KINGDOM OF BAHRAIN
Ministry of Transportation and Telecommunications

مملكة البحرين
وزارة المواصلات والاتصالات

Civil Aviation Affairs - Air Traffic Management Directorate
Aeronautical Information Management

BAHRAIN AERONAUTICAL INFORMATION SERVICE MANUAL - *BAISM*

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Contents

Foreword

Compliance with regulatory requirements is paramount in the field of aviation. The Bahrain Civil Aviation Authority (CAA) recognizes the significance of adhering to the standards set by the International Civil Aviation Organization (ICAO) and is committed to ensuring the highest levels of safety and efficiency in aeronautical operations.

In pursuit of this commitment, the Bahrain Aeronautical Information Service Manual has been meticulously crafted to provide comprehensive guidance and support for Aeronautical Information Management (AIM) tasks. This manual serves as a valuable resource for professionals involved in the collection, management, and provision of aeronautical data and information, as well as the development of Aeronautical Information Products and services.

The content of this manual is aligned with the regulations outlined in Annex 15, Annex 2, Doc 8126, and other essential references. By incorporating these provisions, the Bahrain CAA strives to establish a robust framework that ensures the accurate and efficient dissemination of aeronautical information within the region.

It is important to note that while this manual provides valuable guidelines, end users of aeronautical data and information must remain attentive in their responsibility to verify the accuracy and integrity of the received data. The provisions and procedures outlined in this document are intended to enhance the overall harmonization of processes within the AIM domain, facilitating seamless collaboration and promoting a culture of excellence in aeronautical information services.

I trust that this Bahrain Aeronautical Information Service Manual will serve as an indispensable tool, guiding professionals and organizations in their pursuit of compliance, accuracy, and integrity in the dynamic and ever-evolving field of aviation.

This BAISM effective from 28 October 2024

DOCUMENT APPROVAL AND REVIEW PAGE

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CHAPTER 1: General

1.1 Document Control

1.1.1 Document Title:

The document is known as the Bahrain Aeronautical Information Service Manual.

1.1.2 Purpose:

The purpose of this manual is to provide an explanation of the fundamental functions of Aeronautical Information Management section in Bahrain. It also aims to facilitate the consistent application of the Standards and Recommended Practices (SARPs) outlined in Annex 15, as well as the requirements specified in the relevant Civil Aviation Requirements issued by CAA Bahrain. It is important to read this manual along with the most recent editions of the following related documents.

1.1.3 List of Documents Used in this Manual:

ICAO Annex 15	*Aeronautical Information Services*	AMDT 42	ED16
ICAO Annex 2	*Rules of the Air*	AMDT46	ED10
ICAO Annex 4	*Aeronautical Charts*	AMDT61	ED11
ICAO Annex 14	*Aerodrome*	AMDT17	ED09
ICAO Annex 10	Aeronautical Telecommunications Volume II	AMDT92	ED07
ICAO Doc 8126	*Aeronautical Information Services Manual*	AMDT--	ED07
ICAO Doc 8697	*Aeronautical Chart Manual*	AMDT01	ED03
ICAO Doc 9674	*World Geodetic System — 1984 (WGS-84) Manual*	AMDT--	ED07
ICAO Doc 4444	*Air traffic Management*	AMDT 11	ED16
ICAO Doc 10066	Aeronautical Information Management	AMDT 01	ED01
ICAO Doc 7030	Regional Supplementary Procedures	AMDT09	ED05
ICAO Doc 8400	ICAO Abbreviations and Codes	AMDT 33	ED09

1.1.4 Scope:

This AIIS Manual outlines the procedures for publishing aeronautical information products and applies to the Aeronautical Information Management services provided by the Ministry of Transportation and Telecommunication, Civil Aviation Affairs, and AIR Traffic Management.

1.1.5 Objective:

Per the provisions set forth in Article 37 of the Convention, the primary objective of adhering to Annex 15, which is widely regarded as the principal reference for Aeronautical Information Services, is to foster consistency in the acquisition and dissemination of aeronautical information. This pursuit is driven by the overarching goals of ensuring safety, enhancing operational efficiency, and optimizing economic viability within the realm of civil aviation.

1.1.6 Authority to Approve Changes:

The Director (ATM) serves as the competent authority responsible for approving any amendments or changes to the AIM Manual. This approval is carried out in coordination with the Aeronautical Information Management representative.

The approval process ensures that:

- Changes to be incorporated in the manual are duly approved by the competent authority.
- Relevant pages within the manual are revised accordingly.

1.1.7 Document Amendments:

This AIM Manual is the initial version (Issue 01 Rev 0) of the manual. Any future modifications will be documented on the 'Record of Amendments and Corrigenda' page. The subsequent versions will be sequentially numbered as Issue 01 Rev 1, Issue 01 Rev 2, and so on.

1.1.8 Control Records:

The amendment record numbers that are inserted in the manual must be consistent with the numbers found in the footers of this document.

1.1.9 Distribution of the Manual:

- The manual will be accessible on the official webpage of Aeronautical Information Management (AIM).
- The digital format of the manual ensures convenient access for stakeholders and interested parties, aligning with established protocols for disseminating official documentation.

1.1.10 Manual Change Record

Amendment Number	Description	Name	Signature	Date	Page Number
Issue 01 Rev 0	First edition of the Document	Fatima Saleh		22 Oct 2024	All pages

1.2 Definitions

When the following terms are used in the Standards and Recommended Practices for the AIS, they have the following meanings:

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.

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

Note: Aerodrome mapping data is 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.

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

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

AIP Supplement: Temporary changes to the information contained in the AIP which are provided 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.

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.

Application: Manipulation and processing of data in support of user requirements (ISO 19104*).

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.

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.

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.

ATS surveillance service: 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.

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 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.

Bare Earth: Surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and manmade objects.

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

Canopy: Bare Earth supplemented by vegetation height.

Confidence level: The probability that the true value of a parameter is within a certain interval around the estimate of its value.

Note: The interval is usually referred to as the accuracy of the estimate.

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

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

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.

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

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

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

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 product: Data set or data set series that conforms to a data product specification (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 (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, 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 (ISO 19101*).

Data set series: Collection of data sets sharing the same product specification (ISO 19115*).

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.

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

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.

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.

Ellipsoid height (geodetic height): The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.

Feature: Abstraction of real-world phenomena (ISO 19101*).

Feature attribute: Characteristic of a feature (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 (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 (ISO 19101*).

Feature type: Class of real-world phenomena with common properties (ISO 19110*).

Note: In a feature catalogue, the basic level of classification is the feature type.

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.

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 (ISO 19108*).

Note: In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months.

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

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.

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

Integrity classification (aeronautical data): Based on the applicable integrity classifications, the validation and verification procedures shall:

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.

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 NOTAM office (NOF): An office designated by a State for the exchange of NOTAM internationally.

Logon address: A specified code used for data link logon to an ATS unit.

Maneuvering area: That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

Metadata: Data about data (ISO 19115*).

Note: A structured description of the content, quality, condition or other characteristics of data.

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 obstacle clearance altitude (MOCA): The minimum altitude for a defined segment of flight that provides the required obstacle clearance.

Movement area: That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the maneuvering area and the apron

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.

Next intended user: The entity that receives the aeronautical data or information from the aeronautical information service.

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.

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.

Obstacle/terrain data collection surface. A defined surface intended for the purpose of collecting obstacle/terrain data.

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.

Orthometric height: Height of a point related to the geoid, generally presented as an MSL elevation.

Performance-based communication (PBC): Communication based on performance specifications applied to the provision of air traffic services.

Note: A required communication performance (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 specifications (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: A required surveillance performance (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.

Portrayal: Presentation of information to humans (ISO 19117*).

Position (geographical): Set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which defines the position of a point on the surface of the Earth.

Post spacing: Angular or linear distance between two adjacent elevation points.

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.

Pre-flight information bulletin (PIB): A presentation of current NOTAM information of operational significance, prepared prior to flight.

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.

Quality: Degree to which a set of inherent characteristics fulfils requirements (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 9000*).

Quality control: Part of quality management focused on fulfilling quality requirements (ISO 9000*).

Quality management: Coordinated activities to direct and control an organization with regard to quality (ISO 9000*).

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.

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 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.

Requirement: Need or expectation that is stated, generally implied or obligatory (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.

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.

Route stage: A route or portion of a route flown without an intermediate landing.

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.

SNOWTAM: A special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

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.

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.

Traceability: Ability to trace the history, application or location of that which is under consideration (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.

Validation: Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled (ISO 9000*).

Verification: Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled (ISO 9000*).

Note: The term “verified” is used to designate the corresponding status.

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.

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: In some cases, an air traffic services reporting office can be set up as an independent entity or integrated with an existing unit, such as another air traffic services unit or a unit within the aeronautical information service.

Current flight plan: The flight plan, including changes, if any, brought about by subsequent clearances.

Flight level: A surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 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 1 013.2 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 plan: Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight visibility. The visibility forward from the cockpit of an aircraft in flight.

Ground visibility: The visibility at an aerodrome as reported by an accredited observer or by automatic systems.

Heading: The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

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

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.

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

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

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.

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

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

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

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

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.

- ***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.

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

Flight information region: An airspace of defined dimensions within which flight information service and alerting service are provided.

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.

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.

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

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.

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.

Runway: A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

1.3 LIST OF ACRONYMS:

GAMET: Area forecast for low-level flights	ACC: Area control centre *or* area control
GANP: Global Air Navigation Plan	ACFT: Aircraft
GBAS: Ground-based augmentation system	ADIZ: Air defence identification zone
GNSS: Global navigation satellite system	AFS: Aeronautical fixed service
HTML: Hypertext Markup Language	AFTN: Aeronautical fixed telecommunication network
IERS: International Earth Rotation Service	AIC: Aeronautical Information Circular
IFR: Instrument flight rules	AICM: Aeronautical information conceptual model
ILS: Instrument landing system	AIP: Aeronautical Information Publication
ISO: International Organization for Standardization	AIRAC: Aeronautical information regulation and control
MET: Meteorological services	AIREP: Air report
METAR: Meteorological Terminal Air Report	AIRMET: Airmen's meteorological information
MSL: Mean sea level	AIS: Aeronautical information services
MWO: Meteorological watch office	AIM: Aeronautical information management
NOF: International NOTAM office	AIXM: Aeronautical Information Exchange Model
OB: Observable behavior	AMC: Airspace management cell
OGC: Open Geospatial Consortium	AMD: Aerodrome mapping data
PANS: Procedures for air navigation services	AMHS: ATS message handling system
PDF: Portable document format	AMSL: Above mean sea level
PERM: Permanent	ANS: Air navigation services
PIB: Pre-flight information bulletin	ANSP: Air navigation services provider
PNG: Portable Network Graphics	ARO: ATS reporting office
QMS: Quality management system	ARP: Aerodrome reference point
RCR: Runway condition report	ASBU: Aviation system block upgrade
RNAV: Area navigation	ATM: Air traffic management
RWY: Runway	ATS: Air traffic services
SAR: Search and rescue	ATZ: Aerodrome traffic zone
SARPs: Standards and Recommended Practices	AWY: Airway
SIGMET: Information concerning en-route weather and other phenomena in the atmosphere which may affect	CBTA: Competency-based training and assessment CDM: Collaborative decision making

the safety of aircraft operations SIGWX: Significant weather SMS: Safety management system SOA: Service-oriented architecture SPECI: Aviation selected special weather report SSL: Secure sockets layer SWIM: System wide information management TAF: Terminal aerodrome forecast TCAC: Tropical cyclone advisory centre TCAS: Traffic alert and collision avoidance system TIBA: Traffic information broadcast by aircraft TMA: Terminal control area TWR: Aerodrome control tower TWY: Taxiway UAS: Unmanned aircraft system UIR: Upper information region UTC: Coordinated Universal Time UTM: UAS traffic management VAACS: Volcanic Ash Advisory Centers – Satellite	CE: Critical element CNS: Communication, navigation and surveillance COM: Communications CPDLC: Controller-pilot data link communications CRC: Cyclic redundancy check CTR: control zone DAIM: Digital AIM DME: Distance measuring equipment DTD: Document type definition EGM-96: Earth Gravitational Model — 1996 EST: Estimate FIC: Flight information centre FIR: Flight information region FL: Flight level FMS: Flight management system VMC: Visual meteorological conditions VOR: VHF omnidirectional radio range W3C: World Wide Web Consortium XML: Extensible Markup Language VFR: Visual flight rules

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CHAPTER 2: RESPONSIBILITIES AND FUNCTIONS

2.1 General Purpose and Importance of Bahrain AIS:

2.1.1 Establishing Effective Collaboration with Related Services in AIS

To efficiently carry out the dual role of collecting and distributing information, Bahrain must establish and maintain direct and continuous communication with related services. This includes the following:

a) AIS/AIM in other States that need to provide information for meeting operational requirements within the State regarding pre-flight information.
b) Technical services within the State that are directly involved in the provision and maintenance of air navigation facilities, services, and procedures. This ensures timely dissemination of significant information both within the State and to other States as necessary.
c) Military services within the State, as needed, to exchange information related to navigation warnings (such as military exercises) or any special military facilities or procedures that may impact civil aviation.
d) Air traffic services within the State to promptly transmit all necessary information for air traffic control and in-flight information purposes.
e) All aircraft operating agencies conducting operations in or through the State to ensure adequate fulfillment of pre-flight information requirements.
f) Any other services that may serve as a source of information relevant to civil aviation or have a legitimate reason for requiring information about civil aviation.

2.1.2 Providing essential Information for Aircraft Operators

a) The AIM section must provide the aircraft operators with various information related to air navigation facilities and services that may be utilized.
b) The AIS services are provided for 24 hours.
a) It is the duty of the AIM section to ensure that operators must have knowledge of the regulations governing the airspace of for entry and transit during their operations.
b) The AIM section must provide information on the available aerodromes, heliports, navigation aids, meteorological services, communication services, and any other essential air traffic services.
c) The operator must be familiar with associated procedures and regulations.
d) The AIM section must Update the operations with any changes that may affect the operation of these facilities and services, even with short notice.
e) The AIM section must declare any airspace restrictions or potential hazards that could impact flights.
f) Information should ideally be provided before take-off but may sometimes be required during flight.

2.2 State responsibility's

The Civil Aviation Affairs of the Ministry of Transportation and Communications, representing the Kingdom of Bahrain, is dedicated to offering comprehensive aviation information services in the following manner:

- Bahrain Civil Aviation Affairs shall have the responsibility to provide an aeronautical information service that is fully committed to adhering to the Standards and Recommended Practices set forth by the International Civil Aviation Organization (ICAO) as outlined in the ICAO Annexes.

- Bahrain Civil Aviation Affairs shall ensure comprehensive coverage of aeronautical data and information within the territory of Bahrain and the corresponding areas over the high seas where it provides air traffic services (ATS). These services adhere to the ICAO standards specified in Annex 15.

- Aeronautical data and information provided by Bahrain, or on behalf of Bahrain through the Service Level Agreement (SLA), shall prominently indicate their provision under the authority of the Kingdom of Bahrain, regardless of the format in which they are presented.

- The Bahrain AIM section is responsible for ensuring that the provided aeronautical data and information meet the required quality standards as stipulated in the Data Quality Specifications referenced in Annex 15, sixteenth edition, Amendment 42, Section 3.2.

- Responsibility to ensure that formal arrangements are established through the Service Level Agreement (SLA) between the originators of aeronautical data and information and the AIM. These arrangements aim to ensure the timely and complete provision of aeronautical data and information.

2.3 Sourcing Reliable Aeronautical Information

Aeronautical information is obtained from several sources for the provision of pre-flight information and in-flight information such as the aeronautical information services of other States and from other sources (such as observations made by Air Crew) that may be available for in-flight information that shall, when distributed, be clearly identified as having the authority of the State of Origin also its shall, if possible, be verified before distribution be clearly identified and edited.

2.4 International Exchange of Aeronautical Data and Information

2.4.1 The exchange of aeronautical data and information plays a crucial role in supporting international flight operations. While each State's AIS primarily provides information about facilities and services within its territory, the exchange of similar information with AIS of other States enables the provision of pre-flight information for international operations that traverse multiple jurisdictions. Furthermore, it facilitates the supply of necessary information to air traffic service units for in-flight aircraft. It is important to note that the quantity and extent of information managed by Bahrain AIM can vary significantly between different States.

2.4.2 The Bahrain Civil Aviation Affairs (CAA) has designated the Office of Aeronautical Information Management (AIM) as the focal point for the exchange of aeronautical information and data. This office has comprehensive responsibilities, which include handling all elements of producing the Integrated Aeronautical Information Package, exercising NOTAM issuance authority to issue series A of NOTAMs for all aerodromes located in the FIR, and coordinating the exchange of this information with other NOTAM offices. Additionally, the AIM office provides FPL (Flight Plan) information services, significantly contributing to the facilitation of efficient and safe international flight operations.

2.4.3 To ensure that operational requirements for the issuance and receipt of data are met, the AIM Section of Bahrain CAA has established a connection between the NOF center and the communication center (COM) to receive Aeronautical Fixed Telecommunication Network (AFTN) messages. This arrangement ensures efficient communication and facilitates the timely exchange of NOTAMs, as well as other ATS messages.

2.4.4 Aeronautical data and information in Bahrain are made available as digital datasets. This information is provided based on agreements between Contracting States, in mutually agreed form(s), and without any charges. It is important to note that even if the authority for publication, storage, and distribution has been delegated to a non-governmental agency, the provision of this data remains free of charge:

a) Aeronautical Information Publication (AIP), including Amendments and Supplements;
b) Aeronautical Information Circulars (AIC);
c) NOTAM; and
d) Aeronautical charts.

2.4.5 According to ICAO standards (DOC 7910), the identification of states follows a structured framework using unique two-letter codes. For the Kingdom of Bahrain, the code 'OB' is assigned, where 'O' represents the region and 'B' signifies Bahrain specifically. Additionally, Bahrain's Flight Information Region (FIR) is represented as 'OBBB'. This systematic identification system ensures standardized referencing and clear delineation of Bahrain's territory and airspace within the aviation community.

2.5 Copyright

1-Any product of AIM Bahrain that has been granted copyright protection shall only be made available to a third party on the condition that the third party is informed of its copyright protection and provided that the product is appropriately annotated to indicate its copyright status.

2-The application of copyright does not impact the requirement for States to ensure the free exchange of aeronautical information/data between them.

Articles 28 c) and 37 of the Convention outline the obligation of States to facilitate the unhindered exchange of aeronautical information/data.

2.6 Common reference systems for air navigation

2.6.1 Horizontal reference system

a) The World Geodetic System — 1984 (WGS-84) is the designated horizontal reference system for international air navigation. Aeronautical geographical coordinates, like latitude and longitude, should be referenced to the WGS-84 geodetic datum. Detailed information on WGS-84 can be found in the WGS-84 Manual (Doc 9674).
b) In precise geodetic and air navigation applications, considering temporal changes in tectonic plate motion and tidal effects is important. Including an epoch with absolute station coordinates helps address these effects.

Note 1: The WGS-84 reference frame has epochs of 1997.0 (G873) and 2001.0 (G1150). The G indicates the use of GPS techniques, and the number following G represents the corresponding GPS week when the coordinates were implemented by the United States' National Geospatial-Intelligence Agency.

Note 2: Doc 9674 offers geodetic coordinates of permanent GPS tracking stations for the latest WGS-84 (G1150) realization. These station positions in WGS-84 (G1150) have an accuracy of around 1 cm (1σ).

Note 3: WGS-84 and ITRF are precise global coordinate systems. WGS-84 (G1150) is closely aligned with ITRF 2000, with differences typically around one to two centimeters. APPENDIX C of Doc 9674 offers guidance on ITRS.

2.6.2 Vertical reference system

2.6.2.1 Mean sea level (MSL) datum shall be used as a recommended vertical reference system for international air navigation.

- The geoid closely approximates MSL and represents the undisturbed MSL extended continuously through the continents.

Gravity Models:

2.6.2.2 The Earth Gravitational Model - 1996 (EGM-96) should be used as the global gravity model for international air navigation.

2.6.2.3 In areas where the accuracy of EGM-96 for elevation and geoid undulation is inadequate, regional, national, or local geoid models with high-resolution gravity data shall be developed and used.

- When using a non-EGM-96 geoid model, the Aeronautical Information Publication (AIP) shall include a description of the model and the parameters needed for height transformation.

Note: Detailed specifications for determining and reporting elevation and geoid undulation accuracy at specific aerodrome/heliport positions can be found in the PANS-AIM (Doc 10066), APPENDIX 1.

2.6.3 Temporal reference system

a) Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the Temporal Reference System for all AIS publications.

b) A temporal position denotes a value within the time domain, measured in relation to a specific temporal reference system.

Note1: Comprehensive guidance material regarding UTC can be found in Annex 5

- Units of Measurement to be Used in Air and Ground Operations.

Note2: In specific applications where an alternative temporal reference system is utilized:

- The feature catalogue, along with the associated metadata of an application schema or data set, should include a descriptive account of the employed system.
- Alternatively, it is possible to provide a citation to a document that describes the temporal reference system.

Note: For more information about the implementation of the SARPs related to WGS-84, please refer to the following references: DOC Annex 4: Aeronautical Charts, Annex 11: Air Traffic Services, Annex 14: Aerodromes (Volume I: Aerodrome Design and Operations, Volume II: Heliports), and DOC 9674, which provide guidance on the provision of geographic coordinates and vertical component values referenced in those Annexes.

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CHAPTER 3: AERONAUTICAL INFORMATION MANAGEMENT

3.1 Managing information:

Based on DOC 10066, AIS primarily focused on the collection, storage, and dissemination of aeronautical information. With the transition to AIM, the emphasis shifts towards a comprehensive information management approach, which shall include the following processes:

3.1.1 Collection:

The collection of aeronautical data and information involves documenting the identification of data originators based on the scope of data to be collected. A record of data originators should be maintained, and data elements should be mapped to originators according to formal arrangements between them and the AIS. The list of aeronautical information subjects and properties in APPENDIX 1 guides the establishment of these arrangements, including the definition of valid codes for data properties.

APPENDIX 1 references aeronautical data and information origination and publication requirements, providing a common language for data originators and the AIS to use.

3.1.2 Processing:

3.1.2.1 Data Verification and Validation:

Aeronautical data shall undergo verification and validation to ensure accuracy and reliability. Thorough checks are conducted before submitting aeronautical data and information, ensuring the inclusion of all necessary details and verifying correctness prior to distribution. These procedures guarantee that the received aeronautical data and information meet the required quality standards.

Verification activities involve:

A. Comparing data with other sources.
B. Checking consistency.
C. Utilizing multiple systems for comparison.

Validation activities include:

A. Testing data applications.
B. Comparing outputs.
C. Ensuring data adherence to expected ranges and business rules.

Note 1: APPENDIX 1 provides details on aeronautical data attributes and quality requirements. Guidance on data quality requirements can be found in the WGS-84 Manual (Doc 9674) and RTCA Document DO-201A/EUROCAE Document ED-77 (or equivalent). The Manual on the Quality Management System for Aeronautical Information Management (Doc 9839) offers further guidance on managing data quality.

3.1.2.2 The verification and validation procedures shall include:

A. Thorough checks before submission to the aeronautical information service.
B. Ensuring the inclusion of all necessary information.
C. Verifying the correctness of details.

These procedures shall guarantee that received aeronautical data and information meet the required quality standards, encompassing accuracy, resolution, integrity, and traceability.

Note2: Additional guidance materials for liaising with related services can be found in Doc 8126.

Note 3: Reference materials for aeronautical data quality requirements include:

- World Geodetic System — 1984 (WGS-84) Manual (Doc 9674): Covers accuracy, resolution, integrity, traceability, and protection requirements.
- RTCA Document DO-201A and EUROCAE Document ED-77: Provide supporting material for data accuracy, publication resolution, integrity, and rounding conventions for aeronautical data. Equivalent standards may also be used.

3.1.2.3 Traceability in Automation Systems:

Bahrain AIM ensure that automation systems shall be used for processing aeronautical data maintain a comprehensive record of all actions performed.

3.1.3 quality control:

Quality Control involves using additional data quality assurance techniques to mitigate errors in the process. Techniques include application tests, security checks, logic checks, semantic checks, comparison checks, redundancy checks, digital error detection, and qualification of resources and tools. It is important to implement quality checks to ensure compliance with product specifications. Additionally, conducting consistency checks is necessary when duplicating data across different aeronautical information products.

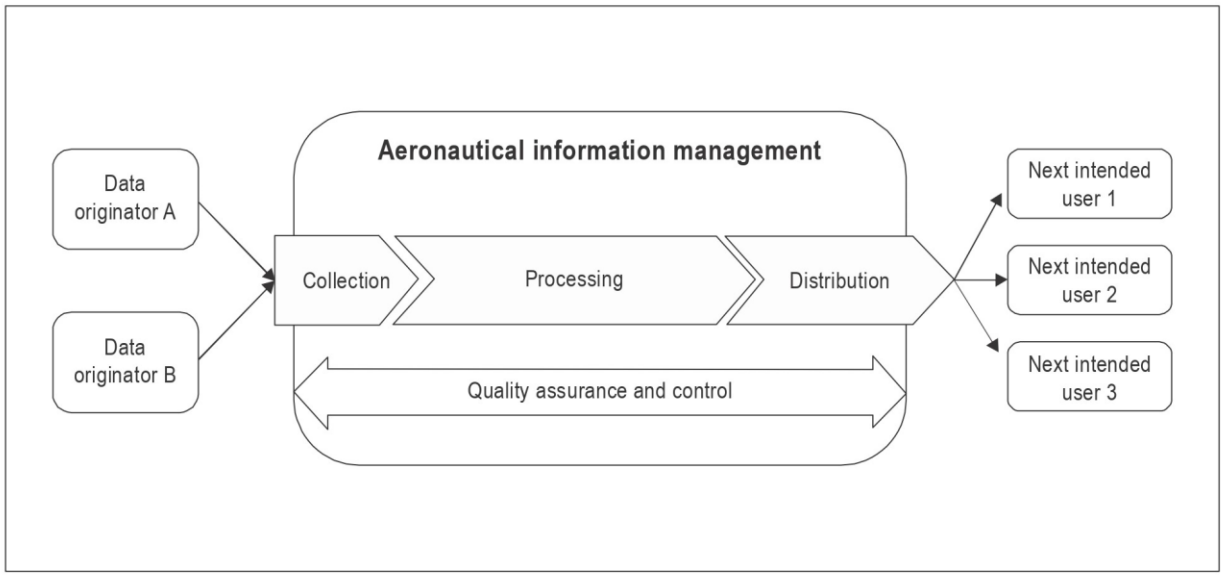
3.1.4 Distribution:

The transition to AIM changes the distribution of aeronautical information from physical media to web-based services. In the case of Bahrain AIM, a direct electronic web-based distribution method is employed. This method enables automatic transfer of aeronautical data and information by establishing a direct electronic connection between the AIM and the intended recipient. It is important to note that different delivery methods and data media may require specific procedures to ensure the required data quality.

3.2 Data quality specifications

Data Quality specifications in aeronautical data encompass several factors. Firstly, data accuracy shall align with its intended use, while data resolution shall correspond to the actual accuracy. Data integrity is of utmost importance and shall be maintained throughout the entire data chain, from origination to distribution. Based on the integrity classification, specific procedures are implemented to prevent corruption, particularly for *routine*, *essential*, and *critical* data. Ensuring traceability is crucial, and aeronautical data should be traceable throughout its usage. Timeliness is achieved by setting effective period limits for data elements, which can be associated with individual elements or data sets. Data completeness of aeronautical data shall be ensured in order to support its intended use, and the format of delivered aeronautical data shall facilitate consistent interpretation aligned with its purpose.

Note. — Specifications concerning the data accuracy, data resolution and integrity classification related to aeronautical data are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066), APPENDIX 1.



Overview of the aeronautical data process

3.3 Aeronautical Data Protection Essentials

3.3.1 Aeronautical data and datasets shall be protected using appropriate data error detection, security, and authentication techniques.
Note: - (Doc 8126) provides suitable guidance on techniques for data error detection, security, and authentication.

3.3.2 Electronic aeronautical data shall be totally monitored using the Cyclic Redundancy Check (CRC) to ensure integrity, with a 32 or 24-bit CRC algorithm that shall be implemented.

3.3.3 Materials in the AIM product shall undergo meticulous verification and coordination to guarantee accurate and complete information before distribution. Validation and verification procedures ensure data quality. (ref 3.2).

3.3.4 Compliance with the quality system shall be confirmed through audits, promptly addressing any nonconformities and documenting the remedial actions taken.

3.4 Quality Management System

3.4.1 Bahrain AIM has implemented a quality system and rigorous management procedures throughout the entire AIM services process, adhering to ISO 9000 standards to ensure the delivery of high-quality information from origination to distribution.

3.4.2 The AIM Section at Bahrain CAA holds ISO 9001 certification, meeting the requirements for the publication of AIP, AIP Amendment Service, Supplement to AIP, and origination of 'A Series' NOTAMs.

3.4.3 All services provided by the Aeronautical Information Management Section are subjected to the established quality system and carried out in adherence to internal procedures (Reference: Appendix 9)

3.4.4 Annex 15 emphasizes the importance of a quality management system for aeronautical information/data and highlights the risks associated with corrupted critical data.

3.4.5 Corrupt or erroneous aeronautical information/data can directly impact air navigation safety, necessitating the provision of timely and high-quality data to the aviation industry.

3.4.6 Personnel responsible for enforcing the quality system shall possess the necessary skills, undergo training, and shall undergo assessments to ensure competency.

3.4.7 The quality management system shall encompass policies, processes, and procedures designed to trace and resolve data anomalies or errors. Effective utilization of metadata aids in addressing and communicating these issues to affected users.

3.4.8 To meet the requirements of a quality management system (QMS), shall adhere to the following guidelines:

A. Develop comprehensive procedures for all AIM services. Refer APPENDIX 9
B. The QMS procedures must cover at all stages (receiving and/or originating, collating or assembling, editing, formatting, publishing, storing and distributing) of the aeronautical information/data process and the execution for each function stage.
C. Identify necessary processes for effective QMS function.
D. Determine process sequence and interaction for coordination and efficiency.
E. Establish criteria and methods for effective operation and control of processes.
F. Ensure availability of relevant information for process operation and monitoring.
G. Implement key performance indicators (KPIs) to measure, monitor, and improve processes.
H. Maintain accurate records to provide confidence in process conformity and product reliability.

3.4.9 The objective of the system is to instill confidence in the accuracy, resolution, and integrity of distributed aeronautical information/data, ensuring its applicability and meeting distribution deadlines.

3.4.10 Proper records shall be maintained to trace the origin of data and correct any anomalies or errors detected during production or operational use.

3.4.11 Compliance with the system shall be demonstrated through audits, promptly addressing and documenting any identified non-conformities.

3.5 Human Factors Considerations

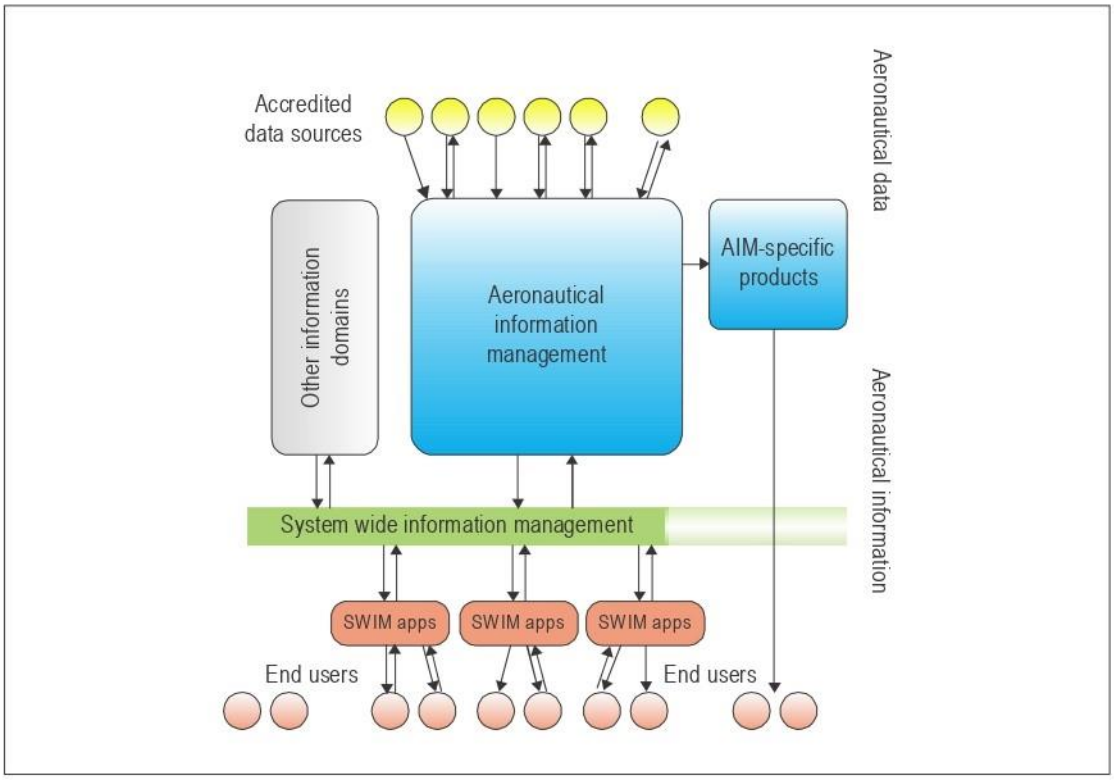
Based on Doc 9683, the consideration of Human Factors is essential in Bahrain Aeronautical Information Services by ensuring the integrity and optimal utilization of data. It is crucial to mitigate predictable errors through the implementation of robust checking and verification systems.

3.5.1 When organizing aeronautical information services and designing, processing, and distributing aeronautical data and information, it is important to consider Human Factors principles. These principles shall facilitate the optimal utilization of these resources.

3.5.2 The integrity of information that requires human interaction shall be carefully considered, and appropriate measures should be taken to mitigate identified risks.

3.5.3 The human-machine interface is susceptible to predictable errors when inputting aeronautical information. Implementing robust checking and verification systems can mitigate these errors.

3.5.4 To address and prevent such human errors, a systematic process of checking, verification, and supervision should be implemented at every stage of production and distribution of the complete integrated aeronautical information package.



Aeronautical information management concept and its various processes

3.6 Scope of Aeronautical Data and Aeronautical Information

3.6.1 The scope of aeronautical data and aeronautical information shall establish the essential criteria necessary for the effective support of aeronautical information products and services, aeronautical navigation databases, air navigation applications, and air traffic management (ATM) systems.

3.6.2 The aeronautical information management section shall manage the following subdomains:

A. National regulations, rules, and procedures
B. Aerodromes data
C. Airspace data
D. ATS and other routes data
E. Instrument flight procedures data
F. Radio navigation aids/systems data
G. Obstacles data
H. Terrain data

I. Geographic data

Note: Detailed content specifications for each subdomain are provided in APPENDIX 1 of the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

3.6.3 Aeronautical data shall be accurately classified to meet end-users' needs.

Note: Accuracy and integrity classification specifications for aeronautical data are available in the PANS-AIM (Doc 10066).

3.7 Metadata

3.7.1 Metadata shall be collected for aeronautical data processes and exchange points.

3.7.2 Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next user.

Note: Detailed specifications for metadata can be found in the PANS-AIM (Doc 10066).

3.8 AIS competency:

3.8.1 The AIS personnel requirements focus on developing and improving job descriptions, training programs, and records based on the ICAO competency framework. The Procedures for Air Navigation Services - Training (PANS-TRG, Doc 9868) provide guidelines for competency-based training and assessment. The AIS competency framework emphasizes specific competencies for AIS tasks and adapts to changing environments, including the transition to automated and data-driven systems. It covers both paper-based and data-centric tasks.

AIS management ensures competency through task identification, consistent training, observation, and assessment. An adapted competency model is developed, defining the required competencies, observable behaviors, standards, and assessment conditions.

In Bahrain, an annual assessment is conducted to evaluate employee performance and enhance their knowledge. This assessment complements the ICAO AIS courses and training provided to AIM staff. Refer to APPENDIX 9.

3.8.2 Application of the AIS adapted competency framework:

To ensure competent personnel, AIS management must identify tasks, assess required competencies, and establish performance criteria. The training, observation, and assessment of competencies should be consistent within the AIS organization. The tasks performed by the AIS function should be identified, and an adapted competency model should be developed, selecting relevant competencies, observable behaviors, standards, and conditions for assessment.

The combination of observable behaviors, conditions, and standards is used to assess whether the required performance has been achieved.

Note: Bahrain AIM training and assessment procedures are listed in APPENDIX 9.

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CHAPTER 4: AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

The Bahrain CAA Authority holds the responsibility for delivering aeronautical information through a diverse range of products and services. This information is consistently presented in a standardized format, encompassing the Aeronautical Information Publication (AIP), AIP Amendments, AIP Supplements, Aeronautical Information Circulars (AIC), NOTAMs, and aeronautical charts.

Note: Bahrain AIM ensures that all its products and services are conducted following the prescribed procedures outlined in APPENDIX 9

4.1 Aeronautical Information Publication (AIP)

4.1.1 The AIP for Bahrain is available in electronic format as eAIP Bahrain FIR, accessible through a dedicated webpage.

4.1.2 The eAIP Bahrain FIR serves as the primary and essential source of information for both enduring data and significant temporary changes of extended duration. *Refer to APPENDIX 2.*

4.2 AIP Amendments

AIP Amendments are issued whenever new information necessitates a permanent change or addition to the information contained in the AIP. Further guidance can be found in Chapter 6 of this manual.

4.3 Aeronautical Information Circular (AIC)

An Aeronautical Information Circular (AIC) is generated when aeronautical information needs to be disseminated that does not meet AIP inclusion criteria or NOTAM origination specifications.

4.3.1 AIC purposes include:

a. Long-term forecasts of major legislative, regulatory, procedural, or facility changes.
b. Explanatory or advisory information affecting flight safety.
c. Information or notifications related to technical, legislative, or administrative matters.

4.3.2 AIC contents shall include:

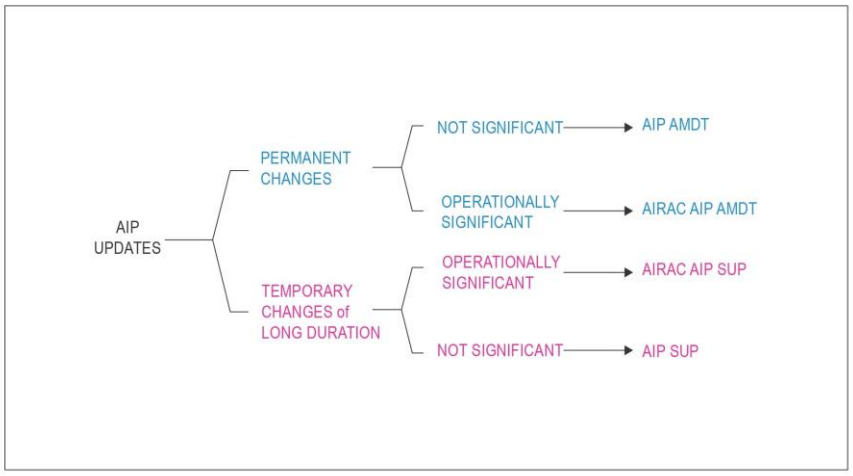
a. Forecasts of significant changes in air navigation procedures, services, and facilities.
b. Forecasts of new navigational system implementation.
c. Important information from aircraft accident investigations impacting flight safety.
d. Regulations concerning safeguarding international civil aviation against unlawful interference.
e. Pilot advice on medical matters.
f. Warnings about physical hazards.

g. Impact of weather phenomena on aircraft operations.
h. Information about new hazards affecting aircraft handling.
i. Regulations regarding restricted articles carried by air.
j. Reference to national legislation requirements and changes.
k. Aircrew licensing arrangements.
l. Aviation personnel training.
m. Application/exemption of national legislation requirements.
n. Equipment-specific use and maintenance advice.
o. Availability of new/revised aeronautical charts.
p. Communication equipment carriage.
q. Explanatory information on noise abatement.
r. Selected airworthiness directives.
s. Changes in NOTAM series, AIP editions, content, coverage, or format.
t. Advance information on the snow plan.
u. Other similar information.

4.3.3 Color coding may be used to identify AIC topics if sufficient numbers allow.

4.3.4 An annual checklist of valid AICs shall be distributed following the same process as for AICs.

4.3.5 AICs selected for international distribution should be distributed as per AIP distribution methods.



AIRAC versus non-AIRAC publications

4.4 AIP Supplement

4.4.1 AIP Supplements are used to publish temporary changes of long duration (3 months or longer) as well as information of short duration that includes extensive text and/or graphics.

4.4.2 Each AIP Supplement is assigned a consecutive serial number based on the calendar year (e.g., 01/2023).

4.4.3 AIP Supplements issued as AIRAC are labeled as 'AIRAC AIP Supplements,' while those not issued as AIRAC are labeled as 'AIP Supplements.'

4.4.4 4.3.4 A Checklist of valid AIP Supplements is issued monthly and distributed through the list of valid NOTAMs for that month.

4.4.5 Temporary changes expected to last less than three months are considered information of short duration and are distributed through NOTAMs. If the changes are expected to last for an additional three months or more, an AIP Supplement is issued to replace the NOTAM. Each AIP Supplement issued to replace a NOTAM includes a reference to the serial number of the NOTAM.

4.4.6 AIP Amendments and AIP Supplements are made available through the most efficient means possible.

4.4.7 The information published in eAIP, amendment service, and AIP Supplement follows the ICAO standard format.

4.5 Aeronautical Charts

The following aeronautical charts are included in Bahrain AIP:

4.5.1 ICAO CHARTS:

1. Aerodrome/Heliport Chart — ICAO
2. Aerodrome Ground Movement Chart — ICAO
3. Aerodrome Obstacle Chart — ICAO Type A
4. Aerodrome Obstacle Chart — ICAO Type B
5. Aircraft Parking/Docking Chart — ICAO
6. Area Chart — ICAO
7. ATC Surveillance Minimum Altitude Chart — ICAO
8. Instrument Approach Chart — ICAO
9. Precision Approach Terrain Chart — ICAO
10. Standard Arrival Chart — Instrument (STAR) — ICAO
11. Enroute Chart — ICAO
12. The World Aeronautical Chart — ICAO 1:1,000,000

4.5.2 NON-ICAO CHARTS:

AD:

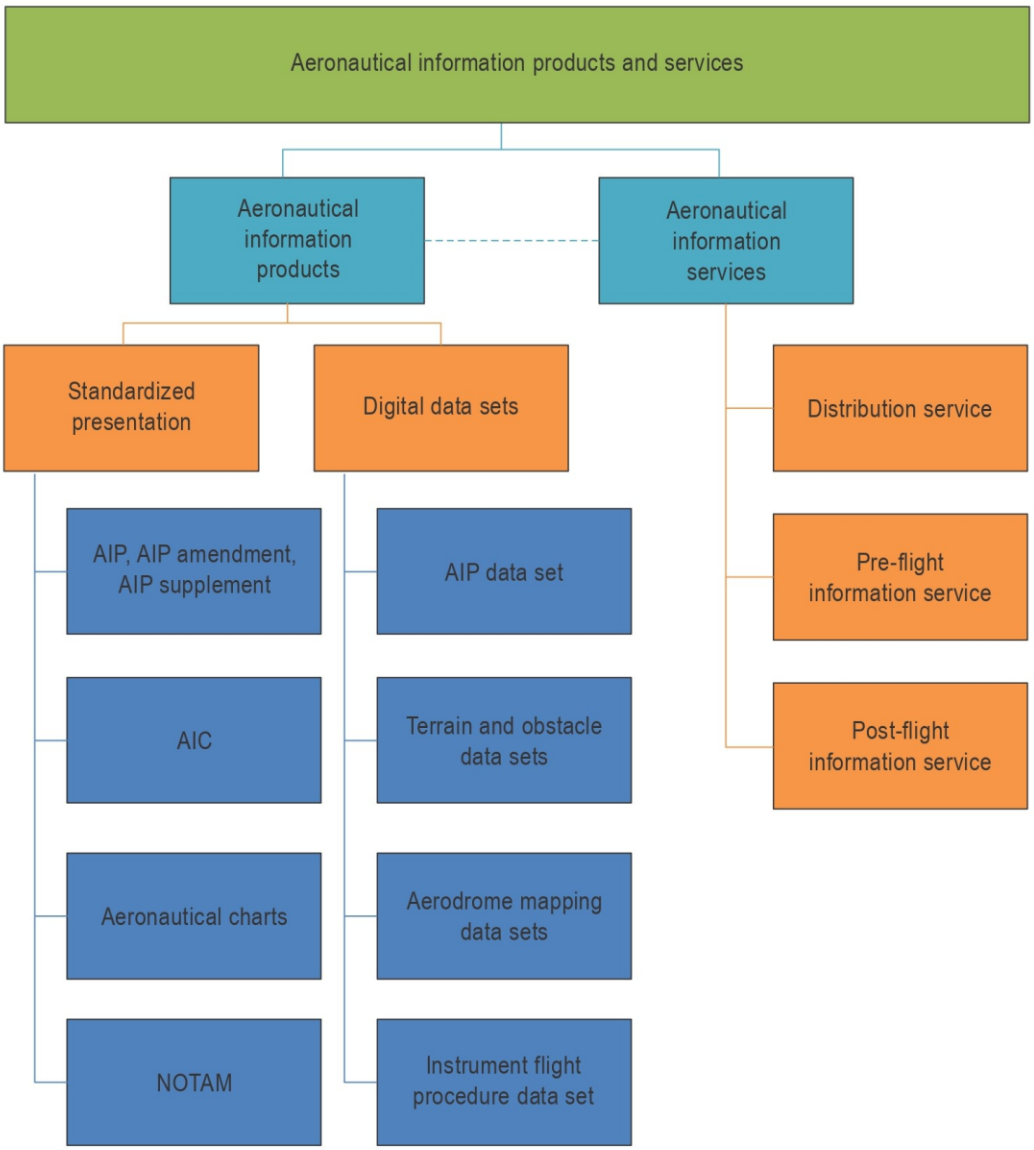
1. LOW VISIBILITY PROCEDURE - DEPARTURE RWY 12L-30R
2. LOW VISIBILITY PROCEDURE - ARR RWY 12L - 30R
3. CIRCLING AUTHORIZATION AREA
4. BIRD CONCENTRATIONS
5. GRAPHIC PORTRAYAL OF AREA OF COVERAGE OF RADAR-SSR
6. AREA OF RADAR COVERAGE

ENR:

1. Aerodrome Index Chart
2. Radio Facility Index Chart

Note: it is permissible to utilize charts created in accordance with Annex 4 — Aeronautical Charts to meet the requirement. For detailed instructions on the specifications of index maps and diagrams found in Aeronautical Information Publications, please refer to the Aeronautical Information Services Manual (Doc 8126).

Aeronautical information products and services



4.6 Electronic AIP (eAIP)

- The eAIP shall follow the content and structure of the paper AIP, including the ability to print a paper version.
- Bahrain AIM shall distribute the eAIP through a webpage-based system.
- New or revised information is clearly identified for easy comparison.

Note: Refer to Doc 8126 for eAIP production and guidelines on using the Internet for aeronautical applications (Doc 9855).

Note: For the provision of terrain and obstacle attributes, please refer to APPENDIX 7.

4.7 Digital data sets

4.7.1 General:

Note: - Detailed specifications concerning metadata are contained in the PANS AIM (Doc 10066).

a) The ISO 19100 series of standards for geographic information shall be used as a reference framework for the exchange of digital data sets between data providers and users.
b) Data product specifications shall be provided to describe available digital data sets, allowing users to evaluate them for their intended use.
c) The content and structure of digital data sets shall be defined through application schema and feature catalogues.
d) An aeronautical information model should be used to encompass the aeronautical data and information to be exchanged.
e) The aeronautical information model should utilize Unified Modelling Language (UML), include metadata provisions, and have a temporality model for capturing the evolution of information features.
f) The aeronautical data exchange model should employ a commonly used data encoding format to ensure interoperability.
g) Charts, maps, or diagrams can complement digital data sets.
h) The digital data should be structured into the following data sets:
    - terrain data sets;
    - obstacle data sets;
    - AIP data set;
    - aerodrome mapping data sets; and
    - instrument flight procedure data sets.

4.7.2 Terrain and obstacle data sets

4.7.2.1 The coverage areas for sets of terrain and obstacle data shall be specified as:

a) **Area 1**: the entire territory of Bahrain;
b) **Area 2**: within the vicinity of an aerodrome, sub-divided as follows:
    - Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists.
      Note. — See ICAO Annex 14, Volume I, Chapter 3 for dimensions for runway strip.
      Note. — Refer to APPENDIX 6 for terrain and obstacle data requirements.

    - Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side.

- Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and
- Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest;

c) **Area 3**: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area.

d) **Area 4**: the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

- When the terrain beyond 900 m (3000 ft) from the runway threshold is significant, extend Area 4 up to 2000 m (6500 ft) from the runway threshold.

4.7.2.2 Terrain data is required for Area 1, while obstacle data is necessary for obstacles in Area 1 that are 100 m or higher above ground level. Similarly, obstacle data should be provided for all hazards to air navigation within Area 2.

4.7.2.3 To ensure the safety of international civil aviation operations at aerodromes, terrain data shall be provided for the following areas:

- Area 2a,
- the take-off flight path area, and
- an area defined by the lateral extent of the aerodrome obstacle limitation surfaces.
- Area 3, and
- Terrain data is crucial for Area 4 in runways with precision approach Category II or III operations, allowing operators to assess terrain impact on decision height determination using radio altimeters. Detailed terrain information enables informed decisions on approach procedures.

Note: Area 4 terrain and Area 2 obstacle data usually suffice for the Precision Approach Terrain Chart - ICAO. Additional obstacle data for Area 4 can be provided as per ICAO PANS-AIM (Doc 10066), APPENDIX 7, Table A7-2. The ICAO Aeronautical Chart Manual (Doc 8697) provides guidance on selecting suitable obstacles.

4.7.2.4 For aerodromes regularly used by international civil aviation, it is advised to provide additional terrain data within Area 2. This includes:

- The area within a 10 km radius from the Aerodrome Reference Point (ARP).
- The region between 10 km and either the boundary of the Terminal Control Area (TMA) or a 45 km radius (whichever is smaller). In this region, particular attention should be given to areas where the terrain intersects a horizontal surface set at 120 m above the lowest runway elevation.

4.7.2.5 It is required to provide obstacle data for:

- Obstacle data sets shall encompass the precise digital representation of both the vertical and horizontal extents of obstacles while ensuring a distinct segregation from terrain data sets.
- Obstacle data must be provided for obstacles in Area 1 that have a height of 100 m or higher above the ground.
- For aerodromes frequently used in international civil aviation, obstacle data shall be supplied for all hazards to air navigation within Area 2.

To meet the requirements of international civil aviation at aerodromes frequently utilized, there is a mandatory provision for obstacle data shall be provided for:

a) Area 2a:

- Obstacles that penetrate the obstacle data collection surface, defined by a rectangular area around the runway including the runway strip and any clearway, with a height of 3 m above the nearest runway elevation along the runway centerline. For portions related to a clearway, if present, the elevation is measured at the nearest runway end.
- Objects within the take-off flight path area that extend above a plane surface with a 1.2 percent slope, originating from the take-off flight path area.
- Obstacles that breach the aerodrome obstacle limitation surfaces.

Note: Take-off flight path areas are specified in ICAO Annex 4, section 3.8.2. Aerodrome obstacle limitation surfaces are specified in ICAO Annex 14, Volume 1, Chapter 4.

b) Areas 2b, 2c, and 2d are defined for obstacles that breach the corresponding obstacle data collection surfaces as specified below:

1. **Area 2b**: This area extends from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15% on each side. The obstacle collection surface in Area 2b has a 1.2% slope, starting from the ends of Area 2a at the elevation of the runway end in the direction of departure. It also extends for a length of 10 km and a splay of 15% on each side.

2. **Area 2c**: This area extends beyond Area 2a and Area 2b, within a maximum distance of 10 km from the boundary of Area 2a. The obstacle collection surface in Area 2c has a 1.2% slope, extending outside Area 2a and Area 2b within a distance of not more than 10 km from the boundary of Area 2a. The initial elevation of Area 2c matches the elevation of the starting point in Area 2a.

3. **Area 2d**: This area lies outside Areas 2a, 2b, and 2c, up to a distance of 45 km from the aerodrome reference point or the nearest existing TMA (Terminal Control Area) boundary. The obstacle collection surface in Area 2d has a height of 100 m above ground level.

However, it is not required to collect data for obstacles below a height of 3 m above ground in Area 2b and below a height of 15 m above ground in Area 2c.

c) In **Area 3**, obstacles are considered if they breach the relevant obstacle data collection surface, which extends half a meter (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.

d) In **Area 4**, obstacle data is required for all runways where precision approach Category II or III operations have been established.

4.7.3 Terrain Data Set:

4.7.3.1 The terrain data sets shall include a digital representation of the terrain surface, consisting of continuous elevation values at all grid intersections (points) and referenced to a common datum.

4.7.3.2 These sets of terrain data shall encompass spatial (position and elevation), thematic, and temporal aspects of the Earth's surface, including natural features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow. Obstacles should be excluded. Depending on the acquisition method employed, the data should represent the continuous surface at the bare Earth, the top of the canopy, or an intermediate level known as the "first reflective surface."

4.7.3.3 Only one feature type, terrain, shall Area 2a be provided in terrain data sets. The feature attributes describing the terrain shall adhere to the listing in APPENDIX 7, Table A7-1. The attributes listed in Table A7-1 represent the minimum set of terrain attributes, and the mandatory ones must be recorded in the terrain data set.

4.7.3.4 The terrain data for each area shall comply with the applicable numerical requirements specified in APPENDIX 1.

4.7.4 Obstacle Data Set:

4.7.4.1 The obstacle data sets shall encompass the digital representation of the vertical and horizontal dimensions of obstacles. It is important to note that obstacle data shall not be included in terrain data sets. Obstacle data elements shall be represented within the data sets using points, lines, or polygons.

4.7.4.2 Within an obstacle data set, all specified obstacle feature types shall be provided, and each of them must be described according to the list of mandatory attributes outlined in APPENDIX 7, Table A7-2.

Note: Obstacles can be categorized as fixed (permanent or temporary) or mobile. APPENDIX 7, Table A7-2, provides optional attributes specifically associated with mobile (feature operations) and temporary types of

obstacles. If these types of obstacles are included in the data set, appropriate attributes describing such obstacles are also required.

4.7.4.3 The obstacle data for each area shall adhere to the relevant numerical requirements specified in ICAO PANS-AIM (Doc 10066), APPENDIX 1.

4.7.5 AIP Data Set:

4.7.5.1 It is recommended to provide an AIP data set that encompasses the entire range of information found in the AIP.
4.7.5.2 In cases where it is not feasible to provide a comprehensive AIP data set, the available data subset(s) should still be provided.
4.7.5.3 The AIP data set shall include the digital representation of aeronautical information that is enduring in nature, consisting of permanent information and long-duration temporary changes that are vital for air navigation.

4.7.6 Aerodrome Mapping Data Sets:

4.7.6.1 The aerodrome mapping data sets shall include the digital representation of various aerodrome features.

Note: Aerodrome features encompass attributes and geometries that are classified as points, lines, or polygons. Examples of such features include runway thresholds, taxiway guidance lines, and parking stand areas.

4.7.6.2 It is highly recommended to make aerodrome mapping data sets available for aerodromes that are frequently utilized by international civil aviation.

Note — Refer to Chapter 5 of ICAO PANS-AIM (Doc 10066) for aerodrome mapping data set information.

4.7.7 Instrument Flight Procedure Data Sets:

4.7.7.1 The instrument flight procedure data sets shall include the digital representation of instrument flight procedures.
4.7.7.2 It is highly recommended to make instrument flight procedure data sets available for aerodromes that are frequently utilized by international civil aviation.

Note — Refer to Chapter 5 of ICAO PANS-AIM (Doc 10066) for instrument flight procedure data sets *information.*

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CHAPTER 5: NOTAM

5.1 NOTAM ORIGINATATION

a) NOTAMs shall be issued promptly for temporary information, significant permanent changes, or long-duration temporary changes made at short notice, excluding extensive text and/or graphics.
b) The primary purpose of NOTAMs is to distribute information in advance of the related event, except in cases of unforeseen unserviceability.
c) To fulfill its purpose, a NOTAM must be received by the addressee with sufficient time for necessary action.
d) Information of short duration containing extensive text and/or graphics is published as an AIP Supplement.
e) NOTAMs serve as a supplement to the AIP and act as a fast medium for distributing information to provide timely warning of any change or occurrence.
f) Operationally significant changes related to specific circumstances are issued under the AIRAC system.

Note: Please refer to APPENDIX 4 for comprehensive instructions on completing the NOTAM format in accordance with the established guidelines followed by Bahrain Aeronautical Information Management (AIM) when issuing NOTAMs.

5.2 NOTAM INFORMATION CATEGORY:

In compliance with the established guidelines, the issuance and origination of NOTAMs shall be required for the following categories of information under specific conditions:

Information Category	Specific Triggers or Situations Requiring NOTAM Issuance
Aerodrome or heliport	Establishment, closure, or significant operational changes, including runways.
Aeronautical services	Establishment, withdrawal, or significant changes in services such as AGA, AIS, ATS, COM, MET, SAR, etc.
Radio navigation and air-ground communication services	Operational changes, including interruptions or returns to operation, frequency changes, hours of service, identification changes, orientation changes (directional aids), location changes, power changes (increase or decrease by 50% or more), broadcast schedule changes, irregularities, or unreliability of electronic navigation aids and air-ground communication services.
Visual aids	Establishment, withdrawal, or significant changes.

Aerodrome lighting systems	Interruption or return to operation of major components.
Procedures for air navigation services	Establishment, withdrawal, or significant changes.
Maneuvering area	Occurrence or correction of major defects or impediments.
Fuel, oil, and oxygen	Changes to availability and limitations.
Search and rescue facilities and services	Major changes.
Hazard beacons	Establishment, withdrawal, or return to operation, marking obstacles to air navigation.
Regulations	Changes requiring immediate action, e.g., prohibited areas for search and rescue.
Hazards affecting air navigation	Presence of obstacles, military exercises, displays, races, and major parachuting events outside designated locations
Obstacles to air navigation	Erection, removal, or changes in takeoff/climb, missed approach, approach areas, and runway strip.
Prohibited, restricted, or danger areas	Establishment, discontinuance, or changes in status.
Areas or routes with interception possibility	Establishment, discontinuance, or changes, requiring VHF emergency frequency 121.5 MHz guard.
Location indicators	Allocation, cancellation, or change.
Rescue and firefighting services	Significant changes in the level of protection at aerodromes/heliports shall necessitate a change of category.
Hazardous conditions on the movement area	Presence, removal, or significant changes due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition, or water.
Epidemics	Outbreaks necessitating changes in inoculation and quarantine requirements
Solar cosmic radiation	Forecasts, if provided.
Volcanic activity	Operationally significant changes, eruption details, volcanic ash cloud information, flight levels, routes, and direction of movement.

Release of hazardous substances	Following nuclear or chemical incidents, including location, date, time, affected flight levels, routes, and direction of movement.
Humanitarian relief missions	Establishment of operations under the United Nations, including procedures and limitations affecting air navigation.
Short-term contingency measures	Implementation in cases of air traffic services disruption, partial disruption, and related supporting services.
Operations of aircraft	Any circumstance which may affect the operations of aircraft.

5.3 NOTAM dissemination shall not be applicable for the following information:

a) Runway marking work, if aircraft operations can safely use other available runways or if the equipment can be removed as needed.
b) Temporary obstructions near aerodromes/heliports that do not affect the safe operation of aircraft.
c) Partial failure of aerodrome/heliport lighting facilities that do not directly affect aircraft operations.
d) Regular maintenance work on aprons and taxiways that does not impact the safe movement of aircraft.
e) Parachuting activities in uncontrolled airspace under VFR, controlled airspace at designated sites, or within danger or prohibited areas.
f) Temporary partial failure of air-ground communications when suitable alternative frequencies are known and operational.
g) Absence of apron marshalling services and road traffic control.
h) Unavailability of location, destination, or other instruction signs on the aerodrome movement area.
i) Other similar temporary information.

5.4 General specifications

5.4.1 Each NOTAM shall contain the information in the order specified in the NOTAM Format in APPENDIX 4.

5.4.2 SNOWTAM information about snow, slush, ice, and standing water on aerodrome/heliport pavements shall follow the order in the SNOWTAM Format in APPENDIX 3.
5.4.3 Each NOTAM shall be assigned a unique series consisting of a letter and a four-digit number followed by a stroke and a two-digit year number.
5.4.4 NOTAM text shall use the assigned significations and phraseology of the ICAO NOTAM Code, supplemented by abbreviations, indicators, identifiers, designators, call signs, frequencies, figures, and plain language. PANS-ABC (Doc 8400).
5.4.5 International NOTAMs shall include English text for parts expressed in plain language, particularly 'item E and D'.
5.4.6 Errors in a NOTAM shall be replaced by a new NOTAM with a different number or canceled, followed by a new NOTAM.
5.4.7 When canceling or replacing a NOTAM, the series and number of the previous NOTAM shall be indicated, ensuring consistency in series, location indicator, and subject.
5.4.8 Message identifiers (NOTAMN, NOTAMR, NOTAMC) shall be used to indicate new information, replacement, or cancellation of a previous NOTAM.
5.4.9 Each NOTAM shall address only one subject and condition, following the NOTAM Selection Criteria.
5.4.10 Each NOTAM shall be concise, self-contained, and understandable without referring to other documents.
5.4.11 Location indicators mentioned in NOTAMs shall conform to Location Indicators (Doc 7910), avoiding abbreviated forms.
5.4.12 If no ICAO location indicator is assigned, the place name shall be entered in plain language, spelled according to local usage, and transliterated, if needed, into the ISO basic Latin alphabet.
5.4.13 Each NOTAM shall be transmitted as a single telecommunication message.
5.4.14 NOTAMs with long-duration information shall include appropriate AIP or AIP Supplement references.
5.4.15 A checklist of valid NOTAMs shall be issued at intervals of no more than one month, referring to the latest AIP Amendments, AIP Supplements, and internationally distributed AIC.
5.4.16 The checklist shall cover all series and not serve as a cancellation for any NOTAM.
5.4.17 ASHTAMs reporting volcanic activity, eruptions, and volcanic ash clouds shall follow the order in the ASHTAM Format in APPENDIX 5.
5.4.18 NOTAMs sent over the AFS typically have GG priority, but in exceptional circumstances or when necessary, a NOTAM can be assigned a higher priority of DD.
5.4.19 The comprehensive details regarding the NOTAM Q-code component "NOTAM SELECTION CRITERIA" can be found in APPENDIX G of the Aeronautical Information Services Manual, Doc 8126 Part III.

5.5 Instructions for the origination and cancellation of NOTAMs:

5.5.1 NOTAM Distribution:

a) NOTAMs shall be distributed upon request.
b) Prepare NOTAMs shall be in accordance with relevant ICAO communication procedures.
c) The AFS shall, whenever practicable, be employed for NOTAM distribution.
d) When sending a NOTAM via means other than the AFS, it shall include a six-digit date-time group indicating the origination date and time, as well as the originator's identification before the text.

5.5.2 Predetermined distribution system for NOTAM messages through the AFTN:

5.5.2.1 The predetermined distribution system channels incoming NOTAM (including ASHTAM) through the AFTN to designated recipients determined by the receiving country. It also involves sending them to the international NOTAM office for verification and control. This system shall use when administrations agree to employ a predetermined distribution system for AFTN messages.

5.5.2.2 The indicators for the designated addressees shall be structured as follows:

a) The first and second letters:

The first two letters of the Location Indicator identify the Bahrain communications center. It has agreed to implement the system and holds predetermined routing responsibility for receiving messages over a dedicated circuit;

b) The third and fourth letters:

The letters ZZ, indicating a requirement for special distribution;

c) The fifth, sixth, and seventh letters:

1. They represent the national and/or international distribution list(s) used by the receiving AFTN center, chosen from the series A to Z.

2. "N" and "S" are specifically reserved as the fifth letter for NOTAM and SNOWTAM respectively. Detailed specifications for NOTAM, including SNOWTAM formats, are provided in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

d) The eighth letter: It can be "X" or a letter from A to Z, further defining the distribution list(s) used by the receiving AFTN center.

Note: Refer to Annex 10, Volume II, Chapter 4 for more details.

5.5.3 International NOTAM Exchange:

a) The originator shall select NOTAMs to be internationally distributed.
b) Use selective distribution lists when feasible.
c) International exchange of NOTAMs shall occur through mutual agreement between international NOTAM offices.

5.5.4 Requests for Origination:

a) Requests for issuance of NOTAMs by various authorities at an airport should be routed through FAX or mail.
b) Requests for the issuance of NOTAMs by different airports should be sent via ATS In-charge, FAX, or mail.

5.5.5 Origination and Verification:

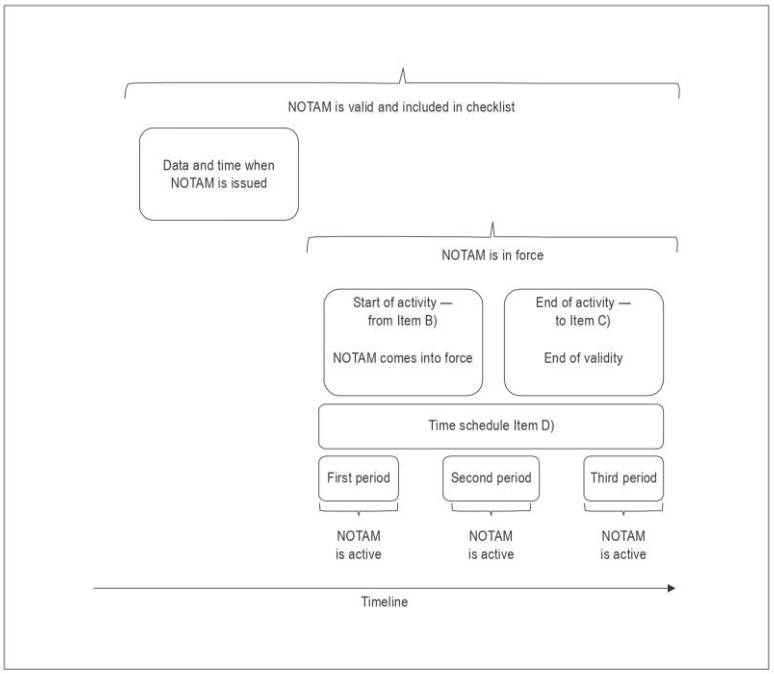
a) The text of the message sent for the origination of a NOTAM must start with the words "request for NOTAM action."
b) The request for the origination of a NOTAM should be in the form of a written message, and it should be signed by the appropriate authority in charge.
c) Before promulgating a NOTAM, check the text in the NOTAM Format against the original request to identify any discrepancies or mistakes.
d) If a NOTAM requires an AIP amendment or AIP Supplement, it must include a cross-reference and annotation, even for temporary information. This notifies users of outstanding information related to a specific entry in the AIP or AIP Supplement.
e) If a NOTAM contains temporary information that is brief and does not require referring to an AIP Amendment or AIP Supplement for complete details, AIP references must not be annotated. This indicates that the NOTAM itself provides all the necessary information.

5.5.6 Cancellation and Facility Updates:

a) The aviation agency that requested origination of a NOTAM is responsible for requesting cancellation when the facility becomes serviceable or the condition no longer exists.
b) When establishing or withdrawing facilities, it is important to inform the AIM section so that the necessary amendments can be made to the relevant sections/pages of AIP Bahrain.

5.6 Duration of NOTAM

a) NOTAMs should not exceed three months in duration, as per Doc 8126.
b) If the notification requirement lasts longer, an AIP Supplement must be published.
c) Unexpectedly extended temporary changes in AIP information issued by NOTAM may warrant issuing a new or replacement NOTAM for one to two months.
d) For longer-lasting conditions, an AIP Supplement must be issued.
e) Activation of danger, restricted, or prohibited areas and activities with temporary airspace restrictions (excluding emergencies) shall require at least seven days' advance notice.
f) Prompt notification should be given for cancellations, changes in activity hours, or airspace dimensions.
g) Providing at least 24 hours' advance notice is preferable for efficient notification processing and airspace planning.
h) NOTAMs reporting unserviceability of navigation aids, facilities, or communication services shall indicate the estimated duration of unavailability or expected service restoration time.



NOTAM date-times

5.7 Trigger NOTAM

The purpose of this NOTAM is to inform users about significant permanent or temporary changes to the AIP. It serves as a reminder for AIM officers to update the AIP with new amendments or supplements. When an AIP Supplement is published, a trigger NOTAM must be originated giving a brief description of the contents, effective date, and serial number of the supplement. The trigger NOTAM shall remain valid for fourteen days, ensuring pilots and operators are aware of operational changes.

a) Trigger NOTAMs are issued on the publication date of an AIP Supplement, it must either in the AIRAC or non-AIRAC series.
b) Trigger NOTAMs are published in the appropriate NOTAM series based on their content, except for Series T.
c) Trigger NOTAMs are issued for a single location (FIR or aerodrome) but can include information on different subjects related to that location to minimize the number of published NOTAMs.
d) For multiple subjects, the qualifiers TRAFFIC, PURPOSE, and SCOPE must be filled in based on the subject of highest operational importance.
e) Trigger NOTAMs follow the same instructions as other NOTAMs, with some exceptions.
f) When issuing trigger NOTAMs, the PURPOSE qualifier must relate to information of operational significance, specifically "BO" (significant operational impact).
g) If there are multiple subjects for the same aerodrome or FIR, the qualifiers SCOPE and TRAFFIC must be selected to cover all subjects.

h) Trigger NOTAM are issued in accordance with the same instructions as for any other NOTAM with the following exceptions:

Qualifiers (Item Q):

- The second and third letters (subject) must be selected from the NOTAM Selection Criteria (Doc 8126) and must never be XX. If no suitable selection is available, use FA for aerodromes and AF for FIR.
- For multiple subjects pertaining to the same aerodrome or FIR, the second and third letters must be chosen based on the subject of highest operational importance.
- The fourth and fifth letters (condition) must always contain the letters TT. This exclusive TT condition must be used in trigger NOTAM regardless of the subject of the NOTAM code.

Note: The condition "TT" can be used to retrieve specific trigger NOTAM from any issuing NOF and can also be used to include (or exclude) trigger NOTAM in/from PIB at a specific time before their effective date.

Purpose:

As trigger NOTAM are issued only relative to information of operational significance, the qualifier PURPOSE must relate to BO.

Scope and Traffic:

For multiple subjects pertaining to the same aerodrome or FIR, even if only the subject of highest operational significance is listed in the NOTAM code, the qualifiers SCOPE and TRAFFIC must be selected to cover all subjects.

Items B) and C):

- Trigger NOTAM must contain in Item B) The AIRAC effective date-time of the AIRAC AIP Amendment or AIRAC AIP Supplement.
- As trigger NOTAM must remain valid for a period of 14 days after the effective date of an amendment or supplement, Item C) must contain the AIRAC effective date-time plus 14 days.

  Example:
  B) 2310151000 (AIRAC effective date-time)
  C) 2310291000 (AIRAC effective date-time + 14 days)

- For AIRAC AIP Supplements with a duration shorter than 14 days, the trigger NOTAM must include the expiration date and time of the published information.
- Trigger NOTAMs cancel automatically at the specified date and time, but can be cancelled or replaced if the information becomes invalid earlier.

Item E) in the trigger NOTAM should be limited to 300 characters and must always start with the words "TRIGGER NOTAM" followed by the abbreviation "PERM" (for AIP Amendments) or a

reference number, effective and end dates (or effective date only for "PERM"), and a brief content description.

"PERM" or end of validity in Item E) indicates the permanent nature or planned duration of the information in the referenced AIP Amendment or Supplement, while the trigger NOTAM itself includes an end date as specified in Item C).

Example:
Q) OBBB/QNMTT/IV/BO/AE/000/999
A) OBBI
E) TRIGGER NOTAM PERM. AIRAC AIP SUPP 04/2023
ON VOR/VOR DME PROCEDURE RWY 12 OBBI AIRPORT)

i) AIP Supplements provide temporary information with known or unknown durations. For AIP Supplements of unknown duration, they must be replaced, cancelled, or updated with a corresponding trigger NOTAMR or NOTAMC to ensure accurate and up-to-date information is available.

j) Trigger NOTAMs for AIP Supplements must include specific information: for unknown duration, a ten-digit datetime group followed by "EST" indicating the need for cancellation or replacement; for known duration, the entire duration is covered, with Item B) indicating the effective date/time and Item C) specifying the end date. The NOTAM remains in the PIB throughout the supplement's duration.

k) When it comes to cancelling AIP Supplements that contain AIRAC information, a corresponding trigger NOTAM is issued. The cancellation or replacement procedures for trigger NOTAMs apply in these cases.

l) Non-AIRAC AIP Supplements are cancelled by NOTAM. Trigger NOTAMs are not typically issued. If cancellation is required before their scheduled end, a NOTAM Notice may be issued instead. The NOTAM must include the "M" (Miscellaneous NOTAM) purpose qualifier and must remain active for 24 hours, allowing recipients to remove the cancelled data from the AIP.

m) An AIP Supplement can replace and modify an existing NOTAM at any time. A trigger NOTAM must be issued for the AIP Supplement, ensuring cancellation of the existing NOTAM at the specified date/time. Cancellation is done with a NOTAMR or NOTAMC, depending on the case.

n) Regarding cancellation/replace, the following guidelines must be applied:

1. Trigger NOTAMs for AIRAC AIP Amendments self-cancel after 14 days.

2. For AIP Supplements:

- If Item C) has a fixed date, the trigger NOTAM is automatically cancelled on that date. In exceptional cases, the end date may be changed earlier through a NOTAM, and a trigger NOTAMR is issued with a maximum duration of 14 days.
- If Item C) has an estimated date (EST), a trigger NOTAMR must be replace the existing trigger NOTAM before reaching the specified time.
- Trigger NOTAMs with an estimated end date must be cancelled by publishing a regular NOTAMC when the issuing office is informed that the situation described in the AIP Supplement has ended.

5.8 NOTAM checklist

5.8.1 A checklist of valid NOTAM shall be issued as a NOTAM checklist at intervals of not more than one month. Please refer to APPENDIX 4 for more information.

Note: Omitting a NOTAM from the checklist does not cancel a NOTAM.

5.8.2 One NOTAM checklist shall be issued for each series.

5.8.3 A NOTAM checklist shall refer to the latest AIP Amendments, AIP Supplements, data sets and at least the internationally distributed AIC, and, when it is selected, include the checklist of AIP Supplements.
5.8.4 A NOTAM checklist shall have the same distribution as the actual message series to which it refers and shall be clearly identified as a checklist.

5.9 Pre-flight Information Services

5.9.1 Provision of Pre-flight Information Services:

5.9.1.1 Annex 15 mandates that pre-flight information must be readily accessible at each aerodrome/heliport commonly used for international operations, as specified in the relevant ICAO regional plans. It is crucial to provide comprehensive aeronautical information necessary for ensuring the safety, regularity, and efficiency of air navigation, particularly for route stages originating from the aerodrome/heliport. This information shall be readily available to flight operations personnel, including flight crews and entities responsible for pre-flight information.

5.9.1.2 Aerodrome AIM units should be organized based on expected traffic and staffed by qualified personnel to provide comprehensive briefings. In low-traffic situations, AIM responsibilities can be delegated to an ATS unit or another operational service to optimize efficiency. Users expect efficient pre-flight information services that cover aeronautical and meteorological information, flight plan submission, and self-briefing.

5.9.1.3 To enhance the provision of pre-flight information, it is recommended to establish a centralized web portal or automated system. Such a system would allow users to conveniently access the necessary information using portable devices from any location.

5.9.1.4 Automated pre-flight information systems shall be used for integrating and customizing pre-flight information. Non-automated options, such as contacting Bahrain AIM office.

5.9.1.5 or accessing the Kingdom of Bahrain Meteorological Authority website, are considered contingency arrangements. It is important to include components from the Integrated Aeronautical Information Package, as well as maps and charts if necessary.

5.9.1.6 The roles and responsibilities for the provision of pre-flight information services are addressed in Chapter 2, Section 2.1.1 of this manual.

5.9.1.7 Automated pre-flight information systems for the provision of aeronautical data and information shall adhere to the following guidelines:

a) Ensure continuous and timely updating of the system's database, monitoring the validity and quality of stored aeronautical data.
b) Allow operations personnel, including flight crew members, aeronautical personnel, and other relevant users, to access the system through suitable telecommunications means.
c) Provide the option for obtaining a paper copy of accessed aeronautical data and information, as required.
d) Utilize access and interrogation procedures that incorporate abbreviated plain language and ICAO location indicators. Alternatively, employ a user-friendly menu-driven interface or other appropriate mechanisms as agreed upon by the civil aviation authority and concerned operators.
e) A recapitulation of valid NOTAM of operational significance and other information of urgent character shall be made available to flight crews in the form of plain language pre-flight information bulletins (PIB).

Note: Guidelines for creating PIBs can be found in the Aeronautical Information Services Manual (Doc 8126).

5.9.2 Effective Pre-flight Information Services:

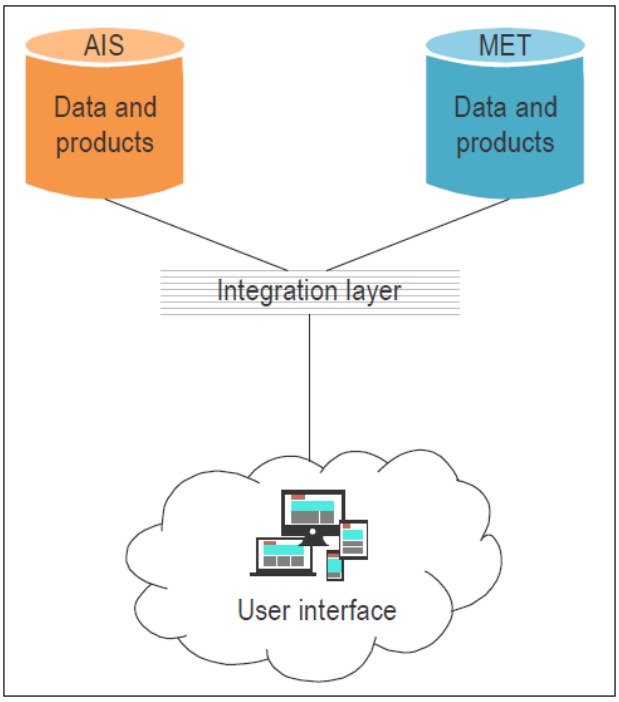
5.9.2.1 Bahrain AIM Ensure prompt response to user requests for information through the related Operation instruction for issuing PIB. (Refer to APPENDIX 9)

5.9.2.2 Additional Considerations for Ensuring Effective Pre-flight Information Services:

a) Define the coverage area for pre-flight information services, including the aerodrome/heliport FIR, adjacent FIRs, and extended air routes.
b) Provide miscellaneous NOTAMs by default, allowing users to adjust the content as necessary, although they are typically not briefed.
c) Implement automated systems for self-briefing, flight planning, and flight information services, ensuring compliance with the provisions outlined in Annex 15.

d) Enable self-briefing and facilitate consultation with the aeronautical information service through automated systems.

Note: The ICAO abbreviations, codes, and location indicators can be found in the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400), and Location Indicators (Doc 7910).



Integrated automated pre-flight information service

5.2.1 PRE-FLIGHT INFORMATION BULLETINS

5.2.1.1 *Pre-flight information bulletins* (PIBs) are plain-language summaries of current NOTAMs that are important for flight operations. PIBs are prepared prior to flight and play a vital role in automated pre-flight briefing services. They provide up-to-date information on the status of facilities and services.

5.2.1.2 *Pre-flight information packages* emphasize the inclusion of AIM and MET information, along with any other required information, and clearly distinguish it from the pre-flight information bulletin (PIB). NOTAMs serve as the principal source of aeronautical information, while meteorological information encompasses observations, reports, forecasts, and warnings.

5.2.1.3 Types of PIBs or pre-flight information packages:

The bulletins are categorized into "area" and "route" types, derived from a common set of NOTAM qualifiers. NOTAMs are the main source of information for the Pre-flight Information Bulletin (PIB), which can be customized to meet specific operational needs. The PIB can be accessed in different formats to accommodate diverse user requirements, such as:

a) Bulletin based on the *Flight number*: allows users to access bulletins based on specific flight numbers. Airlines are required to regularly update the information related to flight numbers, as well as any changes to alternate aerodromes, and submit them to the Aeronautical Information Management section (AIM)

b) Bulletin based on the *Destination*: enables users to retrieve specific bulletins by entering destination and alternate aerodrome information. This functionality allows users to access relevant information pertaining to their intended flight

c) *Aerodrome type* bulletins, provide essential information on selected aerodromes/heliports based on user requirements. These bulletins can include data for aerodromes/heliports within specific Flight Information Regions (FIRs), sectors, or limited to destination and alternate aerodromes/heliports. The requirements for these bulletins are established through agreements between the AIM authority and the relevant operators.

d) *FIR Bulletin*: Users can retrieve bulletins for their preferred FIR by selecting this option. In an automated system, these bulletins can be customized based on user needs by choosing from the following options:
- All PIB information.
- Aerodrome facility PIB information.
- Communication facility PIB information.
- Navigational warnings inclusion option.

e) *Immediate automatic notification of urgent operational items*: NOTAMs labeled with Purpose N, signifying urgent operational significance, must be promptly conveyed to aircraft operators. Integrated service providers are responsible for promptly sharing SIGMET, AIRMET, and amended TAF with flight crews according to established agreements.

f) *Administrative bulletins* must be providing:
- Checklists containing all current NOTAMs categorized by State/FIR/aerodrome/heliport; and
- Compilation of all NOTAM inputs since a specified date-time group.

Note: Implementing this procedure significantly streamlines briefing processes. For comprehensive information, refer to PANS Doc 8126, CH10.

5.10 POST-FLIGHT INFORMATION SERVICES:

Post-flight information services play a critical role in promptly reporting any identified deficiencies in flight operation facilities and the presence of birds that may pose potential hazards to aircraft. It is the

responsibility of operators to report these inadequacies, in accordance with the provisions outlined in Annex 6 and Annex 15. Generally, pilots report malfunctions or bird sightings to the appropriate ATC frequency, which is then relayed to the AIM unit for dissemination. Additionally, written reports can be submitted to the ARO, ensuring that they are accessible to AIM for appropriate and timely distribution.

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CHAPTER 6: AERONAUTICAL INFORMATION UPDATES

6.1 General

6.1.1 Aeronautical data and aeronautical information shall be kept up to date.

6.1.2 Changes in facility services or procedures require updates to airline operations manuals or related documents produced by aviation agencies. These publications are maintained through a pre-arranged production program. Publishing Aeronautical Information Publication (AIP) supplements with uncoordinated effective dates would hinder the ability to keep the manuals and documents up to date. Alternatively, establishing a predetermined schedule for implementing changes throughout the year enables better coordination and timely updates.

6.2 AERONAUTICAL INFORMATION REGULATION AND CONTROL (AIRAC)

6.2.1 ICAO recommends using the regulated system AIRAC to anticipate and schedule changes to facilities, services, and procedures. This system ensures smooth implementation of proposed changes according to pre-established dates, assuming no operational constraints:

a) Relevant information specified in section 6.2 will be disseminated as AIRAC AIP Supplements. These supplements, must be denoted by the acronym "AIRAC," and distributed at least 42 days in advance for regular changes and 56 days in advance for significant changes. The aim is to provide recipients with the information at least 28 days in advance for regular changes and 42 days in advance for significant changes.

b) The AIRAC effective dates must align with the internationally agreed schedule, which follows a 28-day interval for each update.

Note: The guidance material regarding the procedures applicable to the AIRAC system can be found in the Aeronautical Information Services Manual (Doc 8126).

c) Once the information has been notified, it must not be changed for a minimum of 28 days from the indicated effective date. However, if the notified circumstance is temporary and not expected to persist for the entire period, further changes may be considered.

d) In essence, for pre-planned, operationally significant changes that necessitate cartographic work and/or updating of navigation databases, it is imperative that AIM must not utilize implementation dates other than the designated AIRAC effective dates.

6.2.2 The processing cycle for airborne navigation databases necessitates the distribution of the database no less than seven days prior to the effective date. Preparing the data within the database requires

a minimum of eight days. Consequently, navigation data providers typically establish a cut-off period of 20 days prior to the effective date, ensuring the timely completion of subsequent milestones. Data received after the 20-day cut-off is generally excluded from inclusion in the database for the upcoming cycle (refer to Figure 6-1).

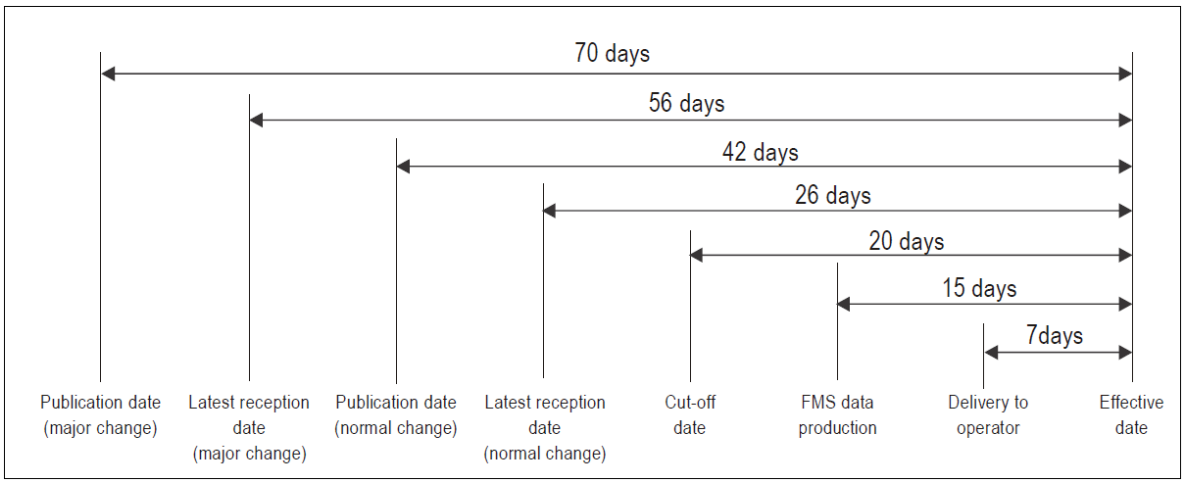

Figure 6-1 Processing cycle for airborne navigation databases

6.2.3 To ensure accurate and timely dissemination of information, it must be ensured that the following guidelines regarding the utilization of AIRAC information are adhered to:

a) Utilize the redetermined schedule of effective AIRAC dates.
b) Use Coordinated Universal Time (UTC) to indicate the time of effectiveness.
c) When the effective time differs from 0000 UTC, it is essential to explicitly include the specific effective time along with the AIRAC information.

6.3 Schedule of AIRAC effective dates

6.3.1 The schedule of predetermined, internationally agreed AIRAC effective dates for the years 2024 to 2029 inclusive is given in Table:

2024	2025	2026	2027	2028	2029
2024-01-25	2025-01-23	2026-01-22	2027-01-21	2028-01-20	2029-01-18
2024-02-22	2025-02-20	2026-02-19	2027-02-18	2028-02-17	2029-02-15
2024-03-21	2025-03-20	2026-03-19	2027-03-18	2028-03-16	2029-03-15
2024-04-18	2025-04-17	2026-04-16	2027-04-15	2028-04-13	2029-04-12
2024-05-16	2025-05-15	2026-05-14	2027-05-13	2028-05-11	2029-05-10
2024-06-13	2025-06-12	2026-06-11	2027-06-10	2028-06-08	2029-06-07
2024-07-11	2025-07-10	2026-07-09	2027-07-08	2028-07-06	2029-07-05
2024-08-08	2025-08-07	2026-08-06	2027-08-05	2028-08-03	2029-08-02
2024-09-05	2025-09-04	2026-09-03	2027-09-02	2028-08-31	2029-08-30
2024-10-03	2025-10-02	2026-10-01	2027-09-30	2028-09-28	2029-09-27
2024-10-31	2025-10-30	2026-10-29	2027-10-28	2028-10-26	2029-10-25
2024-11-28	2025-11-27	2026-11-26	2027-11-25	2028-11-23	2029-11-22
2024-12-26	2025-12-25	2026-12-24	2027-12-23	2028-12-21	2029-12-20

6.3.2 The Bahrain eAIP, particularly in the GEN 3.1 section, contains a comprehensive schedule specifying the effective dates of AIRAC amendments. This schedule is crucial for understanding the timing and implementation of AIRAC updates in Bahrain.

6.4 The information that requires dissemination through AIRAC

6.4.1 Under the regulated system (AIRAC), the following circumstances shall require the distribution of information. This involves establishing, withdrawing, or making significant changes based on common effective dates at 28-day intervals, including 8 November 2018:

a) Limits (horizontal and vertical), regulations, and procedures applicable to:
   1. Flight information regions
   2. Control areas
   3. Control zones
   4. Advisory areas
   5. Air traffic services (ATS) routes
   6. Permanent danger, prohibited and restricted areas (including type and periods of activity when known), and air defense identification zones (ADIZ)
   7. Permanent areas, routes, or portions thereof where the possibility of interception exists

b) Positions, frequencies, call signs, identifiers, known irregularities, and maintenance periods of radio navigation aids, communication, and surveillance facilities.
c) Holding and approach procedures, arrival and departure procedures, noise abatement procedures, and other relevant ATS procedures.
d) Transition levels, transition altitudes, and minimum sector altitudes.
e) Meteorological facilities (including broadcasts) and procedures.
f) Runways and stopways.
g) Taxiways and aprons.
h) Aerodrome ground operating procedures (including low visibility procedures).
i) Approach and runway lighting.
j) Published aerodrome operating minima by a State.

6.4.2 The regulated AIRAC system should be used to ensure accurate and timely dissemination of information concerning the establishment, withdrawal, and planned significant changes in the following specific circumstances:

a) Position, height, and lighting of navigational obstacles.
b) Hours of service for aerodromes, facilities, and services.
c) Customs, immigration, and health services.
d) Temporary danger, prohibited and restricted areas, navigational hazards, military exercises, and mass movements of aircraft.
e) Temporary areas, routes, or portions thereof where the possibility of interception exists.

6.4.3 To ensure effective planning and allow for advance notice when feasible and desirable, the Aeronautical Information Management (AIM) should make information available to recipients at least 56 days before the effective date in cases of major changes. This requirement applies to the establishment of, and planned major changes in, the following circumstances, as well as other significant changes if deemed necessary:

a) The establishment of new aerodromes for international IFR operations.
b) Premeditated changes to existing aerodromes for international IFR operations.
c) New runways for IFR operations at international aerodromes.
d) The design and structure of the air traffic services route network.
e) The design and structure of a set of terminal procedures, including changes in procedure bearings due to magnetic variation.
f) Circumstances listed in 6.4.1 if they affect the entire State or any significant position thereof or require cross-border coordination.

6.5 Significant dates

6.5.1 The AIRAC system involves three important dates, as depicted in Figure 6-2:

e) Publication date: When the AIM distributes the information.
f) Latest reception date: The deadline for recipients to receive new, amended, or deleted information.
g) Effective date: The AIRAC date when the changes become applicable.

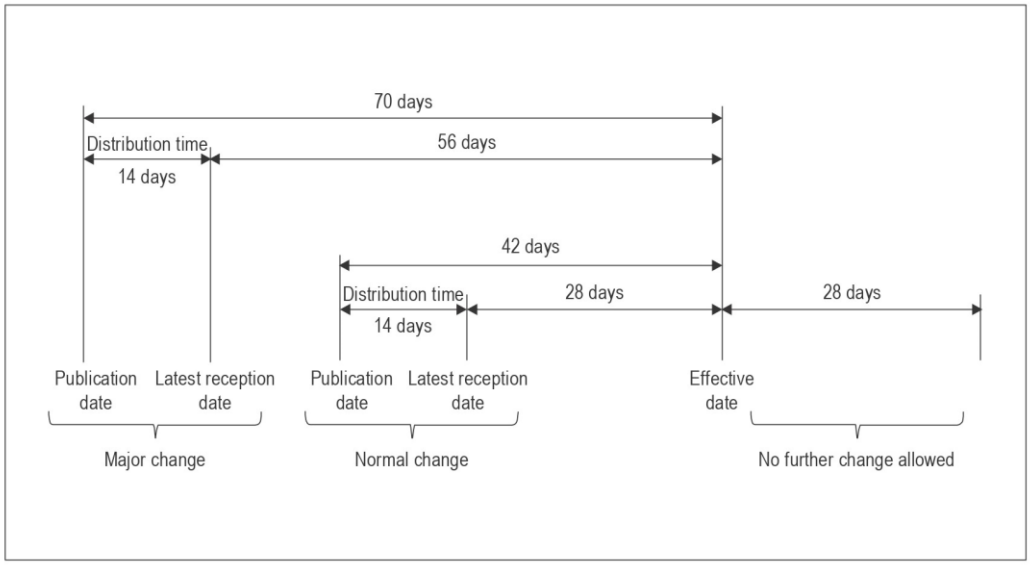

Figure 6-2 AIRAC significant dates

6.5.2 Normal Changes: The aim is for recipients to receive the information no later than 28 days before the AIRAC effective date. If online availability is not possible, there must be a 42-day interval between the publication date and the effective date. This allows for up to 14 days for distribution, ensuring recipients receive the information at least 28 days in advance.

6.5.3 Major Changes: In cases where significant changes are planned and more advance notice is desirable, recipients should receive the information at least 56 days before the effective date. With a distribution time of 14 days, the publication date should be set 70 days prior to the effective date.

6.5.4 The AIM Section receives aeronautical data for publication from various originators, including Bahrain Airport Company (BAC), Sakhir Airbase, ISA Airbase, and ATM Directorate. The received data is processed by AIM to ensure consistency and conformity with standards. If any inconsistencies or shortcomings are identified, they are notified to the originator for resolution. Early receipt of the data allows the AIM Section to process it at a normal speed, while delayed receipt usually leads to rushed processing, increasing the possibility of errors. Therefore, it is necessary to send the complete information to the AIM Section sufficiently in advance to ensure there is enough lead time available.
In addition, a schedule of effective AIRAC dates, corresponding last publication dates, and the final dates by which the AIM Section and ATM must receive the information for changes circulated by the AIM Section should be provided to the ATM directors every year

6.5.5 Missing AIRAC Material: If the AIM does not receive AIRAC material for the next scheduled effective date, a NIL notification must be issued at least one cycle (28 days or more) before the concerned AIRAC effective date via NOTAM or other means.

Note: Refer to PANS Doc 8126 Part III Chapter 3 for additional details regarding AIRAC.

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CHAPTER 7: FLIGHT PLAN

7.1 General

A flight plan (FPL) is a structured document designed to provide a comprehensive overview of a proposed aircraft flight. It shall be submitted by either the pilot or the operator to the appropriate aviation authorities prior to the flight. This document contains specific information pertaining to the intended flight, including crucial details such as the aircraft's identification, type, onboard equipment, and other relevant information. The primary purpose of the flight plan is to establish effective communication between the pilot and air traffic control, ensuring the safe execution of the flight. The flight plan enables air traffic services to monitor and manage air traffic flow, enhancing safety and optimizing airspace utilization. Additionally, it serves as a valuable reference for search and rescue operations during emergencies.

7.2 Flight plan form

7.2.1 It is required to provide a printed flight plan form, adhering to the model specified in APPENDIX 8. This form should include an English text, alongside the language(s) of the respective State, and should be used by operators and air traffic service units for the completion of flight plans.

7.2.2 The AIM (Aeronautical Information Management) office, serving as the ATS unit entrusted with the responsibility, is the designated office in the Kingdom of Bahrain for providing the Flight Plan (FPL) service.

7.2.3 Operators and air traffic services units should adhere to the following guidelines:

a) Follow the instructions provided in APPENDIX 8 for completing the flight plan form and repetitive flight plan listing form.
b) Consider any constraints specified in the relevant Aeronautical Information Publications (AIPs).

Note 1: Failure to comply with the provisions of APPENDIX 8 or any identified constraints in the AIPs may result in data rejection, incorrect processing, or loss.

Note 2: To ensure convenience, the instructions for completing the flight plan form in APPENDIX8 can be printed on the inside cover of flight plan form pads or displayed in briefing rooms.

Note3: A different form and procedure should be provided for use in completing repetitive flight plans (RPL).

Note 4: For the internal procedures pertaining to flight planning, please refer to the list provided in Appendix 9.

7.2.4 Prior to departure, an operator shall fulfill the following requirements:

a) Verify if the flight route or area requires a specific navigation specification. Obtain the appropriate RNP approval and comply with associated conditions.
b) Confirm if the flight will operate in reduced vertical separation minimum (RVSM) airspace. Obtain the required RVSM approval.
c) Determine if the flight must comply with an RCP specification. Obtain the necessary approval while meeting relevant conditions.
d) Assess if the flight must adhere to an RSP specification. Obtain the suitable RSP approval and fulfill all related conditions.

7.3 Submission of a flight plan

7.3.1 PRIOR TO DEPARTURE:

7.3.1.1 A flight plan should be submitted prior to operating for flights receiving air traffic control service, IFR flights within advisory airspace, and flights within designated areas or along designated routes for flight information, alerting, and search and rescue services.

7.3.1.2 Additionally, flight plans are required for flights within designated areas or along designated routes for coordination with military units or adjacent air traffic services units to avoid interception for identification purposes, as well as for flights crossing international borders.

7.3.1.3 Flight plans shall be submitted within 120 hours before the estimated off-block time.

7.3.1.4 Submit the flight plan before departure to the air traffic services reporting office at the departure aerodrome, unless alternative arrangements are in place.

7.3.1.5 If no reporting office exists at the departure aerodrome, submit the flight plan to the unit serving or designated for the departure aerodrome.

7.3.1.6 In the event of a delay exceeding 30 minutes for controlled flights or one hour for uncontrolled flights after the estimated off-block time, the flight plan should be amended or a new flight plan should be submitted, and the old plan should be cancelled, as applicable.

7.3.2 DURING FLIGHT:

7.3.2.1 When submitting a flight plan during a flight, transmit it to the ATS unit responsible for the airspace or desired route.

7.3.2.2 If direct transmission is not possible, send the flight plan to another ATS unit or aeronautical telecommunication station for retransmission to the appropriate air traffic services unit.

7.3.2.3 ATS authorities should impose conditions or limitations on in-flight flight plan submissions, particularly for ATC units in high- or medium-density airspace.

7.3.2.4 If the flight plan is submitted to obtain air traffic control service, the aircraft is required to wait for an air traffic control clearance before proceeding.

7.3.2.5 If the flight plan is submitted for air traffic advisory service, the aircraft is required to wait for acknowledgement of receipt from the service provider

7.3.3 ACCEPTANCE OF A FLIGHT PLAN

The first ATS unit receiving a flight plan, or change there to, shall:

a) check it for compliance with the format and data conventions;
b) check it for completeness and, to the extent possible, for accuracy;
c) take action, if necessary, to make it acceptable to the air traffic services; and
d) indicate acceptance of the flight plan or change thereto, to the originator.

7.3.4 TRANSMISSION OF FLIGHT PLAN MESSAGES

FPL messages should be transmitted immediately after the filing of the flight plan. If a flight plan is filed more than 24 hours in advance of the estimated off-block time of the flight to which it refers, the date of the flight departure shall be inserted in Item 18 of the flight plan.

Note: Instructions for the transmission of an FPL message are contained in Appendix 8.

7.4 Contents of a flight plan

A flight plan shall comprise information regarding such of the following items as are considered relevant by the appropriate ATS authority. APPENDIX 8 explains each item in detail, providing comprehensive explanations for better understanding:

- Aircraft identification
- Flight rules and type of flight
- Number and type(s) of aircraft and wake turbulence category
- Equipment
- Departure aerodrome (see Note 1)
- Estimated off-block time (see Note 2)
- Cruising speed(s)
- Cruising level(s)
- Route to be followed
- Destination aerodrome and total estimated elapsed time
- Alternate aerodrome(s)

- Fuel endurance
- Total number of persons on board
- Emergency and survival equipment
- Other information.

Note 1. — When submitting a flight plan during flight, the information provided in relation to this item serves as an indication of the location from which additional information about the flight can be obtained if needed.

Note 2. — In the case of flight plans submitted during flight, the information required for this item is the estimated time when the aircraft will pass over the first point along the planned route.

Note 3. — The term "aerodrome" mentioned in the flight plan also includes locations other than designated aerodromes that may be utilized by certain aircraft types, such as helicopters or balloons.

7.5 Completion of a flight plan

7.5.1 Regardless of the purpose for which a flight plan is submitted, it shall include relevant information, as applicable, on all relevant items up to and including "Alternate aerodrome(s)." This information shall cover the entire route or the specific portion for which the flight plan is being submitted.

7.5.2 Additionally, the flight plan shall include information, as applicable, on all other items if prescribed by the appropriate ATS authority or if deemed necessary by the person submitting the flight plan.

7.6 Changes to a flight plan

7.6.1 Any changes to a flight plan for an IFR flight or a VFR flight operated as a controlled flight shall be promptly reported to the relevant air traffic services unit. For other VFR flights, significant changes to the flight plan shall also be reported promptly to the appropriate air traffic services unit.

Note 1: Incorrect information provided before departure, such as fuel endurance or the total number of persons on board, constitutes a significant change and must be reported.

Note 2: Procedures for submitting changes to repetitive flight plans are outlined in the PANS-ATM (Doc 4444).

7.6.2 In In the event of the following changes occurring prior to departure for a filed Flight Plan (FPL) that has been accepted by the Aeronautical Information Management (AIM) or the Air Traffic Services (ATS) unit concerned, the following actions shall be taken:

a) MAJOR CHANGES:
- Aircraft identification
- Departure aerodrome
- Destination aerodrome

In the case of any major changes, the flight plan must be cancelled, and a new flight plan is required to be submitted.

b) MINOR CHANGES:
- Type of aircraft
- Type of flight
- Wake turbulence category
- Estimated off-block time
- Cruising speed of aircraft
- Alternate aerodrome
- Flight level
- Persons on board

In the case of any minor changes reported, the flight plan shall be modified accordingly.

7.7 Closing a flight plan

7.7.1 After landing, a flight that submitted a flight plan for the entire flight or remaining portion to the destination aerodrome shall report their arrival as soon as possible to the appropriate air traffic services unit at the arrival aerodrome, either in person, via radiotelephony, or through a data link.

7.7.2 If a flight plan was submitted only for a portion of the flight (excluding the remaining portion to the destination), it shall be closed with a relevant report to the respective air traffic services unit when required.

7.7.3 If no air traffic services unit exists at the arrival aerodrome, the arrival report shall be made promptly after landing, using the fastest available means, to the nearest air traffic services unit.

7.7.4 In cases where communication facilities at the arrival aerodrome are known to be inadequate, and no alternate arrangements are available for handling arrival reports on the ground, following steps shall be taken:

- Immediately prior to landing the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required.

- Normally, this transmission shall be made to the aeronautical station serving the air traffic services unit in charge of the flight information region in which the aircraft is operated.

7.7.5 Aircraft arrival reports shall include the following information: aircraft identification, departure aerodrome, destination aerodrome (if it's a diversionary landing), arrival aerodrome, and time of arrival.

Note: Failure to comply with these provisions when an arrival report is required may lead to significant disruptions in air traffic services and unnecessary search and rescue operations, resulting in substantial expenses.

7.8 Flight information messages

7.8.1 Various types of messages are utilized in air traffic services, each serving distinct purposes. These include Emergency messages, Movement and Control messages, and Flight Information messages. However, our focus will be on movement messages, which specifically represent Bahrain AIM obligations, particularly in relation to flight planning. Movement messages are vital in conveying essential details concerning flight plans, departures, delays, arrivals, cancellations, and modifications.

7.8.2 When transmitting ATS messages via the AFTN, it is important to include information about the priority of transmission, addressees, filing date and time, and the Originator Indicator. Furthermore, make sure to include the ATS data, preceded by supplementary address information if required.

Note: For detailed information on the contents, formats, and data conventions of AIR TRAFFIC SERVICES MESSAGES, as well as examples of ATS messages, please refer to APPENDIX 3 of the PANS Air Traffic Management Doc4444. It provides comprehensive guidance and reference material for ATS message procedures.

7.8.3 Movement messages in air traffic services encompass various types:

7.8.3.1 Filed flight plan messages (FPL): Detailed instructions for transmitting an FPL message can be found in APPENDIX 2, in addition to the FPL information provided in this report.

7.8.3.2 Delay messages (DLA): When the departure of an aircraft, with previously sent basic flight plan data (FPL or RPL), is delayed by more than 30 minutes from the estimated off-block time, a DLA message is transmitted. The ATS unit at the departure aerodrome shall sends this message to all recipients of the basic flight plan data.

- Example on DLA message: (DLA-UZP361-UTTT0610-OEMA-DOF/231130)

7.8.3.3 Modification (CHG) messages: When changes need to be made to the basic flight plan data previously transmitted in FPL or RPL data, a CHG message is sent. This message shall direct to the recipients of the affected basic flight plan data, along with the relevant revised information.

- Example on CHG message:

FF OBBBDUMY OBBBAIMS OEJDZQZX OEDFZPZX OEDFYFYX OEDFZTZX
OEDFZQZX HECCZQZX EUCHZMFP EUCBZMFP LCCCZFZX
300429 OBBIZKZX
(CHG-GFA041-OBBI0635-LGAV-DOF/231130
-9/A321/M

-10/SDE1FGHIJ5M1RWYZ/LB1H
-15/N0465F240 DCT BHR B457 NARMI N697 TAYMA/N0466F260 N697
LABLI/N0472F280 N697 ALKIR/N0462F320 N697 HIL T540 ENABI L550 NWB
J981 DATOK L550 SERMA/N0454F340 L550 STEPA L53 ANIDE UL53 TIPAS
UN137 RIPLI UL995 VARIX VARIX3C
-16/LGAV0419 LGSA LGTS
-18/PBN/A1B1C1D1O1S2 DAT/SV DOF/231130 REG/A9CCF EET/OEJD0007 HECC0216
LCCC0246 LGGG0314 SEL/LRGM CODE/89407C RMK/TCAS EQUIPPED GCAPGFA1223
COM RVR/150)

7.8.3.4 Flight plan cancellation (CNL) messages: In cases where a flight, for which basic flight plan data has already been distributed, is cancelled, a CNL message shall be transmitted. The ATS unit at the departure aerodrome communicates this cancellation message to the ATS units that have received the corresponding basic flight plan data.

- Example on CNL message: (CNL-N344AP-KABE1500-OMDW-DOF/231130)

7.8.3.5 Departure (DEP) messages: Upon the departure of an aircraft, for which basic flight plan data has been previously distributed, a DEP message shall be promptly transmitted, unless regional air navigation agreements specify otherwise. The ATS unit at the departure aerodrome ensures that this DEP message reaches all recipients of the basic flight plan data.

- Example on DEP message: (DEP-GFA771/A7267-OPIS0256-OBBI-DOF/231130)

7.8.3.6 Arrival (ARR) messages: When an arrival report is received by the ATS unit at the arrival aerodrome, an ARR message shall be transmitted:

1) For landing at the destination aerodrome:

- The ARR message is sent to the relevant ACC or flight information Centre.
- The ATS unit at the departure aerodrome, which originated the flight plan message with a request for an ARR message, receives the ARR message.

2) For landing at an alternate or other aerodrome:

- The ARR message is received by the ACC or flight information centre in the area of the arrival aerodrome.
- The ARR message is received by the aerodrome control tower at the destination aerodrome.
- The ARR message is received by the air traffic services reporting office at the departure aerodrome.

- The ARR message is received by the ACC or flight information centre responsible for each FIR or upper FIR that the aircraft would have passed through according to the flight plan (if it had not diverted).

3) In the case of a controlled flight with a communication failure and subsequent landing:

- For landing at the destination aerodrome: The arrival aerodrome's control tower sends the ARR message to all relevant ATS units during the communication failure and any other alerted ATS units.

- For landing at an aerodrome other than the destination aerodrome: The ATS unit serving the destination aerodrome receives the ARR message and forwards it to concerned or alerted ATS units, following the same procedure as for landing at the destination aerodrome.

  - Example on ARR message: (ARR-QTR976-OTHH2245-VVNB0444)

7.9 Coordination messages

7.9.1 Coordination messages comprise:

7.9.1.1 Current flight plan *(CPL)* messages:

- Unless FPL or RPL data is already distributed, each ACC shall transmit a CPL message to the next ACC and the destination aerodrome's control tower.

- This requirement applies to controlled flights and flights with air traffic advisory service on suitable routes.
- In cases where coordination is delegated between control areas, CPLs shall be transmitted directly between those units.
- The CPL message shall be sent with a minimum of 20 minutes' lead time before the aircraft reaches the transfer of control point or boundary point.

- When a CPL message is transmitted to a centre which is not using automatic data-processing equipment, the period of time specified above may be insufficient, in which case an increased lead-time shall be agreed.

- The CPL message shall only contain information from the entry point of the next control area or advisory airspace to the destination aerodrome.

7.9.1.2 Estimate *(EST)* messages:

- When basic flight plan data is available, each ACC or flight information centre shall transmit an EST message to the next ACC or flight information centre along the flight route.

- The EST message shall be sent with sufficient time for the receiving ATS unit to receive it at least 20 minutes before the estimated aircraft arrival at the transfer of control point or boundary point.

- Adjustments to the time frame can be made as prescribed by the appropriate ATS authority.

- In cases where the receiving centre lacks automatic data-processing equipment, an agreed-upon increased lead time should be implemented.

7.10 SUPPLEMENTARY MESSAGES

7.10.1 Request flight plan messages

A Request Flight Plan (RQP) message is transmitted by an ATS unit to obtain flight plan data. This is done when there is no existing basic flight plan data for an aircraft, which may be indicated by a received message. The RQP message is sent to the transferring ATS unit or the center that originated an update message without corresponding flight plan data. In cases where no message has been received but the aircraft establishes radiotelephony (RTF) communications and requires air traffic services, the RQP message is transmitted to the previous ATS unit along the route of flight.

- Example on Request Flight Plan message: (RQP-QTR976-OTHH-VVNB)

7.10.2 Request supplementary flight plan messages

A request supplementary flight plan (RQS) message shall be transmitted when an ATS unit wishes to obtain supplementary flight plan data. The message shall be transmitted to the air traffic services reporting office at the departure aerodrome or in the case of a flight plan submitted during flight, to the ATS unit specified in the flight plan message.

- Example on Request supplementary Flight Plan message: (RQS-MSR216-HECA-OJAI)

7.10.3 Supplementary flight plan messages (SPL)

An SPL message shall be transmitted by the ATS reporting office at the departure aerodrome to ATS units requesting information additional to that already transmitted in a CPL or FPL message. When transmitted by the AFTN, the message shall be assigned the same priority indicator as that in the request message

Note: The instructions for the transmission of an SPL are contained in APPENDIX 2 of PANS Air Traffic Management Doc 4444.

7.11 FREE TEXT GENERAL MESSAGES

The Free Text General message shall only be used to transmit operational information for which any other message type is not appropriate, and for plain-language statements. Normally free text information would be presented directly to the controller responsible - or expecting to be responsible - for the flight. When the message does not refer to a specific flight, a facility designation shall be used to allow for the information to be presented to the appropriate ATS position.

7.12 CATEGORIES OF MESSAGES

7.12.1 General

The listed messages are categorized based on their relative importance and authorized for transmission through various communication services, including aeronautical fixed service, direct circuits, and mobile service, in accordance with Chapter 10 *of PANS Air Traffic Management Doc 4444*.

Note: The Priority Indicator in parentheses after each type of message is that specified in Annex 10 (Volume II, Chapter 4) for application when the message is transmitted on the AFTN. The priority for all ATS interfacility data communication (AIDC) messages using the ATN shall be "normal priority flight safety messages" *as determined by the ATN Internet protocol priority categorization.*

7.12.2 PRIORITY INDICATOR

This shall consist of the appropriate two-letter Priority Indicator for the message as shown in parentheses for the appropriate category of message in Section 11.1 *of PANS Air Traffic Management Doc 4444*.

Note. — It is prescribed in Annex 10 (Volume II, Chapter 4) that the order of priority for the transmission of messages in the AFTN shall be as follows:

Transmission Priority	***Priority Indicator***
1	*SS*
2	*DD FF*
3	*GG KK*

7.12.3 Emergency Message Categories:

a) distress messages and distress traffic, including messages relating to a distress phase (SS);
b) urgency messages, including messages relating to an alert phase or to an uncertainty phase (DD);
c) other messages concerning known or suspected emergencies which do not fall under a) or b) above, and radiocommunication failure messages (FF or higher as required).

7.12.4 Movement and control messages:

The following message categories are classified under the overarching category of "Movement and Control Messages" with a Priority Indicator of **(FF)**:

a) Movement messages
b) Coordination messages
c) Supplementary messages

d) AIDC messages
e) Control messages

7.12.5 The category of Flight Information Messages includes the following:

a) messages containing traffic information (**FF**);
b) messages containing meteorological information (**FF** or **GG**);
c) messages concerning the operation of aeronautical facilities (**GG**);
d) messages containing essential aerodrome information (**GG**);
e) messages concerning air traffic incident reports (**FF**).

When justified by the requirement for special handling, messages transmitted via the AFTN should be assigned the Priority Indicator DD in place of the normal Priority Indicator.

7.13 USE OF THE AFTN

7.13.1 As stated in section 2.4.3, the Bahrain Aeronautical Information Management Office is connected to the AFTN for the purpose of facilitating the reception and transmission of necessary information regarding NOTAMs, flight planning services, and any other pertinent data.

7.13.2 ATS messages to be transmitted via the AFTN shall contain:

a) information in respect of the priority with which they are to be transmitted and the addressees to whom they are to be delivered, and an indication of the date and time at which they are filed with the aeronautical fixed station concerned and of the Originator Indicator.

b) the ATS data, preceded if necessary by the supplementary address information, and prepared in accordance with (DOC 4444, Appendix 3). These data will be transmitted as the text of the AFTN message.

7.14 ADDRESS

7.14.1 The address of a message shall consist of a sequence of Addressee Indicators, one for each addressee to whom the message is to be delivered.

7.14.2 An Addressee Indicator shall consist of eight-letter sequence that includes the ICAO four-letter location indicator assigned to the intended destination. For a comprehensive list of ICAO location indicators, refer to Doc 7910 - Location Indicators.

7.14.3 the ICAO three-letter designator identifying the aeronautical authority, service or aircraft operating agency addressed, or in cases where no designator has been assigned, one of the following:

- “YXY” in the case where the addressee is a military service/organization,
- “ZZZ” in the case where the addressee is an aircraft in flight,
- “YYY” in all other cases;

Note. — A list of ICAO three-letter designators is contained in Doc 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.

7.14.4 i) the letter X, or
ii) the one-letter designator identifying the department or division of the organization addressed.

7.14.5 The following three-letter designators shall be used when addressing ATS messages to ATS units:
Centre in charge of a flight information region or an upper flight information region (whether ACC or FIC):

- if the message is relevant to an IFR flight ZQZ

- if the message is relevant to a VFR flight ZFZ

Aerodrome control tower ZTZ
Air traffic services reporting office ZPZ
Other three-letter designators for ATS units shall not be used for that purpose.

NOTE: Refer to PANS-ATM (Doc 4444), Chapter 11 and Appendix 3 for more information on air traffic services messages, including content, formats, and data conventions.

APPENDIXES

APPENDIX 1: AERONAUTICAL DATA CATALOGUE

Note 1. — The Aeronautical Data Catalogue is available electronically and provided as part of the PANS-AIM.

Note 2. — The Aeronautical Data Catalogue summarizes the scope of AIM data and collects all data maintainable by AIS. It serves as a reference for aeronautical data origination and publication requirements.

Note 3. — The Aeronautical Data Catalogue enables States to identify organizations responsible for aeronautical data and information origination. It offers a shared list of terms and supports formal arrangements between originators and the AIS. It encompasses data quality requirements from origination to publication.

Note 4. — The Aeronautical Data Catalogue contains the aeronautical data subjects, properties and sub-properties organized in:

1. 1Table A1-1 Aerodrome data;
2. Table A1-2 Airspace data;
3. Table A1-3 ATS and other routes data;
4. Table A1-4 Instrument flight procedure data;
5. Table A1-5 Radio navigation aids/systems data;
6. Table A1-6 Obstacle data;
7. Table A1-7 Geographic data;
8. Table A1-8 Terrain data;
9. Table A1-9 Data types; and
10. Table A1-10 Information about national and local regulation, services and procedures.

Note 5. — The Aeronautical Data Catalogue provides detailed descriptions of all subjects, properties and sub-properties, the data quality requirements and the data types.

Note 6. — The data types describe the nature of the property and sub-property and specify the data elements to be collected.

Note 7. — The tables of the Aeronautical Data Catalogue are composed of the following columns:

(1) Subject for which data can be collected.

(2)(3) Property is an identifiable characteristic of a subject which can be further defined into sub-properties. The classification of a catalogue element as subject, property or sub-property does not impose a certain data model.

(4) The data is classified in different types. See Table A1-9 for more information on data types.

(5) A description of the data element.

(6) Notes are additional information or conditions of the provision.

(7) Accuracy requirements for aeronautical data are based on a 95 per cent confidence level. For those fixes and points that are serving a dual purpose, e.g. holding point and missed approach point, the higher accuracy applies.

Accuracy requirements for obstacle and terrain data are based on a 90 per cent confidence level.

(8) Integrity classification.

(9) Origination type. Positional data is identified as surveyed, calculated or declared.

(10) Publication resolutions for geographical position data (latitude and longitude) apply to degrees, minutes, and seconds format. Different formats or locations further north/south require a publication resolution that matches the accuracy requirements.

(11) Chart resolution

Note 8.— The Aeronautical Data Catalogue contains quality requirements for aeronautical data as originally provided in: Annex 4 — Aeronautical Charts, APPENDIX 6; Annex 11 — Air Traffic Services, APPENDIX 5; Annex 14 — Aerodromes, Volume I — Aerodromes Designs and Operations, APPENDIX 4 and Volume II — Heliports, APPENDIX 1;

Annex 15 — Aeronautical Information Services, Appendices 7 and 8, and the Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS, Doc 8168), Volume II — Construction of Visual and Instrument Flight Procedures. The framework of the Aeronautical Data Catalogue is designed to adapt to future quality requirements for the remaining aeronautical data properties and sub-properties.

— END —

APPENDIX 2: CONTENTS OF THE AERONAUTICAL INFORMATION PUBLICATION (AIP)

Procedures for Presenting Information in the Bahrain's AIP:

1. The eAIP Bahrain is structured into three sections:

Part 1 - General (GEN): has five sections and contains information of a non-operational, regulatory nature which does not require the issuance of NOTAM;

Part 2 - Enroute (ENR): has seven sections and contains, *inter alia*, information concerning visual and instrument flight rules, airspace and its use; and

Part 3 - Aerodromes (AD): has four sections and contains information about aerodromes and heliports and their use.

2. The Aeronautical Information Management (AIM) section is the entity responsible for making amendments to the eAIP
3. The eAIP Bahrain is structured in accordance with the AIXM 5.1 format.

4. The structure and content of the eAIP adhere to the guidelines and standards mandated by the International Civil Aviation Organization (ICAO) for traditional paper-based Aeronautical Information Publications (AIPs).

5. The eAIP Bahrain is conveniently accessible through the dedicated webpage of the Aeronautical Information Management (AIM) section within the Ministry of Transportation and Telecommunication's website, which can be found at the official URL: https://aim.mtt.gov.bh/eaip.

6. In addition to its digital format, the eAIP Bahrain incorporates PDF files that enable users to access and reference the information offline or conveniently print specific sections as needed.

7. The eAIP Bahrain is thoughtfully designed to be self-contained, offering users a comprehensive table of contents for easy navigation and access to all the necessary information.

8. The eAIP Bahrain displays a clear date on each page for users to identify the currency of information. The issuing authority, "Civil Aviation Affairs," is indicated on every page, establishing responsibility for publication and management.

9. The eAIP Bahrain adheres to accurate spelling and presentation of place names, conforming to local usage.

10. Operational hours within the eAIP Bahrain are communicated either in Coordinated Universal Time (UTC) or by use of one of the following abbreviations:
    HJ — sunrise to sunset;
    HN — sunset to sunrise;
    HO — service available to meet operational requirements;
    HS — service available during hours of scheduled operations;
    HX — no specific working hours; and
    H24 — continuous day and night service.

11. Regular updates and revisions of the eAIP Bahrain are accomplished through the systematic application of AIP Amendments.
12. The units of measurement selected for use in the AIP, e.g. dimensions on aerodromes, distances, elevations or altitudes, consistently followed and comply with Annex 5 — *Units of Measurement to be Used in Air and Ground Operations*.

13. AIP Amendments in the eAIP Bahrain are assigned unique serial numbers for easy tracking. They also include references to the serial numbers of incorporated AIP Supplements and NOTAMs, ensuring seamless integration and cross-referencing within the documentation.

14. When an AIP Amendment cannot be published as scheduled, a NIL (None) notification is issued through a trigger NOTAM, ensuring that the absence of the amendment is duly communicated.

    Note: Procedures for presenting information in the AIP are outlined in the PANS-AIM, along with additional guidance provided in Doc 8126 CH2 Part III.

PART 1 — GENERAL (GEN)

When the AIP is produced as one volume, the preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments appear only in Part 1 — GEN, and the annotation “not applicable” shall be entered against each of these subsections in Parts 2 and 3.

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume.

GEN 0.1 Preface

Brief description of the AIP, including:
1) name of the publishing authority;
2) applicable ICAO documents;
3) publication media (i.e. printed, online or other electronic media);
4) AIP structure and established regular amendment interval;
5) copyright policy, if applicable; and
6) service to contact in case of detected AIP errors or omissions.

GEN 0.2 Record of AIP Amendments

A record of AIP Amendments and AIRAC AIP Amendments (published in accordance with the AIRAC system) containing:
1) amendment number;
2) publication date;
3) date inserted (for the AIRAC AIP Amendments, effective date); and
4) initials of officer who inserted the amendment.

GEN 0.3 Record of AIP Supplements

A record of issued AIP Supplements containing:
1) Supplement number;
2) Supplement subject;
3) AIP section(s) affected;
4) period of validity; and
5) cancellation record.

GEN 0.4 Checklist of AIP pages

A checklist of AIP pages containing:
1) page number/chart title; and
2) publication or effective date (day, month by name and year) of the aeronautical information.

GEN 0.5 List of hand amendments to the AIP

A list of current hand amendments to the AIP containing:
1) AIP page(s) affected;
2) amendment text; and
3) AIP Amendment number by which a hand amendment was introduced.

GEN 0.6 Table of contents to Part 1

A list of sections and subsections contained in Part 1 — General (GEN).
Note. — Subsections may be listed alphabetically.

GEN 1. NATIONAL REGULATIONS AND REQUIREMENTS

GEN 1.1 Designated authorities

The addresses of designated authorities concerned with the facilitation of international air navigation (civil aviation, meteorology, customs, immigration, health, en-route and aerodrome/heliport charges, agricultural quarantine and aircraft accident investigation) containing, for each authority:
1) designated authority;
2) name of the authority;
3) postal address;
4) telephone number;
5) telefax number;
6) e-mail address;
7) aeronautical fixed service (AFS) address; and
8) website address, if available.

GEN 1.2 Entry, transit and departure of aircraft

Regulations and requirements for advance notification and applications for permission concerning entry, transit and departure of aircraft on international flights.

GEN 1.3 Entry, transit and departure of passengers and crew

Regulations (including customs, immigration and quarantine, and requirements for advance notification and applications for permission) concerning entry, transit and departure of non-immigrant passengers and crew.

GEN 1.4 Entry, transit and departure of cargo

Regulations (including customs, and requirements for advance notification and applications for permission) concerning entry, transit and departure of cargo.

Note. — Provisions for facilitating entry and departure for search, rescue, salvage, investigation, repair or salvage in connection with lost or damaged aircraft are detailed in section GEN 3.6, Search and rescue.

GEN 1.5 Aircraft instruments, equipment and flight documents

Brief description of aircraft instruments, equipment and flight documents, including:
1) instruments, equipment (including aircraft communication, navigation and surveillance equipment) and flight documents to be carried on aircraft, including any special requirement in addition to the provisions specified in Annex 6, Part I, Chapters 6 and 7; and

2) emergency locator transmitter (ELT), signalling devices and life-saving equipment as presented in Annex 6, Part I, 6.6 and Part II, 2.4.5, where so determined by regional air navigation agreement, for flights over designated land areas.

GEN 1.6 Summary of national regulations and international agreements/conventions

A list of titles and references and, where applicable, summaries of national regulations affecting air navigation, together with a list of international agreements/conventions ratified by the State.

GEN 1.7 Differences from ICAO Standards, Recommended Practices and Procedures

A list of significant differences between national regulations and practices of the State and related ICAO provisions, including:
1) provision affected (Annex and edition number, paragraph); and
2) difference in full text.

All significant differences shall be listed under this subsection. All Annexes shall be listed in numerical order even if there is no difference to an Annex, in which case a NIL notification shall be provided. National differences or the degree of non-application of the regional supplementary procedures (SUPPs) shall be notified immediately following the Annex to which the supplementary procedure relates.

GEN 2. TABLES AND CODES

GEN 2.1 Measuring system, aircraft markings, holidays

GEN 2.1.1 Units of measurement

Description of units of measurement used including table of units of measurement.

GEN 2.1.2 Temporal reference system

Description of the temporal reference system (calendar and time system) employed, together with an indication of

whether or not daylight-saving hours are employed and how the temporal reference system is presented throughout the AIP.

GEN 2.1.3 Horizontal reference system

Brief description of the horizontal (geodetic) reference system used, including:
1) name/designation of the reference system;
2) identification and parameters of the projection;
3) identification of the ellipsoid used;
4) identification of the datum used;
5) area(s) of application; and
6) an explanation, if applicable, of the asterisk used to identify those coordinates that do not meet the accuracy requirements.

GEN 2.1.4 Vertical reference system

Brief description of the vertical reference system used, including:
1) name/designation of the reference system;
2) description of the geoid model used including the parameters required for height transformation between the model used and EGM-96; and
3) an explanation, if applicable, of the asterisk used to identify those elevations/geoid undulations that do not meet the accuracy requirements.

GEN 2.1.5 Aircraft nationality and registration marks

Indication of aircraft nationality and registration marks adopted by the State.

GEN 2.1.6 Public holidays

A list of public holidays with indication of services being affected.

GEN 2.2 Abbreviations used in aeronautical information products

A list of alphabetically arranged abbreviations and their respective significations used by the State in its AIP and in the distribution of aeronautical data and aeronautical information with appropriate annotation for those national abbreviations that are different from those contained in the *Procedures for Air Navigation Services — ICAO Abbreviations and Codes* (PANS-ABC, Doc 8400).
Note.— A list of alphabetically arranged definitions/glossary of terms may also be added.

GEN 2.3 Chart symbols

A list of chart symbols arranged according to the chart series where symbols are applied.

GEN 2.4 Location indicators

A list of alphabetically arranged location indicators assigned to the locations of aeronautical fixed stations to be used for encoding and decoding purposes. An annotation to locations not connected to the aeronautical fixed service (AFS) shall be provided.

GEN 2.5 List of radio navigation aids

#AIP-DS# A list of radio navigation aids arranged alphabetically, containing:
1) identifier;
2) name of the station;
3) type of facility/aid; and
4) indication whether aid serves en-route (E), aerodrome (A) or dual (AE) purposes.

GEN 2.6 Conversion of units of measurement

Tables for conversion or, alternatively, conversion formulae between:
1) nautical miles and kilometres and vice versa;
2) feet and metres and vice versa;
3) decimal minutes of arc and seconds of arc and vice versa; and
4) other conversions as appropriate.

GEN 2.7 Sunrise/sunset

Information on the time of sunrise and sunset including a brief description of criteria used for determination of the times given and either a simple formulae or table from which times may be calculated for any location within its territory/area of responsibility, or an alphabetical list of locations for which the times are given in a table with a reference to the related page in the table and the sunrise/sunset tables for the selected stations/locations, including:
1) station name;
2) ICAO location indicator;
3) geographical coordinates in degrees and minutes;
4) date(s) for which times are given;
5) time for the beginning of morning civil twilight;
6) time for sunrise;
7) time for sunset; and
8) time for the end of evening civil twilight.

GEN 3. SERVICES

GEN 3.1 Aeronautical information services

GEN 3.1.1 Responsible service

Description of the aeronautical information service (AIS) provided and its major components, including:
1) service/unit name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;

7) website address, if available;
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
9) an indication if service is not H24.

GEN 3.1.2 Area of responsibility

The area of responsibility for the AIS.

GEN 3.1.3 Aeronautical publications

Description of the elements of the aeronautical information products, including:
1) AIP and related amendment service;
2) AIP Supplements;
3) AIC;
4) NOTAM and pre-flight information bulletins (PIB);
5) checklists and lists of valid NOTAM; and
6) how they may be obtained.
When an AIC is used to promulgate publication prices, that shall be indicated in this section of the AIP.

GEN 3.1.4 AIRAC system

Brief description of the AIRAC system provided including a table of present and near future AIRAC dates.

GEN 3.1.5 Pre-flight information service at aerodromes/heliports

A list of aerodromes/heliports at which pre-flight information is routinely available, including an indication of relevant:
1) elements of the aeronautical information products held;
2) maps and charts held; and
3) general area of coverage of such information.

GEN 3.1.6 Digital data sets

Description of the available data sets, including:
1) data set title;
2) short description;
3) data subjects included;
4) geographical scope; and
5) if applicable, limitations related to its usage.
6) Contact details of how data sets may be obtained, containing:
a) name of the individual, service or organization responsible;
b) street address and e-mail address of the individual, service or organization responsible;
c) telefax number of the individual, service or organization responsible;
d) contact telephone number of the individual, service or organization responsible;
e) hours of service (time period including time zone when contact can be made);
f) online information that can be used to contact the individual, service or organization; and

g) supplemental information, if necessary, on how and when to contact the individual, service or organization.

GEN 3.2.1 Responsible service(s)

Description of service(s) responsible for the production of aeronautical charts, including:
1) service name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;
7) website address, if available;
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
9) an indication if service is not H24.

GEN 3.2.2 Maintenance of charts

Brief description of how aeronautical charts are revised and amended.

GEN 3.2.3 Purchase arrangements

Details of how charts may be obtained, containing:
1) service/sales agency(ies);
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address; and
7) website address, if available.

GEN 3.2.4 Aeronautical chart series available

A list of aeronautical chart series available followed by a general description of each series and an indication of the intended use.

GEN 3.2.5 List of aeronautical charts available

A list of aeronautical charts available, including:
1) title of series;
2) scale of series;
3) name and/or number of each chart or each sheet in a series;
4) price per sheet; and
5) date of latest revision.

GEN 3.2.6 Index to the World Aeronautical Chart (WAC) — ICAO 1:1 000 000

An index chart showing coverage and sheet layout for the WAC 1:1 000 000 produced by a State. If Aeronautical Chart — ICAO 1:500 000 is produced instead of WAC 1:1 000 000, index charts shall be used to indicate coverage and sheet layout for the Aeronautical Chart — ICAO 1:500 000.

GEN 3.2.7 Topographical charts

Details of how topographical charts may be obtained, containing:
1) name of service/agency(ies);
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address; and
7) website address, if available.

GEN 3.2.8 Corrections to charts not contained in the AIP

A list of corrections to aeronautical charts not contained in the AIP, or an indication where such information can be obtained.

GEN 3.3 Air traffic services

GEN 3.3.1 Responsible service

Description of the air traffic service (ATS) and its major components, including:
1) service name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;
7) website address, if available;
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
9) an indication if service is not H24.

GEN 3.3.2 Area of responsibility

Brief description of area of responsibility for which ATS is provided.

GEN 3.3.3 Types of services

Brief description of main types of ATS provided.

GEN 3.3.4 Coordination between the operator and ATS

General conditions under which coordination between the operator and air traffic services is effected.

GEN 3.3.5 Minimum flight altitude

The criteria used to determine minimum flight altitudes.

GEN 3.3.6 ATS units address list

A list of ATS units and their addresses arranged alphabetically, containing:
1) unit name;

2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address; and
7) website address, if available.

GEN 3.4 Communication and navigation services

GEN 3.4.1 Responsible service

Description of the service responsible for the provision of telecommunication and navigation facilities, including:
1) service name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;
7) website address, if available;
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
9) an indication if service is not H24.

GEN 3.4.2 Area of responsibility

Brief description of area of responsibility for which telecommunication service is provided.

GEN 3.4.3 Types of service

Brief description of the main types of service and facilities provided, including:
1) radio navigation services;
2) voice and/or data link services;
3) broadcasting service;

4) language(s) used; and
5) an indication of where detailed information can be obtained.

GEN 3.4.4 Requirements and conditions

Brief description concerning the requirements and conditions under which the communication service is available.

GEN 3.4.5 Miscellaneous

Any additional information (e.g. selected radio broadcasting stations, telecommunications diagram).

GEN 3.5 Meteorological services

GEN 3.5.1 Responsible service

Brief description of the meteorological service responsible for the provision of meteorological information, including:
1) service name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;
7) website address, if available;
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
9) an indication if service is not H24.

GEN 3.5.2 Area of responsibility

Brief description of area and/or air routes for which meteorological service is provided.

GEN 3.5.3 Meteorological observations and reports

Detailed description of the meteorological observations and reports provided for international air navigation, including:
1) name of the station and the ICAO location indicator;
2) type and frequency of observation including an indication of automatic observing equipment;
3) types of meteorological reports (e.g. METAR) and availability of a trend forecast;
4) specific type of observation system and number of observation sites used to observe and report surface wind, visibility, runway visual range, cloud base, temperature and, where applicable, wind shear (e.g. anemometer at intersection of runways, transmissometer next to touchdown zone, etc.);
5) hours of operation; and
6) indication of aeronautical climatological information available.

GEN 3.5.4 Types of services

Brief description of the main types of service provided, including details of briefing, consultation, display of meteorological information, flight documentation available for operators and flight crew members, and of the methods and means used for supplying the meteorological information.

GEN 3.5.5 Notification required from operators

Minimum amount of advance notice required by the meteorological authority from operators in respect of briefing, consultation and flight documentation and other meteorological information they require or change.

GEN 3.5.6 Aircraft reports

As necessary, requirements of the meteorological authority for the making and transmission of aircraft reports.

GEN 3.5.7 VOLMET service

Description of VOLMET and/or D-VOLMET service, including:
1) name of transmitting station;
2) call sign or identification and abbreviation for the radio communication emission;
3) frequency or frequencies used for broadcast;
4) broadcasting period;
5) hours of service;
6) list of aerodromes/heliports for which reports and/or forecasts are included; and
7) reports, forecasts and SIGMET information included and remarks.

GEN 3.5.8 SIGMET and AIRMET service

Description of the meteorological watch provided within flight information regions or control areas for which air traffic services are provided, including a list of the meteorological watch offices with:
1) name of the meteorological watch office and the ICAO location indicator;
2) hours of service;
3) flight information region(s) or control area(s) served;
4) SIGMET validity periods;
5) specific procedures applied to SIGMET information (e.g. for volcanic ash and tropical cyclones);
6) procedures applied to AIRMET information (in accordance with relevant regional air navigation agreements);
7) ATS unit(s) provided with SIGMET and AIRMET information; and
8) additional information (e.g. concerning any limitation of service, etc.).

GEN 3.5.9 Other automated meteorological services

Description of available automated services for the provision of meteorological information (e.g. automated pre-flight information service accessible by telephone and/or computer modem), including:
1) service name;
2) information available;
3) areas, routes and aerodromes covered; and
4) telephone and telefax number(s), e-mail address, and, if available, website address.

GEN 3.6 Search and rescue

GEN 3.6.1 Responsible service(s)

Brief description of service(s) responsible for the provision of search and rescue (SAR), including:
1) service/unit name;
2) postal address;
3) telephone number;
4) telefax number;
5) e-mail address;
6) AFS address;
7) website address, if available; and
8) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed.

GEN 3.6.2 Area of responsibility

Brief description of area of responsibility within which SAR services are provided.
Note.— A chart may be included to supplement the description of the area.

GEN 3.6.3 Types of service

Brief description and geographical portrayal, where appropriate, of the type of service and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft.

GEN 3.6.4 SAR agreements

Brief description of SAR agreements in force, including provisions for facilitating entry and departure of other States' aircraft for search, rescue, salvage, repair or salvage in connection with lost or damaged aircraft, either with airborne notification only or after flight plan notification.

GEN 3.6.5 Conditions of availability

Brief description of provisions for SAR, including the general conditions under which the service and facilities are available for international use, including an indication of whether a facility available for SAR is specialized in SAR techniques and functions, or is specially used for other purposes but adapted for SAR purposes by training and equipment, or is only occasionally available and has no particular training or preparation for SAR work.

GEN 3.6.6 Procedures and signals used

Brief description of the procedures and signals employed by rescue aircraft and a table showing the signals to be used by survivors.

GEN 4. CHARGES FOR AERODROMES/HELIPORTS AND AIR NAVIGATION SERVICES

Note. — Reference may be made to where details of actual charges may be found, if not itemized in this chapter.

GEN 4.1 Aerodrome/heliport charges

Brief description of type of charges which may be applicable at aerodromes/heliports available for international use, including:
1) landing of aircraft;
2) parking, hangarage and long-term storage of aircraft;
3) passenger service;

4) security;
5) noise-related items;
6) other (customs, health, immigration, etc.);
7) exemptions/reductions; and
8) methods of payment.

GEN 4.2 Air navigation services charges

Brief description of charges which may be applicable to air navigation services provided for international use, including:
1) approach control;
2) route air navigation services;
3) cost basis for air navigation services and exemptions/reductions; and
4) methods of payment.

PART 2 — EN-ROUTE (ENR)

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” shall be entered against each of the above subsections.

ENR 0.1 Table of contents to Part 2

A list of sections and subsections contained in Part 2 — En-route.
Note.— Subsections may be listed alphabetically.

ENR 1. GENERAL RULES AND PROCEDURES

ENR 1.1 General rules

The requirement is for publication of the general rules as applied within the State.

ENR 1.2 Visual flight rules

The requirement is for publication of the visual flight rules as applied within the State.

ENR 1.3 Instrument flight rules

The requirement is for publication of the instrument flight rules as applied within the State.

ENR 1.4 ATS airspace classification and description

ENR 1.4.1 ATS airspace classification

Description of ATS airspace classes in the form of the ATS airspace classification table in Annex 11, APPENDIX 4, appropriately annotated to indicate those airspace classes not used by the State.

ENR 1.4.2 ATS airspace description

Other ATS airspace descriptions as applicable, including general textual descriptions.

ENR 1.5 Holding, approach and departure procedures

ENR 1.5.1 General

The requirement is for a statement concerning the criteria on which holding, approach and departure procedures are established. If different from ICAO provisions, the requirement is for presentation of criteria used in a tabular form.

ENR 1.5.2 Arriving flights

The requirement is to present procedures (conventional or area navigation or both) for arriving flights which are common to flights into or within the same type of airspace. If different procedures apply within a terminal airspace, a note to this effect shall be given together with a reference to where the specific procedures can be found.

ENR 1.5.3 Departing flights

The requirement is to present procedures (conventional or area navigation or both) for departing flights which are common to flights departing from any aerodrome/heliport.

ENR 1.5.4 Other relevant information and procedures

Brief description of additional information, e.g. entry procedures, final approach alignment, holding procedures and Patterns

ENR 1.6 ATS surveillance services and procedures

ENR 1.6.1 Primary radar

Description of primary radar services and procedures, including:
1) supplementary services;
2) the application of radar control service;
3) radar and air-ground communication failure procedures;
4) voice and CPDLC position reporting requirements; and
5) graphic portrayal of area of radar coverage.

ENR 1.6.2 Secondary surveillance radar (SSR)

Description of secondary surveillance radar (SSR) operating procedures, including:
1) emergency procedures;
2) air-ground communication failure and unlawful interference procedures;
3) the system of SSR code assignment;
4) voice and CPDLC position reporting requirements; and
5) graphic portrayal of area of SSR coverage.
Note. — The SSR description is of particular importance in areas or routes where the possibility of interception exists.

ENR 1.6.3 Automatic dependent surveillance — broadcast (ADS-B)

Description of automatic dependent surveillance — broadcast (ADS-B) operating procedures, including:
1) emergency procedures;
2) air-ground communication failure and unlawful interference procedures;
3) aircraft identification requirements;
4) voice and CPDLC position reporting requirements; and
5) graphic portrayal of area of ADS-B coverage.

Note. — The ADS-B description is of particular importance in areas or routes where the possibility of interception exists.

ENR 1.6.4 Other relevant information and procedures

Brief description of additional information and procedures, e.g. radar failure procedures and transponder failure procedures.

ENR 1.7 Altimeter setting procedures

The requirement is for a statement of altimeter setting procedures in use, containing:
1) brief introduction with a statement concerning the ICAO documents on which the procedures are based together with differences to ICAO provisions, if any;
2) basic altimeter setting procedures;
3) description of altimeter setting region(s);
4) procedures applicable to operators (including pilots); and
5) table of cruising levels.

ENR 1.8 Regional supplementary procedures

The requirement is for presentation of regional supplementary procedures (SUPPs) affecting the entire area of responsibility.

ENR 1.9 Air traffic flow management and airspace management

Brief description of air traffic flow management (ATFM) system and airspace management, including:
1) ATFM structure, service area, service provided, location of unit(s) and hours of operation;
2) types of flow messages and descriptions of the formats; and
3) procedures applicable for departing flights, containing:
a) service responsible for provision of information on applied ATFM measures;
b) flight plan requirements; and
c) slot allocations.
4) information on overall responsibility regarding airspace management within FIR(s), details of civil/military airspace allocation and management coordination, structure of manageable airspace (allocation and changes to allocation) and general operating procedures.

ENR 1.10 Flight planning

The requirement is to indicate any restriction, limitation or advisory information related to the flight planning stage which may assist the user in the presentation of the intended flight operation, including:
1) procedures for the submission of a flight plan;
2) repetitive flight plan system; and
3) changes to the submitted flight plan.

ENR 1.11 Addressing of flight plan messages

The requirement is for an indication, in tabular form, of the addresses allocated to flight plans, showing:
1) category of flight (IFR, VFR or both);
2) route (into or via FIR and/or TMA); and
3) message address.

ENR 1.12 Interception of civil aircraft

The requirement is for a complete statement of interception procedures and visual signals to be used with a clear indication of whether ICAO provisions are applied and, if not, that differences exist.

Note. — A list of significant differences between national regulations and practices of the State and related ICAO provisions is found in Gen 1.7.

ENR 1.13 Unlawful interference

The requirement is for presentation of appropriate procedures to be applied in case of unlawful interference.

ENR 1.14 Air traffic incidents

Description of air traffic incidents reporting system, including:
1) definition of air traffic incidents;
2) use of the “Air Traffic Incident Reporting Form”;
3) reporting procedures (including in-flight procedures); and
4) purpose of reporting and handling of the form.

Note. — A copy of the Air Traffic Incident Report Form (PANS ATM, Doc 4444, APPENDIX 4) may be included for reference.

ENR 2. ATS AIRSPACE

ENR 2.1 FIR, UIR, TMA and CTA

#AIP-DS# Detailed description of flight information regions (FIR), upper flight information regions (UIR), and control areas (CTA) (including specific CTA such as TMA), including:
1) name, geographical coordinates in degrees and minutes of the FIR/UIR lateral limits and in degrees, minutes and seconds of the CTA lateral limits, vertical limits and class of airspace;
2) identification of unit providing the service;
3) call sign of aeronautical station serving the unit and language(s) used, specifying the area and conditions, when and where to be used, if applicable;
4) frequencies, and if applicable SATVOICE number, supplemented by indications for specific purposes; and
5) remarks.

#AIP-DS# Control zones around military air bases not otherwise described in the AIP shall be included in this subsection. Where the requirements of Annex 2 concerning flight plans, two-way communications and position reporting apply to all flights in order to eliminate or reduce the need for interceptions and/or where the possibility of
interception exists and the maintenance of guard on the VHF emergency channel 121.5 MHz is required, a statement to this effect shall be included for the relevant area(s) or portion(s) thereof.
A description of designated areas over which the carriage of an emergency locator transmitter (ELT) is required and where aircraft shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

Note. — Other types of airspace around civil aerodromes/heliports such as control zones and aerodrome traffic zones are described in the relevant aerodrome or heliport section.

ENR 2.2 Other regulated airspace

Where established, a detailed description of other types of regulated airspace and airspace classification.

ENR 3. ATS ROUTES

Note 1. — Bearings, tracks and radials are normally magnetic. In areas of high latitude, where it is determined by the appropriate authority that reference to Magnetic North is impractical, another suitable reference, i.e. True North or Grid North, may be used.
Note 2. — Changeover points established at the midpoint between two radio navigation aids, or at the intersection of the two radials in the case of a route which changes direction between the navigation aids, need not be shown for each route segment if a general statement regarding their existence is made.
Note 3. — Guidance material on the organization of ATS route publication is contained in the Aeronautical Information Services Manual *(Doc 8126).*

ENR 3.1 Lower ATS routes

(Applicable until 3 November 2021)
#AIP-DS# Detailed description of lower ATS routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
3) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;
4) lateral limits and minimum obstacle clearance altitudes;
5) direction of cruising levels;
6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address,
SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

Note. — In relation to Annex 11, APPENDIX 1, and for flight planning purposes, the defined navigation specification is not considered to be an integral part of the route designator.

ENR 3.1 Conventional navigation routes

(Applicable as of 4 November 2021)
#AIP-DS# Detailed description of conventional navigation routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometer or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
3) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;
4) lateral limits and minimum obstacle clearance altitudes;
5) direction of cruising levels; and
6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.2 Upper ATS routes

(Applicable until 3 November 2021)
#AIP-DS# Detailed description of upper ATS routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
3) upper and lower limits and airspace classification;
4) lateral limits;
5) direction of cruising levels;
6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

Note. — In relation to Annex 11, APPENDIX 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

***ENR 3.2* Area navigation routes**
(Applicable as of 4 November 2021)

#AIP-DS# Detailed description of PBN (RNAV and RNP) routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
2) in respect of waypoints defining an area navigation route, additionally as applicable:
a) station identification of the reference VOR/DME;
b) bearing to the nearest degree and the distance to the nearest tenth of a kilometre or tenth of a nautical mile from the reference VOR/DME, if the waypoint is not collocated with it; and
c) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);

3) magnetic reference bearing to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between defined end-points and distance between each successive designated significant point;
4) upper and lower limits and airspace classification;
5) direction of cruising levels;
6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

Note.— In relation to Annex 11, APPENDIX 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

ENR 3.3 Area navigation routes

(Applicable until 3 November 2021)

#AIP-DS# Detailed description of PBN (RNAV and RNP) routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
2) in respect of waypoints defining an area navigation route, additionally as applicable:
a) station identification of the reference VOR/DME;
b) bearing to the nearest degree and the distance to the nearest tenth of a kilometre or tenth of a nautical mile from the reference VOR/DME, if the waypoint is not collocated with it; and
c) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);
3) magnetic bearing to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between defined end-points and distance between each successive designated significant point;
4) upper and lower limits and airspace classification;
5) direction of cruising levels;
6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

Note.— In relation to Annex 11, APPENDIX 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

ENR 3.4 Helicopter routes

(Applicable until 3 November 2021)

#AIP-DS# Detailed description of helicopter routes, including:
1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
3) upper and lower limits and airspace classification;
4) minimum flight altitudes to the nearest higher 50 m or 100 ft;
5) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address,
SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.
Note. — In relation to Annex 11, APPENDIX 1, and for flight planning purposes, defined navigation specification is not considered to be an integral part of the route designator.

ENR 3.5 Other routes

#AIP-DS# The requirement is to describe other specifically designated routes which are compulsory within specified area(s).

Note. — Arrival, transit and departure routes which are specified in connection with procedures for traffic to and from aerodromes/heliports need not be described since they are described in the relevant section of Part 3 — Aerodromes.

ENR 3.6 En-route holding

#AIP-DS# The requirement is for a detailed description of en-route holding procedures, containing:
1) holding identification (if any) and holding fix (navigation aid) or waypoint with geographical coordinates in degrees, minutes and seconds;
2) inbound track;
3) direction of the procedure turn;
4) maximum indicated airspeed;
5) minimum and maximum holding level;
6) time/distance outbound; and
7) indication of the controlling unit and its operating frequency.
Note. — Obstacle clearance criteria related to holding procedures are contained in Procedures for Air Navigation Services — Aircraft Operations *(PANS-OPS, Doc 8168), Volumes I and II.*

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS
ENR 4.1 Radio navigation aids — en-route

#AIP-DS# A list of stations providing radio navigation services established for en-route purposes and arranged alphabetically by name of the station, including:
1) name of the station and magnetic variation to the nearest degree and for VOR, station declination to the nearest degree used for technical line-up of the aid;
2) identification;
3) frequency/channel for each element;
4) hours of operation;
5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;

6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and
7) remarks. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

ENR 4.2 Special navigation systems

#AIP-DS# Description of stations associated with special navigation systems (DECCA, LORAN, etc.), including:
1) name of station or chain;
2) type of service available (master signal, slave signal, colour);
3) frequency (channel number, basic pulse rate, recurrence rate, as applicable);
4) hours of operation;
5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and
6) remarks.
If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

ENR 4.3 Global navigation satellite system (GNSS)

A list and description of elements of the global navigation satellite system (GNSS) providing the navigation service established for en-route purposes and arranged alphabetically by name of the element, including:
1) the name of the GNSS element, (GPS, GLONASS, EGNOS, MSAS, WAAS, etc.);
2) frequency(ies), as appropriate;
3) geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
4) remarks.
If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column.

ENR 4.4 Name-code designators for significant points

#AIP-DS# A list of alphabetically arranged name-code designators (five-letter pronounceable “name-code”) established for significant points at positions not marked by the site of radio navigation aids, including:
1) name-code designator;
2) geographical coordinates in degrees, minutes and seconds of the position;
3) reference to ATS or other routes where the point is located; and
4) remarks, including supplementary definition of positions where required.

ENR 4.5 Aeronautical ground lights — en-route

#AIP-DS# A list of aeronautical ground lights and other light beacons designating geographical positions which are selected by the State as being significant, including:
1) name of the city or town or other identification of the beacon;
2) type of beacon and intensity of the light in thousands of candelas;
3) characteristics of the signal;
4) operational hours; and

5) remarks.

ENR 5. NAVIGATION WARNINGS

ENR 5.1 Prohibited, restricted and danger areas

#AIP-DS# Description, supplemented by graphic portrayal where appropriate, of prohibited, restricted and danger areas together with information regarding their establishment and activation, including:
1) identification, name and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
2) upper and lower limits; and
3) remarks, including time of activity.
Type of restriction or nature of hazard and risk of interception in the event of penetration shall be indicated in the remarks column

ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ)

#AIP-DS# Description, supplemented by graphic portrayal where appropriate, of established military training areas and military exercises taking place at regular intervals, and established air defence identification zone (ADIZ), including:
1) geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
2) upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
3) remarks, including time of activity and risk of interception in the event of penetration of ADIZ.

ENR 5.3 Other activities of a dangerous nature and other potential hazards

ENR 5.3.1 Other activities of a dangerous nature
#AIP-DS# Description, supplemented by charts where appropriate, of activities that constitute a specific or obvious danger to aircraft operation and could affect flights, including:
1) geographical coordinates in degrees and minutes of centre of area and range of influence;
2) vertical limits;
3) advisory measures;
4) authority responsible for the provision of information; and
5) remarks, including time of activity.

ENR 5.3.2 Other potential hazards
#AIP-DS# Description, supplemented by charts where appropriate, of other potential hazards that could affect flights (active volcanoes, nuclear power stations, etc.), including:
1) geographical coordinates in degrees and minutes of location of potential hazard;
2) vertical limits;
3) advisory measures;
4) authority responsible for the provision of information; and
5) remarks.

ENR 5.4 Air navigation obstacles

#OBS-DS# A list of obstacles affecting air navigation in Area 1 (the entire State territory), including:
1) obstacle identification or designation;
2) type of obstacle;
3) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
4) obstacle elevation and height to the nearest metre or foot; and
5) type and colour of obstacle lighting (if any).

Note 1.— An obstacle whose height above the ground is 100 m and higher is considered an obstacle for Area 1.
Note 2.— Specifications concerning the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations/heights for obstacles in Area 1 are given in APPENDIX 1.

ENR 5.5 Aerial sporting and recreational activities

#AIP-DS# Brief description, supplemented by graphic portrayal where appropriate, of intensive aerial sporting and recreational activities together with conditions under which they are carried out, including:
1) designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
2) vertical limits;
3) operator/user telephone number; and
4) remarks, including time of activity.
Note. — This subsection may be subdivided into different sections for each different category of activity, giving the indicated details in each case.

ENR 5.6 Bird migration and areas with sensitive fauna

Description, supplemented by charts where practicable, of movements of birds associated with migration, including migration routes and permanent resting areas and areas with sensitive fauna.

ENR 6. EN-ROUTE CHARTS

The requirement is for the En-route Chart — ICAO and index charts to be included in this section.

PART 3 — AERODROMES (AD)

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” shall be entered against each of the above subsections.

AD 0.1 Table of contents to Part 3

A list of sections and subsections contained in Part 3 — Aerodromes (AD).

Note.— Subsections may be listed alphabetically.

AD 1. AERODROMES/HELIPORTS — INTRODUCTION

AD 1.1 Aerodrome/heliport availability and conditions of use

AD 1.1.1 General conditions

Brief description of the State's designated authority responsible for aerodromes and heliports, including:
1) the general conditions under which aerodromes/heliports and associated facilities are available for use; and
2) a statement concerning the ICAO documents on which the services are based and a reference to the AIP location where differences, if any, are listed.

AD 1.1.2 Use of military air bases Regulations and procedures, if any, concerning civil use of military air bases.

AD 1.1.3 Low visibility procedures The general conditions under which the low visibility procedures applicable to Cat II/III operations at aerodromes, if any, are applied.

AD 1.1.4 Aerodrome operating minima Details of aerodrome operating minima applied by the State.

AD 1.1.5 Other information If applicable, other information of a similar nature.

AD 1.2 Rescue and firefighting services and snow plan

AD 1.2.1 Rescue and firefighting services

Brief description of rules governing the establishment of rescue and firefighting services at aerodromes and heliports available for public use together with an indication of rescue and firefighting categories established by a State.

AD 1.2.2 Snow plan

Brief description of general snow plan considerations for aerodromes/heliports available for public use at which snow conditions are normally liable to occur, including:

1) organization of the winter service;
2) surveillance of movement areas;
3) measuring methods and measurements taken;
4) actions taken to maintain the usability of movement areas;
5) system and means of reporting;
6) the cases of runway closure; and
7) distribution of information about snow conditions.

Note. — Where different snow plan considerations apply at aerodromes/heliports, this subsection may be subdivided accordingly.

AD 1.3 Index to aerodromes and heliports

A list, supplemented by graphic portrayal, of aerodromes and heliports within a State, including:
1) aerodrome/heliport name and ICAO location indicator;
2) type of traffic permitted to use the aerodrome/heliport (international/national, IFR/VFR, scheduled/non-scheduled, general aviation, military and other); and
3) reference to AIP, Part 3 subsection in which aerodrome/heliport details are presented.

AD 1.4 Grouping of aerodromes/heliports

Brief description of the criteria applied by the State in grouping aerodromes/heliports for production/distribution/provision of information purposes (international/national; primary/secondary; major/other; civil/military; etc.).

AD 1.5 Status of certification of aerodromes

A list of aerodromes in the State, indicating the status of certification, including:
1) aerodrome name and ICAO location indicator;
2) date and, if applicable, validity of certification; and
3) remarks, if any.

AD 2. AERODROMES

Note. — * is to be replaced by the relevant ICAO location indicator.***

**** AD 2.1 Aerodrome location indicator and name

The requirement is for the ICAO location indicator allocated to the aerodrome and the name of aerodrome. An ICAO location indicator shall be an integral part of the referencing system applicable to all subsections in section AD 2.

**** AD 2.2 Aerodrome geographical and administrative data

The requirement is for aerodrome geographical and administrative data, including:
1) aerodrome reference point (geographical coordinates in degrees, minutes and seconds) and its site;
2) direction and distance of aerodrome reference point from centre of the city or town which the aerodrome serves;
3) aerodrome elevation to the nearest metre or foot, reference temperature and mean low temperature;
4) where appropriate, geoid undulation at the aerodrome elevation position to the nearest metre or foot;
5) magnetic variation to the nearest degree, date of information and annual change;
6) name of aerodrome operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
7) types of traffic permitted to use the aerodrome (IFR/VFR); and
8) remarks.

**** AD 2.3 Operational hours

Detailed description of the hours of operation of services at the aerodrome, including:
1) aerodrome operator;
2) customs and immigration;
3) health and sanitation;
4) AIS briefing office;
5) ATS reporting office (ARO);
6) MET briefing office;
7) air traffic service;

8) fuelling;
9) handling;
10) security;
11) de-icing; and
12) remarks.

****** AD 2.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the aerodrome, including:
1) cargo-handling facilities;
2) fuel and oil types;
3) fuelling facilities and capacity;
4) de-icing facilities;
5) hangar space for visiting aircraft;
6) repair facilities for visiting aircraft; and
7) remarks.

****** AD 2.5 Passenger facilities**

Passenger facilities available at the aerodrome, provided as a brief description or a reference to other information sources such as a website, including:
1) hotel(s) at or in the vicinity of aerodrome;
2) restaurant(s) at or in the vicinity of aerodrome;
3) transportation possibilities;
4) medical facilities;
5) bank and post office at or in the vicinity of aerodrome;
6) tourist office; and
7) remarks.

****** AD 2.6 Rescue and firefighting services**

Detailed description of the rescue and firefighting services and equipment available at the aerodrome, including:
1) aerodrome category for firefighting;
2) rescue equipment;
3) capability for removal of disabled aircraft; and
4) remarks.

****** AD 2.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of aerodrome movement areas, including:
1) type(s) of clearing equipment;
2) clearance priorities; and
3) remarks.

****** AD 2.8 Aprons, taxiways and check locations/positions data**

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:
1) until 27 November 2024, designation, surface and strength of aprons;
1) as of 28 November 2024, designation, surface and strength (PCR) of aprons;
2) until 27 November 2024, designation, width, surface and strength of taxiways;
2) as of 28 November 2024, designation, width, surface and strength (PCR) of taxiways;
3) location and elevation to the nearest metre or foot of altimeter checkpoints;
4) location of VOR checkpoints;
5) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
6) remarks.
If check locations/positions are presented on an aerodrome chart, a note to that effect shall be provided under this subsection.

****** AD 2.9 Surface movement guidance and control system and markings**

Brief description of the surface movement guidance and control system and runway and taxiway markings, including:
1) use of aircraft stand identification signs, taxiway guide lines and visual docking/parking guidance system at aircraft stands;
2) runway and taxiway markings and lights;
3) stop bars and runway guard lights (if any);
4) other runway protection measures; and
5) remarks.

****** AD 2.10 Aerodrome obstacles**

#OBS-DS# Detailed description of obstacles, including:
1) obstacles in Area 2:
a) obstacle identification or designation;
b) type of obstacle;
c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
d) obstacle elevation and height to the nearest metre or foot;
e) obstacle marking, and type and colour of obstacle lighting (if any); and
f) NIL indication, if appropriate.

Note 1.— Annex 15, Chapter 5 provides a description of Area 2 while APPENDIX 8, Figure A8-2 of this document contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 2.
Note 2.— Specifications concerning the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations for obstacles in Area 2 are given in APPENDIX 1.
2) the absence of an Area 2 data set for the aerodrome is to be clearly stated and obstacle data are to be provided for:
a) obstacles that penetrate the obstacle limitation surfaces;
b) obstacles that penetrate the take-off flight path area obstacle identification surface; and
c) other obstacles assessed as being hazardous to air navigation.

3) indication that information on obstacles in Area 3 is not provided, or if provided:

a) obstacle identification or designation;

b) type of obstacle;

c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;

d) obstacle elevation and height to the nearest tenth of a metre or tenth of a foot;

e) obstacle marking, and type and colour of obstacle lighting (if any);

f) if appropriate, an indication that the list of obstacles is available as a digital data set, and a reference to GEN 3.1.6; and

g) NIL indication, if appropriate.

Note 1.— Annex 15, Chapter 5, provides a description of Area 3 while APPENDIX 8, Figure A8-3 of this document contains graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in Area 3.

Note 2. — Specifications concerning the determination and reporting (accuracy of field work and data integrity) of positions (latitude and longitude) and elevations for obstacles in Area 3 are given in APPENDIX 1.

****** AD 2.11 Meteorological information provided**

Detailed description of meteorological information provided at the aerodrome and an indication of which meteorological office is responsible for the service enumerated, including:

1) name of the associated meteorological office;

2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;

3) office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;

4) availability of the trend forecasts for the aerodrome, and interval of issuance;

5) information on how briefing and/or consultation is provided;

6) types of flight documentation supplied and language(s) used in flight documentation;

7) charts and other information displayed or available for briefing or consultation;

8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and nreceiver for satellite images;

9) the air traffic services unit(s) provided with meteorological information; and

10) additional information (e.g. concerning any limitation of service).

****** AD 2.12 Runway physical characteristics**

Detailed description of runway physical characteristics, for each runway, including:

1) designations;

2) true bearings to one-hundredth of a degree;

3) dimensions of runways to the nearest metre or foot;

4) until 27 November 2024, strength of pavement (PCN and associated data) and surface of each runway and associated stopways;

4) as of 28 November 2024, strength of pavement (PCR and associated data) and surface of each runway and associated stopways;

5) geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end and, where appropriate, geoid undulation of:

— thresholds of a non-precision approach runway to the nearest metre or foot; and

— thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
6) elevations of:
— thresholds of a non-precision approach runway to the nearest metre or foot; and
— thresholds and the highest elevation of the touchdown zone of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
7) slope of each runway and associated stopways;
8) dimensions of stopway (if any) to the nearest metre or foot;
9) dimensions of clearway (if any) to the nearest metre or foot;
10) dimensions of strips;
11) dimensions of runway end safety areas;
12) location (which runway end) and description of arresting system (if any);
13) the existence of an obstacle-free zone; and
14) remarks.

****** AD 2.13 Declared distances**

Detailed description of declared distances to the nearest metre or foot for each direction of each runway, including:
1) runway designator;
2) take-off run available;
3) take-off distance available, and if applicable, alternative reduced declared distances;
4) accelerate-stop distance available;
5) landing distance available; and
6) remarks, including runway entry or start point where alternative reduced declared distances have been declared.
If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this shall be declared and the words “not usable” or the abbreviation “NU” entered (Annex 14, Volume I, Attachment A, Section 3).

****** AD 2.14 Approach and runway lighting**

Detailed description of approach and runway lighting, including:
1) runway designator;
2) type, length and intensity of approach lighting system;
3) runway threshold lights, colour and wing bars;
4) type of visual approach slope indicator system;
5) length of runway touchdown zone lights;
6) length, spacing, colour and intensity of runway centre line lights;
7) length, spacing, colour and intensity of runway edge lights;
8) colour of runway end lights and wing bars;
9) length and colour of stopway lights; and
10) remarks.

****** AD 2.15 Other lighting and secondary power supply**

Description of other lighting and secondary power supply, including:

1) location, characteristics and hours of operation of aerodrome beacon/identification beacon (if any);
2) location and lighting (if any) of anemometer/landing direction indicator;
3) taxiway edge and taxiway centre line lights;
4) secondary power supply including switch-over time; and
5) remarks.

****** AD 2.16 Helicopter landing area**

Detailed description of helicopter landing area provided at the aerodrome, including:
1) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of touchdown and lift-off (TLOF) or of each threshold of final approach and take-off (FATO) area:
— for non-precision approaches, to the nearest metre or foot; and
— for precision approaches, to the nearest tenth of a metre or tenth of a foot;

2) TLOF and/or FATO area elevation:
— for non-precision approaches, to the nearest metre or foot; and
— for precision approaches, to the nearest tenth of a metre or tenth of a foot;
3) TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
4) true bearings to one-hundredth of a degree of FATO;
5) declared distances available, to the nearest metre or foot;
6) approach and FATO lighting; and
7) remarks.

****** AD 2.17 Air traffic services airspace**

#AIP-DS# Detailed description of air traffic services (ATS) airspace organized at the aerodrome, including:
1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
2) vertical limits;
3) airspace classification;
4) call sign and language(s) of the ATS unit providing service;
5) transition altitude;
6) hours of applicability; and
7) remarks.

****** AD 2.18 Air traffic services communication facilities**

Detailed description of ATS communication facilities established at the aerodrome, including:
1) service designation;
2) call sign;
3) channel(s);
4) SATVOICE number(s), if available;
5) logon address, as appropriate;
6) hours of operation; and
7) remarks.

****** AD 2.19 Radio navigation and landing aids**

#AIP-DS# Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including:
1) until 3 November 2021, type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS, and GBAS, and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
1) as of 4 November 2021,
a) type of aids;
b) magnetic variation to the nearest degree, as appropriate;
c) type of supported operation for ILS/MLS/GLS, basic GNSS and SBAS;
d) classification for ILS;
e) facility classification and approach facility designation(s) for GBAS; and
f) for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
2) identification, if required;
3) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;
4) hours of operation, as appropriate;
5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); elevation of GBAS reference point to the nearest metre or foot, and the ellipsoid height of the point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest metre or foot;
7) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
8) remarks. When the same aid is used for both en-route and aerodrome purposes, a description shall also be given in section

ENR 4. If the GBAS serves more than one aerodrome, description of the aid shall be provided under each aerodrome. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

****** AD 2.20 Local aerodrome regulations**

Detailed description of regulations applicable to the use of the aerodrome, including the acceptability of training flights, non-radio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

****** AD 2.21 Noise abatement procedures**

Detailed description of noise abatement procedures established at the aerodrome.

****** AD 2.22 Flight procedures**

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization at the aerodrome. When established, detailed description of the low visibility procedures at the aerodrome, including:
1) runway(s) and associated equipment authorized for use under low visibility procedures;
2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
3) description of ground marking/lighting for use under low visibility procedures; and

4) remarks.

****** AD 2.23 Additional information**

Additional information at the aerodrome, such as an indication of bird concentrations at the aerodrome, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

****** AD 2.24 Charts related to an aerodrome**

The requirement is for charts related to an aerodrome to be included in the following order:
1) Aerodrome/Heliport Chart — ICAO;
2) Aircraft Parking/Docking Chart — ICAO;
3) Aerodrome Ground Movement Chart — ICAO;
4) Aerodrome Obstacle Chart — ICAO Type A (for each runway);
5) Aerodrome Obstacle Chart — ICAO Type B (when available);
6) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
7) Precision Approach Terrain Chart — ICAO (precision approach Cat II and III runways);
8) Area Chart — ICAO (departure and transit routes);
9) Standard Departure Chart — Instrument — ICAO;
10) Area Chart — ICAO (arrival and transit routes);
11) Standard Arrival Chart — Instrument — ICAO;
12) ATC Surveillance Minimum Altitude Chart — ICAO;
13) Instrument Approach Chart — ICAO (for each runway and procedure type);
14) Visual Approach Chart — ICAO; and
15) bird concentrations in the vicinity of the aerodrome.
If some of the charts are not produced, a statement to this effect shall be given in section GEN 3.2.

Note. — A page pocket may be used in the AIP to include the Aerodrome Terrain and Obstacle Chart — ICAO (Electronic) on appropriate electronic media.

****** *AD 2.25* Visual segment surface (VSS) penetration**

(Applicable as of 4 November 2021)

Visual segment surface (VSS) penetration, including procedure and procedure minima affected.
Note. — Criteria related to the VSS are contained in PANS-OPS Volume II, Part I, Section 4, Chapter 5, paragraph 5.4.6.

AD 3. HELIPORTS

When a helicopter landing area is provided at the aerodrome, associated data shall be listed only under **** AD 2.16.
Note. — * is to be replaced by the relevant ICAO location indicator.***

****** AD 3.1 Heliport location indicator and name**

The requirement is for the ICAO location indicator assigned to the heliport and the name of heliport. An ICAO location indicator shall be an integral part of the referencing system applicable to all subsections in section AD 3.

****** AD 3.2 Heliport geographical and administrative data**

The requirement is for heliport geographical and administrative data, including:

1) heliport reference point (geographical coordinates in degrees, minutes and seconds) and its site;
2) direction and distance of heliport reference point from centre of the city or town which the heliport serves;
3) heliport elevation to the nearest metre or foot, reference temperature and mean low temperature;
4) where appropriate, geoid undulation at the heliport elevation position to the nearest metre or foot;
5) magnetic variation to the nearest degree, date of information and annual change;
6) name of heliport operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
7) types of traffic permitted to use the heliport (IFR/VFR); and
8) remarks.

****** AD 3.3 Operational hours**

Detailed description of the hours of operation of services at the heliport, including:
1) heliport operator;
2) customs and immigration;
3) health and sanitation;
4) AIS briefing office;
5) ATS reporting office (ARO);
6) MET briefing office;
7) air traffic service;
8) fuelling;
9) handling;
10) security;
11) de-icing; and
12) remarks.

****** AD 3.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the heliport, including:
1) cargo-handling facilities;
2) fuel and oil types;
3) fuelling facilities and capacity;
4) de-icing facilities;
5) hangar space for visiting helicopters;
6) repair facilities for visiting helicopters; and
7) remarks.

****** AD 3.5 Passenger facilities**

Passenger facilities available at the heliport, provided as a brief description or as a reference to other information sources such as a website, including:
1) hotel(s) at or in the vicinity of the heliport;
2) restaurant(s) at or in the vicinity of the heliport;
3) transportation possibilities;
4) medical facilities;
5) bank and post office at or in the vicinity of the heliport;
6) tourist office; and
7) remarks.

****** AD 3.6 Rescue and firefighting services**

Detailed description of the rescue and firefighting services and equipment available at the heliport, including:
1) heliport category for firefighting;
2) rescue equipment;
3) capability for removal of disabled helicopters; and
4) remarks.

****** AD 3.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of heliport movement areas, including:
1) type(s) of clearing equipment;
2) clearance priorities; and
3) remarks.

****** AD 3.8 Aprons, taxiways and check locations/positions data**

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:
1) designation, surface and strength of aprons, helicopter stands;
2) designation, width and surface type of helicopter ground taxiways;
3) width and designation of helicopter air taxiway and air transit route;
4) location and elevation to the nearest metre or foot of altimeter checkpoints;
5) location of VOR checkpoints;
6) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
7) remarks.
If check locations/positions are presented on a heliport chart, a note to that effect shall be provided under this subsection.

****** AD 3.9 Markings and markers**

Brief description of final approach and take-off area and taxiway markings and markers, including:
1) final approach and take-off markings;
2) taxiway markings, air taxiway markers and air transit route markers; and
3) remarks.

****** AD 3.10 Heliport obstacles**

#OBS-DS# Detailed description of obstacles, including:
1) obstacle identification or designation;
2) type of obstacle;
3) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
4) obstacle elevation and height to the nearest metre or foot;
5) obstacle marking, and type and colour of obstacle lighting (if any); and
6) NIL indication, if appropriate.

****** AD 3.11 Meteorological information provided**

Detailed description of meteorological information provided at the heliport and an indication of which meteorological office is responsible for the service enumerated, including:
1) name of the associated meteorological office;
2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
3) office responsible for preparation of TAFs, and periods of validity of the forecasts;
4) availability of the trend forecasts for the heliport, and interval of issuance;
5) information on how briefing and/or consultation is provided;
6) type of flight documentation supplied and language(s) used in flight documentation;
7) charts and other information displayed or available for briefing or consultation;
8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
9) the ATS unit(s) provided with meteorological information; and
10) additional information (e.g. concerning any limitation of service).

****** AD 3.12 Heliport data**

Detailed description of heliport dimensions and related information, including:
1) heliport type (surface-level, elevated or helideck);
2) touchdown and lift-off (TLOF) area dimensions to the nearest metre or foot;
3) true bearings to one-hundredth of a degree of final approach and take-off (FATO) area;
4) dimensions to the nearest metre or foot of FATO, and surface type;
5) surface and bearing strength in tonnes (1 000 kg) of TLOF;
6) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of TLOF or of each threshold of FATO:
— for non-precision approaches, to the nearest metre or foot; and
— for precision approaches, to the nearest tenth of a metre or tenth of a foot;
7) TLOF and/or FATO slope and elevation:
— for non-precision approaches, to the nearest metre or foot; and
— for precision approaches, to the nearest tenth of a metre or tenth of a foot;
8) dimensions of safety area;
9) dimensions, to the nearest metre or foot, of helicopter clearway;
10) the existence of an obstacle-free sector; and
11) remarks.

****** AD 3.13 Declared distances**

Detailed description of declared distances to the nearest metre or foot, where relevant for a heliport, including:
1) take-off distance available, and if applicable, alternative reduced declared distances;
2) rejected take-off distance available;
3) landing distance available; and
4) remarks, including entry or start point where alternative reduced declared distances have been declared.
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****** AD 3.14 Approach and FATO lighting**

Detailed description of approach and FATO lighting, including:
1) type, length and intensity of approach lighting system;

2) type of visual approach slope indicator system;
3) characteristics and location of FATO area lights;
4) characteristics and location of aiming point lights;
5) characteristics and location of TLOF lighting system; and
6) remarks.

****** AD 3.15 Other lighting and secondary power supply**

Description of other lighting and secondary power supply, including:
1) location, characteristics and hours of operation of heliport beacon;
2) location and lighting of wind direction indicator (WDI);
3) taxiway edge and taxiway centre line lights;
4) secondary power supply including switch-over time; and
5) remarks.

****** AD 3.16 Air traffic services airspace**

#AIP-DS# Detailed description of air traffic services (ATS) airspace organized at the heliport, including:
1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
2) vertical limits;
3) airspace classification;
4) call sign and language(s) of ATS unit providing service;
5) transition altitude;
6) hours of applicability; and
7) remarks.

****** AD 3.17 Air traffic services communication facilities**

Detailed description of ATS communication facilities established at the heliport, including:
1) service designation;
2) call sign;
3) channel(s);
4) SATVOICE number(s), if available;
5) logon address, as appropriate;
6) hours of operation; and
7) remarks.

****** AD 3.18 Radio navigation and landing aids**

#AIP-DS# Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including:
1) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS and GBAS, and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
2) identification, if required;
3) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;
4) hours of operation, as appropriate;
5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;

6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft), elevation of GBAS reference point to the nearest metre or foot, and the ellipsoid height of the point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest metre or foot;
7) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
8) remarks.

When the same aid is used for both en-route and heliport purposes, a description shall also be given in section ENR4. If the GBAS serves more than one heliport, description of the aid shall be provided under each heliport. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

****** AD 3.19 Local heliport regulations**

Detailed description of regulations applicable to the use of the heliport, including the acceptability of training flights, non-radio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

****** AD 3.20 Noise abatement procedures**

Detailed description of noise abatement procedures established at the heliport.

****** AD 3.21 Flight procedures**

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization established at the heliport. When established, detailed description of the low visibility procedures at the heliport, including:
1) touchdown and lift-off (TLOF) area(s) and associated equipment authorized for use under low visibility procedures;
2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
3) description of ground marking/lighting for use under low visibility procedures; and
4) remarks.

****** AD 3.22 Additional information**

Additional information about the heliport, such as an indication of bird concentrations at the heliport, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

****** AD 3.23 Charts related to a heliport**

The requirement is for charts related to a heliport to be included in the following order:
1) Aerodrome/Heliport Chart — ICAO;
2) Area Chart — ICAO (departure and transit routes);
3) Standard Departure Chart — Instrument — ICAO;
4) Area Chart — ICAO (arrival and transit routes);
5) Standard Arrival Chart — Instrument — ICAO;
6) ATC Surveillance Minimum Altitude Chart — ICAO;

7) Instrument Approach Chart — ICAO (for each procedure type);
8) Visual Approach Chart — ICAO; and
9) bird concentrations in the vicinity of heliport.
If some of the charts are not produced, a statement to this effect shall be given in section GEN 3.2.

— END —

APPENDIX3: SNOWTAM FORMAT

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)	<≡
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	<≡
(Abbreviated heading)	(SWAA* SERIAL NUMBER) S W * *	(LOCATION INDICATOR)	DATE/TIME OF ASSESMENT / (OPTIONAL GROUP) <≡(

SNOWTAM →	(Serial number)	<≡

Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	<≡
(DATE/TIME OF ASSESSMENT *(Time of completion of assessment in UTC)*)	M	B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→
(RUNWAY CONDITION CODE (RWYCC) ON EACH -RUNWAY THIRD) *(From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)*	M	D)	/ / →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	/ / →
(DEPTH *(mm)* OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C	F)	/ / →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH) *(Observed on each runway third, starting from threshold having the lower runway designation number)* COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLUSH STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE	M	G)	/ / →
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITION CODES APPLY, IF LESS THAN PUBLISHED WIDTH)	O	H)	<≡≡
Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH *(m)*)	O	I)	→
(DRIFTING SNOW ON THE RUNWAY)	O	J)	→
(LOOSE SAND ON THE RUNWAY)	O	K)	→
(CHEMICAL TREATMENT ON THE RUNWAY)	O	L)	→
(SNOWBANKS ON THE RUNWAY) *(If present, distance from runway centre line (m) followed by "L", "R" or "LR" as applicable)*	O	M)	→
(SNOWBANKS ON A TAXIWAY)	O	N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	O	O)	→
(TAXIWAY CONDITIONS)	O	P)	→
(APRON CONDITIONS)	O	R)	→
(MEASURED FRICTION COEFFICIENT)	O	S)	→
(PLAIN-LANGUAGE REMARKS)	O	T)	)

NOTES:
1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier.
2. Information on other runways, repeat from B to H.
3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable when reported.
4. Words in brackets ( ) not to be transmitted.
5. For letters A) to T) refer to the *Instructions for the completion of the SNOWTAM Format,* paragraph 1, item b).

SIGNATURE OF ORIGINATOR *(not for transmission)*

INSTRUCTIONS FOR THE COMPLETION OF THE SNOWTAM FORMAT

Note. — Origin of data, assessment process and the procedures linked to the surface conditions reporting system are prescribed in the Procedures for Air Navigation Services — Aerodromes (PANS-Aerodromes, Doc 9981).

3. General

a. When reporting on more than one runway, repeat Items B to P inclusive.
b. Items together with their indicator shall be dropped completely, where no information is to be included.
c. Metric units shall be used and the unit of measurement not reported.
d. The maximum validity of SNOWTAM is 8 hours. New SNOWTAM shall be issued whenever a new runway condition report is received. The following changes relating to runway conditions are considered as significant:

1) a change in the coefficient of friction of about 0.05;
2) changes in depth of deposit greater than the following: 20 mm for dry snow, 10 mm for wet snow, 3 mm for slush;
3) a change in the available length or width of a runway of 10 per cent or more;
4) any change in the type of deposit or extent of coverage which requires reclassification in Items F or T of the SNOWTAM;
5) when critical snow banks exist on one or both sides of the runway, any change in the height or distance from centre line;
6) any change in the conspicuity of runway lighting caused by obscuring of the lights;
7) any other conditions known to be significant according to experience or local circumstances

e. A SNOWTAM cancels the previous SNOWTAM

f. The abbreviated heading “TTAAiiii CCCC MMYYGGgg (BBB)” is included to facilitate the automatic processing of SNOWTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for SNOWTAM = SW;
AA = geographical designator for States, e.g. LF = FRANCE, EG = United Kingdom (see *Location Indicators* (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);
iiii = SNOWTAM serial number in a four-digit group;
CCCC = four-letter location indicator of the aerodrome to which the SNOWTAM refers (see *Location Indicators* (Doc 7910));
MMYYGGgg = date/time of observation/measurement, whereby:
MM = month, e.g. January = 01, December = 12
YY = day of the month
GGgg = time in hours (GG) and minutes (gg) UTC;
(BBB) = optional group for:
Correction to SNOWTAM message previously disseminated with the same serial number = COR.

Note 1. — Brackets in (BBB) are used to indicate that this group is optional.
Note 2. — When reporting on more than one runway and individual dates/times of observation/measurement are indicated by repeated Item B, the latest date/time of observation/measuring is inserted in the abbreviated heading (MMYYGGgg).

Example: Abbreviated heading of SNOWTAM No. 149 from Zurich, measurement/observation of 7 November at 0620 UTC: SWLS0149 LSZH 11070620

Note. — The information groups are separated by a space, as illustrated above.

g. The text “SNOWTAM” in the SNOWTAM Format and the SNOWTAM serial number in a four-digit group shall be separated by a space, for example: SNOWTAM 0124.

h. For readability purposes for the SNOWTAM message, include a line feed after the SNOWTAM serial number, after Item A, and after the aeroplane performance calculation section.

i. When reporting on more than one runway, repeat the information in the aeroplane performance calculation section from the date and time of assessment for each runway before the information in the situational awareness section.

j) Mandatory information is:

1) AERODROME LOCATION INDICATOR;
2) DATE AND TIME OF ASSESSMENT;
3) LOWER RUNWAY DESIGNATOR NUMBER;
4) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD; and
5) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when runway condition code (RWYCC) is reported 1–5)

4. *Aeroplane performance calculation section*

Item A — Aerodrome location indicator (four-letter location indicator).

Item B — Eight-figure date/time group — giving time of observation as month, day, hour and minute in UTC; this item shall always be completed.
Item C — Lower runway designator number (nn[L] or nn[C] or nn[R]).

Note. — Only one runway designator is inserted for each runway and always the lower number.

Item D — Runway condition code for each runway third. Only one digit (0, 1, 2, 3, 4, 5 or 6) is inserted for each runway third, separated by an oblique stroke (n/n/n).

Item E — Per cent coverage for each runway third. When provided, insert 25, 50, 75 or 100 for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

Note 1.— This information is provided only when the runway condition for each runway third (Item D) has been reported as other than 6 and there is a condition description for each runway third (Item G) that has been reported other than DRY.

Note 2. — When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Item F — Depth of loose contaminant for each runway third. When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn).

Note 1. — This information is only provided for the following contamination types:

— standing water, values to be reported 04, then assessed value. Significant changes 3 mm up to and including 15mm;
— slush, values to be reported 03, then assessed value. Significant changes 3 mm up to and including 15 mm;
— wet snow, values to be reported 03, then assessed value. Significant changes 5 mm; and
— dry snow, values to be reported 03, then assessed value. Significant changes 20 mm.

Note 2. — When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Item G — Condition description for each runway third. Insert any of the following condition descriptions for each runway third, separated by an oblique stroke.

COMPACTED SNOW
DRY SNOW
DRY SNOW ON TOP OF COMPACTED SNOW
DRY SNOW ON TOP OF ICE
FROST ICE SLUSH
STANDING WATER
WATER ON TOP OF COMPACTED SNOW
WET
WET ICE
WET SNOW
WET SNOW ON TOP OF COMPACTED SNOW
WET SNOW ON TOP OF ICE

DRY (only reported when there is no contaminant)

Note. — When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Item H — Width of runway to which the runway condition codes apply. Insert the width in metres if less than the published runway width.

5. Situational awareness section

Note 1.— Elements in the situational awareness section end with a full stop.
Note 2.— Elements in the situational awareness section for which no information exists, or where the conditional circumstances for publication are not fulfilled, are left out completely.
Item I — Reduced runway length. Insert the applicable runway designator and available length in meters (example: RWY nn [L] or nn [C] or nn [R] REDUCED TO [n]nnn).

Note. — This information is conditional when a NOTAM has been published with a new set of declared distances.

Item J — Drifting snow on the runway. When reported, insert “DRIFTING SNOW”.

Item K — Loose sand on the runway. When loose sand is reported on the runway, insert the lower runway designator and with a space “LOOSE SAND” (RWY nn or RWY nn[L] or nn[C] or nn[R] LOOSE SAND).

Item L — Chemical treatment on the runway. When chemical treatment has been reported applied, insert the lower runway designator and with a space “CHEMICALLY TREATED” (RWY nn or RWY nn[L] or nn[C] or nn[R] CHEMICALLY TREATED).

Item M — Snow banks on the runway. When snow banks are reported present on the runway, insert the lower runway designator and with a space “SNOW BANK” and with a space left “L” or right “R” or both sides “LR”, followed by the distance in metres from centre line separated by a space FM CL (RWY nn or RWY nn[L] or nn[C] or nn[R] SNOW BANK Lnn or Rnn or LRnn FM CL).

Item N — Snow banks on a taxiway. When snow banks are present on a taxiway, insert the taxiway designator and with a space “SNOW BANK” (TWY [nn]n SNOW BANK).

Item O — Snow banks adjacent to the runway. When snow banks are reported present penetrating the height profile in the aerodrome snow plan, insert the lower runway designator and “ADJ SNOW BANKS” (RWY nn or RWY nn[L] or nn[C] or nn[R] ADJ SNOW BANKS).

Item P — Taxiway conditions. When taxiway conditions are reported as poor, insert the taxiway designator followed by a space “POOR” (TWY [n or nn] POOR or ALL TWYS POOR).

Item R — Apron conditions. When apron conditions are reported as poor, insert the apron designator followed by a space “POOR” (APRON [nnnn] POOR or ALL APRONS POOR).

Item S — Measured friction coefficient. Where reported, insert the measured friction coefficient and friction measuring device.
Note. — This will only be reported for States that have an established programme of runway friction measurement using a State-approved friction measuring device.

Item T — Plain language remarks.

EXAMPLE OF COMPLETED SNOWTAM FORMAT

Example SNOWTAM 1

GG EADBZQZX EADNZQZX EADSZQZX
170100 EADDYNYX
SWEA0149 EADD 02170055
(SNOWTAM 0149 EADD 02170055 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW)

Example SNOWTAM 2

GG EADBZQZX EADNZQZX EADSZQZX
170140 EADDYNYX
SWEA0150 EADD 02170135
(SNOWTAM 0150
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW
02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH)

Example SNOWTAM 3

GG EADBZQZX EADNZQZX EADSZQZX
170229 EADDYNYX
SWEA0151
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW
02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH
02170225 09C 2/3/3 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW

RWY 09L SNOW BANK R20 FM CL. RWY 09R ADJ SNOW BANKS. TWY B POOR. APRON NORTH POOR)

Example SNOWTAM 4

GG EADBZQZX EADNZQZX EADSZQZX
170350 EADDYNYX
SWEA0152
EADD
02170345 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/SLUSH
02170134 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH
02170225 09C 2/3/3 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW 35

DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R CHEMICALLY TREATED. RWY 09C CHEMICALLY TREATED.)

— END —

APPENDIX 4: NOTAM FORMAT

Priority indicator		→
Address		
		≪≡
Date and time of filing		→
Originator's indicator		≪≡(

Message series, number and identifier

NOTAM containing new information	..... (series and number/year)	NOTAMN
NOTAM replacing a previous NOTAM	..... (series and number/year)	NOTAMR..... (series and number/year of NOTAM to be replaced)
NOTAM cancelling a previous NOTAM	..... (series and number/year)	NOTAMC..... (series and number/year of NOTAM to be cancelled) ≪≡

Qualifiers

	FIR	NOTAM Code	Traffic	Purpose	Scope	Lower limit	Upper limit	Coordinates, Radius	
Q)		Q							≪≡

Identification of ICAO location indicator in which the facility, airspace or condition reported on is located	A) →

Period of validity

From *(date-time group)*	B)		→
To *(PERM or date-time group)*	C)	**EST* PERM***	≪≡
Time schedule *(if applicable)*	D)		→
			≪≡

Text of NOTAM; plain-language entry (using ICAO abbreviations)

E) ≪≡

Lower limit	F) →
Upper limit	G)) ≪≡
Signature	

***Delete as appropriate**

INSTRUCTIONS FOR THE COMPLETION OF THE NOTAM FORMAT

Note. — For NOTAM examples see the Aeronautical Information Services Manual (Doc 8126) and the Procedures for Air Navigation Services – ICAO Abbreviations and Codes (PANS-ABC, Doc 8400).

1. General

The qualifier line (Item Q)) and all identifiers (Items A) to G) inclusive) each followed by a closing parenthesis, as shown in the format, shall be transmitted unless there is no entry to be made against a particular identifier.

2. NOTAM numbering

Each NOTAM shall be allocated a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year (e.g. A0023/03). Each series shall start on 1 January with number 0001.

3. Qualifiers (Item Q)

Item Q) is divided into eight fields, each separated by a stroke. An entry shall be made in each field. Examples of how fields are to be filled are shown in the Aeronautical Information Services Manual (Doc 8126). The definition of the fields is as follows:

1) FIR
If the subject of the information is located geographically within one FIR, the ICAO location indicator shall be that of the FIR concerned. When an aerodrome is situated within the overlying FIR of another State, the first field of Item Q) shall contain the code for that overlying FIR (e.g. Q) LFRR/···A) EGJJ);
or,
if the subject of the information is located geographically within more than one FIR, the FIR field shall be composed of the ICAO nationality letters of the State originating the NOTAM followed by "XX". (The location indicator of the overlying UIR shall not be used). The ICAO location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

If one State issues a NOTAM affecting FIRs in a group of States, the first two letters of the ICAO location indicator of the issuing State plus "XX" shall be included. The location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

2) NOTAM CODE

All NOTAM Code groups contain a total of five letters and the first letter is always the letter Q. The second and third letters identify the subject, and the fourth and fifth letters denote the status or condition of the subject reported upon. The two-letter codes for subjects and conditions are those contained in the PANS-ABC (Doc 8400). For combinations of second and third, and fourth and fifth letters, refer to the NOTAM Selection Criteria contained in Doc 8126 or insert one of the following combinations, as appropriate:
a) If the subject is not listed in the NOTAM Code (PANS-ABC, Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert "XX" as the second and third letters; If subject is "XX", use "XX" also for condition (e.g.QXXXX).

b) If the condition of the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert "XX" as the fourth and fifth letters (e.g. QFAXX);

c) When a NOTAM containing operationally significant information is issued in accordance with Annex 15, 6.2.1, and when it is used to announce the existence of AIRAC AIP Amendments or Supplements, insert "TT" as the fourth and fifth letters of the NOTAM Code;

d) When a NOTAM is issued containing a checklist of valid NOTAM, insert "KKKK" as the second, third, fourth and fifth letters; and

e) The following fourth and fifth letters of the NOTAM Code shall be used in NOTAM cancellations:

AK = RESUMED NORMAL OPERATION
AL = OPERATIVE (OR RE-OPERATIVE) SUBJECT TO PREVIOUSLY PUBLISHED LIMITATIONS/CONDITIONS
AO = OPERATIONAL
CC = COMPLETED
CN = CANCELLED
HV = WORK COMPLETED
XX = PLAIN LANGUAGE

Note 1. — As Q - - AO = Operational is used for NOTAM cancellation, NOTAM promulgating new equipment or services use the following fourth and fifth letters Q - - CS = Installed.
Note 2. — Q - - CN = CANCELLED shall be used to cancel planned activities, e.g. navigation warnings;
Q - - HV = WORK COMPLETED is used to cancel work in progress.

f) Facilities, services and other information which require coding have been classified by subject into sections and subsections. The second letter of the code group, which may be any letter of the alphabet except Q, indicates the subject subsections as follows:

AGA (Aerodromes)
. . . . LIGHTING facilities --L
. . . . MOVEMENT and landing area --M
. . . . FACILITIES and services --F

COM (Communications)
. . . . COMMUNICATION and SURVEILLANCE facilities --C
. . . . INSTRUMENT and microwave landing systems --I
. . . . GNSS services --G
. . . . terminal and en-route NAVIGATION facilities --N

ATM (Air Traffic Management)
. . . . AIRSPACE organization --A
. . . . air traffic and VOLMET SERVICES --S
. . . . air traffic PROCEDURES --P

Navigation Warnings
. . . . airspace RESTRICTIONS --R
. . . . WARNINGS --W

Other information
. . . . OTHER information --O

g) Classification by status (fourth and fifth letters)

h) The fourth letter of the code group, which may be any letter of the alphabet except Q, indicates status subsections as follows:

A AVAILABILITY
C CHANGES
H HAZARD conditions
L LIMITATIONS
XX Other

3) TRAFFIC

I = IFR
V = VFR
K = NOTAM is a checklist

Note. — Depending on the NOTAM subject and content, the qualifier field TRAFFIC may contain combined qualifiers. Guidance concerning the combination of TRAFFIC qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126.

4) PURPOSE

N = NOTAM selected for the immediate attention of flight crew members
B = NOTAM of operational significance selected for PIB entry
O = NOTAM concerning flight operations
M = Miscellaneous NOTAM; not subject for a briefing, but available on request
K = NOTAM is a checklist

Note. — Depending on the NOTAM subject and content, the qualifier field PURPOSE may contain the combined qualifiers BO or NBO. Guidance concerning the combination of PURPOSE qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126.

5) SCOPE

A = Aerodrome
E = En-route
W = Nav Warning
K = NOTAM is a checklist

If the subject is qualified AE, the aerodrome location indicator shall be reported in Item A).

Note. — Depending on the NOTAM subject and content, the qualifier field SCOPE may contain combined qualifiers. Guidance concerning the combination of SCOPE qualifiers with subject and conditions in accordance with the NOTAM Selection Criteria is contained in Doc 8126.

6) and 7) LOWER/UPPER LIMITS
Lower and upper limits shall only be expressed in flight levels (FL) and shall express the actual vertical limits of the area of influence without the addition of buffers. In the case of navigation warnings and airspace restrictions, values entered shall be consistent with those provided under Items F) and G).

If the subject does not contain specific height information, insert “000” for LOWER and “999” for UPPER as default values.

8) COORDINATES, RADIUS
The latitude and longitude accurate to one minute, as well as a three-digit distance figure giving the radius of influence in NM (e.g. 4700N01140E043). Coordinates present approximate center of circle whose radius encompasses the whole area of influence, and if the NOTAM affects the entire FIR/UIR or more than one FIR/UIR, enter the default value “999” for radius.

4. Item A)

Insert the ICAO location indicator as contained in Doc 7910 of the aerodrome or FIR in which the facility, airspace, or condition being reported on is located. More than one FIR/UIR may be indicated when appropriate. If there is no available ICAO location indicator, use the ICAO nationality letter as given in ICAO Doc 7910, Part 2, plus “XX” and followed up in Item E) by the name, in plain language.
If information concerns GNSS, insert the appropriate ICAO location indicator allocated for a GNSS element or the common location indicator allocated for all elements of GNSS (except GBAS).

Note. — In the case of GNSS, the location indicator may be used when identifying a GNSS element outage (e.g. KNMH for a GPS satellite outage).

5. Item B)

For date-time group use a ten-figure group, giving year, month, day, hours and minutes in UTC. This entry is the datetime at which the NOTAMN comes into force. In the cases of NOTAMR and NOTAMC, the date-time group is the actual date and time of the NOTAM origination. The start of a day shall be indicated by “0000”.

6. Item C)

With the exception of NOTAMC, a date-time group (a ten-figure group giving year, month, day, hours and minutes in UTC) indicating duration of information shall be used unless the information is of a permanent nature in which case the abbreviation “PERM” is inserted instead. The end of a day shall be indicated by “2359” (i.e. do not use “2400”). If the information on timing is uncertain, the approximate duration shall be indicated using a date-time group followed by the abbreviation “EST”. Any NOTAM which includes an “EST” shall be cancelled or replaced before the date-time specified in Item C).

7. Item D)

If the hazard, status of operation or condition of facilities being reported on will be active in accordance with a specific time and date schedule between the dates-times indicated in Items B) and C), insert such information under Item D). If Item D) exceeds 200 characters, consideration shall be given to providing such information in a separate, consecutive NOTAM.

Note. — Guidance concerning a harmonized definition of Item D) content is provided in Doc 8126.

8. Item E)

Use decoded NOTAM Code, complemented where necessary by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language. When NOTAM is selected for international distribution, English text shall be included for those parts expressed in plain language. This entry shall be clear and concise in order to provide a suitable PIB entry. In the case of NOTAMC, a subject reference and status message shall be included to enable accurate plausibility checks.

9. Items F) and G)

These items are normally applicable to navigation warnings or airspace restrictions and are usually part of the PIB entry. Insert both lower and upper height limits of activities or restrictions, clearly indicating only one reference datum and unit of measurement. The abbreviations GND or SFC shall be used in Item F) to designate ground and surface respectively. The abbreviation UNL shall be used in Item G) to designate unlimited.

— END —

APPENDEX5: ASHTAM Format

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSEE INDICATOR(S))[1]			
	(DATE AND TIME (OF FILING)		(ORIGINATOR'S (INDICATOR)		
(Abbreviated heading)	(VA*[2] SERIAL NUMBER) V A *2 *2		(LOCATION INDICATOR)	DATE/TIME OF ISSUANCE	(OPTIONAL GROUP)

ASHTAM	(SERIAL NUMBER)	
(FLIGHT INFORMATION REGION AFFECTED)		A)
(DATE/TIME (UTC) OF ERUPTION)		B)
(VOLCANO NAME AND NUMBER)		C)
(VOLCANO LATITUDE/LONGITUDE OR VOLCANO RADIAL AND DISTANCE FROM NAVAID)		D)
(VOLCANO LEVEL OF ALERT COLOUR CODE, INCLUDING ANY PRIOR LEVEL OF ALERT COLOUR CODE)[3]		E)
(EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD)[4]		F)
(DIRECTION OF MOVEMENT OF ASH CLOUD)[4]		G)
(AIR ROUTES OR PORTIONS OF AIR ROUTES AND FLIGHT LEVELS AFFECTED)		H)
(CLOSURE OF AIRSPACE AND/OR AIR ROUTES OR PORTIONS OF AIR ROUTES, AND ALTERNATIVE AIR ROUTES AVAILABLE)		I)
(SOURCE OF INFORMATION)		J)
(PLAIN-LANGUAGE REMARKS)		K)

NOTES:

1. See also Appendix 5 regarding addressee indicators used in predetermined distribution systems.
2. *Enter ICAO nationality letter as given in ICAO Doc 7910, Part 2.
3. See paragraph 3.5 below.
4. Advice on the existence, extent and movement of volcanic ash cloud G) and H) may be obtained from the volcanic ash advisory centre(s) responsible for the FIR concerned.
5. Item titles in brackets ( ) not to be transmitted.

SIGNATURE OF ORIGINATOR *(not for transmission)*

INSTRUCTIONS FOR THE COMPLETION OF THE ASHTAM FORMAT

1. General

1.1 The ASHTAM provides information on the status of activity of a volcano when a change in its activity is, or is expected to be, of operational significance. This information is provided using the volcano level of alert colour code given in 3.5 below.

1.2 In the event of a volcanic eruption producing ash cloud of operational significance, the ASHTAM also provides information on the location, extent and movement of the ash cloud and the air routes and flight levels affected.

1.3 Issuance of an ASHTAM giving information on a volcanic eruption, in accordance with paragraph 3 below, should not be delayed until complete information A) to K) is available but should be issued immediately following receipt of notification that an eruption has occurred or is expected to occur, or a change in the status of activity of a volcano of operational significance has occurred or is expected to occur, or an ash cloud is reported. In the case of an expected eruption, and hence no ash cloud evident at that time, items A) to E) should be completed and items F) to I) indicated as “not applicable”. Similarly, if a volcanic ash cloud is reported, e.g. by special air-report, but the source volcano is not known at that time, the ASHTAM should be issued initially with items A) to E) indicated as “unknown”, and items F) to K) completed, as necessary, based on the special air-report, pending receipt of further information. In other circumstances, if information for a specific field A) to K) is not available, indicate “NIL”.

1.4 The maximum period of validity of ASHTAM is 24 hours. New ASHTAM shall be issued whenever there is a change in the level of alert.

2. Abbreviated heading

2.1 Following the usual aeronautical fixed telecommunication network (AFTN) communications header, the abbreviated heading “TT AAiiii CCCC MMYYGGgg (BBB)” is included to facilitate the automatic processing of ASHTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for ASHTAM = VA;

AA = geographical designator for States, e.g. NZ = New Zealand (see Location Indicators (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

iiii = ASHTAM serial number in a four-figure group;

CCCC = four-letter location indicator of the flight information region concerned (see Location Indicators (Doc 7910), Part 5, addresses of centers in charge of FIR/UIR);

MMYYGGgg = date/time of report, whereby:

MM = month, e.g. January = 01, December = 12

YY = day of the month

GGgg = time in hours (GG) and minutes (gg) UTC;

(BBB) = Optional group for correction to an ASHTAM message previously disseminated with the same serial number = COR.

Note. — Brackets in (BBB) are used to indicate that this group is optional.

Example: Abbreviated heading of ASHTAM for Auckland Oceanic FIR, report on 7 November at 0620 UTC:
VANZ0001 NZZO 11070620

3. Content of ASHTAM

3.1 Item A — Flight information region affected, plain-language equivalent of the location indicator given in the abbreviated heading, in this example “Auckland Oceanic FIR”.

3.2 Item B — Date and time (UTC) of first eruption.

3.3 Item C — Name of volcano, and number of volcano as listed in the Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), APPENDIX E, and on the World Map of Volcanoes and Principal Aeronautical Features.

3.4 Item D — Latitude/Longitude of the volcano in whole degrees or radial and distance of volcano from NAVAID as listed in Doc 9691, APPENDIX E, and on the World Map of Volcanoes and Principal Aeronautical Features).

3.5 Item E — Colour code for level of alert indicating volcanic activity, including any previous level of alert colour code as follows:

Level of alert colour code	Status of activity of volcano
GREEN ALERT	Volcano is in normal, non-eruptive state. or, after a change from a higher alert level: Volcanic activity considered to have ceased, and volcano reverted to its normal, non - eruptive state.
YELLOW ALERT	Volcano is experiencing signs of elevated unrest above known background levels. or, after a change from a higher alert level: Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.
ORANGE ALERT	Volcano is exhibiting heightened unrest with increased likelihood of eruption. or, Volcanic eruption is underway with no or minor ash emission [specify ash-plume height if possible].
RED ALERT	Eruption is forecast to be imminent with significant emission of ash into the atmosphere likely. or, Eruption is underway with significant emission of ash into the atmosphere [specify ash-plume height if possible].

Note. — The colour code for the level of alert indicating the status of activity of the volcano and any change from a previous status of activity should be provided to the area control center by the responsible vulcanological agency in the State concerned, e.g. “RED ALERT FOLLOWING YELLOW” OR “GREEN ALERT FOLLOWING ORANGE”.

3.6 *Item F* — If volcanic ash cloud of operational significance is reported, indicate the horizontal extent and base/top of the ash cloud using latitude/longitude (in whole degrees) and altitudes in thousands of metres (feet) and/or radial and distance from source volcano. Information initially may be based only on special air-report, but subsequent information may be more detailed based on advice from the responsible meteorological watch office and/or volcanic ash advisory center.

3.7 *Item G* — Indicate forecast direction of movement of the ash cloud at selected levels based on advice from the responsible meteorological watch office and/or volcanic ash advisory center.

3.8 *Item H* — Indicate air routes and portions of air routes and flight levels affected, or expected to become affected.

3.9 *Item I* — Indicate closure of airspace, air routes or portions of air routes, and availability of alternative routes.

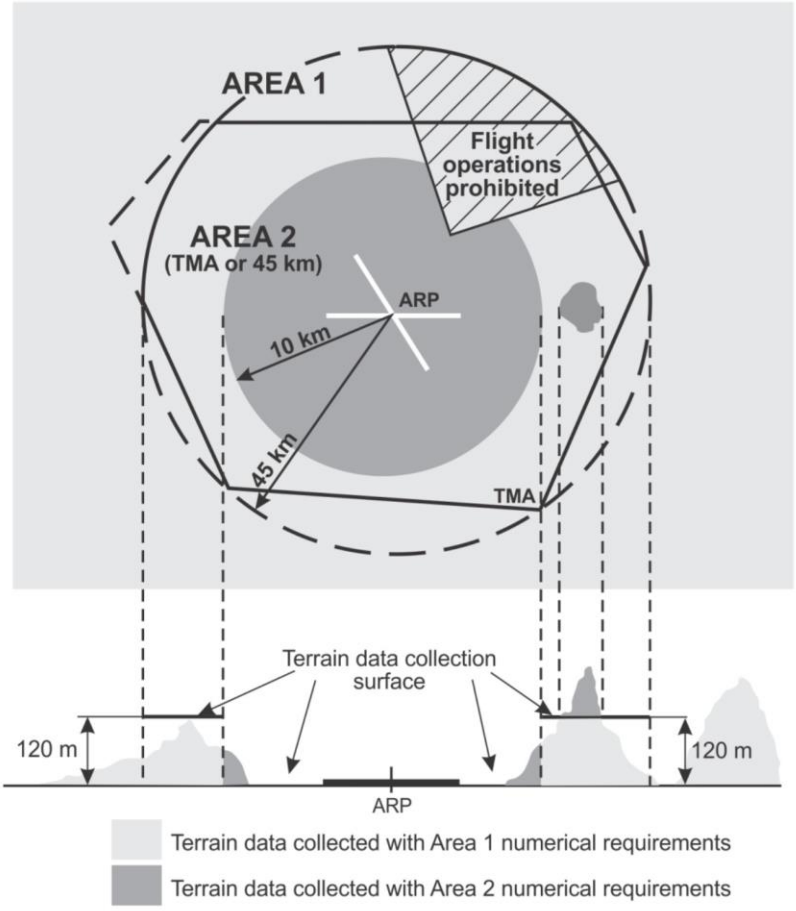
3.10 *Item J* — The source of the information (e.g. “special air-report” or “vulcanological agency.) should always be indicated, whether an eruption has actually occurred or ash cloud reported, or not.

3.11 *Item K* — Include in plain language any operationally significant information additional to the foregoing.

— END —

APPENDEX6: TERRAIN AND OBSTACLE DATA REQUIREMENTS

(See Annex 15, Chapter 5)



Terrain data collection surfaces — Area 1 and Area 2

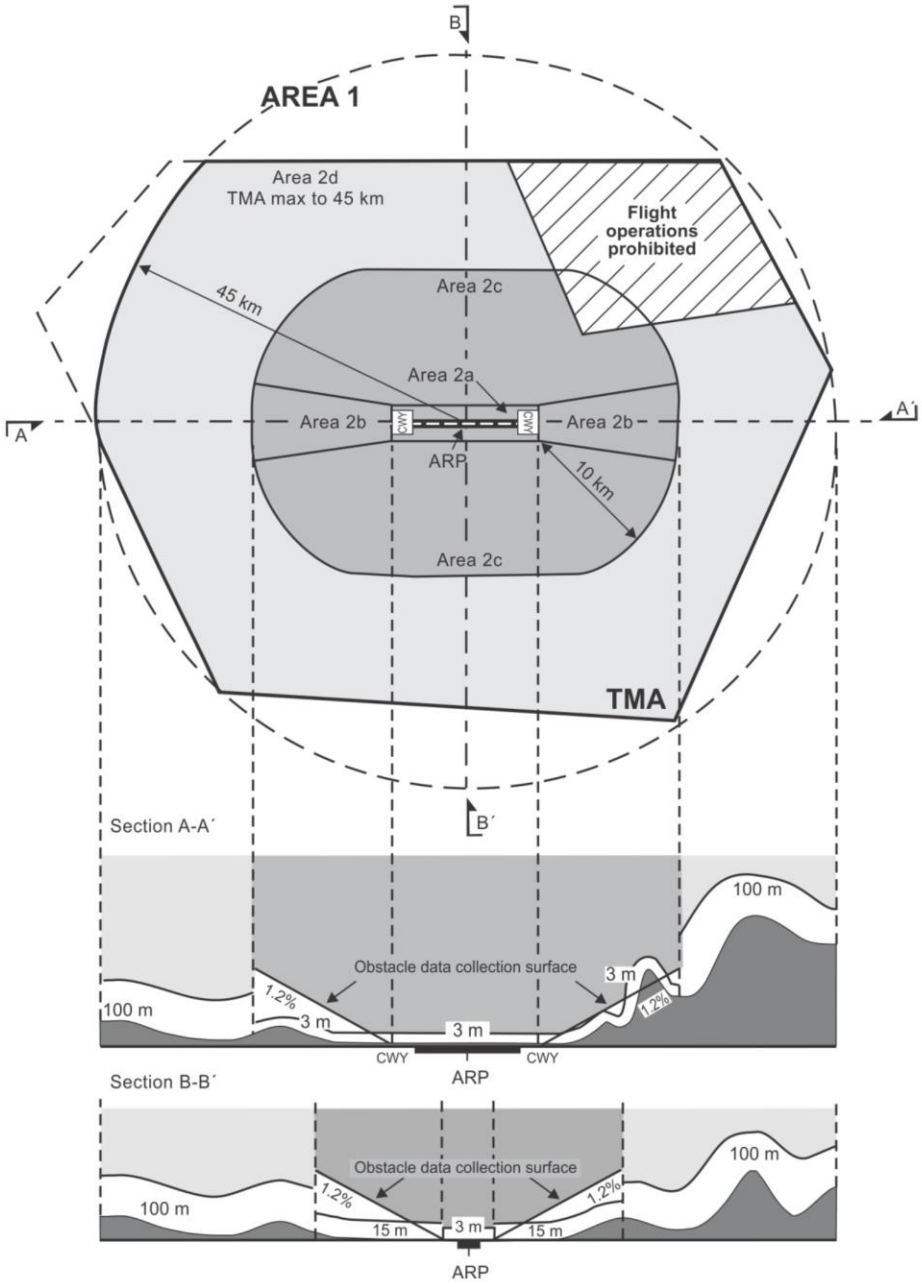
1. Within the area covered by a 10-km radius from the aerodrome reference point (ARP), terrain data shall comply with the Area 2 numerical requirements.

2. In the area between 10 km and the terminal control area (TMA) boundary or 45-km radius (whichever is smaller), data on terrain that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 2 numerical requirements.

3. In the area between 10 km and the TMA boundary or 45-km radius (whichever is smaller), data on terrain that does not penetrate the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 1 numerical requirements.

4. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, terrain data shall comply with the Area 1 numerical requirements.

Note. — Terrain data numerical requirements for Areas 1 and 2 are specified in APPENDIX 1.

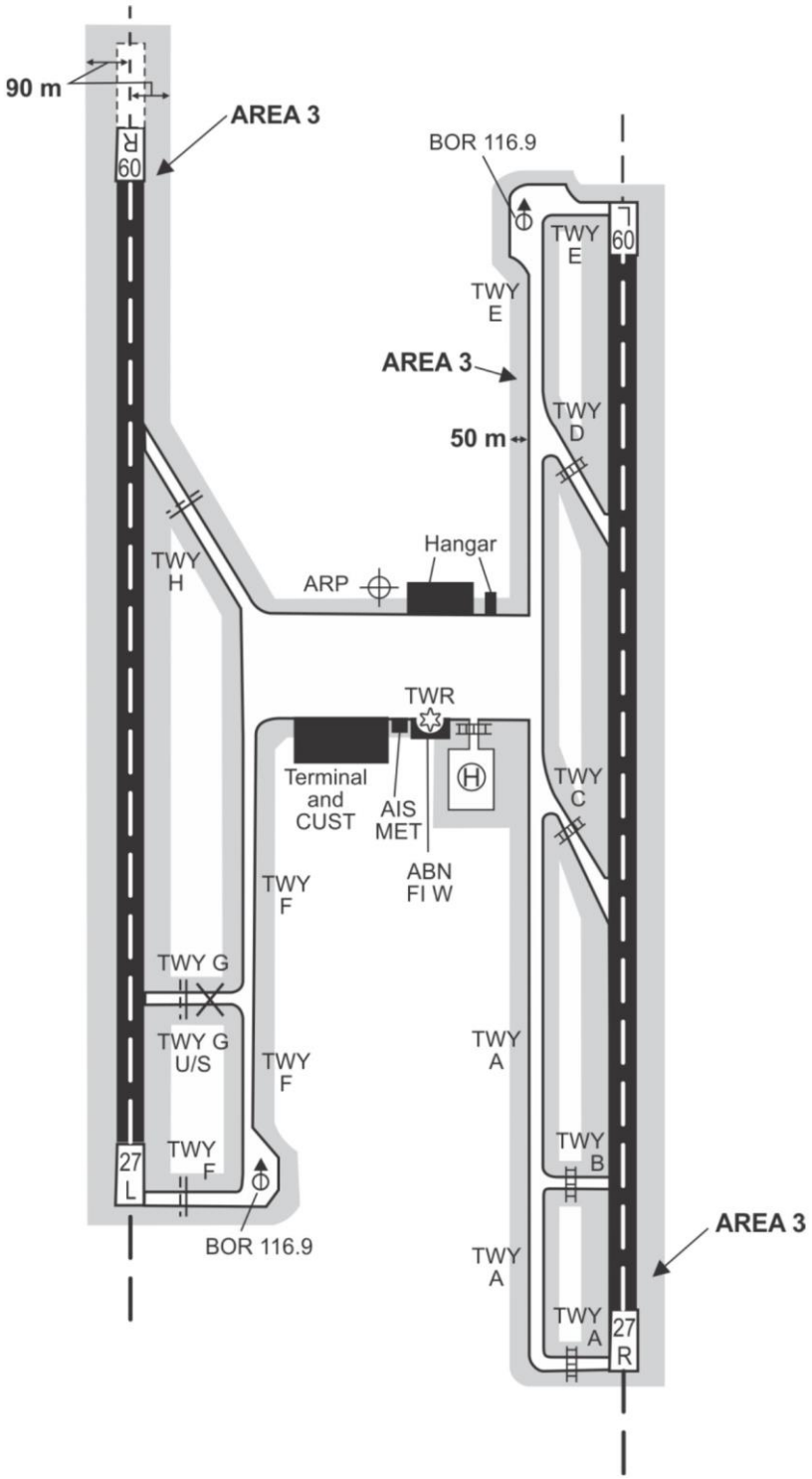


Obstacle data collection surfaces — Area 1 and Area 2

1. Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in APPENDIX 1.

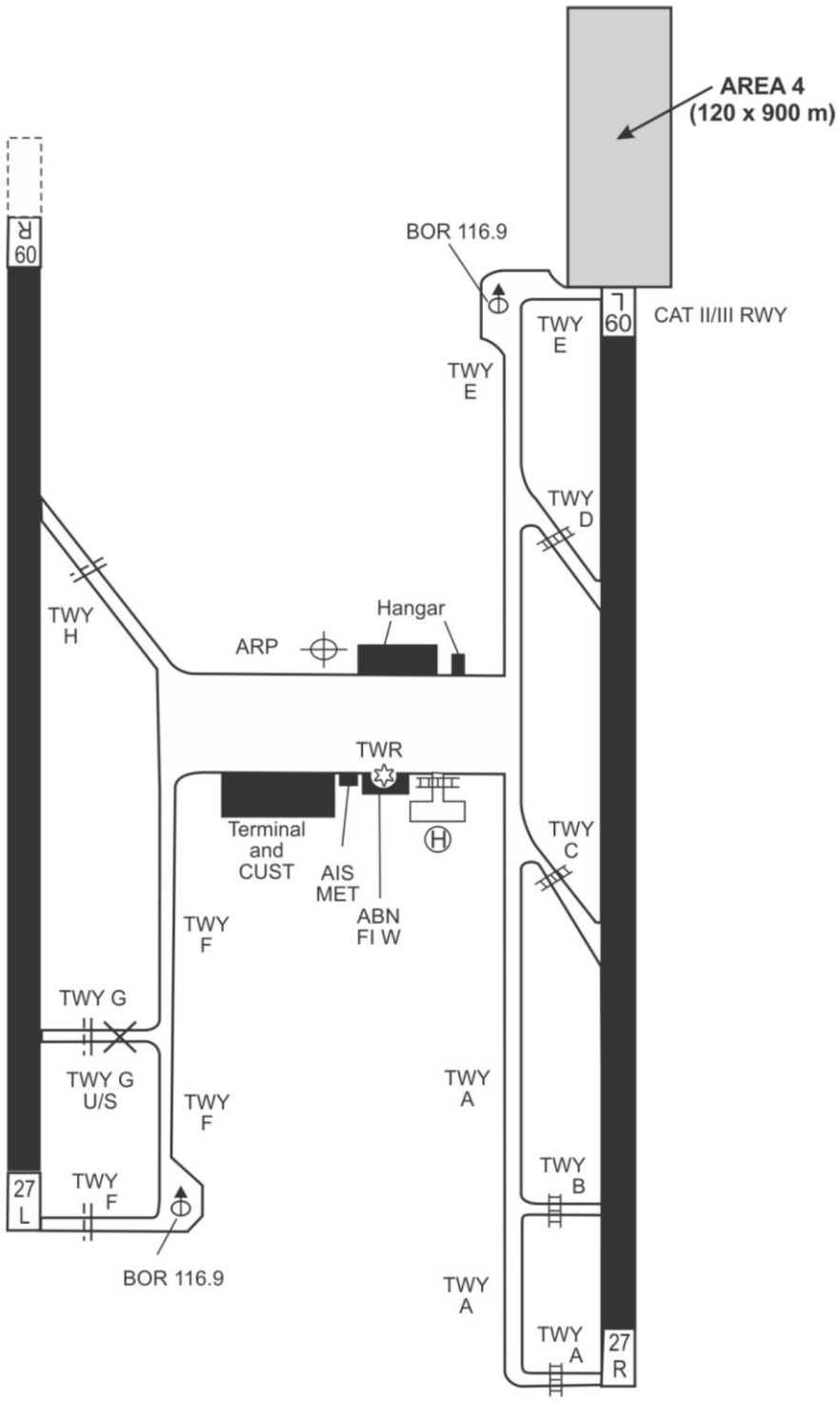
2. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacle data shall be collected and recorded in accordance with the Area 1 requirements.

3. Data on every obstacle within Area 1 whose height above the ground is 100 m or higher shall be collected and recorded in the database in accordance with the Area 1 numerical requirements specified in APPENDIX 1.



Terrain and obstacle data collection surface — Area 3

Terrain and obstacle data in Area 3 shall comply with the numerical requirements specified in APPENDIX 1.



Terrain and obstacle data collection surface — Area 4

Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in APPENDIX 1.

— END —

APPENDEX 7: TERRAIN AND OBSTACLE ATTRIBUTES PROVISION REQUIREMENTS

Table A7-1. Terrain attributes

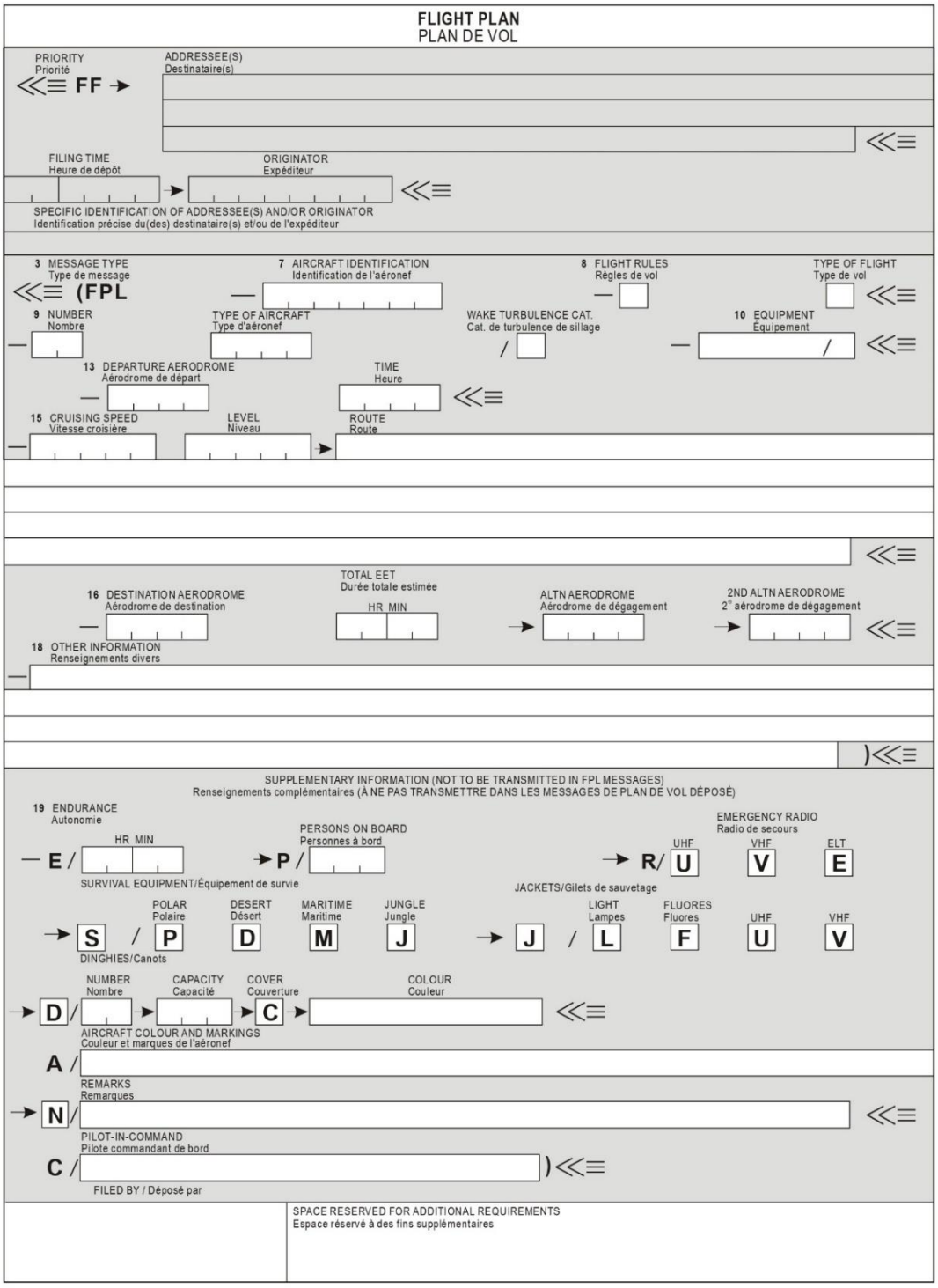
Terrain attribute	Mandatory/Optional
Area of coverage	Mandatory
Data originator identifier	Mandatory
Data source identifier	Mandatory
Acquisition method	Mandatory
Post spacing	Mandatory
Horizontal reference system	Mandatory
Horizontal resolution	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Elevation	Mandatory
Elevation reference	Mandatory
Vertical reference system	Mandatory
Vertical resolution	Mandatory
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Surface type	Optional
Recorded surface	Mandatory
Penetration level	Optional
Known variations	Optional
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory

Table A7-2. Obstacle attributes

Obstacle attribute	Mandatory/Optional
Area of coverage	Mandatory
Data originator identifier	Mandatory
Data source identifier	Mandatory
Obstacle identifier	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Horizontal resolution	Mandatory
Horizontal extent	Mandatory
Horizontal reference system	Mandatory
Elevation	Mandatory
Height	Optional
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Vertical resolution	Mandatory
Vertical reference system	Mandatory
Obstacle type	Mandatory
Geometry type	Mandatory
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory
Operations	Optional
Effectivity	Optional
Lighting	Mandatory

APPENDEX8: FLIGHT PLAN

1. **ICAO model flight plan form**



2.Instructions for the completion of the flight plan form

2.1 General

Adhere closely to the prescribed formats and manner of specifying data.

Commence inserting data in the first space provided. Where excess space is available, leave unused spaces blank. *Insert* all clock times in *4 figures UTC*.

Insert all estimated elapsed times in 4 figures (hours and minutes).

Shaded area preceding Item 3 — to be completed by ATS and COM services, unless the responsibility for originatingflight plan messages has been delegated.

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

2.2 Instructions for insertion of ATS data

Complete Items 7 to 18 as indicated hereunder.

Complete also Item 19 as indicated hereunder, when so required by the appropriate ATS authority or when otherwisedeemed necessary.

Note 1. — Item numbers on the form are not consecutive, as they correspond to Field Type numbers in ATS messages.

Note 2. — Air traffic services data systems may impose communications or processing constraints on information infiled flight plans. Possible constraints may, for example, be limits with regard to item length, number of elements in the route item or total flight plan length. Significant constraints are documented in the relevant Aeronautical Information Publication.

ITEM 7: AIRCRAFT IDENTIFICATION (MAXIMUM 7 CHARACTERS)

INSERT one of the following aircraft identifications, not exceeding 7 alphanumeric characters and without hyphens orsymbols:

a) the ICAO designator for the aircraft operating agency followed by the flight identification (e.g. KLM511, NGA213, JTR25) when in radiotelephony the call sign to be used by the aircraft will consist of the ICAO telephony designator for the operating agency followed by the flight identification (e.g. KLM511, NIGERIA 213, JESTER 25);

OR b) the nationality or common mark and registration mark of the aircraft (e.g. EIAKO, 4XBCD, N2567GA), when:

1) in radiotelephony the call sign to be used by the aircraft will consist of this identification alone (e.g. CGAJS), or preceded by the ICAO telephony designator for the aircraft operating agency (e.g. BLIZZARDCGAJS);

2) the aircraft is not equipped with radio.

Note 1.— Standards for nationality, common and registration marks to be used are contained in Annex 7, section 3.

Note 2.— Provisions for the use of radiotelephony call signs are contained in Annex 10, Volume II, Chapter 5. ICAO designators and telephony designators for aircraft operating agencies are contained in Doc 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.

ITEM 8: FLIGHT RULES AND TYPE OFFLIGHT (ONE OR TWO CHARACTERS)

Flight rules

INSERT one of the following letters to denote the category of flight rules with which the pilot intends to comply:

I if it is intended that the entire flight will be operated under the IFR
V if it is intended that the entire flight will be operated under the VFR
Y if the flight initially will be operated under the IFR, followed by one or more subsequent changes of flightrules or
Z if the flight initially will be operated under the VFR, followed by one or more subsequent changes of flightrules

Specify in Item 15 the point or points at which a change of flight rules is planned.

Type of flight

INSERT one of the following letters to denote the type of flight when so required by the appropriate ATS authority:

S if scheduled air service
N if non-scheduled air transport operation
G if general aviation
M if military
X if other than any of the defined categories above.

Specify status of a flight following the indicator STS in Item 18, or when necessary to denote other reasons for specific handling by ATS, indicate the reason following the indicator RMK in Item 18.

ITEM 9: NUMBER AND TYPE OF AIRCRAFTAND WAKE TURBULENCE CATEGORY

Number of aircraft (1 or 2 characters)

INSERT the number of aircraft, if more than one.

Type of aircraft (2 to 4 characters)

INSERT the appropriate designator as specified in Doc 8643, *Aircraft Type Designators*,

OR, if no such designator has been assigned, or in case of formation flights comprising more than one type,

INSERT ZZZZ, and *SPECIFY* in Item 18, the (numbers and) type(s) of aircraft preceded by TYP/ .

Wake turbulence category (1 character)

INSERT an oblique stroke followed by one of the following letters to indicate the wake turbulence category of the aircraft:

J — SUPER, to indicate an aircraft type specified as such in Doc 8643, *Aircraft Type Designators*;

H — HEAVY, to indicate an aircraft type with a maximum certificated take-off mass of 136 000 kg or more,with the exception of aircraft types listed in Doc 8643 in the SUPER (J) category;

M — MEDIUM, to indicate an aircraft type with a maximum certificated take-off mass of less than136 000 kg but more than 7 000 kg;

L — LIGHT, to indicate an aircraft type with a maximum certificated take-off mass of 7 000 kg or less.

ITEM 10: EQUIPMENT AND CAPABILITIES

Capabilities comprise the following elements:

a) presence of relevant serviceable equipment on board the aircraft;

b) equipment and capabilities commensurate with flight crew qualifications; and

c) where applicable, authorization from the appropriate authority.

Radiocommunication, navigation and approach aid equipment and capabilities

INSERT one letter as follows:

N if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable,

OR S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable *(see Note 1),*

AND/OR

INSERT one or more of the following letters to indicate the serviceable COM/NAV/approach aid equipment and capabilities available:

A	GBAS landing system B LPV (APV with SBAS)C LORAN C
D	DME
E1	FMC WPR ACARSE2 D-FIS ACARS
E3	PDC ACARSF ADF
G	GNSS. If any portion of the flight is planned to be conducted under IFR, it refers to GNSS receivers that comply with the requirements of Annex 10,Volume I *(See Note 2)*
H	HF RTF
I	Inertial Navigation
J1	CPDLC ATN VDL Mode 2 *(See Note 3)*
J2	CPDLC FANS 1/AHFDL
J3	CPDLC FANS 1/A VDL Mode A
J4	CPDLC FANS 1/A VDL Mode 2
J5	CPDLC FANS 1/A SATCOM (INMARSAT)
J6	CPDLC FANS 1/A SATCOM (MTSAT)
J7	CPDLC FANS 1/A SATCOM (Iridium)
K	MLS
L	ILS
M1	ATC SATVOICE (INMARSAT)M2 ATC SATVOICE (MTSAT)
M3	ATC SATVOICE (Iridium)O VOR
P1	CPDLC RCP 400 *(See Note 7)*
P2	CPDLC RCP 240 *(See Note 7)*
P3	SATVOICE RCP 400 *(See Note 7)*
P4-P9	Reserved for RCP
R	PBN approved *(See Note 4)*
T	TACAN
U	UHF RTF
V	VHF RTF
W	RVSM approved
X	MNPS approved
Y	VHF with 8.33 kHz channel spacing capability
Z	Other equipment carried or othercapabilities *(See Note 5)*

Any alphanumeric characters not indicated above are reserved.

Note 1. — If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.

Note 2.— If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 followingthe indicator NAV/ and separated by a space.

Note 3.— See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard – DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.

Note 4.— If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific routesegment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).

Note 5.— If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.

Note 6. — Information on navigation capability is provided to ATC for clearance and routing purposes.

Note 7.— Guidance material on the application of performance-based communication, which prescribes RCP to anair traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

Surveillance equipment and capabilities

INSERT N if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable, *OR*

INSERT one or more of the following descriptors, to a maximum of 20 characters, to describe the serviceablesurveillance equipment and/or capabilities on board:

SSR Modes A and C

A Transponder — Mode A (4 digits — 4 096 codes)
C Transponder — Mode A (4 digits — 4 096 codes) and Mode C

SSR Mode S

E Transponder — Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B)capability
H Transponder — Mode S, including aircraft identification, pressure-altitude and enhanced surveillancecapability
I Transponder — Mode S, including aircraft identification, but no pressure-altitude capability
L Transponder — Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) andenhanced surveillance capability
P Transponder — Mode S, including pressure-altitude, but no aircraft identification capability
S Transponder — Mode S, including both pressure altitude and aircraft identification capability
X Transponder — Mode S with neither aircraft identification nor pressure-altitude capability

Note. — Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a ModeS transponder.

ADS-B

B1 ADS-B with dedicated 1 090 MHz ADS-B “out” capability
B2 ADS-B with dedicated 1 090 MHz ADS-B “out” and “in” capability
U1 ADS-B “out” capability using UAT
U2 ADS-B “out” and “in” capability using UAT
V1 ADS-B “out” capability using VDL Mode 4
V2 ADS-B “out” and “in” capability using VDL Mode 4

ADS-C

D1 ADS-C with FANS 1/A capabilities
G1 ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.
Example: ADE3RV/HB2U2V2G1

Note 1.— The RSP specification(s), if applicable, will be listed in Item 18 following the indicator SUR/. Guidance material on the application of performance-based surveillance, which prescribes RSP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual *(Doc 9869)*

Note 2.— Additional surveillance equipment or capabilities will be listed in Item 18 following the indicator SUR/, asrequired by the appropriate ATS authority.

ITEM 13: DEPARTURE AERODROMEAND TIME (8 CHARACTERS)

INSERT the ICAO four-letter location indicator of the departure aerodrome as specified in Doc 7910, *LocationIndicators*,

OR, if no location indicator has been assigned,

INSERT ZZZZ and *SPECIFY*, in Item 18, the name and location of the aerodrome preceded by DEP/ ,

OR, the first point of the route or the marker radio beacon preceded by DEP/…, if the aircraft has not taken off fromthe aerodrome,

OR, if the flight plan is received from an aircraft in flight,

INSERT AFIL, and *SPECIFY*, in Item 18, the ICAO four-letter location indicator of the location of the ATS unit fromwhich supplementary flight plan data can be obtained, preceded by DEP/.

THEN, WITHOUT A SPACE,

INSERT for a flight plan submitted before departure, the estimated off-block time (EOBT),

OR, for a flight plan received from an aircraft in flight, the actual or estimated time over the first point of the routeto which the flight plan applies.

ITEM 15: ROUTE

INSERT the *first cruising speed* as in (a) and the *first cruising level* as in (b), without a space between them.

THEN, following the arrow, *INSERT* the route description as in (c).

(a) Cruising speed (maximum 5 characters)

INSERT the *True airspeed* for the first or the whole cruising portion of the flight, in terms of:

Kilometers per hour, expressed as K followed by 4 figures (e.g.

K0830), *orKnots,* expressed as N followed by 4 figures (e.g.

N0485), *or*

True Mach number, when so prescribed by the appropriate ATS authority, to the nearest hundredth of unit Mach,expressed as M followed by 3 figures (e.g. M082).

(b) Cruising level (maximum 5 characters)

INSERT the planned cruising level for the first or the whole portion of the route to be flown, in terms of:

Flight level, expressed as F followed by 3 figures (e.g. F085; F330), *or*

**Standard metric level in tens of meters,* expressed as S followed by 4 figures (e.g. S1130), *or*

Altitude in hundreds of feet, expressed as A followed by 3 figures (e.g. A045; A100), *orAltitude in tens of meters,* expressed as M followed by 4 figures (e.g. M0840), *or*

for uncontrolled VFR flights, the letters VFR.

(c) Route (including changes of speed, level and/or flight rules)

Flights along designated ATS routes

INSERT, if the departure aerodrome is located on or connected to the ATS route, the designator of the first ATS route,

OR, if the departure aerodrome is not on or connected to the ATS route, the letters DCT followed by the point ofjoining the first ATS route, followed by the designator of the ATS route.

THEN

INSERT each point at which either a change of speed and/or level is planned to commence, or a change of ATS route,and/or a change of flight rules is planned,

Note. — When a transition is planned between a lower and upper ATS route and the routes are oriented in the samedirection, the point of transition need not be inserted.

FOLLOWED IN EACH CASE

by the designator of the next ATS route segment, even if the same as the previous one,

OR by DCT, if the flight to the next point will be outside a designated route, unless both points are defined bygeographical coordinates.

Flights outside designated ATS routes

INSERT points normally not more than 30 minutes flying time or 370 km (200 NM) apart, including each point at whicha change of speed or level, a change of track, or a change of flight rules is planned.

OR, when required by appropriate ATS authority(ies),

DEFINE the track of flights operating predominantly in an east-west direction between 70°N and 70°S by reference to significant points formed by the intersections of half or whole degrees of latitude with meridians spaced at

* When so prescribed by the appropriate ATS authorities.

intervals of 10 degrees of longitude. For flights operating in areas outside those latitudes the tracks shall be defined by significant points formed by the intersection of parallels of latitude with meridians normally spacedat 20 degrees of longitude. The distance between significant points shall, as far as possible, not exceed one hour's flight time. Additional significant points shall be established as deemed necessary.

For flights operating predominantly in a north-south direction, define tracks by reference to significant pointsformed by the intersection of whole degrees of longitude with specified parallels of latitude which are spacedat 5 degrees.

INSERT DCT between successive points unless both points are defined by geographical coordinates or by bearing anddistance.

USE ONLY the conventions in (1) to (5) below and *SEPARATE* each sub-item by a space.

(1) | ATS route (2 to 7 characters) |

The coded designator assigned to the route or route segment including, where appropriate, the coded designator assignedto the standard departure or arrival route (e.g. BCN1, BI, R14, UB10, KODAP2A).

Note. — Provisions for the application of route designators are contained in Annex 11, APPENDIX 1.

(2) | Significant point (2 to 11 characters) |

The coded designator (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY),

or, if no coded designator has been assigned, one of the following ways:

— *Degrees only* (7 characters):

2 figures describing latitude in degrees, followed by "N" (North) or "S" (South), followed by 3 figures describing longitude in degrees, followed by "E" (East) or "W" (West). Make up the correct number of figures,where necessary, by insertion of zeros, e.g. 46N078W.

— *Degrees and minutes* (11 characters):

4 figures describing latitude in degrees and tens and units of minutes followed by "N" (North) or "S" (South),followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by "E" (East) or"W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W.

— *Bearing and distance from a reference point*:

The identification of the reference point, followed by the bearing from the point in the form of 3 figures givingdegrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. Inareas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic isimpractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion ofzeros — e.g. a point 180° magnetic at a distance of 40 nautical miles from VOR "DUB" should be expressed asDUB180040.

(3) Change of speed or level (maximum 21 characters)

The point at which a change of speed (5% TAS or 0.01 Mach or more) or a change of level is planned to commence, expressed exactly as in (2) above, followed by an *oblique stroke and both the cruising speed and the cruising level*, expressed exactly as in (a) and (b) above, without a space between them, *even when only one of these quantities will be changed*.

Examples: LN/N0284A045
MAY/N0305Fl80
HADDY/N0420F330
4602N07805W/N0500F350
46N078W/M082F330
DUB180040/N0350M0840

(4) Change of flight rules (maximum 3 characters)

The point at which the change of flight rules is planned, expressed exactly as in (2) or (3) above as appropriate, *followedby a space and one of the following*:

VFR if from IFR to VFR
IFR if from VFR to IFR

Examples: LN VFR
LN/N0284A050 IFR

(5) Cruise climb (maximum 28 characters)

The letter C followed by an *oblique stroke*; *THEN the point at which cruise climb is planned to start*, expressed exactly asin (2) above, *followed by an oblique stroke; THEN the speed to be maintained during cruise climb*, expressed exactly asin (a) above, followed by *the two levels defining the layer to be occupied during cruise climb*, each level expressed exactly as in (b) above, *or the level above which cruise climb is planned followed by the letters PLUS*, without a space between them.

Examples: C/48N050W/M082F290F350
C/48N050W/M082F290PLUS
C/52N050W/M220F580F620.

ITEM 16: DESTINATION AERODROME ANDTOTAL ESTIMATED ELAPSED TIME, DESTINATION ALTERNATE AERODROME(S)

Destination aerodrome and total estimated elapsed time (8 characters)

INSERT the ICAO four-letter location indicator of the destination aerodrome as specified in Doc 7910, *LocationIndicators*,

OR, if no location indicator has been assigned,

INSERT ZZZZ and *SPECIFY* in Item 18 the name and location of the aerodrome, preceded by DEST/ .

THEN WITHOUT A SPACE

INSERT the total estimated elapsed time.

Note. — For a flight plan received from an aircraft in flight, the total estimated elapsed time is the estimated timefrom the first point of the route to which the flight plan applies to the termination point of the flight plan.

Destination alternate aerodrome(s)

INSERT the ICAO four-letter location indicator(s) of not more than two destination alternate aerodromes, as specifiedin Doc 7910, *Location Indicators*, separated by a space,

OR, if no location indicator has been assigned to the destination alternate aerodrome(s),

INSERT ZZZZ and SPECIFY in Item 18 the name and location of the destination alternate aerodrome(s), preceded byALTN/.

ITEM 18: OTHER INFORMATION

Note. — Use of indicators not included under this item may result in data being rejected, processed incorrectly or lost.

Hyphens or oblique strokes should only be used as prescribed below.

INSERT 0 (zero) if no other information,

OR, any other necessary information in the sequence shown hereunder, in the form of the appropriate indicatorselected from those defined hereunder followed by an oblique stroke and the information to be recorded:

STS/ Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

ALTRV: for a flight operated in accordance with an altitude reservation;
ATFMX: for a flight approved for exemption from ATFM measures by the appropriate ATS authority;
FFR: fire-fighting;
FLTCK: flight check for calibration of navaids;
HAZMAT: for a flight carrying hazardous material;
HEAD: a flight with Head of State status;
HOSP: for a medical flight declared by medical authorities;
HUM: for a flight operating on a humanitarian mission;
MARSA: for a flight for which a military entity assumes responsibility for separation of military aircraft;
MEDEVAC: for a life critical medical emergency evacuation;
NONRVSM: for a non-RVSM capable flight intending to operate in RVSM airspace;
SAR: for a flight engaged in a search and rescue mission; and
STATE: for a flight engaged in military, customs or police services.

Other reasons for special handling by ATS shall be denoted under the designator RMK/.

PBN/ Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight,up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

	RNAV SPECIFICATIONS
A1	RNAV 10 (RNP 10)
B1	RNAV 5 all permitted sensors
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME
B4	RNAV 5 VOR/DME
B5	RNAV 5 INS or IRS
B6	RNAV 5 LORANC
C1	RNAV 2 all permitted sensors
C2	RNAV 2 GNSS
C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 all permitted sensors
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU
	RNP SPECIFICATIONS
L1	RNP 4
O1	Basic RNP 1 all permitted sensors
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH
S2	RNP APCH with BARO-VNAV
T1	RNP AR APCH with RF (special authorization required)
T2	RNP AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

NAV/ Significant data related to navigation equipment, other than specified in PBN/, as required by the appropriate ATS authority. Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.

COM/ Indicate communication equipment and capabilities not specified in Item 10 a).
DAT/ Indicate data communication equipment and capabilities not specified in 10 a).

SUR/ Indicate surveillance equipment and capabilities not specified in Item 10 b). Indicate as many RSP specification(s) as apply to the flight, using designator(s) with no space. Multiple RSP specifications are separated by a space. Example: RSP180 RSP400.

DEP/ Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in therelevant Aeronautical Information Publication, indicate location as follows:
With 4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E”(East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11 characters).

OR, Bearing and distance from the nearest significant point, as follows:

The identification of the significant point followed by the bearing from the point in the form of 3 figures givingdegrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. Inareas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic isimpractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion ofzeros, e.g. a point of 180° magnetic at a distance of 40 nautical miles from VOR “DUB” should be expressed asDUB180040.

OR, The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken offfrom an aerodrome.

DEST/ Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance fromthe nearest significant point, as described under DEP/ above.

DOF/ The date of flight departure in a six-figure format (YYMMDD, where YY equals the year, MM equals the month and DD equals the day).

REG/ The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.

EET/ Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

Examples: EET/CAP0745 XYZ0830
EET/EINN0204

SEL/ SELCAL Code, for aircraft so equipped.

TYP/ Type(s) of aircraft, preceded if necessary without a space by number(s) of aircraft and separated by one space,if ZZZZ is inserted in Item 9.

Example: TYP/2F15 5F5 3B2

CODE/ Aircraft address (expressed in the form of an alphanumerical code of six hexadecimal characters) when required by the appropriate ATS authority. Example: “F00001” is the lowest aircraft address contained in thespecific block administered by ICAO.

DLE/ Enroute delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using four-figure time in hours and minutes (hhmm).

Example: DLE/MDG0030

OPR/ ICAO designator or name of the aircraft operating agency, if different from the aircraft identification in item 7.

ORGN/ The originator’s 8 letter AFTN address or other appropriate contact details, in cases where the originator of theflight plan may not be readily identified, as required by the appropriate ATS authority.

Note. — In some areas, flight plan reception centres may insert the ORGN/ identifier and originator’s AFTNaddress automatically.

PER/ Aircraft performance data, indicated by a single letter as specified in the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), *Volume I — Flight Procedures*, if so prescribed by the appropriate ATS authority.

ALTN/ Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance fromthe nearest significant point, as described in DEP/ above.

RALT/ ICAO four letter indicator(s) for en-route alternate(s), as specified in Doc 7910, *Location Indicators*, or name(s)of en-route alternate aerodrome(s), if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

TALT/ ICAO four letter indicator(s) for take-off alternate, as specified in Doc 7910, *Location Indicators*, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significantpoint, as described in DEP/ above.

RIF/ The route details to the revised destination aerodrome, followed by the ICAO four-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

Examples: RIF/DTA HEC KLAX
RIF/ESP G94 CLA YPPH

RMK/ Any other plain-language remarks when required by the appropriate ATS authority or deemed necessary.

ITEM 19: SUPPLEMENTARY INFORMATION

Endurance

After E/ *INSERT* a 4-figure group giving the fuel endurance in hours and minutes.

Persons on board

After P/ *INSERT* the total number of persons (passengers and crew) on board, when required by theappropriate ATS authority. *INSERT* TBN (to be notified) if the total number of persons is not knownat the time of filing.

Emergency and survival equipment

R/ (RADIO) *CROSS OUT* U if UHF on frequency 243.0 MHz is not available. *CROSS OUT* V if VHF on frequency 121.5 MHz is not available. *CROSS OUT* E if emergency locator transmitter (ELT) is not available.

S/ (SURVIVAL EQUIPMENT) *CROSS OUT* all indicators if survival equipment is not carried. *CROSS OUT* P if polar survivalequipment is not carried. *CROSS OUT* D if desert survival equipment is not carried. *CROSS OUT* M if maritime survival equipment is not carried. *CROSS OUT* J if jungle survival equipment is not carried.

J/ (JACKETS) *CROSS OUT* all indicators if life jackets are not carried. *CROSS OUT* L if life jackets are not equipped with lights. *CROSS OUT* F if life jackets are not equipped with fluorescein. *CROSS OUT* Uor V or both as in R/ above to indicate radio capability of jackets, if any.

D/ (DINGHIES) (NUMBER) *CROSS OUT* indicators D and C if no dinghies are carried, or *INSERT* number of dinghies carried; and

(CAPACITY) *INSERT* total capacity, in persons, of all dinghies carried; and

(COVER) *CROSS OUT* indicator C if dinghies are not covered; and

(COLOUR) *INSERT* colour of dinghies if carried.

A/ (AIRCRAFT COLOUR AND MARKINGS) *INSERT* colour of aircraft and significant markings.

N/ (REMARKS) *CROSS OUT* indicator N if no remarks, or *INDICATE* any other survival equipment carried and anyother remarks regarding survival equipment.

C/ (PILOT) *INSERT* name of pilot-in-command.

2.3 Filed by

INSERT the name of the unit, agency or person filing the flight plan.

2.4 Acceptance of the flight plan

Indicate acceptance of the flight plan in the manner prescribed by the appropriate ATS authority.

2.5 Instructions for insertion of COM data

Items to be completed

COMPLETE the top two shaded lines of the form, and *COMPLETE* the third shaded line only when necessary, inaccordance with the provisions in PANS-ATM, Chapter 11, 11.2.1.2, unless ATS prescribes otherwise.

3.Instructions for the transmission of afiled flight plan (FPL) message

Correction of obvious errors

Unless otherwise prescribed, *CORRECT* obvious format errors and/or omissions (i.e. oblique strokes) to ensure adherenceas specified in Section 2.

Items to be transmitted

TRANSMIT items as indicated hereunder, unless otherwise prescribed:

a) the items in the shaded lines, above Item 3;

b) commencing with <<= (FPL of Item 3:

all symbols and data in the unshaded boxes down to the) <<□ at the end of Item 18,

additional alignment functions as necessary to prevent the inclusion of more than 69 characters in any line of Items 15 or 18. The alignment function is to be inserted only in lieu of a space so as not to break up a group ofdata,

letter shifts and figure shifts (not preprinted on the form) as necessary;

c) the AFTN Ending, as described below:

End-of-Text Signal

a) one LETTER SHIFT

b) two CARRIAGE RETURNS, one LINE FEED

Page-feed Sequence
Seven LINE FEEDS
End-of-Message Signal
Four of the letter N.

5. Example of a completed flight plan form

FLIGHT PLAN
PLAN DE VOL

PRIORITY / Priorité: FF
ADDRESSEE(S) / Destinataire(s): EHAA ZQZX EBURZQZX EDDYZQZX LFFFZQZX
LFRR ZQZX LFBBZQZX LECMZQZX LPPCZQZX

FILING TIME / Heure de dépôt: 1908
ORIGINATOR / Expéditeur: EHAMZPZX

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR
Identification précise du(des) destinataire(s) et/ou de l'expéditeur

3 MESSAGE TYPE / Type de message: (FPL
7 AIRCRAFT IDENTIFICATION / Identification de l'aéronef: ACF402
8 FLIGHT RULES / Règles de vol: I
TYPE OF FLIGHT / Type de vol: N
9 NUMBER / Nombre:
TYPE OF AIRCRAFT / Type d'aéronef: EA30
WAKE TURBULENCE CAT. / Cat. de turbulence de sillage: H
10 EQUIPMENT / Équipement: S /C
13 DEPARTURE AERODROME / Aérodrome de départ: EHAM
TIME / Heure: 0940
15 CRUISING SPEED / Vitesse croisière: K0830
LEVEL / Niveau: F290
ROUTE / Route: LEK2B LEK UA6 XMM/MO78 F330
UA6 PON URION CHW UA5 NTS DCT 4611N00412W
DCT STG UA5 FTM FATIM1A

TOTAL EET / Durée totale estimée
16 DESTINATION AERODROME / Aérodrome de destination: LPPT
HR MIN: 0230
ALTN AERODROME / Aérodrome de dégagement: LPPR
2ND ALTN AERODROME / 2e aérodrome de dégagement:
18 OTHER INFORMATION / Renseignements divers
REG/FBVGA SEL/EJFL
EET/LPPC0158

SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)
Renseignements complémentaires (À NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL DÉPOSÉ)

19 ENDURANCE / Autonomie: HR MIN 0345
PERSONS ON BOARD / Personnes à bord: P/300
EMERGENCY RADIO / Radio de secours: R/U (UHF) V (VHF) E (ELT)
SURVIVAL EQUIPMENT/Équipement de survie: S / (POLAR/Polaire) (DESERT/Désert) M (MARITIME/Maritime) (JUNGLE/Jungle)
JACKETS/Gilets de sauvetage: J / L (LIGHT/Lampes) F (FLUORES/Fluores) (UHF) (VHF)
DINGHIES/Canots: D/ NUMBER/Nombre 11 CAPACITY/Capacité 330 COVER/Couverture C COLOUR/Couleur YELLOW
AIRCRAFT COLOUR AND MARKINGS / Couleur et marques de l'aéronef: A/WHITE
REMARKS / Remarques: N/
PILOT-IN-COMMAND / Pilote commandant de bord: C/DENKE
FILED BY / Déposé par: AIR CHARTER INT.
SPACE RESERVED FOR ADDITIONAL REQUIREMENTS / Espace réservé à des fins supplémentaires

APPENDEX 9: LIST OF BAHRAIN INTERNAL RELATED PROCEDURES:

1) Process maps:

#	Process Number	Process Description
1	ATMD-AIM-BP-1.1.1	Management of received NOTAM
2	ATMD-AIM-BP-1.1.2	Management of received NOTAM Checklist
3	ATMD-AIM-BP-1.2.1	Origination of NOTAM
4	ATMD-AIM-BP-1.3.1	Origination of monthly NOTAM checklist
5	ATMD-AIM-BP-2.1.1	Management of Flight plan (FPL)
6	ATMD-AIM-BP-3.1.1	Management of e-AIP
7	ATMD-AIM-BP-5.1.1	AIM Technical Library
8	ATMD-AIM-BP-6.1.1	ICAO Correspondence
9	ATMD-AIM-BP-7.1.1	Section Meetings
10	ATMD-AIM-BP-8.1.1	Management of NOF Database
11	ATMD-AIM-BP-8.1.2	Updating System Static Data
12	ATMD-AIM-BP-8.1.3	Management of Data Backup
13	ATMD-AIM-BP-8.1.4	Updating IFPS Database
14	ATMD-AIM-BP-9.1.1	Annual Assessment
15	ATMD-ATMD-SP-2.2.1	Arrangement of Trainings

2) Operational Instructions:

#	Operational Instructions	Procedure Description
1	01/22	Abnormal Procedure when FPL automation system falls down
2	02/22	Abnormal Procedure when NTM automation system falls down
3	03/22	NOTAM Origination
4	04/22	Hard Copy Flight Plan (FPL)
5	05/22	Hard Copy Handover Log
6	01/23	NOTAM Summary Procedure
7	02/23	SNOWTAM Procedure
8	01/24	Procedure for IFPS Failure
9	02/24	Issuing NOTAM Briefing