplifier. For a passive antenna, the antenna port is the output of the antenna itself.

Antenna (reflector). An antenna producing the beam by a method analogous to optics. In most cases the "reflector" surface of the antenna is illuminated by a radio frequency source (e.g. a radio-frequency "horn" assembly). The dimensions of the reflector antenna both in the horizontal and vertical plane, together with the characteristics of the illuminating source, determine the shape and magnitude of the radar beam produced.

Antenna (sum and difference). A hog-trough or LVA antenna which is electrically split into two halves. The two half-antenna outputs are added in phase at one output port (sum, Σ:) and added in antiphase at a second output port (difference, Δ.) to produce output signals which are sensitive to the azimuth angle of arrival of received signals, enabling an off-boresite angle for the signal source to be obtained.

Anticipated operating conditions. † Those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft taking into account the operations for which the aircraft is made eligible, the conditions so considered being relative to the meteorological state of the atmosphere, to the configuration of terrain, to the functioning of the aircraft, to the efficiency of personnel and to all the factors affecting safety in flight. Anticipated operating conditions do not

include:

(a) those extremes which can be effectively avoided by means of operating procedures; and

(b) those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical.

Anticipated operating conditions.†† Those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft and remote pilot station taking into account the operations for which the aircraft or remote pilot station is made eligible, the conditions so considered being relative to the meteorological state of the atmosphere, to the configuration of terrain, to the functioning of the aircraft and remote pilot station, to the efficiency of personnel and to all the factors affecting safety in flight. Anticipated operating conditions do not include:

a) those extremes which can be effectively avoided by means of operating procedures; and

b) those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical.

† Applicable until 25 November 2026.

†† Applicable as of 26 November 2026.

Anti-scan pattern. An image usually constructed of fine lines at varying angular displacement and embedded in the security background design. When viewed normally, the image cannot be distinguished from the remainder of the background security print but when the original is scanned or photocopied the embedded image becomes visible.

Application. Manipulation and processing of data in support of user requirements as per ISO 19104.

Application entity (AE): An AE represents a set of ISO/OSI communication capabilities of a particular application process.

Application Identifier (AID). Data element that is used to uniquely identify an application in a card. It consists of a relative identifier (RID) and a proprietary identifier extension (PIX).

Application Protocol Date Unit (APDU). Standard communication messaging protocol between a card acceptance device and a smart card.

Approach and landing operations using instrument approach procedures. Instrument approach and landing operations are classified as follows:

Non-precision approach and landing operations. An instrument approach and landing which utilizes lateral guidance but does not utilize vertical guidance.

Approach and landing operations with vertical guidance. An instrument approach and landing which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Precision approach and landing operations. An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.

Note— Lateral and vertical guidance refers to the guidance provided either by:

(a) a ground-based navigation aid; or

(b) computer generated navigation data.

Categories of precision approach and landing operations:

Category I (CAT I) operation. A precision instrument approach and landing with:

(a) a decision height not lower than 60 m (200 ft); and

(b) with either a visibility not less than 800 m or a runway visual range not less than 550 m.

Category II (CAT II) operation. A precision instrument approach and landing with:

(a) a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft); and

(b) a runway visual range not less than 300 m.

Category IIIA (CAT IIIA) operation. A precision instrument approach and landing with:

(a) a decision height lower than 30 m (100 ft) or no decision height; and

(b) a runway visual range not less than 175 m.

Category IIIB (CAT IIIB) operation. A precision instrument approach and landing with:

(a) a decision height lower than 15 m (50 ft), or no decision height; and

(b) a runway visual range less than 175 m but not less than 50 m.

Category IIIC (CAT IIIC) operation. A precision instrument approach and landing with no decision height and no runway visual range limitations.

Note— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach and landing operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation

with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).

Approach and landing phase — helicopters. That part of the flight from 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the balked landing point.

Approach control service, approach control, approach control office. Air traffic control service for arriving or departing controlled flights.

Approach control unit. A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

Approach funnel. A specified airspace around a nominal approach path within which an aircraft approaching to land is considered to be making a normal approach.

Approach phase. The operating phase defined by the time during which the engine is operated in the approach operating mode.

Approach sequence. The order in which two or more aircraft are cleared to approach to land at the aerodrome.

Appropriate airworthiness requirements.‡ The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

Appropriate airworthiness requirements.†† The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, remote pilot station, engine or propeller under consideration.

Appropriate ATS authority. The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned.

Appropriate authority, Appropriate national Authority:

(a) Regarding flight over the high seas: The relevant authority of the State of Registry.

(b) Regarding flight other than over the high seas: The relevant authority of the State having sovereignty over the territory being overflown

Approval. An authorization granted by an appropriate national authority for:

(a) the transport of dangerous goods forbidden on passenger and/or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or

(b) other purposes as provided for in the Technical Instructions.

Note— In the absence of a specific reference in the Technical Instructions allowing the granting of an approval, an exemption may be sought.

Approved. Accepted by a Contracting State as suitable for a particular purpose.

Approved maintenance organization. An organization approved by a Contracting State, in accordance with the requirements of Annex 6, Part I, Chapter 8 — Aeroplane Maintenance, to perform maintenance of aircraft or parts thereof and operating under supervision approved by that State.

Note.— Nothing in this definition is intended to preclude that the organization and its supervision be approved by more than one State.

Approved maintenance training organization (AMTO). An approved training organization performing training for aircraft maintenance technicians/engineers/mechanics.

Approved training. Training conducted under special curricula and supervision approved by a Contracting State.

Note 1 – Annex 1 requires that approved training of flight crew members and air traffic controllers for the purpose of obtaining a licence or rating is conducted within an approved training organization. Annex 1 also requires that competency-based approved training for aircraft maintenance personnel is conducted within an approved training organization.

Note 2 — Although not falling under the criteria of training specifically for the issue of a licence or a rating, flight crew members undergoing approved training for the maintenance of competency or for gaining an operational qualification that does not fall under the training criteria outlined in Annex 6 — Operation of Aircraft, Part I— International Commercial Air Transport — Aeroplanes, Chapter 9, 9.3, or Part III — International Operations — Helicopters, Section II, Chapter 7, 7.3, should receive such training from an approved training organization.

Approved training organization. An organization approved by and operating under the supervision of a Contracting State in accordance with the requirements of Annex 1 to perform approved training.

Apron. A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

Apron management service. A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

Area control, Area control centre. A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

Area control service. Air traffic control service for controlled flights in control areas.

Area minimum altitude (AMA). The minimum altitude to be used under instrument meteorological conditions (IMC) that provides a minimum obstacle clearance within a

specified area, normally formed by parallels and meridians.

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space- based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note— Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

Area navigation route. An ATS route established for the use of aircraft capable of employing area navigation.

Arresting system. A system designed to decelerate an aeroplane overrunning the runway.

Arrival routes. Routes identified in an instrument approach procedure by which aircraft may proceed from the en-route phase of flight to an initial approach fix.

ASHTAM. A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations.

Associated aircraft systems. Those aircraft systems drawing electrical/pneumatic power from an auxiliary power unit during ground operations.

Assemble. A process of merging data from multiple sources into a database and establishing a baseline for subsequent processing.

Note— The assemble phase includes checking the data and ensuring that detected errors and omissions are rectified.

Assessment. An appraisal of procedures or operations based largely on experience and professional judgement.

Assessment (Evidence) guide. A guide that provides detailed information (e.g. tolerances) in the form of evidence that an instructor or an evaluator can use to determine whether a candidate meets the requirements of the competency standard.

Assignment, assign. Distribution of frequencies to stations. Distribution of SSR codes or 24-bit aircraft addresses to aircraft.

Assigned altitude deviation (AAD). The difference between the transponder Mode C altitude and the assigned altitude/flight level.

Asymmetric. Different keys needed on each end of a communication link.

Asymmetric algorithm. This type of cryptographic operation uses one key for encryption of plain text and another key for decryption of associated cipher text. These two keys are related to each other and are called a Key Pair.

Asymmetric keys. A separate but integrated user key pair comprised of one public

key and one private key. Each key is one-way, meaning that a key used to encrypt information cannot be used to decrypt the same information.

Authentication A process that validates the claimed identity of a participant in an electronic transaction.

Asynchronous surveillance processor (ASP). A type of video-plot processor

ATA chapters. A common industry referencing standard for aircraft technical documentation.

Note— The competency frameworks of Chapter 4 use references to the ATA chapters numbering, due to its widespread use in civil aviation.

ATIS. The symbol used to designate automatic terminal information service.

ATM services personnel. Persons assigned to perform duties directly in connection with the provision of Air Traffic Management Services.

ATN security services: A set of information security provisions allowing the receiving end system or intermediate system to unambiguously identify (i.e. authenticate) the source of the received information and to verify the integrity of that information.

ATS direct speech circuit. An aeronautical fixed service (AFS) telephone circuit, for direct exchange of information between air traffic services (ATS) units.

ATS interfacility data communication (AIDC): Automated data exchange between air traffic services units in support of flight notification, flight coordination, transfer of control and transfer of communication.

ATS message handling service (ATSMHS): An ATN application consisting of procedures used to exchange ATS messages in store-and-forward mode over the ATN such that the conveyance of an ATS message is in general not correlated with the conveyance of another ATS message by the service provider.

ATS message handling system (AMHS): The set of computing and communication resources implemented by the ATS organisations to provide the ATS message handling service.

ATS route. A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

Note 1— The term “ATS route” is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.

Note 2— An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.

ATS surveillance service. A term used to indicate a service provided directly by means

of an ATS surveillance system.

ATS surveillance system. A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

Note— A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.

Attitude. Attitude is understood as behaviours that are acceptable or not in a given context. Attitudes are a component part of the trainees' required performance that is described in the intermediate objectives. Attitudes are taught to reflect the values and beliefs that students should hold to behave in an acceptable way.

Audit. A systematic and objective review of a State's aviation framework to verify compliance with the provisions of the Chicago Convention or national regulation, conformance with or adherence to Standards and Recommended Practices (SARPs), procedures and good aviation safety practices.

Audit area. One of eight audit areas pertaining to USOAP, i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

Authorized agent. A person who represents an aircraft operator and who is authorized by or on behalf of such operator to act on formalities connected with the entry and clearance of the operator's aircraft, crew, passengers, cargo, mail, baggage or stores and includes, where national law permits, a third party authorized to handle cargo on the aircraft.

Authorized Economic Operator. AEO is a party involved in the international movement of goods in whatever function that has been approved by or on behalf of a national Customs administration as complying with WCO or equivalent supply chain security standards. AEOs may include manufacturers, importers, exporters, brokers, carriers, consolidators, intermediaries, ports, airports, terminal operators, integrated operators, warehouses, distributors and freight forwarders.

Note.— The definition is aligned with that found in the World Customs Organization's "SAFE Framework of Standards to Secure and Facilitate Global Trade."

Authorization. A security process to decide whether a service can be given or not.

Authorized path: A communication path suitable for a given message category.

Automated Border Control (ABC). An automated system which authenticates the electronic machine readable travel document or token, establishes that the passenger is the rightful holder of the document or token, queries border control records, then determines eligibility for border crossing according to pre-defined rules.

Automatic altitude-keeping device. Any equipment which is designed to automatically control the aircraft to a referenced pressure-altitude.

Automatic dependent surveillance (ADS). A surveillance technique in which aircraft automatically provide, via a data link, data derived from on- board navigation and position-fixing systems, including aircraft identification, four-dimensional position and additional data as appropriate.

Automatic dependent surveillance — broadcast (ADS-B). A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

Automatic dependent surveillance — **contract (ADS-C).** A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

Note— The abbreviated term "ADS contract" is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode.

Automatic dependent surveillance-broadcast (ADS-B) OUT. A function on an aircraft or vehicle that periodically broadcasts its state vector (position and velocity) and other information derived from on-board systems in a format suitable for ADS-B IN capable receivers.

Automatic dependent surveillance-broadcast (ADS-B) IN. A function that receives surveillance data from ADS-B OUT data sources.

Automatic landing system. The airborne system which provides automatic control of the aeroplane during the approach and landing

Automatic relay installation. A teletypewriter installation where automatic equipment is used to transfer messages from incoming to outgoing circuits.

Note— This term covers both fully automatic and semiautomatic installations.

Automatic telecommunication log. A record of the activities of an aeronautical telecommunication station recorded by electrical or mechanical means.

Automatic terminal information service (ATIS). The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof.

Data link-automatic terminal information service (D-ATIS). The provision of ATIS via data link.

Voice-automatic terminal information service (Voice-ATIS). The provision of ATIS by means of continuous and repetitive voice broadcasts.

Autonomous runway incursion warning system (ARIWS). A system which provides

autonomous detection of a potential incursion or of the occupancy of an active runway and a direct warning to a flight crew or a vehicle operator.

Axial ratio. The ratio, expressed in decibels, between the maximum output power and the minimum output power of an antenna to an incident linearly polarized wave as the polarization orientation is varied over all directions perpendicular to the direction of propagation.

Auxiliary power-unit (APU). A self-contained power-unit on an aircraft providing electrical/pneumatic power to aircraft systems during ground operations.

Average radius of rated coverage. The radius of a circle having the same area as the rated coverage.

Aviation alternative fuel. A non-petroleum-based drop-in aviation fuel.

Aviation safety inspector. For the purposes of Annex 9, an aviation safety inspector is an individual, designated by a Contracting State, who is charged with the inspection of the safety-related aspects of air transport operations as directed by the appropriate authority.

Note— Examples of safety inspectors include airworthiness or flight operations and any other safety related aspects of air transport operations.

Aviation security. Safeguarding civil aviation against acts of unlawful interference. This objective is achieved by a combination of measures and human and material resources.

Axial ratio. The ratio, expressed in decibels, between the maximum output power and the minimum output power of an antenna to an incident linearly polarized wave as the polarization orientation is varied over all directions perpendicular to the direction of propagation.

Azimuth count (or change) pulses (ACPs). Output pulses of the incremental azimuth measuring device fitted to the radar antenna turning platform (turning gear). The encoding device may give its output in serial or parallel form, but typically provides 4 096 pulses (12 bit encoding), 16 384 pulses (14 bit encoding) or 65 536 pulses (16 bit encoding) in serial form per 360° in azimuth.

Azimuth extension (plot length, delta theta). An azimuth increment, often expressed as a number of ACPs, from detection of the leading edge of a radar plot to detection of the trailing edge of that plot, in a digital plot extractor system.

Back course sector. The course sector which is situated on the opposite side of the localizer from the runway.

Background check. A check of a person's identity and previous experience, including where legally permissible, any criminal history, as part of the assessment of an individual's suitability to implement a security control and/or for unescorted access to a security restricted area.

Back lobe. A lobe of radiated energy to the rear of an antenna (180° in azimuth

with respect to the main lobe).

Balked landing. A landing manoeuvre that is unexpectedly discontinued at any point below the obstacle clearance altitude/height (OCA/H).

Baggage. Personal property of passengers or crew carried on an aircraft by agreement with the operator.

Balloon. A non-power-driven lighter-than-air aircraft.

Note— For the purposes of this Annex, this definition applies to free balloons.

Bar code: A means of storing data as a pattern of lines or dots.

Bare Earth. Surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and man-made objects.

Barrette. Three or more aeronautical ground lights closely spaced in a transverse line so that from a distance they appear as a short bar of light.

Base station (BS): A generalized equipment set providing connectivity, management and control of the mobile station (MS).

Base turn. A turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.

Note.— Base turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

Basic aircraft. An aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

Basic training. Fundamental knowledge and skills appropriate to the discipline to be pursued in the ATS environment.

BDS Open Service (BDS OS). The specified level of positioning, velocity and timing accuracy that is available to any BDS user on a continuous, worldwide basis.

Beam sharpening. A technique applied to the monopulse antenna to decrease the plot run length of SSR replies. The reduced run length is required to improve the resolution capabilities of the extraction system.

Beamwidth. An angle subtended (either in azimuth or elevation) at the half- power points (3 dB below maximum) of the main beam of an antenna.

Becquerel (Bq). The activity of a radionuclide having one spontaneous nuclear transition per second.

Behaviour detection. Within an aviation security environment, the application of techniques involving the recognition of behavioural characteristics, including but not

limited to physiological or gestural signs indicative of anomalous behaviour, to identify persons who may pose a threat to civil aviation.

BeiDou Navigation Satellite System (BDS). The satellite navigation system operated by the People's Republic of China.

BDS Open Service (BDS OS). The specified level of positioning, velocity and timing accuracy that is available to any BDS user on a continuous, worldwide basis.

Biographical data (biodata). The personal details of the bearer of the document appearing as text in the Visual Inspection and Machine Readable Zones on the biographical data page of an MRTD and/or in the contactless integrated circuit of an eMRTD.

Biometric. A measurable, physical characteristic or personal behavioural trait used to recognize the identity, or verify the claimed identity, of an enrollee.

Biometric data. The information extracted from the biometric sample and used either to build a reference template (template data) or to compare against a previously created reference template (comparison data).

Biometric Identification: A means of identifying or confirming the identity of the holder of an MRTD by the measurement of one or more properties of the holder's person.

Biometric matching. The process of using an algorithm that compares templates derived from the biometric reference and from the live biometric input, resulting in a determination of match or non-match.

Biometric reference template. A data set which defines a biometric measurement of a person which is used as a basis for comparison against a subsequently submitted biometric sample(s).

Biometric sample. Raw data captured as a discrete unambiguous, unique and linguistically neutral value representing a biometric characteristic of an enrollee as captured by a biometric system (for example, biometric samples can include the image of a fingerprint as well as its derivative for authentication purposes).

Biometric system. An automated system capable of:

(1) capturing a biometric sample from an end user for an MRP;

(2) extracting biometric data from that biometric sample;

(3) comparing that specific biometric data value(s) with that contained in one or more reference templates;

(4) deciding how well the data match, i.e. executing a rule-based matching process specific to the requirements of the unambiguous identification and person authentication of the enrollee with respect to the transaction involved; and

(5) indicating whether or not an identification or verification of identity has been achieved.

Biometric template. Extracted and compressed data taken from a biometric sample.

Biometric Verification. A means of identifying or confirming the identity of the holder of an MRTD by the measurement and validation of one or more unique properties of the holder's person.

Bit. A binary digit. The smallest possible unit of information in a digital code.

Bit error rate (BER). The number of bit errors in a sample divided by the total number of bits in the sample, generally averaged over many such samples.

Blind transmission. A transmission from one station to another station in circumstances where two-way communication cannot be established but where it is believed that the called station is able to receive the transmission.

Blip. A presentation on an analogue radar display of the received signal from a target.

Blip-to-scan ratio. An approximation of detection probability (P0) (i.e. for a given observation time, the number of blips actually detected for a selected aircraft divided by the number of radar scans).

Block. A string or group of bits that a block algorithm operates on.

Block algorithm. See block cipher.

Block cipher. Algorithms that operate on plain text in blocks (strings or groups) of bits.

Bomb threat. A communicated threat, anonymous or otherwise, which suggests, or infers, whether true or false that the safety of an aircraft in flight or on the ground, or any airport or civil aviation facility or any person may be in danger from an explosive or other item or device.

Bootstrapping. A method of testing the reliability of a data set.

Border integrity. The enforcement, by a State, of its laws and/or regulations concerning the movement of goods and/or persons across its borders.

Border security. The enforcement, by a State, of its laws and/or regulations concerning the movement of goods and/or persons across its borders.

Boresight. A main lobe electrical (radio) axis of an antenna.

Bracket decode. A decoding of the F1-F2 framing pulses (nominal interval 20.3 μs) without regard to the content of the data pulses between these framing pulses.

Break-away or failure mechanism. A device which has been designed, configured and fabricated in such a way that it is very sensitive to one type of loading, usually resulting from a time dependent dynamic impact, but immune to the normal environmental and operational loads imposed on the mechanism during the lifetime of the structure. The "break- away mechanism" can be designed in conjunction with the

joints of the structure and/or designed independent of the joints of the structure.

Briefing. Oral commentary on existing and/or expected meteorological conditions.

Broadcast. A transmission of information relating to air navigation that is not addressed to a specific station or stations.

Brute-force attack. Trying every possible key and checking whether the resulting plain text is meaningful.

Built-in-test equipment (BITE). Internal self-check facilities in electronic equipment which allow the correct operation to be monitored on a continuous basis. Many checks may be GO-NOGO tests, with a failure causing a visual (or possibly audio) alarm to be given. The BITE is usually part of the remote control and monitoring system of a radar. Modern BITE can isolate faults down to a line-replaceable unit (e.g. a printed circuit board) in a majority (e.g. 80 per cent) of all fault conditions.

Burst: A time-defined, contiguous set of one or more related signal units which may convey user information and protocols, signaling and any necessary preamble.

Burst profile: Set of parameters that describes the uplink and downlink transmission properties associated with an interval usage code. Each profile contains parameters such as modulation type, forward error connections (FEC) type, preamble length, guard times, etc.

Bypass ratio. The ratio of the air mass flow through the bypass ducts of a gas turbine engine to the air mass flow through the combustion chambers calculated at maximum thrust when the engine is stationary in an international standard atmosphere at sea level.

Byte. A sequence of eight bits usually operated on as a unit.

C2 Link: The data link between the remotely piloted aircraft and the remote pilot station for the purposes of managing the flight.

C2 Link communication service provider (C2CSP). An entity which provides a portion of, or all of, the C2 Link service for the operation of an RPAS.

Note.— An RPAS operator may also be its own C2CSP.

C2 Link coverage area. The area in which the C2 Link service can be received including the area where the QoSD does not meet the QoSR.

C2 Link interruption. Any temporary situation where the C2 Link is unavailable, discontinuous, introduces too much delay, or has inadequate integrity; but where the lost C2 Link decision time has not been exceeded.

C2 Link log. A record of the activities related to the C2 Link.

C2 Link service. A communication service providing the C2 Link.

C2 Link service area. The area within the C2 Link coverage area where the C2 Link

QoSD meets the QoSR.

C2 Link specification. The minimum performance to be achieved by the C2 Link equipment in conformity with the applicable airworthiness system design requirements.

Cabin crew member. A crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

Calendar. Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day as per ISO 19108**.**

Candela (cd). The luminous intensity, in the perpendicular direction, of a surface of 1/600 000 square metre of black body at the temperature of freezing platinum under a pressure of 101 325 newton per square metre.

Canopy. Bare Earth supplemented by vegetation height.

Caption: Printed word or phrase to identify a field.

Capture. The method of taking a biometric sample from the end user.

Capacitor discharge light. A lamp in which high-intensity flashes of extremely short duration are produced by the discharge of electricity at high voltage through a gas enclosed in a tube.

Card. Medium according to ISO/IEC 7810, ISO/IEC 7811, ISO 7812 used to carry information.

Cargo. Any property carried on an aircraft other than mail, stores and accompanied or mishandled baggage.

Cargo aircraft. Any aircraft, other than a passenger aircraft, which is carrying goods or property.

Carrier-to-multipath ratio (C/M). The ratio of the carrier power received directly, i.e. without reflection, to the multipath power, i.e. carrier power received via reflection.

Carrier-to-noise density ratio (C/No). The ratio of the total carrier power to the average noise power in a 1 Hz bandwidth, usually expressed in dBHz.

Category A. With respect to helicopters, means a multi-engine helicopter designed with engine and system isolation features specified in Part IVB of Annex 8 and capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off.

Category B. With respect to helicopters, means a single-engine or multi- engine helicopter which does not meet Category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and a forced landing is assumed.

Catering stores. All items, other than catering supplies, associated with passenger in-flight services, for example newspapers, magazines, headphones, audio and video tapes, pillows and blankets, amenity kits, etc.

Catering supplies. Food, beverages, other dry stores and associated equipment used on board an aircraft.

Causes. Actions, omissions, events, conditions, or a combination thereof, which led to the accident or incident. The identification of causes does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

Ceiling. The height above the ground or water of the base of the lowest layer of cloud below 6 000 metres (20 000 feet) covering more than half the sky.

Celsius temperature (t°C). The Celsius temperature is equal to the difference t°C = T – T0 between two thermodynamic temperatures T and T0 where T0 equals 273.15 kelvin

Certificate. A digital document which proves the authenticity of a public key.

Certificate holder. An individual or organization that meets the established requirements and functions at the level of competency and safety required by the State to undertake an aviation-related activity for which it has been licensed,

Certificate Revocation List (CRL). A list of revoked certificates within a given infrastructure.

Certified aerodrome. An aerodrome whose operator has been granted an aerodrome certificate. certified, authorized and/or approved to perform.

Certificating authority. A body that issues a biometric document and certifies that the data stored on the document are genuine in a way which will enable detection of fraudulent alteration.

Certification. A formal evaluation and confirmation by or on behalf of the appropriate authority for aviation security that a person possesses the necessary competencies to perform assigned functions to an acceptable level as defined by the appropriate authority.

Certification. The process of determining competence, qualification or quality on which an aviation document is based.

Certification Authority (CA). A trustworthy body that issues digital certificates for PKI.

Certification basis. The applicable airworthiness and environmental standards established by a State as the basis by which the type design of an aeronautical product, or change to that type design, is approved or accepted. The certification basis may also include special conditions of airworthiness, findings of equivalent level of safety, and/or exemptions when determined by the State to apply to the type design.

Certification maintenance requirement. Scheduled maintenance that is required by design to help show compliance with the appropriate type certification basis by detecting the presence of a safety-significant latent failure that would result in a hazardous or

catastrophic failure condition.

Certified aerodrome. An aerodrome whose operator has been granted an aerodrome certificate.

Certify as airworthy (to). To certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof.

Chaining. A process of linking together radar target reports (plots and tracks) and other information relating to one particular object.

Change-over point. The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.

Note.— Changeover points are established to provide the optimum balance in respect of signal strength and quality between facilities at all levels to be used and to ensure a common source of azimuth guidance for all aircraft operating along the same portion of a route segment.

Channel of standard accuracy (CSA). The specified level of positioning, velocity and timing accuracy that is available to any GLONASS user on a continuous, worldwide basis.

Channel rate. The rate at which bits are transmitted over the RF channel. These bits include those bits used for framing and error correction, as well as the information bits. For burst transmission, the channel rate refers to the instantaneous burst rate over the period of the burst.

Channel rate accuracy. This is relative accuracy of the clock to which the transmitted channel bits are synchronized. For example, at a channel rate of 1.2 kbits/s, maximum error of one part in 106 implies the maximum allowed error in the clock is ±1.2 × 10-3 Hz.

Charter. In a charter of an aircraft, a portion of or more entities, which may re-sell it to the public (this occurs most frequently in non-scheduled passenger air operations, which is why they are popularly known as “charter flights”). A charter flight is a non-scheduled operation using a chartered aircraft. The situation in which the charterer is another air operator that has its own operating authority and charters the entire capacity of the aircraft, usually on short notice, is termed a sub-charter.

Chicago Convention. Convention on International Civil Aviation.

Chip. A 0.25 μs carrier interval following possible data phase reversals in the P 6 pulse of Mode S interrogations.

Chemical sensitizers. Security reagents to guard against attempts at tampering by chemical erasure, such that irreversible colours develop when certain chemicals come into contact with the document.

Cipher. Secret writing based on a key, or set of predetermined rules or symbols.

Circling approach. An extension of an instrument approach procedure which provides for visual circling of the aerodrome prior to landing.

Circuit mode. A configuration of the communications network which gives the appearance to the application of a dedicated transmission path.

Civil aviation authority. The governmental entity or entities, however titled, that are directly responsible for the regulation of all aspects of civil air transport, technical (i.e. air navigation and aviation safety) and economic (i.e. the commercial aspects of air transport).

Civil aviation inspector. A civil aviation inspector is an individual, designated by a Contracting State, who is charged with the inspection of the safety, security or related aspects of air transport operations as directed by the appropriate authority.

Note— Examples of civil aviation inspectors include inspectors responsible for airworthiness, flight operations and other safety-related aspects, and security-related aspects, of air transport operations

Class A airspace. IFR flights only are permitted, all flights are provided with air traffic control service and are separated from each other.

Class B airspace. IFR and VFR flights are permitted; all flights are provided with air traffic control service and are separated from each other.

Class C airspace IFR and VFR flights are permitted; all flights are provided with air traffic control service and IFR flights are separated from other IFR flights and from VFR flights. VFR flights are separated from IFR flights and receive traffic information in respect of other VFR flights.

Class D airspace. IFR and VFR flights are permitted and all flights are provided with air traffic control service, IFR flights are separated from other IFR flights and receive traffic information in respect of VFR flights, VFR flights receive traffic information in respect of all other flights.

Class E airspace. IFR and VFR flights are permitted, IFR flights are provided with air traffic control service and are separated from other IFR flights. All flights receive traffic information as far as is practical. Class E shall not be used for control zones.

Class F airspace. IFR and VFR flights are permitted, all participating IFR flights receive an air traffic advisory service and all flights receive flight information service if requested.

Note— Where air traffic advisory service is implemented, this is considered normally as a temporary measure only until such time as it can be replaced by air traffic control.

Class G airspace. IFR and VFR flights are permitted and receive flight information service if requested.

Clearance. see: air traffic control clearance.

Clearance limit. The point to which an aircraft is granted an air traffic control clearance.

Clearance of goods. The accomplishment of the customs formalities necessary to allow goods to enter home use, to be exported or to be placed under another customs procedure.

Clearway. A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height.

Climb phase. The operating phase defined by the time during which the engine is operated in the climb operating mode.

Climb RA. A positive RA recommending a climb but not an increased climb.

Climatological table see: aerodrome climatological table

Closest approach. The occurrence of minimum range between own ACAS aircraft and the intruder. Thus range at closest approach is the smallest range between the two aircraft and time of closest approach is the time at which this occurs.

Cloud of operational significance. A cloud with the height of cloud base below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height.

Clutter. A generic PSR term for unwanted, interfering reflections of radio energy from various sources. Types of clutter include ground clutter, sea clutter, precipitation clutter and "angels".

Cockpit crew zone. The part of the cabin that is exclusively designated for flight crew use.

Code. A combination of data bits contained in signals transmitted by an SSR transponder in reply to an SSR interrogator.

Code (SSR). The number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C.

Coded chip. A “1” or “0” output of the rate ½ or ¼ convolutional code encoder.

Codeshare. The use of the flight designator code of one air operator on a service performed by a second air operator, whose service is usually also identified (and may be required to be identified) as a service of, and being performed by, the second air operator.

Note.— The practice of code sharing, by which one operator permits a second operator to use its airline designator code on a flight, or by which two operators share the same airline code on a flight, can take different forms.

Code (SSR). The number assigned to a particular multiple pulse reply signal transmitted

by a transponder in Mode A or Mode C.

Code train. A sequence of bracket (framing) and information pulses in an SSR Mode A or Mode C reply.

Collision avoidance logic. The sub-system or part of ACAS that analyses data relating to an intruder and own aircraft, decides whether or not advisories are appropriate and, if so, generates the advisories. It includes the following functions: range and altitude tracking, threat detection and RA generation. It excludes surveillance.

Collision risk. The expected number of mid-air aircraft accidents in a prescribed volume of airspace for a specific number of flight hours due to loss of planned separation.

Note — One collision is considered to produce two accidents.

Colour shifting ink. Inks changing their visual characteristic depending on the viewing angle and/or the quality of a stimulating (light) source.

COMAT. Operator material carried on an operator's aircraft for the operator's own purposes.

Combination criteria. Criteria in respect to azimuth and range coincidence with which a primary radar plot and an SSR plot must meet to be considered to have come from the same aircraft and therefore able to be combined.

Combined plot. A radar plot for which both PSR and SSR plots have been detected and found sufficiently adjacent to be combined to one plot message.

Combined vision system (CVS). A system to display images from a combination of an enhanced vision system (EVS) and a synthetic vision system (SVS).

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.

Commencement of journey. The point at which the person began his journey, without taking into account any airport at which he stopped in direct transit, either on a through-flight or a connecting flight, if he did not leave the direct transit area of the airport in question.

Commercial air transport flight see: commercial air transport operation

Commercial air transport operation. An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

Commissary supplies. Items, either disposable or intended for multiple use, that are used by the aircraft operator for provision of services during flights, in particular for catering, and for the comfort of passengers.

Common mark. A mark assigned by the International Civil Aviation Organization to the common mark registering authority registering aircraft of an international operating agency on other than a national basis.

Note— All aircraft of an international operating agency which are registered on other than a national basis will bear the same common mark.

Common mark registering authority. The authority maintaining the non- national register or, where appropriate, the part thereof, in which aircraft of an international operating agency are registered.

Common point. A point on the surface of the earth common to the tracks of two aircraft, used as a basis for the application of separation (e.g. significant point, waypoint, navigation aid, fix).

Communication centre. An aeronautical fixed station which relays or retransmits telecommunication traffic from (or to) a number of other aeronautical fixed stations directly connected to it.

Comparison. The process of comparing a biometric sample with a previously stored reference template or templates. See also *"One-to-many"* and *"One-to-one"*.

Competent authority. See: appropriate authority

Competency. A combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.

Competency. * A dimension of human performance that is used to reliably predict successful performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

Competency-based training and assessment. Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

Competency element. An action that constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.

Competency standard: A level of performance that is defined as acceptable when assessing whether or not competency has been achieved.

Competency unit. A discrete function consisting of a number of competency elements.

Compliance Checklist (CC). Assists the State in ascertaining the status of implementation of ICAO Standards and Recommended Practices (SARPs) and in identifying any difference that may exist between the national regulations and practices and the relevant provisions in the Annexes to the Convention.

Computer. A device which performs sequences of arithmetical and logical steps upon data without human intervention.

Note— When the word "computer" is used in this document it may denote a computer complex, which includes one or more computers and peripheral equipment.

Conditions. Anything that may qualify a specific environment in which performance will be demonstrated.

Cone of silence. A gap in coverage above a radar due to the limitations of the antenna performance at high elevation angles.

Conference communications. Communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously.

Configuration (as applied to the aeroplane). A particular combination of the positions of the moveable elements, such as wing flaps and landing gear, etc., that affect the aerodynamic characteristics of the aeroplane.

Configuration deviation list (CDL). A list established by the organization responsible for the type design with the approval of the State of Design which identifies any external parts of an aircraft type which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance correction.

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

Congested hostile environment. A hostile environment within a congested area.

Connection establishment delay: Connection establishment delay, as defined in ISO 8348, includes a component, attributable to the called subnetwork (SN) service user, which is the time between the SN-CONNECT indication and the SN-CONNECT response. This user component is due to actions outside the boundaries of the satellite subnetwork and is therefore excluded from the AMS(R)S specifications.

Consignment. One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.

Constant false alarm rate (CFAR). A thresholding technique used to reduce false alarms (noise, clutter, etc.) to a quasi-constant level. Also known as constant false alarm regulation.

Consultation. Discussion with a meteorologist or another qualified person of existing and/or expected meteorological conditions relating to flight operations; a discussion includes answers to questions.

Contact tracing. Contact tracing is the practice of identifying, notifying, and monitoring individuals who may have had close contact with or who have been exposed to, and possibly infected by, a person having a confirmed or probable case of an infectious disease as a means of controlling the spread of infection. The confirmed or potentially infected person's identity is not discussed with contacts, even if asked.

Contactless integrated circuit. An electronic microchip coupled to an aerial (antenna) which allows data to be communicated between the chip and an encoding/reading device without the need for a direct electrical connection.

Contaminated runway. A runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed in the runway surface condition descriptors.

Note.— Further information on runway surface condition descriptors can be found in the Annex 14, Volume I — Definitions.

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.

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

[The Definition will be applicable as from 26 November 2026.]

Continuing airworthiness records. Records which are related to the continuing airworthiness status of an aircraft, engine, propeller or associated part.

Continuing airworthiness records. Records which are related to the continuing airworthiness status of an aircraft, remote pilot station, engine, propeller or associated part.

[The Definition will be applicable as from 26 November 2026.]

Continuous descent final approach (CDFA). A technique, consistent with stabilized approach procedures, for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown; for the FAS of an NPA procedure followed by a circling approach, the CDFA technique applies until circling approach minima (circling OCA/H) or visual flight manoeuvre altitude/height are reached.

Contour line. A line on a map or chart connecting points of equal elevation.

Contributing factors. Actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

Control antenna. An SSR antenna having a polar diagram which is designed to "cover" the side lobes of the main interrogating antenna. It is used to radiate a control pulse which, if it exceeds in amplitude the associated interrogation signal at the input to the transponder, will cause the transponder to inhibit responses to the interrogation pulses. Modern SSR antennas have the control elements built into the main array. The control antenna is also known as the SLS (side-lobe suppression) antenna.

Control area (CTA). A controlled airspace extending upwards from a specified limit

above the earth.

Control motion noise (CMN). That portion of the guidance signal error which causes control surface, wheel and column motion and could affect aircraft attitude angle during coupled flight, but does not cause aircraft displacement from the desired course and/or glide path.

Controlled aerodrome. An aerodrome at which air traffic control service is provided to aerodrome traffic.

Note— The term "controlled aerodrome" indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists.

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 ATS airspace Classes A, B, C, D and E as described in Annex 11, 2.6.

Controlled flight. Any flight which is subject to an air traffic control clearance.

Controller-pilot data link communications (CPDLC). A means of communication between controller and pilot, using data link for ATC communications.

Control Number. A number assigned to a document at the time of its manufacture for record-keeping and security purposes.

Control pattern. A polar diagram of the control antenna. Modern integrated SSR antennas have a "modified cardioid" beam shape.

Control pulse. A pulse (P2 for Modes A and C, P5 for Mode S) transmitted by the ground equipment (SSR interrogator) in order to ensure side-lobe suppression.

Control tower. See Aerodrome control tower.

Control zone. A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

Co-pilot. A licensed pilot serving in any piloting capacity other than as pilot- in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction.

Controller pilot data link communications (CPDLC). A means of communication between controller and pilot, using data link for ATC communications.

Conventional aviation fuel. A petroleum-based drop-in aviation fuel.

Conversion process. A type of technology used to convert a feedstock into aviation alternative fuel.

Convolutional turbo codes (CTC): Type of forward error correction (FEC) code.

Coordination. The process by which two ACAS-equipped aircraft select compatible resolution advisories (RAs) by the exchange of resolution advisory complements (RACs).

Coordination interrogation. A Mode S interrogation (uplink transmission) radiated by ACAS II or III and containing a resolution message.

Coordination reply. A Mode S reply (downlink transmission) acknowledging the receipt of a coordination interrogation by the Mode S transponder that is part of an ACAS II or III installation.

Core satellite constellation(s). The core satellite constellations are GPS, and GLONASS, Galileo and BDS.

Corporate aviation. The non-commercial operation or use of aircraft by a company for the carriage of passengers or goods as an aid to the conduct of company business, flown by a professional pilot employed to fly the aircraft. (Note that corporate aviation is a subset of general aviation.)

Corporate aviation operation. The non-commercial operation or use of aircraft by a company for the carriage of passengers or goods as an aid to the conduct of company business, flown by a professional pilot(s) employed to fly the aircraft.

Corrective RA. A resolution advisory that advises the pilot to deviate from the current flight path.

Correlated tracks. Tracks which have been correlated with a flight plan (sometimes this term applies only to tracks for which the Mode A code has been correlated with a call-sign in the code/call-sign list, i.e. flight plan association).

Correlation criteria. A number of pulse repetition intervals over which range correlation of replies must be achieved in a sliding or moving window extractor before the presence (or tentative presence, subject to further tests) of a plot can be declared.

CORSIA eligible fuel. A CORSIA sustainable aviation fuel or a CORSIA lower carbon aviation fuel, which an operator may be used to reduce their offsetting requirements.

CORSIA lower carbon aviation fuel. A fossil-based aviation fuel that meets the CORSIA Sustainability Criteria under this Volume.

CORSIA sustainable aviation fuel. A renewable or waste-derived aviation fuel that meets the CORSIA Sustainability Criteria under this Volume.

Cosecant squared antenna pattern. An antenna pattern for which the gain is proportional to the square of the cosecant of the elevation angle. This results in an approximately constant signal, as a function of range, from an aircraft at constant flight level.

Coulomb (C). The quantity of electricity transported in 1 second by a current of 1 ampere.

Counterfeit. An unauthorized copy or reproduction of a genuine security document made by whatever means.

Country code. A two- or three-letter code as defined in ISO 3166-1, used to designate a document issuing authority or nationality of the document holder. Only three-letter codes are used in Doc 9303.

Course. The intended direction of travel of an aircraft, expressed in degrees from North (true, magnetic or grid).

Course line. The locus of points nearest to the runway centre line in any horizontal plane at which the DDM is zero.

Course sector. A sector in a horizontal plane containing the course line and limited by the loci of points nearest to the course line at which the DDM is 0.155.

CPDLC message. Information exchanged between an airborne system and its ground counterpart. A CPDLC message consists of a single message element or a combination of message elements conveyed in a single transmission by the initiator.

CPDLC message set. A list of standard message elements and free text message elements.

Credit. Recognition of alternative means or prior qualifications.

Crew member. A person assigned by an operator to duty on an aircraft during a flight duty period.

Criterion-referenced test. A test, the measurement of which is compared with an objective standard (and not against another measurement).

Critical elements (CEs). The eight critical elements of a safety oversight system encompass the whole spectrum of civil aviation activities. They are the building blocks upon which an effective safety oversight system is based. The level of effective implementation of the CEs is an indication of a State's capability for safety oversight.

Critical engine(s), Critical power unit(s). Any engine whose failure gives the most adverse effect on the aircraft characteristics relative to the case under consideration.

Note— On some aircraft there may be more than one equally critical engine. In this case, the expression "the critical engine" means one of those critical engines.

Cross-country. A flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures.

Cross-country flight. See cross-country.

Cross-crew qualification. A type rating qualification using a type rating transition course, for which a pilot receives training credit for the technical similarities and common operational and handling procedures of another aircraft type for which he is qualified.

Note – The training credit allows an approved reduction in the type rating course, compared with the type rating course used to qualify those pilots who do not receive such a credit.

Cross-track tolerance (XTT). A fix tolerance measured perpendicularly to the nominal track resulting from the airborne and ground equipment tolerances and the flight technical tolerance (FTT).

Cruise climb. An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

Cruise relief pilot. A flight crew member who is assigned to perform pilot tasks during cruise flight, to allow the pilot-in-command or a co-pilot to obtain planned rest.

Cruising level. A level maintained during a significant portion of a flight.

Cryptography. Science of transforming information into an enciphered, unintelligible form using an algorithm and a key.

Culture. All man-made features constructed on the surface of the Earth, such as cities, railways and canals.

Current data authority. The designated ground system through which a CPDLC dialogue between a pilot and a controller currently responsible for the flight is permitted to take place.

Current flight plan (CPL). The flight plan, including changes, if any, brought about by subsequent clearances.

Current slot: The slot in which a received transmission begins.

Cycle. The term “cycle” used in this chapter refers to one complete pass through the sequence of functions executed by ACAS II or ACAS III, nominally once a second.

Cyclic redundancy check (CRC). A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

D. The largest overall dimension of the helicopter when rotor(s) are turning measured from the most forward position of the main rotor tip path plane to the most rearward position of the tail rotor tip path plane or helicopter structure.

Design D. The D of the design helicopter.

D-value. The amount (positive or negative) by which the altitude (Z) of a point on an isobaric surface differs from the altitude (Zp) of the same isobaric surface in the ICAO Standard Atmosphere (i.e. D-value = Z - Zp).

Damp lease. A wet-leased aircraft that includes a cockpit crew but not cabin attendants.

Danger area. An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

Dangerous goods. Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions.

Note— The provisions of Annex 18 govern the international transport of dangerous goods by air including their classification.

Dangerous goods accident. An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property or environmental damage.

Dangerous goods incident. An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to constitute a dangerous goods incident.

Database. One or more files of data so structured that appropriate applications may draw from the files and update them.

Note— This primarily refers to data stored electronically and accessed by computer rather than in files of physical records.

Database. Any storage of biometric templates and related end user information in an electronic format.

Data accuracy. A degree of conformance between the estimated or measured value and the true value.

Data circuit-terminating equipment (DCE): A DCE is a network provider equipment used to facilitate communications between DTEs.

Data completeness. The degree of confidence that all of the data needed to support the intended use is provided.

Data convention. An agreed set of rules governing the manner or sequence in which a set of data may be combined into a meaningful communication.

Data Encryption Standard (DES). A method of data encryption using a specific algorithm.

Data Features. A data feature involves the incorporation of encoded information into the document data or image structure, usually into the personalization data, especially the portrait.

Data format. A structure of data elements, records and files arranged to meet standards, specifications or data quality requirements.

Data integrity (assurance level). A degree of assurance that an aeronautical data and its value has not been lost or altered since the origination or authorized amendment.

Data link-automatic terminal information service; D-ATIS The provision of ATIS via data link.

Data link communications. A form of communication intended for the exchange of messages via a data link.

Data link entity (DLE): A protocol state machine capable of setting up and managing a single data link connection.

Data link flight information services (D-FIS). The provision of FIS via data link.

Data link initiation capability (DLIC). A data link application that provides the ability to exchange addresses, names and version numbers necessary to initiate data link applications.

Data link service (DLS) sublayer: The sublayer that resides above MAC sublayer. For VLD Mode 4, the DLS sublayer resides above the VSS sublayer. The DLS manages the transmit queue, creates and destroys DLEs for connection oriented communications, provides facilities for the LME to manage the DLS, and provides facilities for connectionless communications.

Data phase reversal. A 180° phase shift which precedes a chip in a Mode S interrogation and is used to encode a binary ONE. The absence of the phase reversal encodes a binary ZERO.

Data processing. A systematic sequence of operations performed on data.

Note— Examples of operations are the merging, sorting, computing or any other transformation or rearrangement with the object of extracting or revising information, or of altering the representation of information.

Data product. Data set or data set series that conforms to a data product specification as per ISO 19131

Data product specification. Detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party in accordance with ISO 19131.

Note— A data product specification provides a description of the universe of discourse and a specification for mapping the universe of discourse to a data set. It may be used for production, sales, end-use or other purpose.

Data quality. A degree or level of confidence that the data provided meet the requirements of the data user in terms of accuracy, resolution and integrity (or equivalent assurance level)), traceability, timeliness, completeness and format.

Data resolution. A number of units or digits to which a measured or calculated value is expressed and used.

Data set. Identifiable collection of data in accordance ISO 19101.

Data set series. Collection of data sets sharing the same product specification as per ISO 19115.

Data storage (Storage). A means of storing data on a document such as an MRP. Doc 9303, Part 1, Volume 2 specifies that the data storage on an ePassport will be on a contactless integrated circuit.

Data terminal equipment (DTE): A DTE in an endpoint of a subnetwork connection.

Data transfer delay (95th percentile): The 95th percentile of the statistical distribution of delays for which transit delay is the average.

Data timeliness. The degree of confidence that the data is applicable to the period of its intended use.

Data traceability. The degree that a system or a data product can provide a record of the changes made to that product and thereby enable an audit trail to be followed from the end-user to the originator.

Data transit delay: In accordance with ISO 8348, the average value of the statistical distribution of data delays. This delay represents the subnetwork delay and does not include the connection establishment delay.

Data signaling rate: Data signaling rate refers to the passage of information per unit of time, and is expressed in bits/second. Data signaling rate is given by the formula:

$$\sum_{i=1}^{i=m} \frac{1}{T_i} \log_2 n_i$$

where m is the number of parallel channels, Ti is the minimum interval for the ith channel expressed in seconds, ni is the number of significant conditions of the modulation in the ith channel.

Note 1.—

a) For a single channel (serial transmission) it reduces to (1/T)log2n; with a two-condition modulation (n = 2), it is 1/T.

b) For a parallel transmission with equal minimum intervals and equal number of significant conditions on each channel, it is m(1/T)log2n (m(1/T) in case of a two-condition modulation).

Note 2.— In the above definition, the term “parallel channels” is interpreted to mean: channels, each of which carries an integral part of an information unit, e.g. the parallel transmission of bits forming a character. In the case of a circuit comprising a number of channels, each of which carries information “independently”, with the sole purpose of increasing the traffic handling capacity, these channels are not to be regarded as parallel channels in the context of this definition.

Date of manufacture. The date of issue of the document attesting that the individual

aircraft or engine as appropriate conforms to the requirements of the type or the date of an analogous document.

Datum. Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities as per ISO 19104.

Datum crossing point (DCP). The DCP is a point on the glide path directly above the LTP or FTP at a height specified by the RDH.

DDM — Difference in depth of modulation. The percentage modulation depth of the larger signal minus the percentage modulation depth of the smaller signal, divided by 100.

Deadheading crew. A crew member positioned by the operator in flight or by surface transport.

Dead time. A period of time during which an SSR transponder is inhibited from receiving signals after a valid interrogation is received and a reply transmitted. The term is also used to describe the time after the normal range for returns and before the next transmission from an interrogator or from a primary radar system.

Dead reckoning (DR) navigation. The estimating or determining of position by advancing an earlier known position by the application of direction, time and speed data.

Decision altitude (DA) or decision height (DH). A specified altitude or height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

Note 1— Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

Note 2— The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.

Note 3— For convenience where both expressions are used they may be written in the form “decision altitude/height” and abbreviated “DA/H”.

Declarant. Any person who makes a goods declaration or in whose name such a declaration is made.

Declared capacity. A measure of the ability of the ATC system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, ATC unit configuration, staff and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace.

Declared distances. - heliports

(a) ***Take-off run available (TORA).*** The length of runway declared available and suitable for the ground run of an aeroplane taking off.

(b) ***Take-off distance available (TODA).*** The length of the take-off run available plus the length of the clearway, if provided.

(c) ***Accelerate-stop distance available (ASDA).*** The length of the take- off run available plus the length of the stopway, if provided.

(d) ***Landing distance available (LDA).*** The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

Declared temperature. A temperature selected in such a way that when used for performance purposes, over a series of operations, the average level of safety is not less than would be obtained by using official forecast temperatures.

Decryption. The act of restoring an encrypted file to its original state through the use of a key.

Dedicated flight check aircraft. An aircraft used occasionally in operational evaluations of radar systems. This aircraft will fly routes, etc., not normally covered by regular traffic and allow a complete operational evaluation through the specified coverage of the radar under test.

Deficiency. A condition where the State's safety oversight system does not meet a Protocol Question (PQ) used to measure the effective implementation of the eight critical elements. One or more related deficiencies may be grouped together to identify a finding. A PQ marked as "not satisfactory" may also be referred to as a deficiency.

Defined point after take-off (DPATO). The point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

Note— For RPAS, defined points apply to remotely piloted helicopters operating in performance Class 2 only.

Defined point before landing (DPBL). The point, within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may *be required.*

Note— For RPAS, defined points apply to remotely piloted helicopters operating in performance Class 2 only.

Defruiter. Equipment used to eliminate unsynchronized replies (fruit) in an SSR ground system.

Defruiting. A process by which aircraft replies accepted by the interrogator- responsor are tested by means of storage and a comparator for synchronism with the interrogation-repetition frequency. Only replies which are in synchronism (correlate on a repeated basis in range) will be output from the defruiter. Other replies are rejected as "fruit" or

false.

Degarbling. A process of separating (and possibly validating) garbled SSR replies.

Degree Celsius (°C). The special name for the unit kelvin for use in stating values of Celsius temperature

Degree of standardized test distortion: The degree of distortion of the restitution measured during a specific period of time when the modulation is perfect and corresponds to a specific text.

De-icing/anti-icing facility. A facility where frost, ice or snow is removed (de-icing) from the aeroplane to provide clean surfaces, and/or where clean surfaces of the aeroplane receive protection (anti-icing) against the formation of frost or ice and accumulation of snow or slush for a limited period of time.

Note— Further guidance is given in the Manual of Aircraft Ground De-icing/Anti-icing Operations (Doc 9640).

De-icing/anti-icing pad. An area comprising an inner area for the parking of an aeroplane to receive de-icing/anti-icing treatment and an outer area for the manoeuvring of two or more mobile de-icing/anti-icing equipment.

Deleterious effects. Effects that are capable of posing a hazard to the health of passengers, personnel, live cargo or on the structure of the aircraft.

Delta theta. A number of azimuth count pulses (ACPs) as measured from the plot leading edge to the plot trailing edge in a sliding window plot extractor. Also known as azimuth extension or plot runlength.

Dependent parallel approaches. Simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are prescribed.

Deportation order. A written order, issued by the competent authorities of a State and served upon a deportee, directing him to leave that State.

Deportee. A person who had legally been admitted to a State by its authorities or who had entered a State illegally, and who at some later time is formally ordered by the competent authorities to leave that State.

Derivative version. An aircraft gas turbine engine of the same generic family as an originally type-certificated engine and having features which retain the basic core engine and combustor design of the original model and for which other factors, as judged by the certificating authority, have not changed.

Note.— There is a difference between the definition of “derived version of an aeroplane” as used in Annex 16, Volume I – Aircraft Noise, which refers to aeroplane design changes that may affect aeroplane noise characteristics, and the definition of “derivative version” as used in this Volume, which refers to engine design changes that may affect emissions characteristics..

Derived version of a CO2-certified aeroplane. An aeroplane which incorporates a change in the type design that either increases its maximum take-off mass, or that increases its CO2 emissions evaluation metric value by more than:

a) 1.35 per cent at a maximum take-off mass of 5 700 kg, decreasing linearly to;

b) 0.75 per cent at a maximum take-off mass of 60 000 kg, decreasing linearly to;

c) 0.70 per cent at a maximum take-off mass of 600 000 kg; and

d) a constant 0.70 per cent at maximum take-off masses greater than 600 000 kg.

Note.— In some States, where the certificating authority finds that the proposed change in design, configuration, power or mass is so extensive that a substantially complete investigation of compliance with the applicable airworthiness regulations is required, the aeroplane requires a new Type Certificate.

Derived version of a non-CO2-certified aeroplane. An individual aeroplane that conforms to an existing Type Certificate, but which is not certified to Annex 16, Volume III, and to which a change in the type design is made prior to the issuance of the aeroplane's first certificate of airworthiness that increases its CO2 emissions evaluation metric value by more than 1.5 per cent or is considered to be a significant CO2 change.

Derived version of a helicopter. A helicopter which, from the point of view of airworthiness, is similar to the noise certificated prototype but incorporates changes in type design which may affect its noise characteristics adversely.

Note 1— In applying the Standards of this Annex, a helicopter that is based on an existing prototype but which is considered by the certificating authority to be a new type design for airworthiness purposes shall nevertheless be considered as a derived version if the noise source characteristics are judged by the certificating authority to be the same as the prototype.

Note 2— "Adversely" refers to an increase of more than 0.30 EPNdB in any one of the noise certification levels for helicopters certificated according to Chapter 8 and 0.30 dB(A) in the certification level for helicopters certificated according to Chapter 11 of annex 16

Derived version of an aeroplane. An aeroplane which, from the point of view of airworthiness, is similar to the noise certificated prototype but incorporates changes in type design which may affect its noise characteristics adversely.

Note 1— Where the certificating authority finds that the proposed change in design, configuration, power or mass is so extensive that a substantially new investigation of compliance with the applicable airworthiness regulations is required, the aeroplane should be considered to be a new type design rather than a derived version.

Note 2— "Adversely" refers to an increase of more than 0.10 dB in any one of the noise certification levels unless the cumulative effects of changes in type design are tracked by an approved procedure in

which case “adversely” refers to a cumulative increase in the noise level in any one of the noise certification levels of more than 0.30 dB or the margin of compliance, whichever is smaller.

Descend RA. A positive RA recommending a descent but not an increased descent.

Descent fix. A fix established in a precision approach at the FAP to eliminate certain obstacles before the FAP, which would otherwise have to be considered for obstacle clearance purposes.

Design landing mass. The maximum mass of the aircraft at which, for structural design purposes, it is assumed that it will be planned to land.

Design take-off mass. The maximum mass at which the aircraft, for structural design purposes, is assumed to be planned to be at the start of the take-off run.

Design taxiing mass. The maximum mass of the aircraft at which structural provision is made for load liable to occur during use of the aircraft on the ground prior to the start of take-off.

Designated operational coverage (DOC) area. The area in which a particular service is provided and in which the service is afforded frequency protection.

Note.— This area may, after proper coordination to ensure frequency protection, extend to areas outside the allotment areas contained in Appendix S27 to the Radio Regulations.

Designated postal operator. Any governmental or non-governmental entity officially designated by a Universal Postal Union (UPU) member country to operate postal services and to fulfil the related obligations arising from the acts of the UPU Convention on its territory.

Detect and avoid. The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.

DETRESFA. The code word used to designate a distress phase.

Difference pattern. A receive (I 090 MHz) characteristic of a monopulse SSR antenna, obtained by connecting in antiphase the signals (replies) received by two partial antennas. The difference pattern has a minimum in the main radiation direction of the antenna and an amplitude and phase characteristic which varies as a function of angle of arrival of the received signal. Used in conjunction with the sum output of the antenna, it enables the off-boresight angle to be found.

Diffractive Optically Variable Device. A security feature containing a holographic or equivalent image within its construction, the image changing its appearance with angle of viewing or illumination.

Diffractive Optically Variable Device (DOVID) Laminate or Overlay. A laminate or overlay containing a DOVID either covering a whole area or located so as to protect key data on the document.

Digital Elevation Model (DEM). The representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum.

Note— Digital Terrain Model (DTM) is sometimes referred to as DEM.

Digital Signature Algorithm (DSA). Asymmetric algorithm published by the NIST as a federal information processing standard (FIPS) in 1991 and revised in 1993. This algorithm only provides digital signature function.

Digital Signature Scheme (DSS). A standard for digital signing, including the DSA, approved by the NIST, defined in NIST FIPS PUB 186, published May 1994 by the US Department of Commerce.

Digital terrain model see: digital elevation model

Direct flight see: through-flight

Direct link service (DLS). A data communications service which makes no attempt to automatically correct errors, detected or undetected, at the link layer of the air-ground communications path. (Error control may be effected by end-user systems)

Digital Watermark See: Steganography

Digitized video. A binary encoded signal, the value of which is equivalent to the value of the originating analogue signal.

Director. The senior official who is the head of a State's aviation administration and licensing authority.

Directory/Public Key Directory (PKD). A repository for storing information. Typically, a directory for a particular PKI is a repository for the public key encryption certificates issued by that PKI's Certification Authority, along with other client information. The directory also keeps cross-certificates, Certification Revocation Lists, and Authority Revocation Lists.

Directory service (DIR): A service, based on the ITU-T X.500 series of recommendations, providing access to and management of structured information relevant to the operation of the ATN and its users.

Direct transit area. A special area established in an international airport, approved by the public authorities concerned and under their direct supervision or control, where passengers can stay during transit or transfer without applying for entry to the State.

Direct transit arrangements. Special arrangements approved by the public authorities concerned by which traffic which is pausing briefly in its passage through the Contracting State may remain under their direct control.

Direct visual segment (Direct-VS). The portion of flight that connects the PinS to the landing location; this can be either direct to the landing location or via a descent point (DP) where a limited track change may occur.

Disabled person. see: person with disabilities

Discrete code. A four-digit SSR code with the last two digits not being “00”.

Discrete source damage. Structural damage of the aeroplane that is likely to result from: impact with a bird, uncontained fan blade failure, uncontained engine failure, uncontained high-energy rotating machinery failure or similar causes.

Disembarkation. The leaving of an aircraft after a landing, except by crew or passengers continuing on the next stage of the same through-flight.

Disinfection. The procedure whereby health measures are taken to control or kill infectious agents on a human or animal body, in or on affected parts of aircraft, baggage, cargo, goods or containers, as required, by direct exposure to chemical or physical agents.

Disinsection. The procedure whereby health measures are taken to control or kill insects present in aircraft, baggage, cargo, containers, goods and mail.

Dispatch Deviation Procedures Guide (DDPG). Manual to identify any procedure to dispatch an aircraft with allowable systems/components inoperative or missing.

Note— Large aircraft manufacturers may choose to produce operating and maintenance procedures in documents such as Dispatch Deviation Procedure Guides, for use by operators.

Displaced runway threshold. see: displaced threshold

Displaced threshold. A threshold not located at the extremity of a runway.

Displacement sensitivity (localizer). The ratio of measured DDM to the corresponding lateral displacement from the appropriate reference line.

Display (analogue). A display in which the raw video (PSR or SSR) is normally presented on the radar screen in the form of a blip. The update of the display is synchronized with the radar antenna turning rate. The preceding processing is normally analogue (i.e. no digital messages). Display (synthetic). A display in which information (radar, map, labels, etc.) is based on digital messages. The displayed radar data are not normally in "real time" due to digital processing delays.

Distance DR. DR is the horizontal distance that the helicopter has travelled from the end of the take-off distance available.

Distress phase. A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

Disruptive passenger. A passenger who fails to respect the rules of conduct at an airport or on board an aircraft or to follow the instructions of the airport staff or crew members and thereby disturbs the good order and discipline at an airport or on board the aircraft.

Ditching. The forced landing of an aircraft on water.

DME dead time. A period immediately following the decoding of a valid interrogation during which a received interrogation will not cause a reply to be generated.

Note.— Dead time is intended to prevent the transponder from replying to echoes resulting from multipath effects.

DME/N. Distance measuring equipment, primarily serving operational needs of en-route or TMA navigation, where the "N" stands for narrow spectrum characteristics.

DME/P. The distance measuring element of the MLS, where the "P" stands for precise distance measurement. The spectrum characteristics are those of DME/N.

DME distance. The line of sight distance (slant range) from the source of a DME signal to the receiving antenna.

Document blanks. A document blank is a travel document that does not contain the biographical data personalized details of a document holder. Typically, document blanks are the base stock from which personalized travel documents are created.

Document number. A number that uniquely identifies a document. It is recommended that the document number and the control number be identical.

Document signer. A body which issues a biometric document and certifies that the data stored on the document is genuine in a way which will enable detection of fraudulent alteration.

Domain. A set of elements of a discipline that are studied in the qualification training.

Doppler shift. The frequency shift observed at a receiver due to any relative motion between transmitter and receiver.

Doppler speed. A radial velocity of a target (aircraft) or of a clutter source (false alarm) measured from its Doppler frequency shift in a received radar reflection.

Double channel simplex. Simplex using two frequency channels, one in each direction.

Note— This method was sometimes referred to as crossband.

Double curvature. A PSR reflector design in which the upper and lower sections of the antenna have a different curvature. This technique is used to optimize the vertical radiation patterns for high beam (short range) and low beam (long range) performance.

Downstream clearance. A clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft.

Downstream data authority. A designated ground system, different from the current data authority, through which the pilot can contact an appropriate ATC unit for the purposes of receiving a downstream clearance

DPSK. Binary differential phase shift keying (DPSK) modulation which uses phase reversals preceding chips to denote binary ONEs and the absence of a phase reversal to

denote binary ZEROs. .

Drift up. see: cruise climb

Dry lease. A lease where the aircraft is provided without crew.

Dry runway. A runway is considered dry if its surface is free of visible moisture and not contaminated within the area intended to be used.

Dual instruction time. Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft, or from a properly authorized remote pilot using the remote pilot station during a remotely piloted aircraft flight.

Duplex. A method in which telecommunication between two stations can take place in both directions simultaneously.

Duplex design. A design made up of an interlocking pattern of small irregular shapes, printed in two or more colours and requiring very close register printing in order to preserve the integrity of the image.

Duty. Any task that flight or cabin crew members are required by the operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue.

Note— For RPAS, this includes remote flight crew members.

Duty period. A period which starts when a flight or cabin crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties.

Note— For RPAS, this includes remote flight crew members and other remote crew members.

Duty period. The time during which a flight crew member carries out any duty at the behest of the flight crew member's employer.

Dynamic load-bearing surface. A surface capable of supporting the loads generated by a helicopter conducting an emergency touchdown on it.

Eavesdropping. The unauthorized interception of data communication.

EDTO — configuration, maintenance and procedures (CMP) requirements. The particular aeroplane configuration minimum requirements including any special inspection, hardware life limits, master minimum equipment list (MMEL) constraints and maintenance practices found necessary to establish the suitability of an airframe-engine combination for extended diversion time operation.

EDTO critical fuel. The fuel quantity necessary to fly to an en-route alternate aerodrome considering, at the most critical point on the route, the most limiting system failure.

Note— Attachment D of Annex 6 Part 1 contains guidance on EDTO critical fuel scenarios.

Note.— Guidance on EDTO critical fuel scenarios is contained in the Extended Diversion Time Operations (EDTO) Manual (Doc 10085).

EDTO significant system. An aeroplane system whose failure or degradation could adversely affect the safety particular to an EDTO flight, or whose continued functioning is specifically important to the safe flight and landing of an aeroplane during an EDTO diversion.

Effective acceptance bandwidth. The range of frequencies with respect to the assigned frequency for which reception is assured when all receiver tolerances have been taken into account.

Effective adjacent channel rejection. The rejection that is obtained at the appropriate adjacent channel frequency when all relevant receiver tolerances have been taken into account.

Effective coverage. The area surrounding an NDB within which bearings can be obtained with an accuracy sufficient for the nature of the operation concerned.

Effective intensity. The effective intensity of a flashing light is equal to the intensity of a fixed light of the same colour which will produce the same visual range under identical conditions of observation.

Effective margin: That margin of an individual apparatus which could be measured under actual operating conditions.

Effective reading zone (ERZ): A fixed-dimensional area, common to all MRTDs, in which the machine readable data in the MRZ can be read by document readers.

eFPL. The symbol used to designate a filed flight plan exchanged using FF-ICE services.

Electronic aeronautical chart display. An electronic device by which flight crews are enabled to execute, in a convenient and timely manner, route planning, route monitoring and navigation by displaying required information.

Electronic flight bag (EFB). An electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties.

Electronic Travel Systems (ETS). The automated process for the lodgement, acceptance and verification of a passenger's authorization to travel to a State, in lieu of the standard counterfoil paper visa.

Electronically enabled td1 or td2 (e-td1 or e-td2). A td1 or td2 conforming to the specifications of Doc 9303, Part 3, Volume 1, that additionally incorporates a contactless integrated circuit including the capability of biometric identification of the td1 or td2 holder, in accordance with the specifications of Doc 9303, Part 3, Volume 2.

Elevated heliport. A heliport located on a raised structure on land.

Elevation. The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

Ellipsoid height (Geodetic height). The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question

Embarkation. The boarding of an aircraft for the purpose of commencing a flight, except by such crew or passengers as have embarked on a previous stage of the same through-flight.

Embedded image. An image or information encoded or concealed within a primary visual image. Also see steganography.

Emergency locator transmitter (ELT). A generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following:

Automatic fixed ELT (ELT(AF)). An automatically activated ELT which is permanently attached to an aircraft.

Automatic portable ELT (ELT(AP)). An automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.

Automatic deployable ELT (ELT(AD)). An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.

Survival ELT (ELT(S)). An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

eFPL. The symbol used to designate a filed flight plan exchanged using FF-ICE services.

Emergency phase. A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

eMRTD. An MRTD (passport, visa or card) that has a contactless integrated circuit embedded in it and the capability of being used for identification of the MRTD holder in accordance with the standards specified in the relevant Part of Doc 9303 — Machine Readable Travel Documents.

End-to-end. Pertaining or relating to an entire communication path, typically from (1) the interface between the information source and the communication system at the transmitting end to (2) the interface between the communication system and the information user or processor or application at the receiving end.

Encryption. The act of disguising information through the use of a key so that it cannot be understood by an unauthorized person.

End-user. An ultimate source and/or consumer of information.

End User. A person who interacts with a biometric system to enroll or have his1 identity checked.

Energy per symbol to noise density ratio (Es/No). The ratio of the average energy

transmitted per channel symbol to the average noise power in a 1 Hz bandwidth, usually expressed in dB. For A-BPSK and A-QPSK, one channel symbol refers to one channel bit.

Engine. A unit used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for functioning and control, but excludes the propeller/rotors (if applicable).

Enhanced vision system (EVS). A system to display electronic real-time images of the external scene achieved through the use of image sensors.

Note.— EVS does not include night vision imaging systems (NVIS).

En-route phase. That part of the flight from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

Note— Where adequate obstacle clearance cannot be guaranteed visually, flights must be planned to ensure that obstacles can be cleared by an appropriate margin. In the event of failure of the critical engine, operators may need to adopt alternative procedures.

En-route radar. A surveillance radar for the traffic passing through the area of control. Typically, the range of such a radar is between 240 km (150 NM) and 370 km (200 NM) and the information renewal rate for a mechanically rotating antenna is 8 to 12 seconds.

Enrolee. A person applying for an eMRTD.

Enrollment. The process of collecting biometric samples from a person and the subsequent preparation and storage of biometric reference templates representing that person's identity.

Enrollee. A human being, i.e. natural person, assigned an MRTD by an issuing State or organization.

Environmental Standards. The specifications defined in Annex 16 — Environmental Protection for the certification of aircraft noise and engine smoke and gaseous emissions, including the standards for the prevention of intentional fuel venting into the atmosphere.

ePassport: A machine readable passport (MRP) containing a contactless Integrated Circuit (IC) chip within which is stored data from the MRP data page, a biometric measure of the passport holder, and a security object to protect the data with PKI cryptographic technology, and which conforms to the specifications of Doc 9303, Part 1.

Equipment. Portion of a system that performs a function that contributes to a systems output(s).

Equivalent isotropically radiated power (e.i.r.p.). The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (absolute or isotropic gain).

Equivalent level of safety. As used in type certification, a finding where literal

compliance with a specific airworthiness requirement cannot be demonstrated but compensating factors exist in the type design that can be shown to provide a level of safety equivalent to that intended by the certification basis.

Equivalent procedure. An equivalent procedure is a test or analysis procedure which, while differing from the one specified in Annex 16, Volume II, in the technical judgement of the certificating authority, yields effectively the same emissions levels as the specified procedure.

Note.— Some equivalent procedures are documented in the Environmental Technical Manual (Doc 9501), Volume II — Procedures for the Emissions Certification of Aircraft Engines. All equivalent procedures and their use are subject to the approval of the certificating authority.

Equivalent procedure. A test or analysis procedure which, while differing from the ones specified in this volume of Annex 16, in the technical judgement of the certificating authority yields effectively the same CO2 emissions evaluation metric value as the specified procedure.

[Definition as per Annex 16, Volume III]

ERP. Effective radiated power (ERP) is the transmitted power enhanced by the gain of the antenna less the losses in cables, rotary joints, etc.

Error. An action or inaction by an operational person that leads to deviations from organizational or the operational person's intentions or expectations.

Note— See Chapter 1 of Annex 19 — Safety Management for a definition of operational personnel.

Error management. The process of detecting errors and responding to them with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired states.

Note— See Chapter 6 of Part II, Section 1 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and Circular 314 — Threat and Error Management (TEM) in Air Traffic Control for a description of undesired states.

Escort. An individual authorized by a Contracting State or an aircraft operator to accompany inadmissible persons or deportees being removed from that Contracting State.

Essential radio navigation service. A radio navigation service whose disruption has a significant impact on operations in the affected airspace or aerodrome.

Established track. A track generated by ACAS air-air surveillance that is treated as the track of an actual aircraft.

Estimated elapsed time. The estimated time required to proceed from one significant point to another.

Estimated off-block time. The estimated time at which the aircraft will commence movement associated with departure.

Estimated time of arrival. For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

European GNSS navigation overlay service (EGNOS). A satellite-based augmentation system providing navigation service meeting Annex 10 requirements that provides navigation service in the European Region.

Evaluation Assurance Level (EAL). An assurance requirement as defined by Common Criteria, an international standard in effect since 1999. The increasing assurance levels define increasing assurance requirements in computer systems.

Event. A combination of a task or a sub-task and the conditions under which the task or sub-task is to be performed.

Exception. A provision in this Annex which excludes a specific item of dangerous goods from the requirements normally applicable to that item.

Exemption. An authorization, other than an approval, granted by an appropriate national authority providing relief from the provisions of the Technical Instructions.

Exhaust nozzle. In the exhaust emissions sampling of gas turbine engines where the jet effluxes are not mixed (as in some turbofan engines for example) the nozzle considered is that for the gas generator (core) flow only. Where, however, the jet efflux is mixed the nozzle considered is the total exit nozzle.

Expected. Used in relation to various aspects of performance (e.g. rate or gradient of climb), this term means the standard performance for the type, in the relevant conditions (e.g. mass, altitude and temperature).

Expected approach time. The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing.

Note— The actual time of leaving the holding fix will depend upon the approach clearance.

Extended diversion time operations (EDTO). Any operation by an aeroplane with two or more turbine engines where the diversion time to an en-route alternate aerodrome is greater than the threshold time established by the State of the Operator.

Extended flight over water. A flight operated over water at a distance of more than 93 km (50 NM), or 30 minutes at normal cruising speed, whichever is the lesser, away from land suitable for making an emergency landing.

Extended Golay code: An error correction code capable of correcting multiple bit errors.

Extended hybrid surveillance. The process of using qualified ADS-B airborne position messages via 1 090 MHz extended squitter without validating 1 090 extended squitter data for the track by ACAS active interrogations.

Extended range operation. Any flight by an aeroplane with two turbine engines where the flight time at the one engine inoperative cruise speed (in ISA and still air conditions), from a point on the route to an adequate alternate aerodrome, is greater than the threshold time approved by the State of the Operator.

Extended range operation by twin-engined aeroplane. see: extended range operation

Extended twin-engine operation. see: extended range operation

External equipment (helicopter). Any instrument, mechanism, part, apparatus, appurtenance, or accessory that is attached to or extends from the helicopter exterior but is not used nor is intended to be used for operating or controlling a helicopter in flight and is not part of an airframe or engine.

Extraction. The process of converting a captured biometric sample into biometric data so that it can be compared to a reference template.

Facilitation. The efficient management of a necessary control process, with the objective to expedite clearance of persons or goods and prevent unnecessary operational delays.

Facility Performance Category I — ILS. An ILS which provides guidance information from the coverage limit of the ILS to the point at which the localizer course line intersects the ILS glide path at a height of 30 m (100 ft) or less above the horizontal plane containing the threshold.

Note.— The lower limit is set to 30 m (100 ft) below the minimum Category I decision height (DH).

Facility Performance Category II — ILS. An ILS which provides guidance information from the coverage limit of the ILS to the point at which the localizer course line intersects the ILS glide path at a height of 15 m (50 ft) or less above the horizontal plane containing the threshold.

Note.— The lower limit is set to 15 m (50 ft) below the minimum Category II decision height (DH).

Facility Performance Category III — ILS. An ILS which, with the aid of ancillary equipment where necessary, provides guidance information from the coverage limit of the facility to, and along, the surface of the runway.

Factor of safety. A design factor used to provide for the possibility of loads greater than those assumed, and for uncertainties in design and fabrication.

Failure condition. The effect on the aircraft and its occupants, both direct and consequential, caused or contributed to by one or more failures, considering relevant adverse operational or environmental conditions.

Failure to acquire. The failure of a biometric system to obtain the necessary biometric to

enroll a person.

Failure to enroll. The failure of a biometric system to enroll a person.

False acceptance. When a biometric system incorrectly identifies an individual or incorrectly verifies an impostor against a claimed identity.

False acceptance rate/FAR. The probability that a biometric system will incorrectly identify an individual or will fail to reject an impostor. The rate given normally assumes passive impostor attempts. The false acceptance rate may be estimated as FAR = NFA / NIIA or FAR = NFA / NIVA where FAR is the false acceptance rate, NFA is the number of false acceptances, NIIA is the number of impostor identification attempts, and NIVA is the number of impostor verification attempts.

False match rate Alternative to "false acceptance rate"; used to avoid confusion in applications that reject the claimant if his biometric data matches that of an enrollee. In such applications, the concepts of acceptance and rejection are reversed, thus reversing the meaning of "false acceptance" and "false rejection".

False non-match rate Alternative to "false rejection rate"; used to avoid confusion in applications that reject the claimant if his biometric data matches that of an enrollee. In such applications, the concepts of acceptance and rejection are reversed, thus reversing the meaning of "false acceptance" and "false rejection".

False plot. A radar plot report (PSR, SSR or combined plot) which does not correspond to the actual position of a real aircraft (target), within certain limits.

False rejection. When a biometric system fails to identify an enrollee or fails to verify the legitimate claimed identity of an enrollee.

False rejection rate/FRR. The probability that a biometric system will fail to identify an enrollee or verify the legitimate claimed identity of an enrollee. The false rejection rate may be estimated as follows: FRR = NFR / NEIA or FRR = NFR / NEVA where FRR is the false rejection rate, NFR is the number of false rejections, NEIA is the number of enrollee identification attempts, and NEVA is the number of enrollee verification attempts. This estimate assumes that the enrollee identification/verification attempts are representative of those for the whole population of enrollees. The false rejection rate normally excludes "failure to acquire" errors.

Fan marker beacon. A type of radio beacon, the emissions of which radiate in a vertical fan-shaped pattern.

Far field monitor (FFM). See remote field monitor.

Farad (F). The capacitance of a capacitor between the plates of which there appears a difference of potential of 1 volt when it is charged by a quantity of electricity equal to 1 coulomb

Fatigue. A physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, and/or workload (mental and/or physical activity) that can impair a person's alertness and ability to perform safety-related operational duties.

Fatigue Risk Management System (FRMS). A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.

FDM. see: flight data analysis

Feature. Abstraction of real world phenomena as per ISO 19101

Feature attribute. Characteristic of a feature as per ISO 19101

Note— A feature attribute has a name, a data type and a value domain associated with it.

Feature operation. Operation that every instance of a feature type may perform as per ISO 19110

Note— An operation upon the feature type dam is to raise the dam. The result of this operation is to raise the level of water in the reservoir.

Feature relationship. Relationship that links instances of one feature type with instances of the same or a different feature type as per ISO 19101

Feature type. Class of real world phenomena with common properties as per ISO 19110

Note— In a feature catalogue, the basic level of classification is the feature type.

Feedstock. A type of unprocessed raw material used for the production of aviation alternative fuel.

Feet. see: foot

Fibres. Small, thread-like particles embedded in a substrate during manufacture for security purposes.

Fictitious threshold point (FTP). The FTP is a point over which the final approach segment path passes at a relative height specified by the reference datum height. It is defined by the WGS-84 latitude, longitude and ellipsoid height. The FTP replaces the LTP when the final approach course is not aligned with the runway extended centre line or when the threshold is displaced from the actual runway threshold. For non-aligned approaches the FTP lies on the intersection of the perpendicular from the FAS to the runway threshold. The FTP elevation is the same as the actual runway threshold elevation.

Field: Specified space for an individual data element within a zone.

Filed flight plan (FPL or eFPL). The latest flight plan as submitted by the pilot, an operator or a designated representative for use by ATS units.

Note.— The FPL denotes a filed flight plan exchanged using aeronautical

fixed service while eFPL denotes a filed flight plan exchanged using FF-ICE services. The eFPL allows for the exchange of additional information not contained within the FPL.

Final approach. That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,

(a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified;

(b) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:

(1) a landing can be made; or

(2) a missed approach procedure is initiated

Final approach and take-off area (FATO). A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available

Final approach fix or point; FAF That fix or point of an instrument approach procedure where the final approach segment commences.

Final approach (FA) mode. The condition of DME/P operation which supports flight operators in the final approach and runway regions.

Final approach segment. That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

Final approach segment (FAS) data block. The set of parameters to identify a single precision approach or APV and define its associated approach path.

Final approach track. The flight track in the final approach segment that is normally aligned with the runway centre line. For offset final approach segments, the final approach track is aligned with the orientation of the FTP and the FPAP.

Financial or capital lease. A lease used by air operators to avoid the otherwise substantial capital outlays/debt required in purchasing aircraft directly from the manufacturer, or to reduce taxation or other costs.

Note— For example, an air operator may sell all or part of its fleet to a bank or other financial institution and then lease the aircraft back. Financial leases are long-term arrangements that give the outward appearance of ownership, e.g. the aircraft bear the air operator's name/logo and are frequently registered in the air operator's State.

Finding and Recommendation (F&R). A finding is generated as a result of a lack of compliance with Articles of the Chicago Convention, safety-related provisions in the Annexes to the Convention, Procedures for Air Navigation Services (PANS) or a lack of application of ICAO guidance material or good aviation safety practices. The lack of

compliance is expressed in terms of one or more deficiencies. For every finding, ICAO recommends measures to be taken by the State for its resolution.

Fingerprint(s): One (or more) visual representation(s) of the surface of the holder's fingertip(s).

Fireproof. The capability to withstand the application of heat by a flame for a period of 15 minutes.

Note— The characteristics of an acceptable flame can be found in ISO 2685.

Fireproof material. A material capable of withstanding heat as well as or better than steel when the dimensions in both cases are appropriate for the specific purpose.

Fire resistant. The capability to withstand the application of heat by a flame for a period of 5 minutes.

Note— The characteristics of an acceptable flame can be found in ISO 2685.

Fixed light. A light having constant luminous intensity when observed from a fixed point.

Flight and flow — information for a collaborative environment (FF-ICE). Information necessary for planning, coordination, and notification of flights, exchanged in a standardized format between members of the ATM community, including those involved in flight operations and aerodrome operations.

Flight and flow — information for a collaborative environment (FF-ICE) services. A set of services established for the purposes of facilitating the exchange of FF-ICE, accurate assessment of demands, appropriate resource planning, and optimizing flight planning and execution.

Flight and flow — information for a collaborative environment (FF-ICE) services unit. A unit designated by the appropriate ATS authority for the provision of FF-ICE services.

Note.— The appropriate ATS authority may designate an existing unit, such as an air traffic services unit, or a local or regional air traffic flow management unit as an FF-ICE services unit.

Flight crew member. A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

Flight data analysis. A process of analysing recorded flight data in order to improve the safety of flight operations.

Flight data monitoring. see: flight data analysis

Flight documentation. Written or printed documents, including charts or forms, containing meteorological information for a flight.

Flight duty period. A period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes

when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member.

Note— For RPAS this includes remote flight crew members.

Flight information centre (FIC). A unit established to provide flight information service and alerting service.

Flight information region (FIR). An airspace of defined dimensions within which flight information service and alerting service are provided.

Flight information service. A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

Flight level. A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

Note 1— A pressure type altimeter calibrated in accordance with the Standard Atmosphere:

(a) when set to a QNH altimeter setting, will indicate altitude;

(b) when set to a QFE altimeter setting, will indicate height above the QFE reference datum;

(c) when set to a pressure of 1013.2 hPa, may be used to indicate flight levels.

Note 2— The terms “height” and “altitude”, used in Note 1 above, indicate altimetric rather than geometric heights and altitudes

Flight manual. A manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

Note— For RPAS, this includes information related to the whole system including the RPS and remote flight crew members.

Flight operations officer/flight dispatcher. A person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with Annex 1, who supports, briefs and/or assists the pilot-in-command in the safe conduct of the flight.

Flight operations officer/flight dispatcher. A person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably competent in accordance with Annex 1, who supports, briefs and/or assists the remote pilot-in-command in the safe conduct of the flight.

Flight path alignment point (FPAP). The FPAP is a point in the same lateral plane as the LTP or FTP that is used to define the alignment of the final approach

segment. For approaches aligned with the runway centre line, the FPAP is located at or beyond the opposite threshold of the runway. The delta length offset from the opposite threshold of the runway defines its location

Flight path monitoring. The use of ATS surveillance systems for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path, including deviations from the terms of their air traffic control clearances.

Note— Some applications may require a specific technology, e.g. radar, to support the function of flight path monitoring.

Flight plan. Specified information relative to an intended flight or portion of a flight of an aircraft.

Note 1.— The term flight plan may be prefixed by the words "preliminary", "filed", "current" or "operational" to indicate the context and different stages of a flight.

Note 2.— When the word "message" is used as a suffix to this term, it denotes the content and format of the flight plan data as transmitted.

Flight plan. Specified information provided to the air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

[As per Annex 6, Part 4]

Flight procedure designer. A person responsible for flight procedure design who meets the competency requirements as laid down by the State.

Flight procedures trainer. See Flight simulation training device.

Flight recorder. Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

Automatic deployable flight recorder (ADFR). A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.

Note— See Annex 6, Parts I, II and III, for specifications relating to flight recorders.

Flight safety documents system. A set of interrelated documentation established by the operator, compiling and organizing information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator's maintenance control manual.

Flight sector. A flight or one of a series of flights which commences at a parking place of the aircraft and terminates at a parking place of the aircraft. It is composed of:

— flight preparation,

— flight time,

— post-flight period after the flight sector or series of flight sectors.

Flight simulation training device. Any one of the following three types of apparatus in which flight conditions are simulated on the ground:

A flight simulator, which provides an accurate representation of the flight deck of a particular aircraft type or an accurate representation of the remotely piloted aircraft system (RPAS) to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;

A flight procedures trainer, which provides a realistic flight deck environment or realistic RPAS environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;

A basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight or the RPAS environment in instrument flight conditions.

Note – For RPAS, the RPS is equivalent to the "flight deck," and may not be specific to the type of RPA being used.

Flight simulator. See Flight simulation training device.

Flight status. An indication of whether a given aircraft requires special handling by air traffic services units or not.

Flight technical error (FTE). The difference between the altitude indicated by the altimeter display being used to control the aircraft and the assigned altitude/flight level.

Flight termination system. A system intended to terminate flight and minimize the possibility of injury or damage to persons, property or other aircraft.

Flight time — aeroplanes. The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

Note— Flight time as here defined is synonymous with the term "block to block" time or "chock to chock" time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.

Flight time — helicopters. The total time from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

Note 1— The State may provide guidance in those cases where the definition of flight time does not describe or permit normal practices. Examples are: crew change without stopping the rotors; and rotors running engine wash procedure following a flight. In any case, the time when rotors are running between sectors of a flight is included within the calculation of flight time.

Note 2— This definition is intended only for the purpose of flight and duty time regulations.

Flight time — remotely piloted aircraft systems. The total time from the moment a command and control (C2) link is established between the remote pilot station (RPS) and the remotely piloted aircraft (RPA) for the purpose of taking off or from the moment the remote pilot receives control following a handover until the moment the remote pilot completes a handover or the C2 link between the RPS and the RPA is terminated at the end of the flight.

Flight time — remotely piloted aircraft systems. The total time the moment a C2 Link is established between the remote pilot station (RPS) and the remotely piloted aircraft (RPA) for the purpose of taking off or from the moment the remote pilot receives control following a handover until the moment the remote pilot completes a handover or the C2 Link between the RPS and the RPA is terminated at the end of the flight.

[Definition is as per Annex 6, Part 4]

Flight track. see: track

Flight visibility. The visibility forward from the cockpit of an aircraft in flight.

Flow control. Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective utilization of the airspace.

Fluorescent ink. Ink containing material that glows when exposed to light at a specific wavelength (usually UV) and that ceases to glow immediately after the illuminating light source has been extinguished.

Foot (ft). The length equal to 0.304 8 meter exactly.

Forecast. A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.

Forecast chart. see: prognostic chart

Foreign object debris (FOD). An inanimate object within the movement area which has no operational or aeronautical function and which has the potential to be a hazard to aircraft operations.

Foreign operator. Any operator that holds an AOC issued by one State and that operates, or seeks to operate, into the airspace above the territory of another State

Forgery See**:** Fraudulent Alteration.

Forward error correction (FEC). The process of adding redundant information to the transmitted signal in a manner which allows correction, at the receiver, of errors incurred in the transmission.

FPL. The symbol used to designate a filed flight plan exchanged via aeronautical fixed service (AFS).

Frame: The link layer frame is composed of a sequence of address, control, FCS and information fields. For VDL Mode 2, these fields are bracketed by opening and closing flag sequences, and a frame may or may not include a variable-length information field.

Framing pulses. Pulses which "frame" the information pulses (code) of SSR Mode A and C replies (described as F1 and F2 respectively). Also known as "bracket pulses".

Franchising. Franchising is the granting by an air operator of a franchise or right to use various of its corporate identity elements (such as its flight designator code, livery and marketing symbols) to a franchisee, i.e. the entity granted the franchise to market or deliver its air service product, typically subject to standards and controls intended to maintain the quality desired by the franchiser, i.e. the entity granting the franchise.

Frangible object. An object of low mass designed to break, distort or yield on impact so as to present the minimum hazard to aircraft.

Note— Guidance on design for frangibility is contained in the Aerodrome Design Manual (Doc 9157), Part 6.

Fraudulent Alteration. Involves the alteration of a genuine document in an attempt to enable it to be used for travel by an unauthorized person or to an unauthorized destination. The biographical details of the genuine holder, particularly the portrait, form the prime target for such alteration.

Free text message element. Part of a message that does not conform to any standard message element in the PANS-ATM (Doc 4444).

Free zone. A part of the territory of a Contracting State where any goods introduced are generally regarded, insofar as import duties and taxes are concerned, as being outside the customs territory.

Freight. see: cargo

Frequency assignment: A logical assignment of centre frequency and channel bandwidth programmed to the base station (BS).

Frequency channel. A continuous portion of the frequency spectrum appropriate for a transmission utilizing a specified class of emission.

Note— The classification of emissions and information relevant to the portion of the frequency spectrum appropriate for a given type of transmission (bandwidths) is specified in the ITU Radio Regulations, Article S2 and Appendix S1.

Fringe (inner and outer). A minimum and maximum range respectively for a successful plot detection.

Front course sector. The course sector which is situated on the same side of the localizer as the runway.

Front-to-back (see-through) register. A design printed on both sides of the document

or an inner page of an MRP which when viewed by transmitted light forms an interlocking image.

Fruit. A term applied to unwanted SSR replies received by an interrogator which have been triggered by other SSR interrogators. Fruit is the acronym of false replies unsynchronized in time, or false replies unsynchronized to interrogator transmission.

Fuel uplift. Measurement of fuel provided by the fuel supplier, as documented in the fuel delivery notes or invoices for each flight (in litre).

Full frontal (facial) image. A portrait of the holder of the MRP produced in accordance with the specifications established in Doc 9303, Part 1, Volume 1, Section IV, 7.

Full-scale deflection (FSD). The term used to describe the maximum deviation from center of either a course deviation indicator (CDI) or a vertical deviation indicator (VDI), such as a glide slope indicator, and that applies to both linear and angular scaling.

Full size (Format-A) machine readable visa (MRV-A): An MRV conforming with the dimensional specifications contained in Doc 9303, Part 2, sized to completely fill a passport visa page.

Fully automatic relay installation. A teletypewriter installation where interpretation of the relaying responsibility in respect of an incoming message and the resultant setting-up of the connections required to effect the appropriate retransmissions is carried out automatically, as well as all other normal operations of relay, thus obviating the need for operator intervention, except for supervisory purposes.

Gain (of antenna). A measure for the antenna of the relative transmitted power density radiated in a particular direction as compared with the power density that would have been radiated from an isotropic antenna with the same power input (usually expressed in dB) and at the same distance from the radiator.

Gain time control (GTC). A circuit which controls the gain of a radar receiver, allowing it to rise from an initial preset value to maximum at a predetermined rate to compensate for the decrease in received signal strength as range increases. Also known as sensitivity time control (STC).

Gain-to-noise temperature ratio. The ratio, usually expressed in dB/K, of the antenna gain to the noise at the receiver output of the antenna subsystem. The noise is expressed as the temperature that a 1 ohm resistor must be raised to produce the same noise power density.

Galileo. The satellite navigation system operated by the European Union.

Galileo Open Service (Galileo OS). The specified level of positioning, velocity and timing accuracy that is available to any Galileo user on a continuous, worldwide basis.

Gallery. The database of biometric templates of persons previously enrolled, which may be searched to find a probe.

GAMET area forecast. An area forecast in abbreviated plain language for low-level flights for a flight information region or sub-area thereof, prepared by the meteorological

office designated by the meteorological authority concerned and exchanged with meteorological offices in adjacent flight information regions, as agreed between the meteorological authorities concerned.

Garbling. A term applied to the overlapping in range and/ or azimuth of two or more SSR replies so that the pulse positions of one reply fall close to or overlap the pulse positions of another reply, thereby making the decoding of reply data prone to error.

Gaussian filtered frequency shift keying (GFSK): A continuous-phase, frequency shift keying technique using two tones and a Gaussian pulse shape filter.

GBAS azimuth reference point (GARP). The GARP is defined to be beyond the FPAP along the procedure centre line by a fixed offset of 305 m (1 000 ft). It is used to establish the lateral deviation display limits.

GBAS landing system (GLS). A system for approach and landing operations utilizing GNSS, augmented by a ground-based augmentation system (GBAS), as the primary navigational reference.

General aviation operation. An aircraft operation other than a commercial air transport operation or an aerial work operation.

Generic Standard Shop Practices Manual. Manual that has been developed by an operator or by an Approved Maintenance Organization that provides guidance and direction to shop personnel with respect to all aspects of in-house procedures as applied to the various maintenance and maintenance support activities that has been accepted or approved by the regulator for the scope of activities for that organization.

Generic Standard Storage Practices Manual. Manual that has been developed by an operator or by an Approved Maintenance Organization that provides guidance and direction to maintenance support personnel engaged in the storage and preservation of aircraft parts, components, and other materials used in aircraft maintenance activities. The scope of the manual forms part of the organization's accepted or approved maintenance programme as indicated by the regulator.

Geodesic distance. The shortest distance between any two points on a mathematically defined ellipsoidal surface.

Geodetic datum. A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

Geoid. The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.

Note— The geoid is irregular in shape because of local gravitational disturbances (wind tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point.

Geoid undulation. The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.

Note— In respect to the World Geodetic System — 1984 (WGS-84) defined ellipsoid, the difference between the WGS-84 ellipsoidal height and orthometric height represents WGS-84 geoid undulation.

Glide path. A descent profile determined for vertical guidance during a final approach

Glider. A non-power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Glider flight time. The total time occupied in flight, whether being towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight.

Global interoperability. The capability of inspection systems (either manual or automated) in different States throughout the world to obtain and exchange data, to process data received from systems in other States, and to utilize that data in inspection operations in their respective States. Global interoperability is a major objective of the standardized specifications for placement of both eye readable and machine readable data in all ePassports.

Global navigation satellite system (GNSS). A worldwide position and time determination system that includes one or more satellite constellations, aircraft receivers and system integrity monitoring, augmented as necessary to support the required navigation performance for the intended operation.

Note— GNSS performance standards are found in Annex 10, Volume I, Chapter 3.

Global navigation satellite system (GLONASS). The satellite navigation system operated by the Russian Federation.

Global positioning system (GPS). The satellite navigation system operated by the United States.

Global signaling channel (GSC): A channel available on a worldwide basis which provides for communication control.

Globally Interoperable Biometric. Refers to Face Image as set forth in Doc 9303, Part 3, Volume 2.

Globally unique flight identifier (GUFI). An unchangeable data element associated with a flight that allows all eligible members of the ATM community to unambiguously refer to information pertaining to the flight.

GNSS position error. The difference between the true position and the position determined by the GNSS receiver.

Gravity-related height. see: elevation

Gray (Gy). The energy imparted by ionizing radiation to a mass of matter corresponding to 1 joule per kilogram

Great Circle Distance. The shortest distance, rounded to the nearest kilometre, between the origin and the destination aerodromes, measured over the earth's surface modelled according to the World Geodetic System 1984 (WGS84).

Note – Latitude and longitude coordinates of aerodromes can be obtained from the ICAO Location Indicators database.

Gregorian calendar. Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar according to ISO 19108

Note.— In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months

Grid point data in digital form. Computer processed meteorological data for a set of regularly spaced points on a chart, for transmission from a meteorological computer to another computer in a code form suitable for automated use.

Note— In most cases, such data are transmitted on medium- or high-speed telecommunications channels.

Ground-based augmentation system (GBAS). An augmentation system in which the user receives augmentation information directly from a group of ground- based transmitters covering a region.

Ground-based regional augmentation system (GRAS). An augmentation system in which the user receives augmentation information directly from one of a group of ground-based transmitters covering a region.

Ground earth station (GES). An earth station in the fixed satellite service, or, in some cases, in the aeronautical mobile-satellite service, located at a specified fixed point on land to provide a feeder link for the aeronautical mobile satellite service.

Note— This definition is used in the ITU's Radio Regulations under the term "aeronautical earth station". The definition herein as "GES" for use in the SARPs is to clearly distinguish it from an aircraft earth station (AES), which is a mobile station on an aircraft.

Ground effect. A condition of improved performance (lift) due to the interference of the surface with the airflow pattern of the rotor system when a helicopter or other VTOL aircraft is operating near the ground.

Note— Rotor efficiency is increased by ground effect to a height of about one rotor diameter for most helicopters.

Ground equipment. Articles of a specialized nature for use in the maintenance, repair and servicing of an aircraft on the ground, including testing equipment and cargo- and passenger-handling equipment.

Ground handling. Services necessary for an aircraft's arrival at, and departure from, an airport, other than air traffic services.

Ground-to-air communication. One-way communication from stations or locations on the surface of the earth to aircraft.

Ground track. see: track

Ground visibility. The visibility at an aerodrome as reported by an accredited observer or by automatic systems.

Guilloche design. A pattern of continuous fine lines, usually computer generated, and forming a unique image that can only be accurately re- originated by access to the equipment, software and parameters used in creating the original design.

Gyroplane. A heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors which rotate freely on substantially vertical axes.

Half course sector. The sector, in a horizontal plane containing the course line and limited by the loci of points nearest to the course line at which the DDM is 0.0775.

Half ILS glide path sector. The sector in the vertical plane containing the ILS glide path and limited by the loci of points nearest to the glide path at which the DDM is 0.0875.

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

Hash. A mathematical formula that converts a message of any length into a unique fixed-length string of digits (typically 160 bits) known as “message digest” that represents the original message. A hash is a one-way function, that is, it is infeasible to reverse the process to determine the original message. Also, a hash function will not produce the same message digest from two different inputs.

Hazard. A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

Hazard beacon. An aeronautical beacon used to designate a danger to air navigation.

Heading. The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

Head-up display (HUD). A display system that presents flight information into the pilot’s forward external field of view.

Health-related documentation. Documentary evidence required by Contracting States, including those standardized by the World Health Organization (WHO) International Health Regulations (IHR) (2005), to indicate that passengers and crew members have fulfilled the requirements for preventing and mitigating the spread of communicable diseases for the purposes of transiting or entering a Contracting State.

Heat-sealed laminate. A laminate bonded to the MRTD by the application of heat and pressure.

Heavier-than-air aircraft. Any aircraft deriving its lift in flight chiefly from aerodynamic forces.

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

Height-keeping capability. The aircraft height-keeping performance that can be expected under nominal environmental operating conditions with proper aircraft operating practices and maintenance.

Height-keeping performance. The observed performance of an aircraft with respect to adherence to cleared flight level.

Helicopter. A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

Note.— Some States use the term "rotorcraft" as an alternative to "helicopter".

Helicopter air taxiway. A defined path on the surface established for the air taxiing of helicopters.

Helicopter clearway. A defined area on the ground or water, selected and/or prepared as a suitable area over which a helicopter operated in performance class 1 may accelerate and achieve a specific height.

Helicopter ground taxiway. A ground taxiway intended for the ground movement of wheeled undercarriage helicopters.

Helicopter stand. An aircraft stand which provides for parking a helicopter and where ground taxi operations are completed or where the helicopter touches down and lifts off for air taxi operations

Helideck. A heliport located on a floating or fixed offshore structure.

Heliport. An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

Note 1.— Throughout this Part, when the term "heliport" is used, it is intended that the term also applies to aerodromes primarily meant for the use of aeroplanes.

Note 2.— Helicopters may be operated to and from areas other than heliports.

Heliport operating minima. The limits of usability of a heliport for:

(a) take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;

(b) landing in precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation;

(c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and

(d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

Heliport operating minima. The limits of usability of a heliport for:

a) take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;

b) landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions; and

c) landing in 3D instrument approach operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the type and/or category of the operation.

Heliport reference point (HRP). The designated location of the heliport or landing location.

Henry (H). The inductance of a closed circuit in which an electromotive force of 1 volt is produced when the electric current in the circuit varies uniformly at a rate of 1 ampere per second

Hertz (Hz). The frequency of a periodic phenomenon of which the period is 1 second

High frequency network protocol data unit (HFNPDU). User data packet.

High performance receiver. A UAT receiver with enhanced selectivity to further improve the rejection of adjacent frequency.

High-risk cargo or mail. Cargo or mail which is deemed to pose a threat to civil aviation as a result of specific intelligence; or shows anomalies or signs of tampering which give rise to suspicion.

Hit. A reception and recognition by the aircraft (transponder) of the SSR interrogation pulses P1 and P3, resulting in the return of a detectable reply code to the ground receiver.

Holder. A person possessing an ePassport, submitting a biometric sample for verification or identification whilst claiming a legitimate or false identity. A person who interacts with a biometric system to enroll or have his identity checked.

Holding bay. A defined area where aircraft can be held, or bypassed, to facilitate efficient surface movement of aircraft.

Holding fix. A geographical location that serves as a reference for a holding procedure.

Holding point. A specified location, identified by visual or other means, in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control clearances.

Holding procedure. A predetermined manoeuvre which keeps an aircraft within a specified airspace while awaiting further clearance.

Holdover time. The estimated time the anti-icing fluid (treatment) will prevent the formation of ice and frost and the accumulation of snow on the protected (treated) surfaces of an aeroplane.

Homing. The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.

Horizontal plane. The plane containing the longitudinal axis and perpendicular to the plane of symmetry of the aeroplane.

Hostile environment. An environment in which:

(a) a safe forced landing cannot be accomplished because the surface and surrounding environment are inadequate; or

(b) the helicopter occupants cannot be adequately protected from the elements; or

(c) search and rescue response/capability is not provided consistent with anticipated exposure; or

(d) there is an unacceptable risk of endangering persons or property on the ground.

Hot spot. A location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary

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 INC.

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

Hybrid surveillance. The process of using a combination of active surveillance and passive surveillance with validated data to update an ACAS track in order to preserve ACAS independence.

Hypsometric tints. A succession of shades or colour gradations used to depict ranges of elevation.

I and Q channels. In-phase and quadrature channels of a primary radar receiver used for the extraction of phase and amplitude of the received signal. In older systems these channels were processed separately to avoid "blind phases".

ICAO competency framework: A competency framework, developed by ICAO, is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours.

ICAO meteorological information exchange model (IWXXM). A data model for representing aeronautical meteorological information.

ICAO Public Key Directory (ICAO PKD). The central database serving as the repository of Document Signer Certificates (CDS) (containing Document Signer Public Keys), CSCA Master List (MLCSCA), Country Signing CA Link Certificates (ICCSCA) and Certificate Revocation Lists issued by Participants, together with a system for their distribution worldwide, maintained by ICAO on behalf of Participants in order to facilitate the validation of data in eMRTDs.

IC module. The sub-assembly embedded into the ICC comprising the IC, the IC carrier and contacts.

Identification. The situation which exists when the position indication of a particular aircraft is seen on a situation display and positively identified.

Identification beacon. An aeronautical beacon emitting a coded signal by means of which a particular point of reference can be identified

Identification card (ID-card). A card used as an identity document.

Identifier. A unique data string used as a key in the biometric system to name a person's identity and its associated attributes. An example of an identifier would be a passport number.

Identity. The collective set of distinct personal and physical features, data and qualities that enable a person to be definitively identified from others. In a biometric system, identity is typically established when the person is registered in the system through the use of so-called "breeder documents" such as birth certificate and citizenship certificate.

Identity Document. Document used to identify its holder and issuer, which may carry data required as input for the intended use of the document.

Identification/Identify. The one-to-many process of comparing a submitted biometric sample against all of the biometric reference templates on file to determine whether it matches any of the templates and, if so, the identity of the ePassport holder whose template was matched. The biometric system using the one-to-many approach is seeking to find an identity amongst a database rather than verify a claimed identity. Contrast with "Verification".

IFR. The symbol used to designate the instrument flight rules.

IFR flight. A flight conducted in accordance with the instrument flight rules.

ILS continuity of service. That quality which relates to the rarity of radiated signal interruptions. The level of continuity of service of the localizer or the glide path is expressed in terms of the probability of not losing the radiated guidance signals.

ILS glide path. That locus of points in the vertical plane containing the runway centre line at which the DDM is zero, which, of all such loci, is the closest to the horizontal plane.

ILS glide path angle. The angle between a straight line which represents the mean of the ILS glide path and the horizontal.

ILS glide path sector. The sector in the vertical plane containing the ILS glide path and limited by the loci of points nearest to the glide path at which the DDM is 0.175.

Note.— The ILS glide path sector is located in the vertical plane containing the runway centre line, and is divided by the radiated glide path in two parts called upper sector and lower sector, referring respectively to the sectors above and below the glide path.

ILS integrity. That quality which relates to the trust which can be placed in the correctness of the information supplied by the facility. The level of integrity of the localizer or the glide path is expressed in terms of the probability of not radiating false guidance signals.

ILS Point "A". A point on the ILS glide path measured along the extended runway centre line in the approach direction a distance of 7.5 km (4 NM) from the threshold.

ILS Point "B". A point on the ILS glide path measured along the extended runway centre line in the approach direction a distance of 1 050 m (3 500 ft) from the threshold.

ILS Point "C". A point through which the downward extended straight portion of the nominal ILS glide path passes at a height of 30 m (100 ft) above the horizontal plane containing the threshold.

ILS Point "D". A point 4 m (12 ft) above the runway centre line and 900 m (3 000 ft) from the threshold in the direction of the localizer.

ILS Point "E". A point 4 m (12 ft) above the runway centre line and 600 m (2 000 ft) from the stop end of the runway in the direction of the threshold.

ILS reference datum (Point "T"). A point at a specified height located above the intersection of the runway centre line and the threshold and through which the downward extended straight portion of the ILS glide path passes.

Instrument flight rules; IFR A set of rules governing the conduct of flight under instrument meteorological conditions.

Image. A representation of a biometric as typically captured via a video, camera or scanning device. For biometric purposes this is stored in digital form.

IMC. The symbol used to designate instrument meteorological conditions.

Immigration control. Measures adopted by States to control the entry into, transit through and departure from their territories of persons travelling by air.

Impact energy. The energy required for an object to break, distort or yield when subjected to an impact load.

Impact load. A sudden application of a load or force by an object moving with high velocity.

Import duties and taxes. Customs duties and all other duties, taxes or charges, which are collected on or in connection with the importation of goods. Not included are any charges which are limited in amount to the approximate cost of services rendered or collected by the customs on behalf of another national authority.

Imposter. A person who impersonates the rightful holder of a genuine travel document.

Impostor. A person who submits a biometric sample in either an intentional or inadvertent attempt to pass for another person.

Impostor. A person who assumes another person's identity.

Improperly documented person. A person who travels, or attempts to travel:

(a) with an expired travel document or an invalid visa;

(b) with a counterfeit, forged or altered travel document or visa;

(c) with someone else's travel document or visa;

(d) without a travel document; or (e) without a visa, if required. State by its authorities.

Improved interrogation side-lobe suppression (I2SLS). A technique whereby interrogation pulse P 1 is transmitted via both the main beam and the control beam of the SSR antenna, so that a transponder in a side-lobe direction more reliably receives a P 1-P2 pulse pair.

Improvement factor. Target to clutter ratio at the output of an MTI processor divided by the target to clutter ratio at the input of the processor, averaged uniformly over all target radial velocities of interest.

INCERFA. The code word used to designate an uncertainty phase.

Inadmissible person. A person who is or will be refused admission to a State by its authorities.

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

Note— The types of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in Attachment C of Annex 13 – Aircraft Accident and Incident Investigation.

Incompatible. Describing dangerous goods which, if mixed, would be liable to cause a dangerous evolution of heat or gas or produce a corrosive substance.

Increased rate RA. A resolution advisory with a strength that recommends increasing the altitude rate to a value exceeding that recommended by a previous climb or descend RA.

Independent parallel approaches. Simultaneous approaches to parallel or near-

parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are not prescribed.

Independent parallel departures. Simultaneous departures from parallel or near-parallel instrument runways.

Industry codes of practice. Guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organization's Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate.

Note— Some States accept and reference industry codes of practice in the development of regulations to meet the requirements of Annex 6, Part II, and make available, for the industry codes of practice, their sources and how they may be obtained.

Infected area. (for human health purposes) Defined as geographical areas where human and/or animal vector-borne diseases are actively transmitted, as reported by local or national public health authorities or by the World Health Organization.

Note— A list of infected areas notified by health administrations is published in the World Health Organization's Weekly Epidemiological Record.

In-flight security officer. A person who is authorized by the government of the State of the Operator and the government of the State of Registration to be deployed on an aircraft with the purpose of protecting that aircraft and its occupants against acts of unlawful interference. This excludes persons employed to provide exclusive personal protection for one or more specific people travelling on the aircraft, such as personal bodyguards.

Infra-red drop-out ink. An ink which forms a visible image when illuminated with light in the visible part of the spectrum and which cannot be detected when illuminated in the infra-red region.

Initial approach fix (IAF). A fix that marks the beginning of the initial segment and the end of the arrival segment, if applicable. In RNAV applications this fix is normally defined by a fly-by waypoint.

Initial approach (IA) mode. The condition of DME/P operation which supports flight operations outside the final approach region and which is interoperable with DME/N.

Initial approach segment. That segment of an instrument approach procedure between the initial approach fix and the intermediate fix or, where applicable, the final approach fix or point.

Initialization (of a smart card). The process of populating persistent memory (EEPROM, etc.) with data that are common to a large number of cards while also including a minimal amount of card unique items (e.g. ICC serial number and Personalization keys).

Inspection. The basic activity of an audit, which involves examination of the specific

characteristics of the safety oversight programme of the Contracting State (Safety Oversight Audit Manual (Doc 9735)).

Inspection. An examination of an aviation licence, certificate, approval or authorization holder (or applicant) performed by aviation safety inspectors to confirm compliance with requirements for the licence, certificate, approval or authorization already issued (or being issued) by the State.

Inspection. The act of a State examining an ePassport presented to it by a traveller (the ePassport holder) and verifying its authenticity.

Inspection system. A system used for inspecting (e)MRTDs by any public or private entity having the need to validate the (e)MRTD, and using this document for identity verification, e.g. border control authorities, airlines and other transport operators, financial institutions.

Inspector. A person trained and authorized to undertake inspections.

Instructional Systems Design (ISD). A formal process for designing training which includes analysis, design and production, and evaluation.

Instructions for continuing airworthiness (ICA). A set of descriptive data, maintenance planning and accomplishment instructions, developed by a design approval holder in accordance with the certification basis for the aeronautical product. The ICAs provide air operators with the necessary information to develop their own maintenance programme and also for approved maintenance organizations to establish the accomplishment instructions.

Instrument approach operations. An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note.— Lateral and vertical navigation guidance refers to the guidance provided either by:

a) a ground-based radio navigation aid; or

b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

Instrument approach procedure (IAP). A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument

approach procedures are classified as follows:

Non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A.

Note.— Non-precision approach procedures may be flown using a continuous descent final approach (CDFA) technique. CDFAs with advisory VNAV guidance calculated by on-board equipment are considered 3D instrument approach operations. CDFAs with manual calculation of the required rate of descent are considered 2D instrument approach operations. For more information on CDFAs, refer to PANS-OPS (Doc 8168) Volume I, Part II, Section 5.

Approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

Precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

Note.— Refer to Annex 6 for instrument approach operation types.

Approach procedure with vertical guidance (APV). An instrument approach procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Precision approach (PA) procedure. An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.

Note — Lateral and vertical guidance refers to the guidance provided either by:

(a) a ground-based navigation aid; or

(b) computer-generated navigation data.

Note — Refer to Annex 6 for instrument approach operation types.

Note.— Refer to 4.2.8.3 for instrument approach operation types.

Instrument flight time. Time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.

Instrument ground time. Time during which a pilot is practising, on the ground, simulated instrument flight in a flight simulation training device approved by the Licensing Authority.

Instrument meteorological conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

Note.1— The specified minima for visual meteorological conditions are contained in Annex 2, Chapter 4.

Note 2— The specified minima for visual meteorological conditions are contained in Chapter 3 of Annex 2.

Note 3— In a control zone, a VFR flight may proceed under instrument meteorological conditions if and as authorized by air traffic control.

Instrument runway. One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

(a) ***Non-precision approach runway.*** An instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.

(b) ***Precision approach runway, category I.*** An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height not lower than 60 m (200 ft) and either a visibility not less than 800 m or a runway visual range not less than 550 m.

(c) ***Precision approach runway, category II.*** An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 300 m.

(d) ***Precision approach runway, category III.*** An instrument runway served by ILS and/or MLS to and along the surface of the runway and:

A — intended for operations with a decision height lower than 30 m (100 ft), or no decision height and a runway visual range not less than 175 m.

B — intended for operations with a decision height lower than 15 m (50 ft), or no decision height and a runway visual range less than 175 m but not less than 50 m.

C — intended for operations with no decision height and no runway visual range limitations.

Note 1— See Annex 10, Volume I, for related ILS and/or MLS specifications.

Note 2— Visual aids need not necessarily be matched to the scale of non- visual aids provided. The criterion for the selection of visual aids is the conditions in which operations are intended to be conducted.

Instrument runway. One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

a) Non-precision approach runway. A runway served by visual aids and non-visual aid(s) intended for landing operations following an instrument approach operation type A and a visibility not less than 1 000 m.

b) Precision approach runway, category I. A runway served by visual aids and non-visual aid(s) intended for landing operations following an instrument approach operation type B with a decision height (DH) not lower than 60 m (200 ft) and either a visibility not less than 800 m or a runway visual range not less than 550 m.

c) Precision approach runway, category II. A runway served by visual aids and non-visual aid(s) intended for landing operations following an instrument approach operation type B with a decision height (DH) lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 300 m.

d) Precision approach runway, category III. A runway served by visual aids and non-visual aid(s) intended for landing operations following an instrument approach operation type B with a decision height (DH) lower than 30 m (100 ft), or no decision height and a runway visual range less than 300 m, or no runway visual range limitations.

Note 1.— Visual aids need not necessarily be matched to the scale of non-visual aids provided. The criterion for the selection of visual aids is the conditions in which operations are intended to be conducted.

Note 2.— Refer to Annex 6 — Operation of Aircraft for instrument approach operation types.

Instrument time. Instrument flight time or instrument ground time.

Interactive API (iAPI) system. An electronic system that transmits, during check-in, API data elements collected by the aircraft operator to public authorities who, within existing business processing times for passenger check-in, return to the operator a response message for each passenger and/or crew member.

Interoperability. The ability of several independent systems or sub-system components to work together.

Intaglio. A printing process used in the production of security documents in which engraved plates, high printing pressure and special inks create a relief design with tactile feel on the surface of the document.

Integrated circuit (IC). Electronic component designed to perform processing and/or memory functions.

Integrated circuit(s) card (IC card, ICC). A card into which been inserted one or more ICs.

Integrated circuits serial number. A number common to all IC in a lot, corresponding to a particular place in the mask (used in the manufacturing process).

Integrity. A measure of the trust that can be placed in the correctness of the information supplied by the total system. Integrity includes the ability of a system to provide timely and

valid warnings to the user (alerts).

Integrity classification (aeronautical data). Classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:

a) routine data: there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;

b) essential data: there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and

c) critical data: there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

Intruder. An aircraft for which ACAS has an established track.

Interface. A standardized technical definition of the connection between two components.

Interface device. Any terminal, communication device or machine to which the IC card is electrically connected during operation.

Intermediate approach segment. That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, racetrack or dead reckoning track procedure and the final approach fix or point, as appropriate.

Intermediate holding position. A designated position intended for traffic control at which taxiing aircraft and vehicles shall stop and hold until further cleared to proceed, when so instructed by the aerodrome control tower.

Intermediate objectives. What a trainee is expected to accomplish in terms of skills, knowledge and attitude, at specified points in a training course. For example, be able to use a piece of test equipment, or solder a joint. Sometimes also referred to as enabling objectives, as they lead up to, or enable, a specific terminal objective.

Interchange. An aircraft interchange or interchange flight is a regularly scheduled, single-plane through service linking a route of one air operator at the interchange point to a route of a second air operator, with the same aircraft being crewed by and under the operational control of the respective authorized operator on each route. An interchange provides passengers with the benefit of a single-plane service on what is essentially an interline operation and may provide additional benefits to the operators involved in terms of better aircraft utilization.

Interlace. A repeating series of SSR interrogation modes. The interlace pattern may be determined either on a p.r.p. (pulse-repetition period) to basis or on an antenna rotation to antenna rotation basis. It may also be made on a combined p.r.p./antenna basis.

Interleave. A condition where two or more pulse trains become superimposed in time

so that their pulse time spacing can be distinguished and the correct codes established.

Intermode interrogations. Interrogations that consist of 3 pulses (P1, P3 and P4) and are capable of eliciting replies a) from both Mode A/C and Mode S transponders or b) from Mode A/C transponders but not from Mode S transponders (see "All-call").

International airport. Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

International airways volcano watch (IAVW). International arrangements for monitoring and providing warnings to aircraft of volcanic ash in the atmosphere.

Note.— The IAVW is based on the cooperation of aviation and non-aviation operational units using information derived from observing sources and networks that are provided by States. The watch is coordinated by ICAO with the cooperation of other concerned international organizations.

International telecommunication service. A telecommunication service between offices or stations of different States, or between mobile stations which are not in the same State, or are subject to different States.

Interpilot air-to-air communication. Two-way communication on the designated air-to-air channel to enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.

Interrogation. See "Mode".

Interrogator. A ground-based (normally) transmitter element of an SSR system.

Interrogator identifier (II). One of the codes (1 to 15) used to identify a Mode S ground station using the multisite protocols.

Interrogator repetition frequency (/RF). An average number of interrogations per second transmitted by the radar. See also "Pulse repetition frequency".

Interrogator-responsor. A ground-based combined transmitter-receiver element of an SSR system.

Interrogator side-lobe suppression (ISLS). A method of preventing transponder replies to interrogations transmitted through the ground antenna side lobes.

Integrated Aeronautical Information Package. A package which consists of the following elements:

— AIP, including amendment service;

— Supplements to the AIP;

— NOTAM and PIB;

— AIC; and

— checklists and lists of valid NOTAM.

Integrated antenna. A PSR antenna in which the reflector of a PSR radar is used in conjunction with SSR radiating elements in order to obtain the required SSR horizontal and vertical radiation patterns.

Integrated survival suit. A survival suit which meets the combined requirements of the survival suit and life jacket.

Integrity (aeronautical data). A degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.

Intermediate approach segment. That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, racetrack or dead reckoning track procedure and the final approach fix or point, as appropriate

Intermediate fix (IF). A fix that marks the end of an initial segment and the beginning of the intermediate segment. In RNAV applications this fix is normally defined by a fly-by waypoint.

Intermediate holding position. A designated position intended for traffic control at which taxiing aircraft and vehicles shall stop and hold until further cleared to proceed, when so instructed by the aerodrome control tower

Intermediate system (IS). A system which performs relaying and routing functions and comprises the lowest three layers of the OSI reference model

International airport. Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

International airways volcano watch (IAVW). International arrangements for monitoring and providing warnings to aircraft of volcanic ash in the atmosphere.

Note— The IAVW is based on the cooperation of aviation and non-aviation operational units using information derived from observing sources and networks that are provided by States. The watch is coordinated by ICAO with the cooperation of other concerned international organizations.

International NOTAM office. An office designated by a State for the exchange of NOTAM internationally.

International operating agency. An agency of the kind contemplated in Article 77 of the Convention.

Internet protocol. see: internetworking protocol

Internetworking protocol; IP; internetwork protocol; Internet protocol; IP A protocol that transfers data packets between intermediate systems and end systems interconnected by subnetworks and that is supported by the routing protocols and addressing plan.

Investigation. A process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and/or contributing factors and, when appropriate, the making of safety recommendations.

Investigator (of an accident or incident). A person charged, on the basis of his or her qualifications, with the responsibility to participate in the conduct and control of an investigation.

Investigator-in-charge. A person charged, on the basis of his or her qualifications, with the responsibility for the organization, conduct and control of an investigation.

Note— Nothing in the above definition is intended to preclude the functions of an investigator-in-charge being assigned to a commission or other body.

Ionosphere-free pseudo-range. A pseudo-range in which the first order ionosphere effect on signal propagation has been removed by a linear combination of pseudo-range measurements from signals on two distinct frequencies from the same satellite.

Iris (printing). See Rainbow Printing.

Isogonal. A line on a map or chart on which all points have the same magnetic variation for a specified epoch.

Isogriv. A line on a map or chart which joins points of equal angular difference between the North of the navigation grid and Magnetic North

Isolated aerodrome. A destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type.

Issuing organization: Organization authorized to issue an official travel document (e.g. the United Nations Organization, issuer of the laissez- passer).

Issuing State: The country issuing the MRTD.

Issuing State. The country writing the biometric to enable a receiving State (which could also be itself) to verify it.

Job performance objectives. The desired level of job performance in terms of tasks to be performed and standards to be achieved.

Joint rescue coordination centre (JRCC). A rescue coordination centre responsible for both aeronautical and maritime search and rescue operations.

Joint service flight. A joint service flight is a flight identified by the designator codes of

two airlines that typically have agreed with each other to share revenues and/or costs with the concurrence of their respective States.

Note— Some States consider a joint service flight as a codesharing flight and some do not.

Joule (J). The work done when the point of application of a force of 1 newton is displaced a distance of 1 metre in the direction of the force

JPEG and JPEG 2000. Standards for the data compression of images, used particularly in the storage of facial images.

Kelvin (K). A unit of thermodynamic temperature which is the fraction 1/273.16 of the thermodynamic temperature of the triple point of water.

Key. See Public Key Cryptography.

Key down time. The time during which a dot or dash of a Morse character is being transmitted.

Key exchange. The process for getting session keys into the hands of the conversants.

Key management. The process by which cryptographic keys are provided for use between authorized communicating parties.

Key pair. A pair of digital keys — one public and one private — used for encrypting and signing digital information.

Kilogram (kg). The unit of mass equal to the mass of the international prototype of the kilogram

Knot (kt). The speed equal to 1 nautical mile per hour

Knowledge. A person's range of information; familiarity gained by experience or repetition; understanding. Knowledge is understood as information stored in the student's mind that can be retrieved when necessary, and the understanding of concepts and performances. Knowledge is a component part of the trainees' expected performance described in the intermediate objectives.

Known consignor. A consignor who originates cargo or mail for its own account and whose procedures meet common security rules and standards sufficient to allow the carriage of cargo or mail on any aircraft.

Known shipper (Formerly). see: regulated agent

Lack of Effective Implementation (LEI). A measure of the State's safety oversight capability, calculated for each critical element or for each audit area. The overall Lack of Effective Implementation (LEI) published in the USOAP audit reports is the average of the eight LEIs for each critical element.

Lading. The placing of cargo, mail, baggage or stores on board an aircraft to be carried on a flight.

Laminate: A protective film with a degree of cohesive strength bonded over some or all of the MRP data page to protect and secure the page and its personalization data.

Laminate. A clear material, which may have security features such as optically variable properties, designed to be securely bonded to a document surface.

Landing area. That part of a movement area intended for the landing or take-off of aircraft.

Landing decision point (LDP). The point used in determining landing performance from which, an engine failure occurring at this point, the landing may be safely continued or a balked landing initiated.

Note— LDP applies only to helicopters operating in performance Class 1.

Landing direction indicator. A device to indicate visually the direction currently designated for landing and for take-off.

Landing distance available (LDA). The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

Landing distance required (helicopter); LDRH. The horizontal distance required to land and come to a full stop from a point 10.7 m (35 ft) above the landing surface.

Landing location. A landing area that has the same physical characteristics as a non-instrument heliport as per Annex 14, Volume II (e.g. the landing location could be a non-instrument heliport or could be located on a non instrument runway).

Landing surface. That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft landing in a particular direction.

Landing threshold point (LTP). The LTP is a point over which the glide path passes at a relative height specified by the reference datum height. It is defined by the WGS-84 latitude, longitude and ellipsoid height. The LTP is normally located at the intersection of the runway centre line and threshold.

Large aeroplane. An aeroplane of a maximum certificated take-off mass of over 5 700 kg.

Laser-beam critical flight zone (LCFZ). Airspace in the proximity of an aerodrome but beyond the LFFZ where the irradiance is restricted to a level unlikely to cause glare effects.

Laser-beam free flight zone (LFFZ). Airspace in the immediate proximity of the aerodrome where the irradiance is restricted to a level unlikely to cause any visual disruption.

Laser-beam sensitive flight zone (LSFZ). Airspace outside, and not necessarily contiguous with, the LFFZ and LCFZ where the irradiance is restricted to a level unlikely to cause flash-blindness or after-image effects.

Laser engraving. A process whereby text and images (usually personalized images) are created by a photo chemical reaction within a substrate using a laser.

Laser-perforation. A process whereby text and/or images are created by perforating the substrate with a laser.

Latent failure. A failure that is not detected and/or enunciated when it occurs.

Latent image. A hidden image formed within a relief image which is composed of line structures which vary in direction and profile resulting in the hidden image appearing at predetermined viewing angles.

LDS. The Logical Data Structure describing how biometric data is to be written to and formatted in ePassports.

Lease. A lease can be understood to be a contractual arrangement whereby a properly licensed air operator gains commercial control of an entire aircraft without transfer of ownership.

Lenticular Feature. Security feature in which a lens structure is integrated in the surface of the document or used as a verification device.

Lessee. The term lessee means the party to which the aircraft is leased.

Lessor. The term lessor means the party from which the aircraft is leased.

Level. A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

Level of complexity. Refers to the taxonomy of verbs used to describe the trainees' expected performance in a training objective.

Licensing Authority. The Authority designated by a Contracting State as responsible for the licensing of personnel.

Note— In the provisions of this Annex, the Licensing Authority is deemed to have been given the following responsibilities by the Contracting State:

(a) assessment of an applicant's qualifications to hold a licence or rating;

(b) issue and endorsement of licences and ratings;

(c) designation and authorization of approved persons;

(d) approval of training courses;

(e) approval of the use of flight simulation training devices and authorization for their use in gaining the experience or in demonstrating the skill required for the issue of a licence or rating; and

(f) validation of licences issued by other Contracting States.

Life-limited part. Any part for which a mandatory replacement limit (in hours, cycles or calendar time) is specified in the type design, the mandatory continuing airworthiness information or instructions for continuing airworthiness. These parts must be permanently removed from service on or before this limit is reached.

Lighter-than-air aircraft. Any aircraft supported chiefly by its buoyancy in the air.

Lighting system reliability. The probability that the complete installation operates within the specified tolerances and that the system is operationally usable.

Likely. In the context of the medical provisions in Chapter 6, likely means with a probability of occurring that is unacceptable to the medical assessor.

Limit loads. The maximum loads assumed to occur in the anticipated operating conditions.

Line replaceable unit (LRU). A unit, part of a system, which can be exchanged as an entity for a spare of the same type and which may consist of a single printed circuit board, power supply or equipment module. The exchange of unit will take place at equipment (system) level.

Link: A link connects an aircraft DLE and a ground DLE and is uniquely specified by the combination of aircraft DLS address and the ground DLS address. A different subnetwork entity resides above every link endpoint.

Link layer: The layer that lies immediately above the physical layer in the Open Systems Interconnection protocol model. The link layer provides for the reliable transfer of information across the physical media. It is subdivided into the data link sublayer and the media access control sublayer.

Link management entity (LME): A protocol state machine capable of acquiring, establishing and maintaining a connection to a single peer system. An LME establishes data link and subnetwork connections, “hands-off” those connections, and manages the media access control sublayer and physical layer. An aircraft LME tracks how well it can communicate with the ground stations of a single ground system. An aircraft VME instantiates an LME for each ground station that it monitors. Similarly, the ground VME instantiates an LME for each aircraft that it monitors. An LME is deleted when communication with the peer system is no longer viable.

Link protocol data unit (LPDU). Data unit which encapsulates a segment of an HFNPDU.

Litre (L). A unit of volume restricted to the measurement of liquids and gases which is equal to 1 cubic decimetre

Live capture. The process of capturing a biometric sample by an interaction between an ePassport holder and a biometric system.

Live capture. The process of capturing a biometric sample by an interaction between an eMRTD holder and a biometric system.

Load factor. The ratio of a specified load to the weight of the aircraft, the former being expressed in terms of aerodynamic forces, inertia forces, or ground reactions.

Lobing (antenna pattern). A process whereby, due to interference of two waves, one direct and one reflected, differences in phases cause larger or smaller amplitudes than expected for free space, causing differences in signal amplitudes.

Localizer performance with vertical guidance (LPV). The label to denote minima lines associated with APV-I or APV-II performance on approach charts.

Location indicator. A four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station.

Locator. An LF/MF NDB used as an aid to final approach.

Note.— A locator usually has an average radius of rated coverage of between 18.5 and 46.3 km (10 and 25 NM).

Lockout state. A state in which a Mode S transponder has been instructed not to accept certain all-call interrogations. Lockout is deliberately induced by command from the Mode S ground station.

LogFTC. A signal processing technique comprising a logarithmic amplification stage followed by a differentiation (short time constant) stage used for the suppression of unwanted PSR signals

Logical Data Structure (LDS). Describes how data are to be written to and formatted in the contactless IC from eMRTD.

Logon address. A specified code used for data link logon to an ATS unit

Longitudinal axis of the aeroplane. A selected axis parallel to the direction of flight at a normal cruising speed, and passing through the centre of gravity of the aeroplane.

Lost C2 Link decision state. The state of the RPAS in which a C2 Link interruption has occurred, but the duration of which does not exceed the lost C2 Link decision time.

Lost C2 Link decision time. The maximum length of time permitted before declaring a lost C2 Link state during which the C2 Link performance is not sufficient to allow the remote pilot to actively manage the flight in a safe and timely manner appropriate to the airspace and operational conditions.

Lost C2 Link state. The state of the RPAS in which the C2 Link performance has degraded, as a result of a C2 Link interruption that is longer than the lost C2 Link decision time, to a point where it is not sufficient to allow the remote pilot to actively manage the flight in a safe and timely manner.

Low modulation rates: Modulation rates up to and including 300 bauds.

Low-visibility operations (LVO). Approach operations in RVRs less than 550 m and/or with a DH less than 60 m (200 ft) or take-off operations in RVRs less than 400 m.

Lumen (lm). The luminous flux emitted in a solid angle of 1 steradian by a point source having a uniform intensity of 1 candela.

Lux (lx). The illuminance produced by a luminous flux of 1 lumen uniformly distributed over a surface of 1 square metre.

M Burst: a management channel data block of bits used in VDL Mode 3. This burst contains signaling information needed for media access and link status monitoring.

Machine Assisted Document Verification. A process using a device to assist in the verification of the authenticity of the document in respect to data and/or security.

Machine readable official travel document (MROTD): An official document of identity, capable of being read by machine, issued by a State or organization, which may, subject to agreement of the issuing and receiving State, be accepted in lieu of a passport or visa for international travel.

Machine readable passport (MRP): Passport conforming with the specifications contained in Doc 9303, Part 1, Volume 1 and, optionally, Volume 2. Normally constructed as an ID-3 size book containing pages with information on the holder and the issuing State or organization and pages for visas and other endorsements. Machine readable information is contained in two lines of OCR-B text, each with 44 characters. These specifications permit the MRP to be in the form of a free-standing card of ID- 1 size; ID-1 sized passport cards are specified in Doc 9303, Part 3.

Machine readable travel document (MRTD): Official document, conforming with the specifications contained in Doc 9303, issued by a State or organization which is used by the holder for international travel (e.g. passport, visa, official document of identity) and which contains mandatory visual (eye readable) data and a separate mandatory data summary in a format which is capable of being read by machine.

Machine readable visa (MRV): A visa (also known as an entry clearance but not referred to as such in these specifications) conforming with the specifications contained in Doc 9303, Part 2. The MRV is normally attached to a visa page in a passport.

Machine readable zone (MRZ): A fixed-dimensional area located on the MRTD data page, containing mandatory and optional data formatted for machine reading using OCR methods.

Machine-verifiable biometric feature. A unique physical personal identification feature (e.g. an iris pattern, fingerprint or facial characteristics) stored on a travel document in a form that can be read and verified by machine.

Magnetic variation. The angular difference between True North and Magnetic North.

Note— The value given indicates whether the angular difference is East or West of True North

Mail. Dispatches of correspondence and other items tendered by and intended for delivery to postal services in accordance with the rules of the Universal Postal Union (UPU).

Maintenance. The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

Maintenance.†† The performance of tasks on an aircraft, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair. †† Applicable as of 5 November 2020

Maintenance. The performance of tasks on an aircraft, remote pilot station, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft, remote pilot station, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

[Definition applicable as of 26 November 2026]

Maintenance organization's procedures manual.†† A document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems. †† Applicable as of 5 November 2020

Maintenance records.†† Records that set out the details of the maintenance carried out on an aircraft, engine, propeller or associated part. †† Applicable as of 5 November 2020

Maintenance release.†† A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements. †† Applicable as of 5 November 2020.

Maintenance Defect Reporting Sheet. Is used by aircraft maintenance personnel to report any defects and malfunctions being found during aircraft inspections.

Maintenance organization's procedures manual. A document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

Maintenance programme. A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.

Maintenance records. Records which provide a description of work accomplished on the aeronautical products or parts thereof including the work and release to service certification, as required by Civil Aviation Authorities, operators, and maintenance organizations.

Note— The maintenance record is used to record discrepancies, corrective action, modification details, total time in service, current status of

compliance with mandatory continuing airworthiness information, and the current status of the aircraft's compliance with the maintenance programme. Finally, maintenance records show that all requirements for the signing of a maintenance release have been met.

Maintenance release. A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

Major modification. In respect of an aeronautical product for which a type certificate has been issued, a change in the type design that has an appreciable effect, or other than a negligible effect, on the mass and balance limits, structural strength, engine operation, flight characteristics, reliability, operational characteristics, or other characteristics or qualities affecting the airworthiness or environmental characteristics of an aeronautical product

Major repair. Any repair of an aeronautical product that might appreciably affect the structural strength, performance, engine, operation flight characteristics or other qualities affecting airworthiness or environmental characteristics.

Making way. An aeroplane on the surface of the water is 'making way' when it is under way and has a velocity relative to the water.

Mandatory Continuing Airworthiness Information (MCAI). The mandatory requirements for the modification, replacement of parts, or inspection of aircraft and amendment of operating limitations and procedures for the safe operation of the aircraft. Among such information is that issued by Contracting States in the form of airworthiness directives.

Manoeuvring area. That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

Mary phase shift keying (M-PSK) modulation. A digital phase modulation that causes the phase of the carrier waveform to take on one of a set of M values.

Margin: The maximum degree of distortion of the circuit at the end of which the apparatus is situated which is compatible with the correct translation of all the signals which it may possibly receive.

Marker. An object displayed above ground level in order to indicate an obstacle or delineate a boundary.

Marking. A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information

Master key. Root of the derivation chain for keys.

Master minimum equipment list (MMEL). A list established for a particular aircraft type by the organization responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at

the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Match/Matching. The process of comparing a biometric sample against a previously stored template and scoring the level of similarity. A decision to accept or reject is then based upon whether this score exceeds the given threshold.

Material-dependent training. A well-documented and repeatable training package that has been tested and proven to be effective.

Maximum carrying capacity. In relation to an aircraft, means the maximum passenger-seating capacity, or the maximum payload, permitted under the aircraft's certificate of type approval.

Maximum diversion time. Maximum allowable range, expressed in time, from a point on a route to an en-route alternate aerodrome.

Maximum mass. Maximum certificated take-off mass.

Maximum passenger-seating capacity. In relation to an aircraft, means the maximum number of seats for passengers permitted under the aircraft's certificate of type approval.

Maximum passenger-seating capacity. The maximum certificated number of passenger for the aeroplane type design.

Mean power (of a radio transmitter). The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

Note— A time of 1/10 second during which the mean power is greatest will be selected normally.

Maximumm take-off mass. The highest of all take-off masses for the type design.

Media access control (MAC): The sublayer that acquires the data path and controls the movement of bits over the data path.

Media access protocol data unit (MPDU). Data unit which encapsulates one or more LPDUs.

Medical Assessment. The evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness.

Medical assessor. A physician, appointed by the Licensing Authority, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance.

Note 1— Medical assessors evaluate medical reports submitted to the Licensing Authority by medical examiners.

Note 2— Medical assessors are expected to maintain the currency of their professional knowledge.

Medical examiner. A physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Licensing Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed.

Medium modulation rates: Modulation rates above 300 and up to and including 3 000 bauds.

Message. The smallest meaningful collection of information transmitted from sender to receiver. This information may consist of one or more card transactions or card transaction-related information.

Message Authentication Code (MAC). A MAC is a message digest appended to the message itself. The MAC cannot be computed or verified unless a secret is known. It is appended by the sender and verified by the receiver which is able to detect a message falsification.

Message field. An assigned area of a message containing specified elements of data.

Metadata. Data about data as per ISO 19115.

Note— Data that describes and documents data

Metallic ink. Ink exhibiting a metallic-like appearance.

Metameric inks. A pair of inks formulated to appear to be the same colour when viewed under specified conditions, normally daylight illumination, but which do not match under different illumination.

Meteorological authority. The authority providing or arranging for the provision of meteorological service for international air navigation on behalf of a Contracting State.

Meteorological bulletin. A text comprising meteorological information preceded by an appropriate heading.

Meteorological information. Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

Meteorological office. An office designated to provide meteorological service for international air navigation.

Meteorological operational channel. A channel of the aeronautical fixed service (AFS), for the exchange of aeronautical meteorological information.

Meteorological operational telecommunication network. An integrated system of meteorological operational channels, as part of the aeronautical fixed service (AFS), for the exchange of aeronautical meteorological information between the aeronautical fixed stations within the network.

Note— "Integrated" is to be interpreted as a mode of operation necessary to ensure that the information can be transmitted and received by the stations within the network in accordance with pre-established schedules.

Meteorological report. A statement of observed meteorological conditions related to a specified time and location.

Meteorological satellite. An artificial Earth satellite making meteorological observations and transmitting these observations to Earth.

Meteorological watch office (MWO). An office designated to provide information concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations within its specified area of responsibility.

MET office see: meteorological office.

Metre (m). The distance travelled by light in a vacuum during 1/299 792 458 of a second

Microprint. Printed text or symbols smaller than 0.25 mm / 0.7 pica points.

Minimum descent altitude (MDA) or minimum descent height (MDH). A specified altitude or height in a non-precision approach or circling approach below which descent must not be made without the required visual reference.

Note 1— Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.

Note 2— The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.

Note 3— For convenience when both expressions are used they may be written in the form "minimum descent altitude/ height" and abbreviated "MDA/H".

Minimum en-route altitude (MEA). The altitude for an en-route segment that provides adequate reception of relevant navigation facilities and ATS communications, complies with the airspace structure and provides the required obstacle clearance.

Minimum equipment list (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Note.— *For RPAS this includes inoperative equipment of the RPAS, not only the RPA.*

Minimum fuel. The term used to describe a situation in which an aircraft's fuel supply has reached a state where the flight is committed to land at a specific aerodrome and no additional delay can be accepted.

Minimum obstacle clearance altitude (MOCA). The minimum altitude for a defined segment of flight that provides the required obstacle clearance

Minimum sector altitude (MSA). The lowest altitude which may be used which will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 NM) radius centred on a significant point, the aerodrome reference point (ARP) or the heliport reference point (HRP).

Minimum stabilization distance (MSD). The minimum distance to complete a turn manoeuvre and after which a new manoeuvre can be initiated. The minimum stabilization distance is used to compute the minimum distance between waypoints.

Minor. A person who has not attained the age of majority as determined under the law applicable to the person.

Minor modification. A modification other than a major modification.

Minor repair. A repair other than a major repair.

Mishandled baggage. Baggage involuntarily, or inadvertently, separated from passengers or crew.

Missed approach holding fix (MAHF). A fix used in RNAV applications that marks the end of the missed approach segment and the centre point for the missed approach holding.

Missed approach point (MAPt). That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

Missed approach procedure. The procedure to be followed if the approach cannot be continued

Missed approach turning fix (MATF). A fix different from MAPt that marks a turn in the missed approach segment.

Mission. An activity requiring one or more persons to travel to a State and conduct on-site tasks.

Mixed-fleet flying (MFF) operations. Operations in which the operator assigns qualified pilots to operate as flight crew members on more than one aircraft type or variant, in accordance with procedures and conditions acceptable to the State of the Operator.

MLS approach reference datum. A point on the minimum glide path at a specified height above the threshold.

MLS datum point. The point on the runway centre line closest to the phase centre of the approach elevation antenna.

Mobile station (MS): A station in the mobile service intended to be used while in motion or during halts at unspecified points. An MS is always a subscriber station (SS).

Mobile surface station. A station in the aeronautical telecommunication service, other than an aircraft station, intended to be used while in motion or during halts at unspecified points.

Mode (SSR). The conventional identifier related to specific functions of the interrogation signals transmitted by an SSR interrogator. There are four modes specified in Annex 10: A, C, S and intermode.

Mode. SSR interrogation mode as specified in Annex 10, Volume IV, Chapter 2.

Mode 2: A data-only VDL mode that uses D8PSK modulation and a carrier sense multiple access (CSMA) control scheme.

Mode 3: A voice and data VDL mode that uses D8PSK modulation and a TDMA media access control scheme.

Mode 4: A data-only VDL mode using a GFSK modulation scheme and self-organizing time division multiple access (STDMA)

Mode S. An enhanced mode of SSR that permits selective interrogation and reply capability.

Mode S ground station. Ground equipment that interrogates Mode A/C and Mode S transponders using intermode and Mode S interrogations.

Mode S period. Refer to roll-call period.

Mode S subnetwork. A means of performing an interchange of digital data through the use of secondary surveillance radar (SSR) Mode S interrogators and transponders in accordance with defined protocols.

Mode S transaction. The initiation, control and exchange of data between a Mode S interrogator and transponder over the air/ground link.

Mode W, X, Y, Z. A method of coding the DME transmissions by time spacing pulses of a pulse pair, so that each frequency can be used more than once.

Modification. A change to the type design of an aircraft, engine or proprller.

Note.— A modification may also include the embodiment of the modification which is a maintenance task subject to a maintenance release. Further guidance on aircraft maintenance — modification and repair is contained in the Airworthiness Manual (Doc 9760).

Modulation rate: The reciprocal of the unit interval measured in seconds. This rate is expressed in bauds.

Note.— Telegraph signals are characterized by intervals of time of duration equal to or longer than the shortest or unit interval. The modulation rate (formerly telegraph speed) is therefore expressed as the inverse of the value of this unit interval. If, for example, the unit interval is 20 milliseconds, the modulation rate is 50 bauds.

Mole (mol). The amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilogram of carbon-12.

Note— When the mole is used, the elementary entities must be specified and may be atoms, molecules, ions, electrons, other particles or specified groups of such particles

Monitor display. A device for the presentation of radar data, usually working in the plan-position indicator (PPI) mode of operation. This device is generally found as part of the maintenance equipment of a PSR and/or SSR station. Generally, radar data at various stages of processing may be observed on the monitor display.

Monitoring: A cognitive process to compare an actual to an expected state.

Note.— Monitoring is embedded in the competencies for a given role within an aviation discipline, which serve as countermeasures in the threat and error management model. It requires knowledge, skills and atttudes to create a mental mode and to take appropriate action when deviations are recognized.

Monopulse. A technique wherein the amplitudes and/or phases of the signals received in overlapping antenna lobes are compared to estimate the angle of arrival of the signal. The technique determines the angle of arrival of a single pulse, or reply, within an antenna beamwidth. The angle of arrival is determined by means of a processor using the replies received through the sum and difference patterns of the antenna. The monopulse technique is generally termed "monopulse direction finding".

Monopulse plot extractor. A plot extractor using monopulse direction- finding techniques. See also plot extractor.

Mountainous area. An area of changing terrain profile where the changes of terrain elevation exceed 900 m (3 000 ft) within a distance of 18.5 km (10.0 NM).

Movement area. That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

Moving target detector (MTD). A technique for achieving fixed and moving clutter rejection by a cascade of digital MTI and pulse Doppler filters.

Moving target indicator (MTI). Signal processing used in primary radar systems to reject signals from fixed or slow moving unwanted targets (buildings, trees, rain, etc.) and retain for detection or display of signals from moving targets (aircraft).

Moving window detector. A radar signal processing device which stores radar returns over a given number of pulse repetition periods (the number depending upon the so called moving window size) and uses these for the automatic detection of radar targets. Also known as sliding window detector.

M-PSK symbol. One of the M possible phase shifts of the M-PSK modulated carrier representing a group of log2 M coded chips.

MR see: meteorological report

MRP data page: A fixed-dimensional page within the MRP containing a standardized presentation of visual and machine readable data. This may be on the front or back of an inner page adjacent to the cover or on the inside of a front or back cover.

MRTD. Machine Readable Travel Document, e.g. passport, visa or official document of identity accepted for travel purposes.

Multilateration (MLAT) system. A group of equipment configured to provide position derived from the secondary surveillance radar (SSR) transponder signals (replies or squitters) primarily using time difference of arrival (TDOA) techniques. Additional information, including identification, can be extracted from the received signals.

Multiple biometric. The use of more than one biometric.

Multi-functional transport satellite-based augmentation system (MSAS). A satellite-based augmentation system providing navigation service meeting Annex 10 requirements that provides navigation service in the Asia-Pacific Region.

Multilink. The ability to use more than one available air-ground subnetworks in order to provide the required performance

Multi-radar trajectory reconstitution (MURATREC). A technique for the accurate a-posteriori determination of an object trajectory using simultaneous measured observations from a number of radars.

Multiple biometric. The use of more than one biometric.

Narcotics control. Measures to control the illicit movement of narcotics and psychotropic substances by air.

National accreditation body. Authorised body which attests that a verification body is competent to provide specific verification services.

Navigation specification. A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

Required navigation performance (RNP) specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

Area navigation (RNAV) specification. A navigation specification based on area

navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

Note 1— The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications.

Note 2— The term RNP, previously defined as "a statement of the navigation performance necessary for operation within a defined airspace", has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.

Nautical mile (NM). The length equal to 1 852 metres exactly

Near-parallel runways. Non-intersecting runways whose extended centre lines have an angle of convergence/divergence of 15 degrees or less.

Necessary precautions. Verifications carried out by adequately trained staff members of the aircraft operator or the company operating on behalf of the aircraft operator, at the point of embarkation, in order to ensure that every person holds a valid travel document and, where applicable, the visa or residence permit required to enter the State of transit and/or receiving State. These verifications are designed to ensure that irregularities (e.g. obvious document alteration) are detected.

Net gradient. The net gradient of climb throughout these requirements [Annex 6/I] is the expected gradient of climb diminished by the manoeuvre performance (i.e. that gradient of climb necessary to provide power to manoeuvre) and by the margin (i.e. that gradient of climb necessary to provide for those variations in performance which are not expected to be taken explicit account of operationally).

Network (N): The word "network" and its abbreviation "N" in ISO 8348 are replaced by the word "subnetwork" and its abbreviation "SN", respectively, wherever they appear in relation to the subnetwork layer packet data performance.

Network station. An aeronautical station forming part of a radiotelephony network.

New entrant. Any aeroplane operator that commences an aviation activity falling within the scope of this Volume on or after its entry into force and whose activity is not in whole or in part a continuation of an aviation activity previously performed by another aeroplane operator.

Newton (N). The force which when applied to a body having a mass of 1 kilogram gives it an acceleration of 1 metre per second squared.

Next data authority. The ground system so designated by the current data authority through which an onward transfer of communications and control can take place.

Next intended user. The entity that receives the aeronautical data or information from

the aeronautical information service.

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 ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.

Noise factor. A figure defined for a receiver as the ratio of the noise at the output of the practical receiver and the noise output of an ideal receiver at standard temperature T0 (290° K). The noise factor is, in practice, defined as the signal-to-noise ratio at the input divided by the signal-to-noise ratio at the output of a receiver.

Nominal C2 Link state. The state of the RPAS when the C2 Link performance is sufficient to allow the remote pilot to actively manage the flight of the RPA in a safe and timely manner appropriate to the airspace and operational conditions.

Nonce. In security engineering, a nonce is a "number used once". It is often a random or pseudo-random number issued in an authentication protocol to ensure that old communications cannot be reused in "replay attacks". For instance, nonces are used in HTTP digest access authentication to calculate an MD5 digest of the password. The nonces are different each time the 401 authentication challenge response code is presented, thus making the replay attack virtually impossible (Source: wikipedia.org).

Non-compliant aircraft. An aircraft configured to comply with the requirements of an RVSM MASPS which, through height monitoring, is found to have a total vertical error (TVE) or an assigned altitude deviation (AAD) of 90 m (300 ft) or greater or an altimetry system error (ASE) of 75 m (245 ft) or more.

Non-congested hostile environment. A hostile environment outside a congested area.

Non-destructive testing (NDT). An inspection technique used to test the condition of materials, components and systems used in aircraft, powerplants, associated systems, and components to examine these articles for condition and defects without causing damage to the item being inspected.

Note— NDT testing methods may include but are not limited to ultrasonic, magnetic-particle, liquid penetrant, radiographic, eddy-current testing and structural health monitoring.

Non-duty period. A continuous and defined period of time, subsequent to and/or prior to duty periods, during which the air traffic controller is free of all duties.

Non-hostile environment. An environment in which:

a) a safe forced landing can be accomplished because the surface and surrounding environment are adequate;

b) the helicopter occupants can be adequately protected from the elements;

c) search and rescue response/capability is provided consistent with anticipated exposure; and

d) the assessed risk of endangering persons or property on the ground is acceptable.

Note.— Those parts of a congested area satisfying the above requirements are considered non-hostile.

Non-instrument runway*.* A runway intended for the operation of aircraft using visual approach procedures.

Non-instrument runway. A runway intended for the operation of aircraft using visual approach procedures or an instrument approach procedure to a point beyond which the approach may continue in visual meteorological conditions.

Note.— Visual meteorological conditions (VMC) are described in Chapter 3 of Annex 2 — Rules of the Air

Non-network communications*.* Radiotelephony communications conducted by a station of the aeronautical mobile service, other than those conducted as part of a radiotelephony network.

Non-radar separation. The separation used when aircraft position information is derived from sources other than radar.

Non-volatile memory. A semiconductor memory that retains its content when power is removed (i.e. ROM, EEPROM).

Non-volatile particulate matter (nvPM). Emitted particles that exist at a gas turbine engine exhaust nozzle exit plane that do not volatilize when heated to a temperature of 350°C.

Normal flight zone (NFZ). Airspace not defined as LFFZ, LCFZ or LSFZ but which must be protected from laser radiation capable of causing biological damage to the eye.

Normal operating zone (NOZ). Airspace of defined dimensions extending to either side of an ILS localizer course and/or MLS final approach track. Only the inner half of the normal operating zone is taken into account in independent parallel approaches.

North marker (NoM). A single pulse, typically produced by a digital encoder (shift encoder) attached to the radar antenna drive system, which indicates when the antenna passes through the direction to the North.

North message. Special messages generated by the extractor to indicate passage of the antenna rotation through an azimuth angle of zero degrees (true North).

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.

Notice to airmen see: NOTAM

Notifying State. The State that has submitted to ICAO the request for the registration of or change in the three-letter designator of an aeroplane operator over which it has jurisdiction.

No transgression zone (NTZ). In the context of independent parallel approaches, a corridor of airspace of defined dimensions located centrally between the two extended runway centre lines, where a penetration by an aircraft requires a controller intervention to manoeuvre any threatened aircraft on the adjacent approach.

Object. A combination of radar targets and related information which are correlated in time and space.

Objective evidence. Information that can be verified, supporting the existence of a documented system and indicating that the system generates the desired results.

Observable Behaviour (OB): A single role-related behavior that can be observed and may or may not be measurable.

Observation (meteorological). The evaluation of one or more meteorological elements.

Obstacle. All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

(a) are located on an area intended for the surface movement of aircraft; or

(b) extend above a defined surface intended to protect aircraft in flight; or

(c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

Note— The term obstacle is used in this Annex solely for the purpose of specifying the charting of objects that are considered a potential hazard to the safe passage of aircraft in the type of operation for which the individual chart series is designed.

Obstacle assessment surface (OAS). A defined surface intended for the purpose of determining those obstacles to be considered in the calculation of obstacle clearance altitude/height for a specific ILS facility and procedure.

Obstacle clearance altitude (OCA) or obstacle clearance height (OCH). The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.

Note 1— Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.

Note 2— For convenience when both expressions are used they may be

written in the form "obstacle clearance altitude/height" and abbreviated "OCA/H".

Note 3— See Procedures for Air Navigation Services — Aircraft Operations (Doc 8168), Volume I, Part I, Section 4, Chapter 1, 1.5, and Volume II, Part I, Section 4, Chapter 5, 5.4, for specific applications of this definition.

Obstacle/terrain data collection surface. A defined surface intended for the purpose of collecting obstacle/terrain data.

Obstacle free zone (OFZ). The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes

Obstacle limitation surfaces. A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aeroplane operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.

Occupancy. A parameter of the collision risk model which is twice the count of aircraft proximate pairs in a single dimension divided by the total number of aircraft flying the candidate paths in the same time interval.

Off-boresight angle (OBA). In monopulse SSR, the angle within the beam width of the antenna (calculated by the OBA processor) by which a target is off (away from) the boresight.

Offset frequency simplex. A variation of single channel simplex wherein telecommunication between two stations is effected by using in each direction frequencies that are intentionally slightly different but contained within a portion of the spectrum allotted for the operation.

Offshore operations. Operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations. Such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer.

Ohm (Ω). The electric resistance between two points of a conductor when a constant difference of potential of 1 volt, applied between these two points, produces in this conductor a current of 1 ampere, this conductor not being the source of any electromotive force.

One-to-a-few. A hybrid of one-to-many identification and one-to-one verification. Typically the one-to-a-few process involves comparing a submitted biometric sample against a small number of biometric reference templates on file. It is commonly referred to when matching against a "watch list" of persons who warrant detailed identity investigation or are known criminals, terrorists, etc.

One-to-many. Synonym for "Identification".

One-to-one. Synonym for "Verification".

Operation. An activity or group of activities which are subject to the same or similar hazards and which require a set of equipment to be specified, or the achievement and maintenance of a set of pilot competencies, to eliminate or mitigate the risk of such hazards.

Note— Such activities could include, but would not be limited to, offshore operations, heli-hoist operations or emergency medical service.

Operating base. The location from which operational control is exercised.

Note— An operating base is normally the location where personnel involved in the operation of the aeroplane work and the records associated with the operation are located. An operating base has a degree of permanency beyond that of a regular point of call.

Operating system. A programme which manages the various application programmes used by a computer.

Operational control. The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

Operational control communications. Communications required for the exercise of authority over the initiation continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of a flight.

Note— Such communications are normally required for the exchange of messages between aircraft and aircraft operating agencies.

Operational credit. A credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure.

Operational error. Any vertical deviation of an aircraft from the correct flight level as a result of incorrect action by air traffic control (ATC) or the aircraft crew.

Operational flight plan. The operator's plan for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

Operational control. The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

Operating lease. An operating lease is designed to meet an air operator's need for additional aircraft, often on a seasonal or short-term basis.

Operational planning. The planning of flight operations by an operator.

Operations in performance Class 1. Operations with performance such that, in the event of a critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, unless the failure occurs prior to reaching the take-off decision point (TDP) or after passing the landing decision point (LDP), in which cases the helicopter must be able to land within the rejected take-off or landing area.

Note.— For RPAS, this refers to remotely piloted helicopters only.

Operations in performance Class 2. Operations with performance such that, in the event of critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

Note.— For RPAS, this refers to remotely piloted helicopters only.

Operations in performance Class 3. Operations with performance such that, in the event of an engine failure at any time during the flight, a forced landing will be required.

Note.— For RPAS, this refers to remotely piloted helicopters only.

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

Operational personnel. Personnel involved in aviation activities who are in a position to report safety information.

Note— Such personnel include, but are not limited to: flight crews; air traffic controllers; aeronautical station operators; maintenance technicians; personnel of aircraft design and manufacturing organizations; cabin crews; flight dispatchers, apron personnel and ground handling personnel.

Operations specifications. The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

Operations specifications. The authorizations, including specific approvals, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

Note.— For RPAS these specifications are associated with the RPAS operator certificate.

[Definition is applicable as of 26 November 2026]

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Note— In the context of remotely piloted aircraft, an aircraft operation refers to the operation of an RPAS.

Operator's maintenance control manual. A document which describes the operator's procedures necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator's aircraft on time and in a controlled and satisfactory manner.

Note.— For RPAS this includes all parts and components of the RPAS, not only the RPA.

Optically Variable Device (OVD). Security Feature displaying different colours or image appearance depending on viewing angle or verification conditions.

Optically Variable Feature (OVF). An image or feature whose appearance in colour and/or design changes dependent upon the angle of viewing or illumination.

Optimum conditions. The combinations of altitude and airspeed within the approved operating envelope defined in the aeroplane flight manual that provides the highest specific air range value at each reference aeroplane mass.

Optimum sampling point. The optimum sampling point of a received UAT bit stream is at the nominal centre of each bit period, when the frequency offset is either plus or minus 312.5 kHz.

Optional data capacity expansion technology. Contactless integrated circuit that may be added to a travel document to increase the amount of machine readable data stored in the document. Doc 9303, Part 3, Volume 2 for guidance on the use of this technology. Bar codes, magnetic stripes and optical memory are also data storage technologies but these are available only for use by a State for its own or bilaterally agreed purposes and are not globally interoperable.

Orbit. In the context of flight testing, a flight of circular pattern at a constant altitude and distance from the antenna of the ground equipment under test.

Organization responsible for the type design. The organization which is the holder of the type certificate and has the responsibility of the design of the aeronautical product and the continuous compliance of the aeronautical product type design to the appropriate airworthiness requirements imposed by the type certificating authority. In some cases (prior to Amendment 98 of Annex 8), it will be the holder of an equivalent document certifying approval of the type design by the certificating authority.

Organization responsible for the type design. The organization that holds the type certificate, or equivalent document, for an aircraft, engine or propeller type, issued by a Contracting State.

Origination (aeronautical data or aeronautical information). The creation of the value associated with new data or information or the modification of the value of existing data or information.

Originator (aeronautical data or aeronautical information). An entity that is accountable for data or information origination and/or from which the AIS organization receives aeronautical data and aeronautical information.

Orphan aircraft type. An aircraft which has its Type Certificate revoked by the State of Design, and no longer has a designated State of Design in accordance with Annex 8.

These aircraft do not meet the Standards of Annex 8

Ornithopter. A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on planes to which a flapping motion is imparted.

Orthometric height. Height of a point related to the geoid, generally presented as an MSL elevation.

Outer main gear wheel span (OMGWS). The distance between the outside edges of the main gear wheels.

Overall risk. The risk of collision due to all causes, which includes the technical risk and all risk due to operational errors and in- flight contingencies.

Over-interrogation. Interference in the operation of a secondary radar system due to the fact that the number of interrogations exceeds the capacity of the transponder (a preset value). The action of the transponder is an automatic reduction in transponder receiver sensitivity.

Overlapping targets. A condition where radar replies overlap each other in range and/or azimuth.

Overlay: A very thin protective layer with negligible cohesive strength bonded over some or all of the MRP data page to protect and secure the page and its personalization data.

Overlay. An ultra-thin film or protective coating that may be applied to the surface of a document in place of a laminate.

Overpack. An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

Note— A unit load device is not included in this definition.

Oversight. The active control of the aviation industry and service providers by the competent regulatory authorities to ensure that the State's international obligations and national requirements are met through the establishment of a system based on the eight critical elements.

Own aircraft. The aircraft fitted with the ACAS that is the subject of the discourse, which ACAS is to protect against possible collisions, and which may enter a manoeuvre in response to an ACAS indication.

Oxides of nitrogen. The sum of the amounts of the nitric oxide and nitrogen dioxide contained in a gas sample calculated as if the nitric oxide were in the form of nitrogen dioxide.

PA procedure see: precision approach (PA) procedure.

Package. The complete product of the packing operation consisting of the packaging and its contents prepared for transport.

Packaging. Receptacles and any other components or materials necessary for the

receptacle to perform its containment function.

Note— For radioactive material, see Part 2, paragraph 7.2 of the Technical Instructions.

Padding. Appending extra bits to either side of a data string up to a predefined length.

Path and Terminator ("Path Terminator"). A two-letter code, which defines a specific type of flight path along a segment of a procedure and a specific type of termination of that flight path. Path terminators are assigned to all RNAV, SID, STAR and approach procedure segments in an airborne navigation database.

Note— Path terminators as defined in PANS-OPS are, with the exception of the RF path terminator, established in accordance with the rules set forth in ARINC Specification 424-15, Navigation System Data Base. The rules applicable to the RF path terminator are based upon ARINC 424-17.

Pathway. A specific combination of feedstock and conversion process used for the production of aviation alternative fuel.

Parrot. See remote field monitor in this glossary.

Partial rise time. The time as measured between the 5 and 30 per cent amplitude points on the leading edge of the pulse envelope.

Partial usage sub-channelization (PUSC): A technique in which the orthogonal frequency division multiplexing (OFDM) symbol subcarriers are divided and permuted among a subset of sub-channels for transmission, providing partial frequency diversity.

Pascal (Pa). The pressure or stress of 1 newton per square metre

Passenger aircraft. An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.

Passenger amenities. Facilities provided for passengers which are not essential for passenger processing.

Passenger Data Single Window. A facility that allows parties involved in passenger transport by air to lodge standardized passenger information (i.e. API, iAPI and/or PNR) through a single data entry point to fulfil all regulatory requirements relating to the entry and/or exit of passengers that may be imposed by various agencies of the Contracting State.

Note. — The Passenger Data Single Window facility to support API/iAPI transmissions does not necessarily need to be the same facility used to support PNR data exchange.

Passing frequency. The frequency of events in which two aircraft are in longitudinal overlap when travelling in the opposite or same direction on the same route at adjacent flight levels and at the planned vertical separation.

Passive surveillance. The process of tracking another aircraft without interrogating it, by using the other aircraft's extended squitters. ACAS uses the information obtained via 1 090 MHz extended squitter to monitor the need for active surveillance, but not for any other purpose. Passive surveillance applies to both hybrid and extended hybrid surveillance.

Passport Card. A td1-sized card which may be issued in place of, or in addition to, a passport book and which one or more receiving States agree to accept as a passport.

Path following error (PFE). That portion of the guidance signal error which could cause aircraft displacement from the desired course and/or glide path.

Pavement classification number (PCN).‡ A number expressing the bearing strength of a pavement for unrestricted operations.

Pavement classification rating (PCR).†† A number expressing the bearing strength of a pavement.

‡ Applicable until 27 November 2024.

†† Applicable as of 28 November 2024.

Peak envelope power (PEP). The peak power of the modulated signal supplied by the transmitter to the antenna transmission line.

PEL Office. The office within the Civil Aviation Authority responsible for personnel licensing functions and processes.

Penetrating numbering ink. Ink containing a coloured component, which penetrates deep into a substrate.

Performance-based aerodrome operating minimum (PBAOM). A lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft.

Note 1.— The PBAOM is derived by considering the combined capabilities of the aircraft and available ground facilities. Additional guidance material on PBAOM may be found in the Manual of All-Weather Operations (Doc 9365).

Note 2. — PBAOM may be based on operational credits.

Note 3.— PBAOM are not limited to PBN operations.

Performance-based communication (PBC). Communication based on performance specifications applied to the provision of air traffic services.

Note.— An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note— Performance requirements are expressed in navigation specification (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance-based surveillance (PBS). Surveillance based on performance specifications applied to the provision of air traffic services.

Note.— An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance Class 1 helicopter. A helicopter with performance such that, in case of engine failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area.

Performance Class 2 helicopter. A helicopter with performance such that, in case of engine failure, it is able to safely continue the flight, except when the failure occurs prior to a defined point after take-off or after a defined point before landing, in which cases a forced landing may be required.

Performance Class 3 helicopter. A helicopter with performance such that, in case of engine failure at any point in the flight profile, a forced landing must be performed.

Performance criteria: Statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an observable behavior condition(s) and a competency standard.

Performance model. An analytical tool or method validated from corrected flight test data that can be used to determine the SAR values for calculating the CO2 emissions evaluation metric value at the reference conditions.

Persona. In legal terms, a person or an association of people or special- purpose funds (e.g. a foundation) having a legal personality and possessing legal capacity.

Personal Identification Number (PIN). A numeric security code used as a mechanism for local one-to-one verification with the purpose to ascertain whether the card holder is in fact the natural person authorized to access or use a specific service such as the right to unlock certain information on the card.

Personalization. A process by which biographical data of a certain person are applied to the document.

Person with disabilities. Any person whose mobility is reduced due to a physical

incapacity (sensory or locomotor), an intellectual deficiency, age, illness or any other cause of disability when using transport and whose situation needs special attention and the adaptation to the person's needs of the services made available to all passengers.

Phosphorescent ink. Ink containing a material, which glows when exposed to light, the reactive glow remaining visible and then decaying after the light source is removed.

Photochromic ink. An ink that undergoes a reversible colour change when exposed to UV light.

Photo-substitution. A type of forgery in which the portrait in a document is substituted for a different one after the document has been issued.

Physical layer: The lowest level layer in the Open Systems Interconnection protocol model. The physical layer is concerned with the transmission of binary information over the physical medium (e.g. VHF radio).

Physical layer protocol data unit (PPDU). Data unit passed to the physical layer for transmission, or decoded by the physical layer after reception.

Physical security. The range of security measures applied within the production environment to prevent theft and unauthorized access to the process.

PI data. Information related to a cardholder and used by a PI system.

PI retry count. The number of consecutive unsuccessful PI data inputs by the cardholder.

PI system. A technique used to confirm the identity of a cardholder.

Pilot (to). To manipulate the flight controls of an aircraft during flight time.

Pilot flying (PF): The pilot whose primary task is to control and manage the flight path. The secondary tasks of the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crew members.

Pilot-in-command/Aircraft commander. The pilot responsible for the operation and safety of the aircraft during flight time.

Pilot-in-command. The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

Pilot-in-command under supervision. Co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in- command, in accordance with a method of supervision acceptable to the Licensing Authority.

Pilot monitoring (PM): The pilot whose primary task is to monitor the flight path and its management by the PF. The secondary tasks of the PM are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crew members.

PKI. The Public Key Infrastructure methodology of enabling detection as to whether data in an ePassport has been tampered with.

Planchettes. Small visible/invisible and/or fluorescent platelets incorporated into a document material at the time of its manufacture.

Plan position indicator (PPI). A monitor display with radar and other related information in plan position (as if projected on a horizontal plane).

Plot combiner. A signal processing device for the combination of PSR and SSR data ascertained as having originated from the same target. Targets failing to meet pre-defined combination criteria will be output as "PSR only" or "SSR only" plots in place of "combined plots".

Plot extractor. Signal processing equipment which converts radar video into an output data message suitable for transmission through a data transmission media, or possibly to further data processing equipment.

Plot filter. Signal processing equipment which filters out radar plot data positively identified as stationary by a rotation scan-to-scan correlation process.

Plot resolution. A separation in range and azimuth between two plots, for which the quality of the information of one plot is not affected by the presence of the other plot.

Plot run length. The number of azimuth count pulses between the first and last detection of a plot presence in a sliding window plot extractor.

Point light. A luminous signal appearing without perceptible length.

Point of no return. The last possible geographic point at which an aircraft can proceed to the destination aerodrome as well as to an available en-route alternate aerodrome for a given flight.

Point-in-space (PinS) approach. The point-in-space approach is based on a basic GNSS non-precision approach procedure designed for helicopters only. It is aligned with a reference point located to permit subsequent flight manoeuvring or approach and landing using visual manoeuvring in adequate visual conditions to see and avoid obstacles.

Point-in-space reference point (PRP). Reference point for the point-in- space approach as identified by the latitude and longitude of the MAPt.

Point-in-space (PinS) visual segment. This is the segment of a helicopter PinS approach procedure from the MAPt to the landing location for a PinS “proceed visually” procedure. This visual segment connects the PinS to the landing location.

Note.— The procedure design criteria for a PinS approach and the detailed design requirements for a visual segment are established in the Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS, Doc 8168).

Point-to-point. Pertaining or relating to the interconnection of two devices, particularly end-user instruments. A communication path of service intended to connect two discrete end-users; as distinguished from broadcast or multipoint service.

Polar diagrams. Horizontal or vertical radiation patterns for a radar antenna whereby the relative gain is plotted as a function of the relative azimuth (horizontal polar diagram) or as a function of the relative elevation angle (vertical polar diagram). Separate uplink and downlink frequency polar diagrams, in each plane, are plotted for each of the main beam, control and difference (monopulse only) SSR antenna patterns, referenced to the mainbeam axis.

Polarization. Direction of the electrical field vector of radiated radar energy with respect to a plane tangential to the earth (horizontal, vertical, lefthand circular, righthand circular, elliptical, etc.).

Pooling arrangements. Pooling arrangements are commercial agreements which may involve agreed capacity, conditions of operation, and the sharing between the parties of one or more of the elements of traffic, frequencies, equipment, revenues and costs.

Portrait: A visual representation of the facial image of the holder of the document.

Portrayal. Presentation of information to humans as per ISO 19117.

Position (geographical). Set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the Earth.

Position indication. The visual indication, in non-symbolic and/or symbolic form, on a situation display, of the position of an aircraft, aerodrome vehicle or other object.

Position symbol. The visual indication in symbolic form, on a situation display, of the position of an aircraft, aerodrome vehicle or other object, obtained after automatic processing of positional data derived from any source.

Positive RA. A resolution advisory that advises the pilot either to climb or to descend (applies to ACAS II).

Post spacing. Angular or linear distance between two adjacent elevation points.

Potential threat. An intruder deserving special attention either because of its close proximity to own aircraft or because successive range and altitude measurements indicate that it could be on a collision or near-collision course with own aircraft. The warning time provided against a potential threat is sufficiently small that a traffic advisory (TA) is justified but not so small that a resolution advisory (RA) would be justified.

Power measurement point (PMP). A cable connects the antenna to the UAT equipment. The PMP is the end of that cable that attaches to the antenna. All power measurements are considered as being made at the PMP unless otherwise specified. The cable connecting the UAT equipment to the antenna is assumed to have 3 dB of loss.

Powered-lift. A heavier-than-air aircraft capable of vertical take-off, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine

thrust for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during horizontal flight.

Powerplant. The system consisting of all the engines, drive system components (if applicable), and propellers (if installed), their accessories, ancillary parts, and fuel and oil systems installed on an aircraft but excluding the rotors for a helicopter.

Power-unit; See powerplant

Precision. The smallest difference that can be reliably distinguished by a measurement process.

Note— In reference to geodetic surveys, precision is a degree of refinement in performance of an operation or a degree of perfection in the instruments and methods used when taking measurements.

Precision approach procedure. An instrument approach procedure utilizing azimuth and glide path information provided by ILS or PAR

Precision approach radar (PAR). Primary radar equipment used to determine the position of an aircraft during final approach, in terms of lateral and vertical deviations relative to a nominal approach path, and in range relative to touchdown.

Note— Precision approach radars are designated to enable pilots of aircraft to be given guidance by radio communication during the final stages of the approach to land.

Precision approach runway, see **Instrument runway**

Precision approach runway, category 1. An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height not lower than 60 m (200 ft) and either a visibility not less than 800 m or a runway visual range not less than 550 m.

Precision approach runway, category II. An instrument runway served by ILS and/or MLS and visual aids intended for operations with a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 350 m.

Precision approach runway, category III

An instrument runway served by ILS and/or MLS to and along the surface of the runway and:

A — intended for operations with a decision height lower than 30 m (100 ft), or no decision height and runway visual range not less than 200 m.

B — intended for operations with a decision height lower than 15 m (50 ft), or no decision height and runway visual range less than 200 m but not less than 50 m.

C — intended for operations with no decisions height and no runway visual range limitations.

Pre-flight information bulletin (PIB). A presentation of current NOTAM information of operational significance, prepared prior to flight.

Preliminary flight plan (PFP). The information related to a flight submitted by an operator or a designated representative to conduct collaborative planning of a flight, prior to filing a flight plan.

Preliminary Report. The communication used for the prompt dissemination of data obtained during the early stages of the investigation.

Pressure-altitude. An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere as defined in Annex 8.

Prevailing visibility. The greatest visibility value, observed in accordance with the definition of "visibility", which is reached within at least half the horizon circle or within at least half of the surface of the aerodrome. These areas could comprise contiguous or non-contiguous sectors.

Note— This value may be assessed by human observation and/or instrumented systems. When instruments are installed, they are used to obtain the best estimate of the prevailing visibility.

Preventive RA. A resolution advisory that advises the pilot to avoid certain deviations from the current flight path but does not require any change in the current flight path.

Primary area. A defined area symmetrically disposed about the nominal flight track in which full obstacle clearance is provided.

Primary Certification Authority. Means the National Aviation Authority of the State of Design.

Primary frequency. The radiotelephony frequency assigned to an aircraft as a first choice for air-ground communication in a radiotelephony network.

Primary means of communication. The means of communication to be adopted normally by aircraft and ground stations as a first choice where alternative means of communication exist.

Primary radar. A radar system which uses reflected radio signals.

Primary runway(s). Runway(s) used in preference to others whenever conditions permit.

Primary surveillance radar (PSR). A surveillance radar system which uses reflected radio signals.

Primary surveillance radar (PR or PSR). A radar which detects the presence of a target based on reflected radar energy from that target.

Principal place of business. The notion of the operator's principal place of business has not been defined so far in ICAO documents, although it is referred to in Article 83 bis as well as in the definition of the "State of the Operator". It should be a matter

of appreciating the facts of each case and comparing the importance of the various places of business of an operator so that the main one can be selected. Domestic jurisprudence or case law may also offer definitions and criteria assisting in the determination of an air operator's principal place of business.

Printed communications. Communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.

Private Key. A cryptographic key known only to the user, employed in public key cryptography in decrypting or signing information.

Probability of detection (Pv*)*·Probability that a correct radar plot message is derived when a target is present.

Probe. The biometric template of the enrollee whose identity is sought to be established.

Problematic use of substances. The use of one or more psychoactive substances by aviation personnel in a way that:

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or

(b) causes or worsens an occupational, social, mental or physical problem or disorder.

Problematic substance use intervention. Consists of actions aimed at nullifying or minimizing the psycho• logical, physiological, medical, occupational, operational , and/or social consequences of problematic substance use, especially those adversely affecting safety i n the aviation workplace .

Problematic substance use prevention. C onsists of the actions necessary to preclude problematic substance users from being employed within the safety-sensitive areas of aviation and the actions aimed at deterring safety-sensitive aviation personnel from engaging in problematic substance use.

Procedure. A series of steps followed in a methodical manner to complete an activity or a process, describing what should be done, when and by whom; where and how each step should be carried out; what information, documentation and resources should be used; and how it should all be controlled.

Procedure altitude/height. A published altitude/height used in defining the vertical profile of a flight procedure, at or above the minimum obstacle clearance altitude/height where established

Procedural control. Term used to indicate that information derived from an ATS surveillance system is not required for the provision of air traffic control service.

Procedural separation. The separation used when providing procedural control.

Procedure turn. A manoeuvre in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

Note 1— Procedure turns are designated "left" or "right" according to the direction of the initial turn.

Note 2— Procedure turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure

Process. A set of interrelated or interacting activities that transforms inputs into outputs. Processes within an organization or programme are generally planned and carried out under controlled conditions to add value.

Profile. The orthogonal projection of a flight path or portion thereof on the vertical surface containing the nominal track.

Prognostic chart. A forecast of a specified meteorological element(s) for a specified time or period and a specified surface or portion of airspace, depicted graphically on a chart.

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

Propulsion system. A system consisting of an engine and all other equipment utilized to provide those functions necessary to sustain, monitor and control the power/thrust output of any one engine following installation on the airframe.

Protected flight zones. Airspace specifically designated to mitigate the hazardous effects of laser radiation.

Protected service volume. A part of the facility coverage where the facility provides a particular service in accordance with relevant SARPs and within which the facility is afforded frequency protection.

Protection area. An area within a taxi-route and around a helicopter stand which provides separation from objects, the FATO, other taxi-routes and helicopter stands, for safe manoeuvring of helicopters.

Protocol Questions (PQs). The primary tool used in USOAP for assessing the level of effective implementation of a State's safety oversight system based on the eight critical elements, the Convention on International Aviation, ICAO SARPs, PANS and related guidance material.

Pseudorandom message data block. Several UAT requirements state that performance will be tested using pseudorandom message data blocks. Pseudorandom message data blocks should have statistical properties that are nearly indistinguishable from those of a true random selection of bits. For instance, each bit should have (nearly) equal probability of being a ONE or a ZERO, independent of its neighbouring bits. There should be a large number of such pseudorandom message data blocks for each message type (Basic ADS-B, Long ADS-B or Ground Uplink) to provide sufficient independent data for statistical performance measurements. See Section 2.3 of Part I of the Manual on the Universal Access Transceiver (UAT) (Doc 9861) for an example of how to provide suitable pseudorandom message data blocks.

Pseudo-range. The difference between the time of transmission by a satellite and reception by a GNSS receiver multiplied by the speed of light in a vacuum, including bias due to the difference between a GNSS receiver and satellite time reference.

PSR blip. The visual indication, in non-symbolic form, on a situation display of the position of an aircraft obtained by primary radar.

Psychoactive substances. Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

Public authorities. The agencies or officials of a Contracting State responsible for the application and enforcement of the particular laws and regulations of that State which relate to any aspect of these Standards and Recommended Practices.

Public health emergency of international concern. An extraordinary event which is determined, as provided in the International Health Regulations (2005) of the World Health Organization: (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response.

Public health risk. A likelihood of an event that may affect adversely the health of human populations, with an emphasis on one which may spread internationally or may present a serious and direct danger.

Public key. The public component of an integrated asymmetric key pair, used in encrypting or verifying information.

Public key certificate. The public key information of an entity signed by the certification authority and thereby rendered unforgettable.

Public key cryptography. A form of asymmetric encryption where all parties possess a pair of keys, one private and one public, for use in encryption and digital signing of data.

Public Key Infrastructure (PKI). A set of policies, processes and technologies used to verify, enrol and certify users of a security application. A PKI uses public key cryptography and key certification practices to secure communications.

Public key system. A cryptographic method using pairs of keys, one of which is secret and one is public. If encipherment is done using the public key, decipherment requires application of the corresponding secret key and vice versa.

Public use aerodrome. An aerodrome licensed to be available to all persons on equal terms and conditions for the take-off or landing of aircraft.

Pulse amplitude. The maximum voltage of the pulse envelope.

Pulse code. The method of differentiating between W, X, Y and Z modes and between FA and IA modes.

Pulse compression. A transmitter frequency modulation technique (change in frequency within the pulse), coupled with a frequency sensitive receiver signal

processing technique, which enables a radar to obtain the resolution and accuracy of a short pulse and the detection capability of a long pulse.

Pulse decay time. The time as measured between the 90 and 10 per cent amplitude points on the trailing edge of the pulse envelope.

Pulse duration. The time interval between the 50 per cent amplitude point on leading and trailing edges of the pulse envelope.

Pulse length. The time between the 50 per cent amplitude points on the leading and trailing edges of the pulse envelope. Also known as a pulse width.

Pulse position modulation (PPM). Modulation technique used for Mode S replies where a pulse transmitted in the first half of the bit position interval represents a binary ONE, whereas a pulse transmitted in the second half represents a binary ZERO.

Pulse repetition frequency (PRF). An average number of Pulses/interrogations per second transmitted by the radar. Also known as pulse recurrence frequency.

Pulse repetition interval (p.r.i.). An average interval between two successive pulses/interrogations transmitted by a radar.

Pulse rise time. The time as measured between the 10 and 90 per cent amplitude points on the leading edge of the pulse envelope.

Pulse train. A sequence of framing and information pulses in the coded SSR reply.

Qualification training. Job-category-related knowledge, attitude and skills appropriate to the discipline to be pursued in the ATS environment.

Quality. Degree to which a set of inherent characteristics fulfils requirements as per ISO 9000.

Note 1— The term “quality” can be used with adjectives such as poor, good or excellent.

Note 2— “Inherent”, as opposed to “assigned”, means existing in something, especially as a permanent characteristic.

Quality assurance. Part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000Standard).

Quality audit. A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Quality control. Part of quality management focused on fulfilling quality requirements according to ISO 9000 Standard.

Quality management. Coordinated activities to direct and control an organization with regard to quality according to ISO 9000 Standard**.**

Quality of service (QOS): The information relating to data transfer characteristics used by various communication protocols to achieve various levels of performance for network users.

Quality of service (QoS). The totality of the characteristics of an entity that bear on its ability to satisfy stated and implied needs.

Quality of service delivered (QoSD). A statement of the QoS achieved or delivered to the RPAS operator by the C2CSP.

Quality of service experienced (QoSE). A statement expressing the QoS that the remote pilot believes they have experienced.

Quality of service required (QoSR). A statement of the QoS requirements of the RPAS operator to the C2CSP.

Note.— The QoSR may be expressed in descriptive terms (criteria) listed in the order of priority, with preferred performance value for each criterion. The C2CSP then translates these into parameters and metrics pertinent to the service.

Quality system. Documented organizational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvement**.**

Quantized video (QV). Generic term for a video signal generated by regularly sampling an analogue video signal and assigning it a binary value of one or zero depending on whether the analogue value exceeds or does not exceed a threshold. It is also known as hard bit quantized video. Specific terms that occur in some manufacturers' documentation include:

(a) for primary radar, the threshold may be referred to as a dynamic noise threshold or fast time constant threshold;

(b) for secondary radar, quantized video may refer to a pulse generated within a plot extractor on detection of F1, F2 pulses, synchronized to the plot extractor timing; and

(c) for monopulse SSR, quantized video may refer to an analogue video converted to digital words synchronized to the monopulse plot extractor master clock timing.

Quantum. Range unit used for quantization of the range information. Also known as range bin or range cell.

Quarantine. The restriction of activities and/or separation from others of suspect persons who are not ill or of suspect baggage, containers, conveyances or goods in such a manner as to prevent the possible spread of infection or contamination.

RA sense. The sense of an ACAS II RA is “upward” if it requires climb or limitation of descent rate and “downward” if it requires descent or limitation of climb rate. It can be both upward and downward simultaneously if it requires limitation of the vertical rate to a

specified range.

Note.— The RA sense may be both upward and downward when, having several simultaneous threats, ACAS generates an RA aimed at ensuring adequate separation below some threat(s) and above some other threat(s).

Racetrack procedure. A procedure designed to enable the aircraft to reduce altitude during the initial approach segment and/or establish the aircraft inbound when the entry into a reversal procedure is not practical.

Radar. A radio detection device which provides information on range, azimuth and/or elevation of objects.

Radar approach. An approach in which the final approach phase is executed under the direction of a controller using radar.

Radar clutter. The visual indication on a situation display of unwanted signals.

Radar contact. The situation which exists when the radar position of a particular aircraft is seen and identified on a situation display.

Radar control. Term used to indicate that radar-derived information is employed directly in the provision of air traffic control service.

Radar controller. A qualified air traffic controller holding a radar rating appropriate to the functions to which he is assigned.

Radar display. An electronic display of radar-derived information depicting the position and movement of aircraft.

Radar identification. The situation which exists when the radar position of a particular aircraft is seen on a radar display and positively identified by the air traffic controller.

Radar map. Information superimposed on a radar display to provide ready indication of selected features.

Radar monitoring. The use of radar for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path, including deviations from the terms of their air traffic control clearances.

Radar position indication; RPI The visual indication, in non-symbolic and/or symbolic form, on a radar display of the position of an aircraft obtained by primary and/or secondary surveillance radar.

Radar position symbol; RPS The visual indication, in symbolic form, on a radar display, of the position of an aircraft obtained after automatic processing of positional data derived from primary and/or secondary surveillance radar.

Radar reinforcement. In combined PSR/SSR plot extractors, the term is applied to the successful association of a primary plot with an SSR plot. Also known as plot combination. If successful association is achieved, the plot extractor generates an SSR

message in which an additional bit, radar reinforcement, is set; the remaining primary radar plot information may be merged or it may be discarded.

Radar separation. The separation used when aircraft position information is derived from radar sources

Radar service. Term used to indicate a service provided directly by means of radar.

Radar track position. An extrapolation of aircraft position by the computer based upon radar information and used by the computer for tracking purposes.

Radar unit. That element of an air traffic services unit which uses radar equipment to provide one or more services.

Radar vectoring. Provision of navigational guidance to aircraft in the form of specific headings, based on the use of radar.

Radian (rad). The plane angle between two radii of a circle which cut off on the circumference an arc equal in length to the radius.

Radiotelephony. A form of radio communication primarily intended for the exchange of information in the form of speech.

Radiotelephony network. A group of radiotelephony aeronautical stations which operate on and guard frequencies from the same family and which support each other in a defined manner to ensure maximum dependability of air-ground communications and dissemination of air-ground traffic.

Radio bearing. The angle between the apparent direction of a definite source of emission of electro-magnetic waves and a reference direction, as determined at a radio direction-finding station. A *true* radio bearing is one for which the reference direction is that of true North. A *magnetic* radio bearing is one for which the reference direction is that of magnetic North

Radio direction finding (RR S1.12). Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object.

Radio direction-finding station (RR S1.91). A radio determination station using radio direction finding.

Note— The aeronautical application of radio direction finding is in the aeronautical radio navigation service.

Radio navigation service. A service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.

Radiotelephony. A form of radio communication primarily intended for the exchange of information in the form of speech.

Rainbow printing (Iris or split fountain printing). A technique whereby two or more colours of ink are printed simultaneously by the same unit on a press to create a controlled merging of the colours similar to the effect seen in a rainbow.

Ramp see: apron

Random access. A means of storing data whereby specific items of data can be retrieved without the need to sequence through all the stored data.

Random Access Memory (RAM). A volatile memory randomly accessible used in the IC that requires power to maintain data.

Range of variables (conditions). The conditions under which the competency units must be performed.

Rated air traffic controller. An air traffic controller holding a licence and valid ratings appropriate to the privileges to be exercised.

Rated ATSEP. An ATSEP holding the qualification appropriate to the privileges to be exercised.

Rated coverage. The area surrounding an NDB within which the strength of the vertical field of the ground wave exceeds the minimum value specified for the geographical area in which the radio beacon is situated.

Note.— The above definition is intended to establish a method of rating radio beacons on the normal coverage to be expected in the absence of sky wave transmission and/or anomalous propagation from the radio beacon concerned or interference from other LF/MF facilities, but taking into account the atmospheric noise in the geographical area concerned.

Rated thrust. For engine emissions purposes, the maximum take-off thrust approved by the certificating authority for use under normal operating conditions at ISA sea level static conditions, and without the use of water injection. Thrust is expressed in kilonewtons.

Rating. An authorization entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

Raw video. Unprocessed, analogue PSR or SSR video information.

RCP type. A label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity.

Reactive inks. Inks that contain chemical sensitizers to guard against tampering.

Readback. A procedure whereby the receiving station repeats a received message or an appropriate part thereof back to the transmitting station so as to obtain confirmation of correct reception.

Read only memory (ROM). Non-volatile memory that is written once, usually during IC production. It is used to store operating systems and algorithms employed by the semiconductor in an integrated circuit card during transactions.

Read range. The maximum practical distance between the contactless IC with its

antenna and the reading device.

Real-time quality control (RTQC). A form of built-in test equipment and/or software in which system performance parameters are monitored in real time (on-line).

Receiver side-lobe suppression (RSLS). A method, using two (or more) receivers to suppress aircraft replies which have been received via side lobes of the main beam of the antenna.

Receiving State: The country to which the MRTD holder is applying for entry.

Receiving State. The country reading the biometric and wanting to verify it.

Receiving unit/controller. Air traffic services unit/air traffic controller to which a message is sent.

Note— See definition of "sending unit/controller".

Recertification. Certification of an aircraft with or without a revision to its certification noise levels, to a Standard different to that to which it was originally certificated.

Recognized organizations. Entities including national, regional, supranational and international organizations, committees or bodies with which ICAO has signed a Memorandum of Understanding (MOU) for the sharing of information under the USOAP CMA.

Reed-Solomon code: An error correction code capable of correcting symbol errors. Since symbol errors are collections of bits, these codes provide good burst error correction capabilities.

Reference datum height (RDH). The height of the extended glide path or a nominal vertical path at the runway threshold.

Reference geometric factor. An adjustment factor based on a measurement of aeroplane fuselage size derived from a two-dimensional projection of the fuselage.

Reference humidity. The relationship between temperature and reference humidity is defined as follows:

— at temperatures at and below ISA, 80 per cent relative humidity,

— at temperatures at and above ISA + 28°C, 34 per cent relative humidity,

— at temperatures between ISA and ISA + 28°C, the relative humidity varies linearly between the humidity specified for those temperatures.

Reference pressure ratio. The ratio of the mean total pressure at the last compressor discharge plane of the compressor to the mean total pressure at the compressor entry plane when the engine is developing take-off thrust rating in ISA sea level static conditions.

Note— Methods of measuring reference pressure ratio are given in Appendix 1.

Regional air navigation agreement. Agreement approved by the Council of ICAO normally on the advice of a regional air navigation meeting.

Registration. The process of making a person's identity known to a biometric system, associating a unique identifier with that identity, and collecting and recording the person's relevant attributes into the system.

Registration (of a person). Obtaining sufficient proof of the identity of the intended card holder by traditional means, possibly including attributes (e.g. as required for a specific eService). Registration is to a defined level of proof of identity.

Registration Authority. A person or organization responsible for the identification and authentication of an applicant for a digital certificate. An RA does not issue or sign certificates.

Regular station. A station selected from those forming an en-route air- ground radiotelephony network to communicate with or to intercept communications from aircraft in normal conditions

Regulated agent. An agent, freight forwarder or any other entity who conducts business with an operator and provides security controls that are accepted or required by the appropriate authority in respect of cargo or mail.

Regulation. The giving of authoritative direction to bring about and maintain a desired degree of order.

Note— For the purpose of this manual, this term includes but is not limited to instructions, rules, edicts, directives, and sets of laws, requirements, policies and orders.

Rejected take-off area. A defined area on a heliport suitable for helicopters operating in performance class 1 to complete a rejected take-off.

Rejected take-off distance available (helicopter); RTODAH. The length of the final approach and take-off area declared available and suitable for performance class 1 helicopters to complete a rejected take-off.

Rejected take-off distance required; RTODR. The horizontal distance required from the start of the take-off to the point where the helicopter comes to a full stop following a power-unit failure and rejection of the take- off at the take-off decision point.

Release of goods. The action by the customs authorities to permit goods undergoing clearance to be placed at the disposal of the persons concerned.

Reliable link service (RLS). A data communications service provided by the subnetwork which automatically provides for error control over its link through error detection and requested retransmission of signal units found to be in error.

Relief. The inequalities in elevation of the surface of the Earth represented on aeronautical charts by contours, hypsometric tints, shading or spot elevations

Relief flights. Flights operated for humanitarian purposes which carry relief personnel

and relief supplies such as food, clothing, shelter, medical and other items during or after an emergency and/or disaster and/or are used to evacuate persons from a place where their life or health is threatened by such emergency and/or disaster to a safe haven in the same State or another State willing to receive such persons.

Relief (3-D) design (Medallion). A security background design incorporating an image generated in such a way as to create the illusion that it is embossed or debossed on the substrate surface.

Remote co-pilot: A licensed remote pilot serving in any piloting capacity other than as remote pilot-in-command but excluding a remote pilot who is in the remote pilot station for the sole purpose of receiving flight instruction.

Remote crew member. A person assigned by an operator with duties connected to the operation of a remotely piloted aircraft system during a flight duty period.

[Definition is applicable as of 26 November 2026]

Remote field monitor. A system which monitors the uplink and/or downlink performance of an SSR or Mode S system from a site located at the specified distance from the radar (far field). The monitor is interrogated by the radar, and its replies can be evaluated on the radar site. In addition, the replies may contain data about certain interrogation parameters as seen by the monitor. Alternative terminology to "remote field monitor" in common usage includes "far field monitor", "Parrot" and "site monitor".

Remote flight crew member: A licensed flight crew member charged with duties essential to the operation of a remotely piloted aircraft system during a flight duty period.

Remote monitoring and control system (RMCS). A system which allows manual or automatic reconfiguration of a radar system. The RMCS will also give an overall indication of the system status (equipment operational, equipment in standby, faults, etc.). The RMCS equipment may have a terminal either at the station level or at the ATC centre level and often at both levels.

Remote pilot. A person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time.

Remote pilot-in-command. The remote pilot designated by the operator as being in command and charged with the safe conduct of a flight.

Remote pilot station (RPS) †. The component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.

Remotely piloted aircraft (RPA) ††. An unmanned aircraft which is piloted from a remote pilot station.

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.

† Applicable until 25 November 2026

Remotely piloted aircraft system (RPAS) ††. A remotely piloted aircraft, its associated remote pilot station(s), the required C2 Link(s) and any other components as specified in the type design.

†† Applicable as of 26 November 2026

Removal of a person. Action by the public authorities of a State, in accordance with its laws, to direct a person to leave that State.

Removal order. A written order served by a State on the operator on whose flight an inadmissible person travelled into that State, directing the operator to remove that person from its territory.

Rendering (a Certificate of Airworthiness) valid. The action taken by a Contracting State, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness.

Rendering (a licence) valid. The action taken by a Contracting State, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence.

Rendering (a licence) valid. The action taken by a Contracting State, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence.

Repair. The restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.

Repair.† The restoration of an aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements.

Repair.†† The restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear.

Repatriation flights. Special flights organized, facilitated or supported by a State for the exclusive purpose of transporting that State's nationals, and other eligible persons, from foreign countries to that State, or a safe third country, through operations by State aircraft, humanitarian flights or chartered/non-scheduled commercial flights.

Repetitive flight plan (RPL). A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

Reply. A pulse train received at an SSR ground station as a result of successful SSR interrogation.

Reply code, reply pulse train. See "Code train".

Reply efficiency. The ratio of replies transmitted by the transponder to the total of received valid interrogations.

Reply preamble. A sequence of four pulses, each with a duration of 0.5 microsecond, indicating the beginning of a Mode S reply.

Reporting office see: air traffic services reporting office

Reporting point. A specified geographical location in relation to which the position of an aircraft can be reported.

Note— There are three categories of reporting points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids. A reporting point can be indicated as "on request" or as "compulsory"

Reporting period. A period which commences on 1 January and finishes on 31 December in a given year for which an aeroplane operator or State reports required information.

Requirement. Need or expectation that is stated, generally implied or obligatory as per ISO 9000

Note 1— "Generally implied" means that it is custom or common practice for the organization, its customers and other interested parties, that the need or expectation under consideration is implied.

Note 2— A qualifier can be used to denote a specific type of requirement, e.g. product requirement, quality management requirement, customer requirement.

Note 3— A specified requirement is one which is stated, for example, in a document.

Note 4— Requirements can be generated by different interested parties.

Required communication performance (RCP). A statement of the performance requirements for operational communication in support of specific ATM functions.

Required communication performance (RCP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

Required communication performance type (RCP type). A label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity.

Required navigation performance (RNP). A statement of the navigation performance necessary for operation within a defined airspace.

Note.— Navigation performance and requirements are defined for a particular

RNP type and/or application.

Required surveillance performance (RSP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

Rescue. An operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety.

Rescue coordination centre (RCC). A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

Rescue subcentre (RSC). A unit subordinate to a rescue coordination centre, established to complement the latter according to particular provisions of the responsible authorities.

Rescue unit. A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue.

Residual errors. Errors in position which exist between the corrected positions of an object (measured position minus systematic error) and the corresponding trajectory.

Residual error rate: The ratio of incorrect, lost and duplicate subnetwork service data units (SNSDUs) to the total number of SNSDUs that were sent.

Resolution. A number of units or digits to which a measured or calculated value is expressed and used

Resolution. Ability of a system to distinguish between two or more targets in close proximity to each other both in range and bearing (azimuth).

Resolution advisory (RA). An indication given to the flight crew recommending:

a) a manoeuvre intended to provide separation from all threats; or

b) a manoeuvre restriction intended to maintain existing separation.

Resolution advisory complement (RAC). Information provided by one ACAS to another via a Mode S interrogation in order to ensure complementary manoeuvres by restricting the choice of manoeuvres available to the ACAS receiving the RAC.

Resolution advisory complements record (RAC record). A composite of all currently active vertical RACs (VRCs) and horizontal RACs (HRCs) that have been received by ACAS. This information is provided by one ACAS to another ACAS or to a Mode S ground station via a Mode S reply.

Resolution advisory strength. The magnitude of the manoeuvre indicated by the RA. An RA may take on several successive strengths before being cancelled. Once a new RA strength is issued, the previous one automatically becomes void.

Resolution message. The message containing the resolution advisory complement

(RAC).

Response. A message returned by the slave to the master after the processing of a command received by the slave.

Responsor. A ground-based receiver part of the SSR. The complete equipment is generally known as the interrogator/responsor.

Responsibility/accountability. The state of being responsible for an undertaking, person, thing or action and for which an organization or individual or both are liable to be called to account. An ICAO Contracting State and its respective civil aviation authority are ultimately responsible for the implementation of ICAO SARPs within their State. A State may either perform these obligations or, through mutual agreement, have another organization perform and be accountable for these functions; however, the State retains the responsibility under its duties of sovereignty.

Rest period. A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.

Note.— *For RPAS, this applies to remote flight crew members and other remote crew members.*

Restricted area. An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

Reversal procedure. A procedure designed to enable aircraft to reverse direction during the initial approach segment of an instrument approach procedure. The sequence may include procedure turns or base turns

Reversed sense RA. A resolution advisory that has had its sense reversed.

Ring-around. Continuous reception of replies to interrogations by the side lobes of the ground antenna. This normally occurs only at short ranges, usually due to the non-existence of a side-lobe suppression mechanism or the improper functioning of this mechanism, at either the interrogator or the transponder side.

Risk analysis/aeronautical study. A mechanism, part of a safety management system, used to assess the risk (combination of event or hazard severity and probability of occurrence) posed by a particular set of circumstances. It is used to compare the outcome of such an analysis against the intended outcome of a particular Standard, Recommended Practice or national requirement so that a solution can be selected that will not degrade safety below that which is intended.

Risk assessment. An assessment by a deporting State of a deportee's suitability for escorted or unescorted removal via commercial air services. The assessment should take into account all pertinent factors, including medical, mental and physical fitness for carriage on a commercial flight, willingness or unwillingness to travel, behavioural patterns and any history of violence.

Risk management. The systematic application of management procedures and practices which provide border inspection agencies with the necessary information to

address movements or consignments which represent a risk.

RNP type. A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time. Example.— RNP 4 represents a navigation accuracy of plus or minus 7.4 km (4 NM) on a 95 per cent containment basis.

Road. An established surface route on the movement area meant for the exclusive use of vehicles.

Road-holding position. A designated position at which vehicles may be required to hold.

Roll-call. On the uplink, the roll-call is a regular scheduled selective Mode S interrogation that is addressed to a specific Mode S transponder and intended to elicit a reply to support the surveillance function.

Roll-call period (also known as Mode S period). The time interval during which a Mode S interrogator schedules the time windows allocated for Mode S transactions.

Rotorcraft. A power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

Round (trip) reliability. An SSR term used to state the probability of receiving a detectable reply at the interrogator, resulting from an SSR interrogation.

Route segment. A route or portion of route usually flown without an intermediate stop.

Route stage. A route or portion of a route flown without an intermediate landing

Routing Directory. A list in a communication centre indicating for each addressee the outgoing circuit to be used

Router. A router is a node that forwards Internet protocol (IP) packets not explicitly addressed to itself. A router manages the relaying and routing of data while in transit from an originating end system to a destination end system**.**

RPA observer. A trained and competent person designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight.

RPAS operator certificate (ROC). A certificate authorizing an operator to carry out specified RPAS operations.

[Definition is applicable as of 26 November 2026.*]*

RPAS-recorder system (RPAS-RS). The recorder system installed in the remotely piloted aircraft system for the purpose of complementing accident/incident investigation. RPAS recorder systems consists of the following:

An RPA-recorder system (RPA-RS). Any type of recorder system installed in the remotely piloted aircraft for the purpose of complementing accident/incident investigation.

An RPS-recorder system (RPS-RS). Any type of recorder system installed in the RPS for the purpose of complementing accident/incident investigation.

[Definition is applicable as of 26 November 2026.*]*

Run length. See "Delta theta".

Runway. A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Runway condition assessment matrix (RCAM). A matrix allowing the assessment of the runway condition code, using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

Runway condition code (RWYCC). A number describing the runway surface condition to be used in the runway condition report.

Note.— The purpose of the runway condition code is to permit an operational aeroplane performance calculation by the flight crew. Procedures for the determination of the runway condition code are described in the PANS-Aerodromes (Doc 9981).

Runway condition report (RCR). A comprehensive standardized report relating to runway surface condition(s) and its effect on the aeroplane landing and take-off performance.

Runway end safety area (RESA). An area symmetrical about the extended runway centre line and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.

Runway guard lights. A light system intended to caution pilots or vehicle drivers that they are about to enter an active runway.

Runway-holding position. A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

Note— In radiotelephony phraseologies, the expression “holding point” is used to designate the runway-holding position.

Runway incursion. Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.

Runway strip. A defined area including the runway and stopway, if provided, intended:

(a) to reduce the risk of damage to aircraft running off a runway; and

(b) to protect aircraft flying over it during take-off or landing operations

Runway surface condition(s). A description of the condition(s) of the runway surface

used in the runway condition report which establishes the basis for the determination of the runway condition code for aeroplane performance purposes.

Note 1.— The runway surface conditions used in the runway condition report establish the performance requirements between the aerodrome operator, aeroplane manufacturer and aeroplane operator.

Note 2.— Aircraft de-icing chemicals and other contaminants are also reported but are not included in the list of runway surface condition descriptors because their effect on runway surface friction characteristics and the runway condition code cannot be evaluated in a standardized manner.

Note 3.— Procedures on determining runway surface conditions are available in the PANS-Aerodromes (Doc 9981).

a) *Dry runway.* A runway is considered dry if its surface is free of visible moisture and not contaminated within the area intended to be used.

b) *Wet runway.* The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.

c) *Slippery wet runway*. A wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.

d) *Contaminated runway.* A runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed in the runway surface condition descriptors.

Note.— Procedures on determination of contaminant coverage on runway are available in the PANS-Aerodromes (Doc 9981).

e) *Runway surface condition descriptors*. One of the following elements on the surface of the runway:

Note.— The descriptions for e) i) to viii) are used solely in the context of the runway condition report and are not intended to supersede or replace any existing WMO definitions.

i) *Compacted snow.* Snow that has been compacted into a solid mass such that aeroplane tires, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface.

ii) *Dry snow.* Snow from which a snowball cannot readily be made.

iii) *Frost.* Frost consists of ice crystals formed from airborne moisture on a surface whose temperature is below freezing. Frost differs from ice in that the frost crystals grow independently and therefore have a more granular texture.

Note 1.— Below freezing refers to air temperature equal to or less than

the freezing point of water (0 degree Celsius).

Note 2.— Under certain conditions frost can cause the surface to become very slippery and it is then reported appropriately as reduced braking action.

iv) *Ice.* Water that has frozen or compacted snow that has transitioned into ice, in cold and dry conditions.

v) *Slush.* Snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully.

vi) *Standing water.* Water of depth greater than 3 mm.

Note.— Running water of depth greater than 3 mm is reported as standing water by convention.

vii) *Wet ice*. Ice with water on top of it or ice that is melting.

Note.— Freezing precipitation can lead to runway conditions associated with wet ice from an aeroplane performance point of view. Wet ice can cause the surface to become very slippery. It is then reported appropriately as reduced braking action in line with procedures in the PANS-Aerodromes (Doc 9981).

viii) *Wet snow.* Snow that contains enough water content to be able to make a well-compacted, solid snowball, but water will not squeeze out.

Runway turn pad. A defined area on a land aerodrome adjacent to a runway for the purpose of completing a 180-degree turn on a runway.

Runway-type FATO. A FATO having characteristics similar in shape to a runway.

Runway visual range (RVR). The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

RVSM approval. The term used to describe the successful completion of airworthiness approval and operational approval (if required).

Sabotage. An act or omission, intended to cause malicious or wanton destruction of property, endangering or resulting in unlawful interference with international civil aviation and its facilities.

Safe forced landing. Unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface.

Safety. The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety area. A defined area on a heliport surrounding the FATO which is free of

obstacles, other than those required for air navigation purposes, and intended to reduce the risk of damage to helicopters accidentally diverging from the FATO.

Safety data. A defined set of facts or set of safety values collected from various aviation-related sources, which is used to maintain or improve safety.

Note.— Such safety data is collected from proactive or reactive safety-related activities, including but not limited to:

a) accident or incident investigations;

b) safety reporting;

c) continuing airworthiness reporting;

d) operational performance monitoring;

e) inspections, audits, surveys; or

f) safety studies and reviews.

Safety information. Safety data processed, organized or analysed in a given context so as to make it useful for safety management purposes

Safety management system. A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

[Definition is applicable as of 26 November 2026]

Safety oversight. A function performed by a State to ensure that individuals and organizations performing an aviation activity comply with safety-related national laws and regulations.

Safety performance. A State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety performance indicator. A data-based parameter used for monitoring and assessing safety performance.

Safety performance target. The planned or intended objective for safety performance indicator(s) over a given period.

Safety risk. The predicted probability and severity of the consequences or outcomes of a hazard.

Safety recommendation. A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from

accident and incident investigations, safety recommendations may result from diverse sources, including safety studies.

Safety recommendation of global concern (SRGC). A safety recommendation regarding a systemic deficiency having a probability of recurrence, with significant consequences at a global level, and requiring timely action to improve safety.

Note.— The Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part IV – Reporting contains the criteria for a recommendation to be classified as an SRGC.

Sailplane: See glider

Safety-sensitive personnel (employes). Persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

Satellite-based augmentation system (SBAS). A wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter.

Note— SBAS performance standards are found in Annex 10, Volume I, Chapter 3.

Satisfactory evidence. A set of documents or activities that a Contracting State accepts as sufficient to show compliance with an airworthiness requirement.

Scenario (event-set). Relatively independent segment of training made up of several events.

Score. A number on a scale from low to high, measuring the success that a biometric probe record (the person being searched for) matches a particular gallery record (a person previously enrolled)

Screening. The application of technical or other means which are intended to identify and/or detect weapons, explosives or other dangerous devices, articles or substances which may be used to commit an act of unlawful interference.

Note— Certain dangerous articles or substances are classified as dangerous goods by Annex 18 and the associated Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284) and must be transported in accordance with those instructions. In addition, the Aviation Security Manual (Doc 8973 — Restricted) provides a list of prohibited items that must never be carried in the cabin of an aircraft.

Screening. When the shape of the terrain or certain objects prevent the detection of targets in certain parts of the airspace, one speaks about screening of the parts of the airspace concerned.

Sea clutter. Unwanted primary radar reflections from sea. Varies with sea state.

Search. An operation normally coordinated by a rescue coordination centre or rescue subcentre using available personnel and facilities to locate persons in distress.

Search. The condition which exists when the DME interrogator is attempting to acquire and lock onto the response to its own interrogations from the selected transponder.

Search and rescue aircraft. An aircraft provided with specialized equipment suitable for the efficient conduct of search and rescue missions.

Search and rescue facility. Any mobile resource, including designated search and rescue units, used to conduct search and rescue operations.

Search and rescue region (SRR). An area of defined dimensions, associated with a rescue coordination centre, within which search and rescue services are provided.

Search and rescue service. The performance of distress monitoring, communication, coordination and search and rescue functions, initial medical assistance or medical evacuation, through the use of public and private resources, including cooperating aircraft, vessels and other craft and installations.

Search and rescue services unit. A generic term meaning, as the case may be, rescue coordination centre, rescue subcentre or alerting post.

Search and rescue unit. A mobile resource composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations.

Second (s). The duration of 9 192 631 770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium-133 atom

Secondary area. A defined area on each side of the primary area located along the nominal flight track in which decreasing obstacle clearance is provided.

Secondary frequency. The radiotelephony frequency assigned to an aircraft as a second choice for air-ground communication in a radiotelephony network.

Secondary image. A repeat image of the holder's portrait reproduced elsewhere in the document by whatever means.

Secondary radar. A radar system wherein a radio signal transmitted from the radar station initiates the transmission of a radio signal from another station.

Secondary surveillance radar (SSR). A surveillance radar system which uses transmitters/receivers (interrogators) and transponders.

Note: - The requirements for interrogators and transponders are specified in Chapter 3.

Secondary surveillance radar (SSR) transponder. A unit which transmits a response signal on receiving an SSR interrogation. The term is a derivative of the words transmitter and responder.

Secure hash algorithm (SHA). Hash function developed by the NIST and published as a federal information processing standard in 1993.

Secured message. A message that is protected against illegal alteration or origination.

Security. Safeguarding civil aviation against acts of unlawful interference. This objective is achieved by a combination of measures and human and material resources.

Security audit. An in-depth compliance examination of all aspects of the implementation of the national civil aviation security programme.

Security check: See Security control

Security control. A means by which the introduction of weapons, explosives or other dangerous devices, articles or substances which may be used to commit an act of unlawful interference can be prevented.

Security culture. A set of security-related norms, values, attitudes and assumptions that are inherent in the daily operation of an organization and are reflected by the actions and behaviours of all entities and personnel within the organization.

Security equipment. Devices of a specialized nature for use, individually or as part of a system, in the prevention or detection of acts of unlawful interference with civil aviation and its facilities.

Security inspection. An examination of the implementation of relevant national civil aviation security programme requirements by an airline, airport, or other entity involved in security.

Security restricted area. Those areas of the airside of an airport which are identified as priority risk areas where in addition to access control, other security controls are applied. Such areas will normally include, inter alia, all commercial aviation passenger departure areas between the screening checkpoint and the aircraft, the ramp, baggage make-up areas, including those where aircraft are being brought into service and screened baggage and cargo are present, cargo sheds, mail centres, airside catering and aircraft cleaning premises.

Security survey. An evaluation of security needs including the identification of vulnerabilities which could be exploited to carry out an act of unlawful interference, and the recommendation of corrective actions.

Security test. A covert or overt trial of an aviation security measure which simulates an attempt to commit an unlawful act.

Security thread. A thin strip of plastic or other material embedded or partially embedded in the structure of the document.

See-through register (front-to-back). See front-to-back register.

Segregated parallel operations. Simultaneous operations on parallel or near-parallel instrument runways in which one runway is used exclusively for approaches and the other runway is used exclusively for departures.

Self-organizing time division multiple access (STDMA): A multiple access scheme based on time-shared use of a radio frequency (RF) channel employing: (1) discrete contiguous time slots as the fundamental shared resource; and (2)) a set of operating protocols that allows users to mediate access to these time slots without reliance on a master control station.

Self-sustaining powered sailplane. A powered aeroplane with available engine power which allows it to maintain level flight but not to take off under its own power.

Semi-automatic relay installation. A teletypewriter installation where interpretation of the relaying responsibility in respect of an incoming message and the resultant setting-up of the connections required to effect the appropriate retransmissions require the intervention of an operator but where all other normal operations of relay are carried out automatically.

Sending unit/controller. Air traffic services unit/air traffic controller transmitting a message.

Note— See definition of "receiving unit/controller".

Sensitivity level (S). An integer defining a set of parameters used by the traffic advisory (TA) and collision avoidance algorithms to control the warning time provided by the potential threat and threat detection logic, as well as the values of parameters relevant to the RA selection logic.

Note.— For TA and RA selection, sensitivity level is not used in ACAS X-compliant systems.

Sensitivity time control (STC). See "Gain time control".

Series of flights. Series of flights are consecutive flights that:

(a) begin and end within a period of 24 hours; and

(b) are all conducted by the same pilot-in-command.

Serious incident. An incident involving circumstances indicating that there was a high probability of an accident and 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 as it comes to rest at the end of the flight and the primary propulsion system is shut down.

Note 1— The difference between an accident and a serious incident lies only in the result.

Note 2— Examples of serious incidents can be found in Attachment C of Annex 13.

Serious injury. An injury which is sustained by a person in an accident and which:

(a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or

(b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or

(c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or

(d) involves injury to any internal organ; or

(e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or

(f) involves verified exposure to infectious substances or injurious radiation.

Service. A function and/or data critical to the system or user, provided directly or indirectly, either individually, or as part of an overall function or output.

Service volume. A part of the facility coverage where the facility provides a particular service in accordance with relevant SARPs and within which the facility is afforded frequency protection.

Serviceability of an aircraft part. An approved part is serviceable when it meets approved design data applicable to that part and has been manufactured and subsequently maintained in accordance with the requirements of the State of Design, Manufacture or Registry, as applicable.

Service data unit (SDU): A unit of data transferred between adjacent layer entities, which is encapsulated within a protocol data unit (PDU) for transfer to a peer layer.

Service flow: A unidirectional flow of media access control layer (MAC) service data units (SDUs) on a connection that is providing a particular quality of service (QoS).

Service level agreement (SLA). The agreement between the C2CSP and the RPAS operator covering the safety, performance, service area and security of the C2 Link provision as required for the RPAS operator's intended operations.

Service provider. An organization, serving operators and other providers, that is part of the aviation activity and is functionally separated from its regulator.

SHA. See secure hash algorithm.

SHA-1 1994. revision to SHA which is considered more secure.

Shadow Image Used synonym to Ghost Image: A second representation of the holder's portrait on the document, reduced in contrast and/or saturation and/or size.

Shipboard heliport. A heliport located on a ship that may be purpose or non-purpose-built. A purpose-built shipboard heliport is one designed specifically for helicopter operations. A non-purpose-built shipboard heliport is one that utilizes an area of the ship that is capable of supporting a helicopter but not designed specifically for that task.

Shoreline. A line following the general contour of the shore, except that in cases of inlets or bays less than 30 nautical miles in width, the line shall pass directly across the inlet or bay to intersect the general contour on the opposite side.

Shoulder. An area adjacent to the edge of a pavement so prepared as to provide a transition between the pavement and the adjacent surface

Side lobes (antenna). Lobes of the radiation pattern of an antenna, which are not part of the main or principal beam. Radar systems can have sufficient sensitivity via side lobes for successful detection of aircraft (particularly for SSR, but also for PSR). Special precautions are necessary to protect against these false plots.

Side-lobe suppression (SLS). A mechanism in an SSR transponder activated by the transmission (radiation) of a control pulse (P2 or P5) of amplitude greater than the antenna side-lobe signals-in-space, which will enable the transponder to prevent itself from replying to the side-lobe interrogation signals.

Siemens (S). The electric conductance of a conductor in which a current of 1 ampere is produced by an electric potential difference of 1 volt

Sievert (Sv). The unit of radiation dose equivalent corresponding to 1 joule per kilogram

SIGMET information. Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations.

Sign.

(a) Fixed message sign. A sign presenting only one message.

(b) Variable message sign. A sign capable of presenting several predetermined messages or no message, as applicable.

Sign a maintenance release (to). To certify that maintenance work has been completed satisfactorily in accordance with appropriate airworthiness requirements by issuing the maintenance release reffered to in Annex 6 (in case of a releaser not issued by an approved maintenance organization) or Annex 8 (in the case of a release issued by an approved maintenance organization).

Signal area. An area on an aerodrome used for the display of ground signals.

Significant. In the context of the medical provisions in Chapter 6, significant means to a degree or of a nature that is likely to jeopardize flight safety.

Significant point. A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes.

Note— There are three categories of significant points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids

Significant obstacle. Any natural terrain feature or man-made fixed object, permanent or temporary, which has vertical significance in relation to adjacent and surrounding features and which is considered a potential hazard to the safe passage of aircraft in the type of operation for which the individual procedure is designed.

Note— The term "significant obstacle" is used in this document solely for the purpose of specifying the objects considered in calculations of relevant elements of the procedure and intended to be presented on an appropriate chart series.

Significant Safety Concern (SSC). Occurs when the audited State allows the holder of an authorization or approval to exercise the privileges attached to it, although the minimum requirements established by the State and by the Standards set forth in the Annexes to the Chicago Convention are not met, resulting in an immediate safety risk to international civil aviation.

Simplex. A method in which telecommunication between two stations takes place in one direction at a time.

Note— In application to the aeronautical mobile service, this method may be subdivided as follows:

(a) single channel simplex;

(b) double channel simplex;

(c) offset frequency simplex.

Single channel simplex. Simplex using the same frequency channel in each direction.

Single Window. A facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export, and transit-related regulatory requirements. If information is electronic then individual data elements should only be submitted once.

Situation display. An electronic display depicting the position and movement of aircraft and other information as required.

+Size 1 machine readable official travel document (TD-1): A card with nominal dimensions guided by those specified for the ID-1 type card (ISO/IEC 7810) (excluding thickness). In the case of a plastic card which carries any optional, additional data storage technology, the reading of which requires it to be inserted into a slot reader (i.e. magnetic stripe, optical memory or integrated circuit with contacts), the TD-1 conforms to the precise dimensions and tighter tolerances specified in ISO/IEC 7810.

Size 2 machine readable official travel document (TD-2): A card or label conforming with the dimensions defined for the ID-2 type card (ISO/IEC 7810) (excluding thickness). In the case of a card which carries any optional, additional data storage technology, the reading of which requires the TD-2 to be inserted into a slot reader (e.g. a magnetic stripe), the TD-2 conforms to the precise dimensions and tighter tolerances specified in ISO/IEC 7810. Part I. Machine Readable Passports — Volume I Section II. References and definitions II-3.

Skill. Practical or intellectual ability; ease in doing something; dexterity. Skills are classified as either intellectual or physical. Intellectual skills are those related to the use of intellect, like the abilities of classifying, rule- using, discriminating, problem-solving or cognitive strategy (the most complex of all). Physical skills are those that enable a person to make coordinated movements, perform manual tasks, and carry out physical activities. The skills are a component part of the expected trainees' performance that is described in the intermediate objective.

Slot: One of a series of consecutive time intervals of equal duration. Each burst transmission starts at the beginning of a slot.

Slotted aloha. A random access strategy whereby multiple users access the same communications channel independently, but each communication must be confined to a fixed time slot. The same timing slot structure is known to all users, but there is no other coordination between the users.

Slush. Water-saturated snow which with a heel-and-toe slap-down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.

Note— Combinations of ice, snow and/or standing water may, especially when rain, rain and snow, or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush.

Small aeroplane. An aeroplane of a maximum certificated take-off mass of 5 700 kg or less.

Small size (Format-B) machine readable visa (MRV-B): An MRV conforming with the dimensional specifications (ID-2 size) contained in Doc 9303, Part 2, sized to maintain a clear area on the passport visa page adjacent to the visa to allow, for example, a seal to be placed on the visa and the passport page on which it is affixed or enable a number perforated through the passport pages to remain visible.

Smoke. The carbonaceous materials in exhaust emissions which obscure the transmission of light.

Smoke Number. The dimensionless term quantifying smoke emissions

SMS: See safety management system

Snow (on the ground).

(a) ***Dry snow.*** Snow which can be blown if loose or, if compacted by hand, will fall apart again upon release; specific gravity: up to but not including 0.35.

(b) ***Wet snow***. Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.

(c) ***Compacted snow***. Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked

up; specific gravity: 0.5 and over.

SNOWTAM. A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format

Solo flight time. Flight time during which a student pilot is the sole occupant of an aircraft.

Solo flight time – remotely piloted aircraft systems. Flight time during which a student remote pilot is controlling the remotely piloted aircraft system, acting solo.

Space weather centre (SWXC). A centre designated to monitor and provide advisory information on space weather phenomena expected to affect high-frequency radio communications, communications via satellite, GNSS-based navigation and surveillance systems and/or pose a radiation risk to aircraft occupants.

Note.— A space weather centre is designated as global and/or regional.

Spare parts. Articles, including engines and propellers, of a repair or replacement nature for incorporation in an aircraft.

Special Standard Practices/Maintenance Procedures Manuals. Manuals establishing standard practices for selected processes to be applied by aircraft and component maintenance personnel for the proper handling (identification, application, working procedures, use of tools, and quality standards) of standard aeronautical hardware; e.g. welding, NDT.

Special VFR flight. A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VM

Specific air range. The distance an aeroplane travels in the cruise flight phase per unit of fuel consumed.

Specific approval. An approval which is documented in the operations specifications for commercial air transport operations or in the list of specific approvals for general aviation operations.

Note.— The terms authorization, specific approval, approval and acceptance are further described in Attachment B.

Specific approval. A specific approval is an approval which is documented in the Operations Specifications for commercial air transport operations or in the list of specific approvals for non-commercial operations.

Note.— *The terms authorization, specific approval, approval and acceptance are further described in Attachment D.*

[Definition applicable as of 26 November 2026]

Split plots. Generation of two plots by a radar extraction system for the same target for one passage of the antenna main-beam through the target.

Spot beam: Satellite antenna directivity whose main lobe encompasses significantly less than the earth's surface that is within line-of-sight view of the satellite. May be designed so as to improve system resource efficiency with respect to geographical distribution of user earth stations.

Spurious plots. An unwanted radar plot not corresponding directly with an aircraft position (generally applied to SSR).

Squitter protocol data unit (SPDU). Data packet which is broadcast every 32 seconds by an HFDL ground station on each of its operating frequencies, and which contains link management information.

SSR response. The visual indication, in non-symbolic form, on a situation display, of a response from an SSR transponder in reply to an interrogation.

Stagger. Deliberate, controlled variation of pulse repetition intervals of a PSR to overcome blind speeds and decorrelate second-time-around replies.

Deliberate, controlled variation of the pulse repetition frequency of the SSR to prevent aircraft plots due to second-time around replies.

Standard instrument arrival (STAR). A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

Standard instrument departure (SID). A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.

Standard isobaric surface. An isobaric surface used on a worldwide basis for representing and analysing the conditions in the atmosphere.

Standard message element. Part of a message defined in the PANS-ATM (Doc 4444) in terms of display format, intended use and attributes.

Standard parts. Parts, such as fasteners, which are considered as approved parts when in accordance with a national or industry accepted standard and when referenced in the type design of the particular aircraft.

Standard positioning service (SPS). The specified level of positioning, velocity and timing accuracy that is available to any global positioning system (GPS) user on a continuous, worldwide basis.

Standard Practices Manuals. Manuals establishing standard practices to be applied by aircraft and component maintenance personnel for the proper handling (identification, application, working procedures, use of tools, and quality standards) of standard aeronautical hardware.

Standard Wiring Practices Manuals (SWPM). Manuals establishing standard practices for processes in relation to any wiring used in aeronautical equipment to be applied by aircraft and component maintenance personnel for proper handling

(identification, application, working procedures, use of tools, and quality standards).

Standard atmosphere. An atmosphere defined as follows:

a) the air is a perfect dry gas;

b) the physical constants are:

— Sea level mean molar mass:

$M_0 = 28.964\ 420 \times 10^{-3}$ kg mol^{-1}

— Sea level atmospheric pressure:

$P_0 = 1\ 013.250$ hPa

— Sea level temperature:

t0 = 15°C

T0 = 288.15 K

— Sea level atmospheric density:

$\rho_0 = 1.225\ 0$ kg m^{-3}

— Temperature of the ice point:

$T_i = 273.15$ K

— Universal gas constant:

R* = 8.314 32 JK–1mol^{-1}

c) the temperature gradients are:

Geopotential altitude (km)		***Temperature gradient (Kelvin per standard geopotential kilometre)***
From	***To***	
–5.0	11.0	–6.5
11.0	20.0	0.0
20.0	32.0	+1.0
32.0	47.0	+2.8

47.0	51.0	0.0
51.0	71.0	–2.8
71.0	80.0	–2.0

Note 1— The standard geopotential metre has the value 9.80665 $m^2 s^{-2}$.

Note 2— See Doc 7488 for the relationship between the variables and for tables giving the corresponding values of temperature, pressure, *density and geopotential.*

Note 3— Doc 7488 also gives the specific weight, dynamic viscosity, kinematic viscosity and speed of sound at various altitudes.

Standard UAT receiver. A general purpose UAT receiver satisfying the minimum rejection requirements of interference from adjacent frequency distance measuring equipment (DME)

Standardized health documents. Documents standardized by the World Health Organization (WHO) under the International Health Regulations (IHR) (2005).

Standby. A defined period during which a crew member may be called for a duty with minimum notice.

State of Design. The State having jurisdiction over the organization responsible for the type design.

State of Destination. The State in the territory of which the consignment is finally to be unloaded from an aircraft.

State of licence issue (SOLI). The State that issues a licence according to Annex 1.

State of Manufacture††. The State having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.

State of Manufacture†. The State having jurisdiction over the organization responsible for the final assembly of the aircraft, remote pilot station, engine or propeller.

† Applicable as of 26 November 2026.

††Applicable until 25 November 2026.

State of Occurrence. The State in the territory of which an accident or incident occurs

State of Origin. The State in the territory of which the consignment was first loaded on an aircraft.

State of the Aerodrome. The State in whose territory the aerodrome is located.

Note— For RPAS, the aerodrome includes an airport, heliport or landing location over which the State has jurisdiction.

State of the Operator. The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

State of the principal location of a general aviation operator. The State in which the operator of a general aviation aircraft has its principal place of business or, if there is no such place of business, its permanent residence.

Note.— Guidance concerning the options for the principal location of a general aviation operator is contained in the Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation (Doc 10059).

State of Registry. The State on whose register the aircraft is entered.

Note 1— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

Note 2— *For RPAS, this refers to the State on whose register the RPA is entered.*

State of the RPS service provider. The State where the RPS service provider has its primary place of business.

[Definition is applicable as of 26 November 2026]

State safety programme (SSP) / Safety Programme. An integrated set of regulations and activities aimed at improving safety.

State pair. A group of two Contracting States composed of a departing Contracting State or its territories and an arrival Contracting State or its territories.

State volcano observatory. A volcano observatory, designated by regional air navigation agreement, to monitor active or potentially active volcanoes within a State and to provide information on volcanic activity to its associated area control centre/flight information centre, meteorological watch office and volcanic ash advisory centre.

Static load-bearing surface. A surface capable of supporting the mass of a helicopter situated upon it.

Station declination. An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.

Steradian (sr). The solid angle which, having its vertex in the centre of a sphere, cuts off an area of the surface of the sphere equal to that of a square with sides of length equal to the radius of the sphere.

Sterile area see: security restricted area

Stopway. A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take-off

Stores (Supplies). (a) Stores (supplies) for consumption; and (b) Stores (supplies) to be taken away.

Stores (Supplies) for consumption. Goods, whether or not sold, intended for consumption by the passengers and the crew on board aircraft, and goods necessary for the operation and maintenance of aircraft, including fuel and lubricants.

Stores (Supplies) to be taken away. Goods for sale to the passengers and the crew of aircraft with a view to being landed.

Structural inspection. A detailed inspection of the airframe structure that may require special inspection techniques to determine the continuous integrity of the airframe and its related parts.

Structure feature. A structure feature involves the incorporation of a measurable structure into or onto the MRTD. The presence of the structure may be detected and measured by the detection machine.

Successful message reception (SMR). The function within the UAT receiver for declaring a received message as valid for passing to an application that uses received UAT messages. See Section 4 of Part I of the Manual on the Universal Access Transceiver (UAT) (Doc 9861) for a detailed description of the procedure to be used by the UAT receiver for declaring successful message reception.

Subnetwork (SN): See Network (N).

Subnetwork connection: a long-term association between an aircraft DTE and a ground DTE using successive virtual calls to maintain contect across link handoff.

Subnetwork dependent convergence function (SNDCF): A function that matches the characteristics and services of a particular subnetwork to those characteristics and services required by the internetwork facility.

Subnetwork entity: Communicating with an aircraft station; and, the phrase “aircraft DTE” will be used for the subnetwork entity in an aircraft communicating with the station. A subnetwork entity is a packet layer entity found in ISO 8208.

Subnetwork entry time: The time from when the mobile station starts the scanning for BS transmission, until the network link establishes the connection, and the first network user “protocol data unit” can be sent.

Subnetwork Layer: The layer that establishes, manages and terminates connections

across a subnetwork.

Subnetwork service data unit (SNSDU): An amount of subnetwork user data, the identity of which is preserved from one end of a subnetwork connection to the other.

Subscriber station (SS): A generalized equipment set providing connectivity between subscriber equipment and a base station (BS).

Subsidiary legislation. Legislation arising from primary legislation.

Subsonic aeroplane. An aeroplane incapable of sustaining level flight at speeds exceeding a Mach number of 1.

Substance feature. A substance feature involves the incorporation into the MRTD of a material which would not normally be present and is not obviously present on visual inspection. The presence of the material may be detected by the presence and magnitude of a suitable property of the added substance.

Suitable alternate aerodrome. A suitable alternate aerodrome is an adequate aerodrome where, for the anticipated time of use, weather reports, or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the required aerodrome operating minima, and the runway surface condition reports indicate that a safe landing will be possible.

Sum pattern. Normal radiation pattern for the main directional beam of an antenna. Contrasts with the "difference-pattern", where a part of the radiating elements of the antenna is switched in anti-phase to

produce signals proportional to the amount by which the source is off the boresight of the sum pattern.

Surface-level heliport. A heliport located on the ground or on the water.

Surveillance. The State activities through which the State proactively verifies through inspections and audits that aviation licence, certificate, authorization or approval holders continue to meet the established requirements and function at the level of competency and safety required by the State.

Surveillance Coordination Network (SCN). The network used to connect Mode S radars that are operating as part of a cluster in order to share the same interrogator code (IC).

Surveillance processing. A general term covering any processing applied to the target reports after the extraction functions and prior to the data transmission functions. Such processes include filtering, clutter reduction, data rate control and dynamic angel control.

Surveillance radar. Radar equipment used to determine the position of an aircraft in range and azimuth.

Survey see: security survey

Survival ELT; ELT(S) An ELT which is removable from an aircraft, stowed so as to

facilitate its ready use in an emergency, and manually activated by survivors.

Sustainable aviation fuel. An aviation alternative fuel that meets the CORSIA Sustainability Criteria under this Volume.

Sv see: sievert

Switch-over time (light). The time required for the actual intensity of a light measured in a given direction to fall from 50 per cent and recover to 50 per cent during a power supply changeover, when the light is being operated at intensities of 25 per cent or above.

Switchover. The act of transferring the active data link path between the RPS and the RPA from one of the links or networks that constitutes the C2 Link to another link or network that constitutes the C2 Link.

Symmetric algorithm. A type of cryptographic operation using the same key or set of keys for encryption of plain text and decryption of associated cipher text.

Sync phase reversal. The first phase reversal in the Mode S P 6 interrogation pulse. It is used to synchronize the circuitry in the transponder that decodes the P 6 pulse by detecting data phase reversals. as a timing reference for subsequent transponder operations related to the interrogation.

Synchronous operation: Operation in which the time interval between code units is a constant.

Synthetic flight trainer see: flight simulation training device

Synthetic vision system (SVS). A system to display data-derived synthetic images of the external scene from the perspective of the flight deck.

System. In this context, one or more types of electronic equipment and ancillary devices functioning to provide a service.

System. A specific IT installation, with a particular purpose and operational environment.

System: A VDL-capable entity. A system comprises one or more stations and the associated VDL management entity. A system may either be ab aircraft system or a ground system.

System Accuracy: See accuracy

System and equipment rating training. System and equipment knowledge, attitude and skills leading to recognized competency.

System efficiency. The ratio of valid replies processed by the interrogator to the total of its own interrogations.

System integration. The process by which cardholder-facing, internal and partner-facing systems and applications are integrated with each other.

System security policy. The set of law, rules and practices that regulate how sensitive

information and other resources are managed, protected and distributed within a specific system.

System-wide information management (SWIM). SWIM consists of standards, infrastructure and governance enabling the management of ATM related information and its exchange between qualified parties via interoperable information services.

Tactile feature. A surface feature giving a distinctive texture to the document.

Tagged ink . Inks containing compounds that are not naturally occurring substances in an MRTD and which can be detected using special equipment.

Tamper resistance. The capability of components within a document to withstand alteration.

Take-off and initial climb phase. That part of the flight from the start of take-off to 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or to the end of the climb in the other cases.

Take-off decision point (TDP). The point used in determining take-off performance from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.

Note.— TDP applies only to helicopters operating in performance Class 1.

Take-off distance available (helicopter); TODAH The length of the final approach and take-off area plus the length of helicopter clearway (if provided) declared available and suitable for helicopters to complete the take-off.

Take-off distance required (helicopter)**;** TODRH The horizontal distance required from the start of the take-off to the point at which Vtoss, a height of 10.7 m (35 ft) above the take-off surface, and a positive climb gradient are achieved, following failure of the critical power-unit at TDP, the remaining power-units operating within approved operating limits.

Take-off phase. The operating phase defined by the time during which the engine is operated at the rated thrust.

Take-off runway. A runway intended for take-off only.

Take-off surface. That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction.

Target level of safety (TLS). A generic term representing the level of risk which is considered acceptable in particular circumstances.

Tarmac: See apron

Taxi. See taxiing

Taxiing. Movement of an aircraft on the surface of an aerodrome under its own power,

excluding take-off and landing.

Taxi/ground idle. The operating phases involving taxi and idle between the initial starting of the propulsion engine(s) and the initiation of the take-off roll and between the time of runway turn-off and final shutdown of all propulsion engine(s).

Taxi-route. A defined path established for the movement of helicopters from one part of a heliport to another. A taxi-route includes a helicopter air or ground taxiway which is centred on the taxi-route.

Taxiway. A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

(a) **Aircraft stand taxilane.** A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

(b) **Apron taxiway.** A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

(c) **Rapid exit taxiway.** A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

Taxiway intersection. A junction of two or more taxiways.

Taxiway strip. An area including a taxiway intended to protect an aircraft operating on the taxiway and to reduce the risk of damage to an aircraft accidentally running off the taxiway.

TD: See travel document

Technical Instructions. The Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284), approved and issued periodically in accordance with the procedure established by the ICAO Council.

Technical risk. The risk of collision associated with aircraft height-keeping performance.

Telecommunication (RR S1.3). Any transmission, emission, or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.

Teletypewriter tape. A tape on which signals are recorded in the 5-unit Start-Stop code by completely severed perforations (Chad Type) or by partially severed perforations (Chadless Type) for transmission over teletypewriter Circuits.

Template/Reference Template. Data which represent the biometric measurement of an enrolee used by a biometric system for comparison against subsequently submitted biometric samples.

Template size. The amount of computer memory taken up by the biometric data.

Temporary admission. The customs procedure under which certain goods can be

brought into a customs territory conditionally relieved totally or partially from payment of import duties and taxes; such goods must be imported for a specific purpose and must be intended for re-exportation within a specified period and without having undergone any change except normal depreciation due to the use made of them.

Terminal approach radar (TAR). A surveillance radar for the approach area. Typically, the range of such a radar is limited to 110 km (60 NM) and the information renewal rate for mechanically rotating antennas is 4 to 5 seconds.

Terminal arrival altitude (TAA). The lowest altitude that will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an arc of a circle defined by a 46 km (25 NM) radius centred on the initial approach fix (IAF), or where there is no IAF on the intermediate approach fix (IF), delimited by straight lines joining the extremity of the arc to the IF. The combined TAAs associated with an approach procedure shall account for an area of 360 degrees around the IF

Terminal objectives. What a trainee is expected to accomplish upon completion of training. For example, "when the trainee completes training, he will be able to troubleshoot and repair a piece of XYZ equipment in twenty minutes, using standard tools and test equipment." Objectives are best stated in terms of accomplishments. Also called end-of-course performance objectives or behavioural objectives.

Terminal control area. A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

Terrain. The surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles.

Note— In practical terms, depending on the method of data collection, terrain represents the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as "first reflective surface"

Tesla (T). The magnetic flux density given by a magnetic flux of 1 weber per square metre

Thermochromic ink . An ink which undergoes a reversible colour change when the printed image is exposed to a specific change in temperature.

Threat. An intruder deserving special attention either because of its close proximity to own aircraft or because successive range and altitude measurements indicate that it could be on a collision or near-collision course with own aircraft. The warning time provided against a threat is sufficiently small that an RA is justified.

Threat. Events or errors that occur beyond the influence of an operational person, increase operational complexity and must be managed to maintain the margin of safety.

Note— See Chapter 1 of Annex 19 – Safety Management for a definition of operational personnel.

Threat management. The process of detecting and responding to threats with

countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired states.

Note—: See Chapter 6 of Part II, Section 1 of the Procedures for Air Navigation Services – Training (PANS-TRGG, Doc 9868) and Circular 314 – Threat and Error Management (TEM) in Air Traffic Control for a description of undesired states.

Threshold. The beginning of that portion of the runway usable for landing.

Threshold. A “benchmark” score above which the match between the stored biometric and the person is considered acceptable or below which it is considered unacceptable.

Threshold time. The range, expressed in time, established by the State of the Operator, to an en-route alternate aerodrome, whereby any time beyond requires an EDTO approval from the State of the Operator.

Through-flight. A particular operation of aircraft, identified by the operator by the use throughout of the same symbol, from point of origin via any intermediate points to point of destination.

Tilt. See "Antenna elevation".

Tilt-rotor. A powered-lift capable of vertical take-off, vertical landing, and sustained low-speed flight, which depends principally on engine-driven rotors mounted on tiltable nacelles for the lift during these flight regimes and on nonrotating aerofoil(s) for lift during high-speed flight.

Time difference of arrival (TDOA). The difference in relative time that a transponder signal from the same aircraft (or ground vehicle) is received at different receivers.

Time division multiple access (TDMA). A multiple access scheme based on time-shared use of an RF channel employing:

(1) discrete contiguous time slots as the fundamental shared resource; and

(2) a set of operating protocols that allows users to interact with a master control station to mediate access to the channel.

Time division multiplex (TDM). A channel sharing strategy in which packets of information from the same source but with different destinations are sequenced in time on the same channel.

Time-to-alert. The maximum allowable time elapsed from the onset of the navigation system being out of tolerance until the equipment enunciates the alert.

Token image. A portrait of the holder of the MRTD, typically a full frontal image, which has been adjusted in size to ensure a fixed distance between the eyes. It may also have been slightly rotated to ensure that an imaginary horizontal line drawn between the centres of the eyes is parallel to the top edge of the portrait rectangle if this has not been achieved when the original portrait was taken or captured.

Tonne (t). The mass equal to 1000 kilograms

"Torn-tape" relay installation. A teletypewriter installation where messages are received and relayed in teletypewriter tape form and where all operations of relay are performed as the result of operator intervention.

Total estimated elapsed time. For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

Total vertical error (TVE). The vertical geometric difference between the actual pressure altitude flown by an aircraft and its assigned pressure altitude (flight level).

Total voice transfer delay: The elapsed time commencing at the instant that speech is presented to the AES or GES and concluding at the instant that the speech enters the interconnecting network of the counterpart GES or AES. This delay includes vocoder processing time, physical layer delay, RF propagation delay and any other delays within AMS(R)S subnetwork.

Note.— The following terms used in this chapter are defined in Annex 10 as follows:

- Aeronautical telecommunication network (ATN): Volume III, Chapter 1.
- Aeronautical mobile-satellite (route) service (AMS(R)S): Volume II, Chapter 1.1.
- Aircraft earth station (AES): Volume III, Chapter 1. • Ground earth station (GES): Volume III, Chapter 1.
- Subnetwork layer: Volume III, Chapter 6.1.

Touchdown. The point where the nominal glide path intercepts the runway.

Note— "Touchdown" as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

Touchdown and lift-off area (TLOF). A load bearing area on which a helicopter may touch down or lift off

Touchdown/positioning circle (TDPC). A touchdown positioning marking (TDPM) in the form of a circle used for omnidirectional positioning in a TLOF.

Touchdown/positioning marking (TDPM). A marking or set of markings providing visual cues for the positioning of helicopters.

Touchdown zone. The portion of a runway, beyond the threshold, where it is intended landing aeroplanes first contact the runway.

Traceability. Ability to trace the history, application or location of that which is under consideration as per ISO 9000

Note— When considering product, traceability can relate to:

— the origin of materials and parts;

— the processing history; and

— the distribution and location of the product after delivery.

Track. The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

Track. A succession of radar reported positions for one aircraft sometimes correlated and smoothed by a special tracking algorithm.

Track. The condition which exists when the DME interrogator has locked onto replies in response to its own interrogations, and is continuously providing a distance measurement.

Track. A sequence of measurements representing positions that could reasonably have been occupied by an aircraft.

Traffic advisory (TA). An indication given to the flight crew that a certain intruder is a potential threat.

Traffic avoidance advice. Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

Traffic information. Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

Traffic information service – broadcast (TIS-B) IN. A surveillance function that receives and processes surveillance data from TIS-B OUT data sources.

Traffic information service – broadcast (TIS-B) OUT. A function on the ground that periodically broadcasts the surveillance information made available by ground sensors in a format suitable for TIS-B IN capable receivers.

Note.— This technique can be achieved through different data links. The requirements for Mode S extended squitters are specified in Annex 10, Volume IV, Chapter 5. The requirements for VHF digital link (VDL) Mode 4 and universal access transceiver (UAT) are specified in Annex 10, Volume III, Part I.

Traffic right. A traffic right is a market access right which is expressed as an agreed physical or geographic specification, or combination of specifications, of who or what may be transported over an authorized route or parts thereof in the aircraft (or substitute conveyance) authorized.

Note— The term “traffic rights” is, in one usage, applied collectively to have about the same meaning as market access rights.

Trailing edge (plot). The azimuth, for which the extractor/plot processor logic detects the "end of plot".

Training for specialty rating. Training aimed at developing the set of particular competencies required to perform maintenance tasks on a specific type of equipment and in specific environments.

Note— Such types of equipment include but are not limited to:

(a) a specific aircraft or a broad category of aircraft;

(b) an airframe or aircraft structure;

(c) engines;

(d) aircraft systems or components; and

(e) avionic systems or components.

Training objective. A clear statement that is comprised of three parts, i.e. the desired performance or what the trainee is expected to be able to do at the end of training (or at the end of particular stages of training), the performance standard that must be attained to confirm the trainee’s level of competence, and the conditions under which the trainee will demonstrate competence.

Transfer cargo and mail. Cargo and mail departing on an aircraft other than that on which it arrived.

Transfer of control point. A defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next.

Transferring unit. Air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight.

Note— See definition of “accepting unit/controller”.

Transit delay. In packet data systems, the elapsed time between a request to transmit an assembled data packet and an indication at the receiving end that the corresponding packet has been received and is ready to be used or forwarded.

Transition altitude. The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

Transition layer. The airspace between the transition altitude and the transition level.

Transition level. The lowest flight level available for use above the transition altitude.

Transmission rate. The average number of pulse pairs transmitted from the transponder per second.

Transponder occupancy. A state of unavailability of the transponder from the time it detects an incoming signal that appears to cause some action or from the time of a self-initiated transmission, to the time that it is capable of replying to another interrogation.

Note.— Signals from various systems that contribute to transponder occupancy are described in the Aeronautical Surveillance Manual (Doc 9924), Appendix M.

Travel document. A passport or other official document of identity issued by a State or organization, which may be used by the rightful holder for international travel.

Tributary station. An aeronautical fixed station that may receive or transmit messages and/or digital data but which does not relay except for the purpose of serving similar stations connected through it to a communication centre.

Tropical cyclone. Generic term for a non-frontal synoptic-scale cyclone originating over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation.

Tropical cyclone advisory centre (TCAC). A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, world area forecast centres and international OPMET databanks regarding the position, forecast direction and speed of movement, central pressure and maximum surface wind of tropical cyclones.

True airspeed; TAS The speed of the aeroplane relative to undisturbed air.

Turn-around area see: runway turn pad

Turnaround time The time spent on the ground during a flight duty period between two flight sectors.

Two-frequency glide path system. An ILS glide path in which coverage is achieved by the use of two independent radiation field patterns spaced on separate carrier frequencies within the particular glide path channel.

Two-frequency localizer system. A localizer system in which coverage is achieved by the use of two independent radiation field patterns spaced on separate carrier frequencies within the particular localizer VHF channel.

Type Certificate. A document issued by a Contracting State to define the design of an aircraft, engine or propeller type and to certify that this design meets the appropriate airworthiness requirements of that State.

Note.— In some Contracting States a document equivalent to a Type Certificate may be issued for an engine or propeller type.

Type Certificate. †† A document issued by a Contracting State to define the design of an aircraft, remote pilot station, engine or propeller type and to certify that this design

meets the appropriate airworthiness requirements of that State.

Note 1.†††— In some Contracting States a document equivalent to a Type Certificate may be issued for an engine or propeller type.

Note 2.††— A document equivalent to a Type Certificate may be issued for a remote pilot station type.

Type design. The set of data and information necessary to define an aeronautical product type for the purpose of airworthiness determination to any later aeronautical product of the same type.

Type design. The set of data and information necessary to define an aircraft, engine or propeller type for the purpose of airworthiness determination.

[Definition as per Annex 16, Volume III]

Type design.†† The set of data and information necessary to define an aircraft, remote pilot station, engine or propeller type for the purpose of airworthiness determination.

UAT ADS-B message. A message broadcasted once per second by each aircraft to convey state vector and other information. UAT ADS-B messages can be in one of two forms depending on the amount of information to be transmitted in a given second: the Basic UAT ADS-B Message or the Long UAT ADS-B Message. UAT ground stations can support traffic information service-broadcast (TIS-B) through transmission of individual ADS-B messages in the ADS-B segment of the UAT frame.

UAT ground uplink message. A message broadcasted by ground stations, within the ground segment of the UAT frame, to convey flight information such as text and graphical weather data, advisories, and other aeronautical information, to aircraft that are in the service volume of the ground station.

Ultimate load. The limit load multiplied by the appropriate factor of safety.

Unaccompanied baggage. Baggage that is transported as cargo and may or may not be carried on the same aircraft with the person to whom it belongs.

Unaccompanied minor. A minor travelling alone or travelling only in the company of another minor.

Note.— It is to be noted that this definition might need to be applied in light of any obligation resulting from the application of national regulations on border checks

Unburned hydrocarbons. The total of hydrocarbon compounds of all classes and molecular weights contained in a gas sample, calculated as if they were in the form of methane.

Uncertainty phase. A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

Unclaimed baggage. Baggage that arrives at an airport and is not picked up or claimed

by a passenger.

Under command. An aeroplane on the surface of the water is 'under command' when it is able to execute manoeuvres as required by the International Regulations for Preventing Collisions at Sea for the purpose of avoiding other vessels.

Under way. An aeroplane on the surface of the water is 'under way' when it is not aground or moored to the ground or to any fixed object on the land or in the water.

Unidentified baggage. Baggage at an airport, with or without a baggage tag, which is not picked up by or identified with a passenger.

Unit load device. Any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

Note— An overpack is not included in this definition.

United Nations Laissez-passer: A document, generally equivalent to a passport, issued under the auspices of the United Nations to allow authorized persons to travel across international borders.

Universal access transceiver (UAT). A broadcast data link operating on 978 MHz, with a modulation rate of 1.041667 Mbps.

Unlading/Unloading. The removal of cargo, mail, baggage or stores from an aircraft after a landing.

Unmanned free balloon. A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

Note— Unmanned free balloons are classified as heavy, medium or light in accordance with specifications contained in Appendix 5 of Annex 2

UN number. The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.

Unpredictability. The implementation of security measures in order to increase their deterrent effect and their efficiency, by applying them at irregular frequencies, different locations and/or with varying means, in accordance with a defined framework.

Unruly passenger. See disruptive passenger

Unserviceable area. A part of the movement area that is unfit and unavailable for use by aircraft.

Upper-air chart. A meteorological chart relating to a specified upper-air surface or layer of the atmosphere.

Usability factor. The percentage of time during which the use of a runway or system of runways is not restricted because of the crosswind component.

Note— Crosswind component means the surface wind component at right angles to the runway centre line.

User group: A group of ground and/or aircraft stations which share voice and/or data connectivity. For voice communications, all members of a user group can access all communications. For data, communications include point-to-point connectivity for air-to-ground messages, and point-to-point and broadcast connectivity for ground-to-air messages.

UV dull substrate. A substrate that exhibits no visibly detectable fluorescence when illuminated with UV radiation.

Validate. To confirm submitted information in order to determine either the existence of a finding or the progress made in resolving the finding.

Validation. Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled as per ISO 9000.

Validation. The process of demonstrating that the system under consideration meets in all respects the specification of that system.

Validation. The process of verifying the relative position of an intruder using passive information via 1 090 MHz extended squitter by comparing it to the relative position obtained by ACAS active interrogation.

Validation (code). Process of correlation of the code information used in SSR Mode A/C systems. Generally 2 identical codes in 2 successive replies suffice to validate the code. In Mode S, code validation occurs inherently when the reply is decoded (and, if appropriate, error corrected).

Note— Modern radar systems may provide "smoothed" code information when the so-called validation indication serves to indicate non extrapolated code information.

Variable laser image. Feature generated by laser engraving or laser perforation displaying changing information or images dependent upon the viewing angle.

Variable message sign. A sign capable of presenting several pre-determined messages or no message, as applicable.

VDL management entity (VME): A VDL-specific entity that provides the quality of service requested by the ATN-defined SN_SME. A VME uses the LMEs (that it creates and destroys) to enquire the quality of service available from peer systems.

VDL Mode 4 Burst: a VHF digital link (VDL) Mode 4 burst is composed of a sequence of source address, burst ID, information, slot reservation and frame check sequence (FCS) fields, bracketed by opening and closing flag sequences.

Note: — The start of a burst may occur only at quantized time intervals and this constraint allows the propagation delay between the transmission and reception to be derived.

VDL Mode 4 DLS system: A VDL system that implements the VDL Mode 4 DLS and subnetwork protocols to carry ATN packets or other packets

VDL Mode 4 specific services (VSS) sublayer: The sublayer that resides above the MAC sublayer and provides VDL Mode 4 specific access protocols including reserved, random and fixed protocols.

VDL station: An aircraft-based or ground-based physical entity, capable of VDL Mode 2, 3 or 4.

Note: — In the context of this chapter, a VDL station is also referred to as a "station".

Vectoring. Provision of navigational guidance to aircraft in the form of specific headings, based on the use of an ATS surveillance system

Vertical planes. Planes perpendicular to the horizontal plane.

Vertical path angle (VPA). Angle of the published final approach descent in baro-VNAV procedures.

Vertical separation. The spacing provided between aircraft in the vertical plane to avoid collision.

Vertical separation minimum (VSM). VSM is documented in the Procedures for Air Navigation Services — Air Traffic Management (PANS- ATM, Doc 4444) as being a nominal 300 m (1 000 ft) below FL 290 and 600 m (2 000 ft) above FL 290 except where, on the basis of regional agreement, a value of less than 600 m (2 000 ft) but not less than 300 m (1 000 ft) is prescribed for use by aircraft operating above FL 290 within designated portions of the airspace.

Vectoring. Provision of navigational guidance to aircraft in the form of specific headings, based on the use of an ATS surveillance system.

Verification. Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled as per ISO9000.

Note 1— The term "verified" is used to designate the corresponding status.

Note 2— Confirmation can comprise activities such as:

— performing alternative calculations;

— comparing a new design specification with a similar proven design specification;

— undertaking tests and demonstrations; and

— reviewing documents prior to issue.

Verification/Verify. The process of comparing a submitted biometric sample against the biometric reference template of a single enrolee whose identity is being claimed,

to determine whether it matches the enrolee's template. Contrast with "Identification".

Verification body. A legal entity that performs the verification of an Emissions Report and, when required, an Emissions Units Cancellation Report, as an accredited independent third party.

Verification of report. An independent and systematic evaluation process of an emissions report and, when required, a cancellation of eligible emissions units report, which has been sufficiently documented.

Verification report. A document, drafted by the verification body, containing the verification statement and required supporting information.

Verification team. A group of verifiers, or a single verifier that also qualifies as a team leader, belonging to a verification body conducting the verification of an Emissions Report and, when required, an Emissions Units Cancellation Report. The team can be supported by technical experts.

Vertical speed limit (VSL) RA. A resolution advisory advising the pilot to avoid a given range of altitude rates. A VSL RA can be either corrective or preventive.

VFR. The symbol used to designate the visual flight rules.

VFR flight. A flight conducted in accordance with the visual flight rules.

VHF digital link (VDL). A constituent mobile subnetwork of the aeronautical telecommunication network (ATN), operating in the aeronautical mobile VHF frequency band. In addition, the VDL may provide non-ATN functions such as, for instance, digitized voice.

Video display unit. Also known as a monitor screen and is generally used for the display of alphanumeric data, but may also have some graphic capabilities (more modem systems).

Virtual origin. The point at which the straight line through the 30 per cent and 5 per cent amplitude points on the pulse leading edge intersects the 0 per cent amplitude axis.

Visible. Visible on a dark night with a clear atmosphere.

Visibility. Visibility for aeronautical purposes is the greater of:

(a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;

(b) the greatest distance at which lights in the vicinity of 1000 candelas can be seen and identified against an unlit background.

Note 1— The two distances have different values in air of a given extinction coefficient, and the latter b) varies with the background illumination. The former a) is represented by the meteorological optical range (MOR).

Note. 2— The definition applies to the observations of visibility in local routine and special reports, to the observations of prevailing and minimum visibility reported in METAR and SPECI and to the observations of ground visibility.

Visitor. Any person who disembarks and enters the territory of a Contracting State other than that in which that person normally resides; remains there lawfully as prescribed by that Contracting State for legitimate non-immigrant purposes, such as touring, recreation, sports, health, family reasons, religious pilgrimages, or business; and does not take up any gainful occupation during his stay in the territory visited.

Visual approach. An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

Visual approach procedure. A series of predetermined manoeuvres by visual reference, from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, a go-around procedure can be carried out.

Visual inspection zone (VIZ): Those portions of the MRTD (data page in the case of MRP), i.e. front and back (where applicable), not defined as the MRZ.

Visual line-of-sight (VLOS) operation. An operation in which the remote pilot or RPA observer maintains direct unaided visual contact with the remotely piloted aircraft.

Visual manoeuvring (circling) area. The area in which obstacle clearance should be taken into consideration for aircraft carrying out a circling approach.

Visual meteorological conditions. Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

Note— The specified minima are contained in Chapter 4 of Annex 2

Visual segment descent angle (VSDA). The angle between the MDA/H at the MAPt/DP and the heliport crossing height.

VMC. The symbol used to designate visual meteorological conditions.

Vocoder: A low bit rate voice encoder/decoder.

Voice-automatic terminal information service; Voice-ATIS. The provision of ATIS by means of continuous and repetitive voice broadcasts.

Voice unit: A device that provides a simplex audio and signaling interface between the user and VDL.

Volcanic ash advisory centre (VAAC). A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, area control centres, flight information centres, world area forecast centres and international OPMET databanks regarding the lateral and vertical extent and

forecast movement of volcanic ash in the atmosphere following volcanic eruptions.

VOLMET. Meteorological information for aircraft in flight.

Data link-VOLMET (D-VOLMET)**.** Provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link.

VOLMET broadcast. Provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

Volt (V). The unit of electric potential difference and electromotive force which is the difference of electric potential between two points of a conductor carrying a constant current of 1 ampere, when the power dissipated between these points is equal to 1 watt.

Vs1. A stalling speed or minimum steady flight speed.

Vso. A stalling speed or minimum steady flight speed in the landing configuration.

VSS user: A user of the VDL Mode 4 specific services. The VSS user could be higher layers in the VDL Mode 4 SARPs or an external application using VDL Mode 4.

Vtoss. The minimum speed at which climb shall be achieved with the critical power-unit inoperative, the remaining power-units operating within approved operating limits.

Vy. Best rate of climb speed.

Warning time. The time interval between potential threat or threat detection and closest approach when neither aircraft accelerates.

Watermark. A design, typically containing tonal gradation, formed in the paper or other substrate during its manufacture, created by the displacement of materials therein, viewable by transmitted light.

Watt (W). The power which gives rise to the production of energy at the rate of 1 joule per second.

Wavelet Scalar Quantization. A means of compressing data used particularly in relation to the storage of fingerprint images.

Waypoint. A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

Fly-by waypoint. A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure; or

Flyover waypoint. A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

Waypoint distance (WD). Distance on the WGS ellipsoid from a defined waypoint to the aircraft RNAV receiver.

Weber (Wb). The magnetic flux which, linking a circuit of one turn, produces in it an electromotive force of 1 volt as it is reduced to zero at a uniform rate in 1 second

Wet lease. A lease where the aircraft is provided with crew.

Wet runway. The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.

Wide area multilateration (WAM) system. A multilateration system deployed to support en-route surveillance, terminal area surveillance and other applications such as height monitoring and precision runway monitoring (PRM).

Winching area. An area provided for the transfer by helicopter of personnel or stores to or from a ship.

Work area. A part of an aerodrome in which maintenance or construction works are in progress.

World area forecast centre (WAFC). A meteorological centre designated to prepare and issue significant weather forecasts and upper-air forecasts in digital form on a global basis direct to States using the aeronautical fixed service Internet-based services.

World area forecast system (WAFS). A worldwide system by which world area forecast centres provide aeronautical meteorological en-route forecasts in uniform standardized formats.

Z marker beacon. A type of radio beacon, the emissions of which radiate in a vertical cone-shaped pattern.

Zenithal gap. See "Cone of silence".

Zone: An area containing a logical grouping of data elements on the MRTD. Seven (7) zones are defined for MRTDs.

ISO Standards

9000 — Quality Management Systems — Fundamentals and Vocabulary

19101 — Geographic information — Reference model

19104 — Geographic information — Terminology

19108 — Geographic information — Temporal schema

19109 — Geographic information — Rules for application schema

19110 — Geographic information — Feature cataloguing schema

19115 — Geographic information — Metadata

19117 — Geographic information — Portrayal

19131 — Geographic information — Data product specification