Civil Aviation Authority

Aeronautical Data Quality – Guidance for the provision and maintenance of aeronautical data and aeronautical information in UK Aeronautical Information Products

CAP 1054

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Revision History

Edition 1 **June 2015**

CAP 1054 was first published in 2015 to notify United Kingdom policy and provide guidance for the origination, management, transmission and distribution of aeronautical data and aeronautical information published in the Integrated Aeronautical Information Package (IAIP).

Edition 2 **January 2022**

CAP 1054 was fundamentally revised between 2019-2021 to reflect all relevant policy decisions made in relation to the implementation of the ADQ IR (EU No. 73/2010) in the UK, the adoption of Amendment 40, 41 and 42 to ICAO Annex 15 and the implementation of UK Reg (EU) 2017/373 (including amendments effective on 27th January 2022).

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Foreword

Civil Aviation Authority (CAA) Civil Aviation Publications (CAPs) are based upon national legislation and non-legislative regulatory material, such as ICAO Standards and Recommended Practices. They are published in order to provide UK industry with:

a) guidance and clarification on the means of achieving compliance with global, and UK regulatory requirements, and where applicable:

b) details of any additional UK national requirements, and

c) Additional details regarding procedures and administrative processes to complement the applicable UK Regulations (and the Acceptable Means of Compliance and Guidance Material to the Regulations).

In publishing CAPs, the CAA satisfies the obligations placed upon it by the Transport Act 2000[1], Chapter 1 Article 2 'CAA's general duty', which in paragraph 2(a) requires the CAA to exercise its functions under the Act in the manner it thinks best calculated, to further the interests of operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them. The only interests to be considered under subsection (2)(a) are interests regarding the range, availability, continuity, cost, and quality of air traffic services.

Publication of CAPs additionally satisfies the requirements set out by the Civil Aviation Authority (Chicago Convention) Directions 2007[2] to ensure that it acts consistently with the obligations placed on the UK under the Chicago Convention. The CAA is obliged to consider whether it is necessary to amend United Kingdom aviation legislation to ensure appropriate implementation of an ICAO provision.

Where (a) the CAA considers it inappropriate to transpose an ICAO provision into domestic legislation and (b) the CAA has discretionary power to enforce the requirements of such a provision through a certificate, licence, or other means of approval, the Civil Aviation Authority (Chicago Convention) Directions 2007 obliges the CAA to develop and publish such requirements as are necessary to implement the ICAO provision and shall ensure that it is able to verify adherence to those requirements.

CAPs are subject to periodic revision to take account of changes to source regulatory material, feedback from industry, and recognised best practice. CAP 1054 provides applicable guidance and clarification relating to – and is to be read in conjunction with - the regulatory material referenced below. ***Non-inclusion of source regulatory material within this CAP does not preclude the end user from either the need to be aware of, or the need to comply with, the requirements contained within the source regulatory materials unless otherwise exempted from those requirements.***

It is the policy of the UK government that, unless a Difference (from an ICAO requirement) has been established, compliance with relevant international (i.e., ICAO and applicable equivalents such as International Telecommunications Union) regulatory material is required to the extent mandated in law. Additionally, compliance with national requirements that are

[1] http://www.legislation.gov.uk/ukpga/2000/38/contents or http://www.legislation.gov.uk/ukpga/2000/38/data.pdf

[2] https://webarchive.nationalarchives.gov.uk/20100422174722/http://www.caa.co.uk/docs/286/CAA(ChicagoConvention)Directions2007(asamended).pdf

not addressed by international regulations is also required.

The words 'must', 'shall' and 'will' indicate that compliance with applicable regulatory requirements is necessary. In the case of Acceptable Means of Compliance, the word 'should' indicates that compliance is required, unless complying with a CAA approved alternative means of compliance.

Regulatory References:

CAP 1054 is published to assist all parties involved in the data chain, understanding of, and compliance with the requirements pertaining to origination, management, transmission and distribution of aeronautical data and aeronautical information published in Aeronautical Information Publications laid down in:

ICAO:

- Annex 15 to the Convention on International Civil Aviation – Aeronautical Information Services (ICAO Annex 15)
- Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM)
- Annex 4 to the Convention on International Civil Aviation – Aeronautical Charts (ICAO Annex 4)

UK/EUROCONTROL/EUROCAE:

- UK Regulation (EU) No 73/2010[3] as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky ('**ADQ IR'**)
- UK Regulation (EU) No 2017/373 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight ('**ATM IR'**)
- UK Regulation (EU) No 139/2014 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, laying down requirements and administrative procedures related to aerodromes ('**ADR IR'**)
- EUROCONTROL Guidelines Supporting the Implementation of Aeronautical Information Requirements ("the AIR Guide") – Edition 1.0 (7 Dec 2020)
- EUROCONTROL Guidelines Operating Procedures for AIS Dynamic Data (OPADD) – Edition 4.1 (7 Dec 2020)
- EUROCONTROL Specification for the Electronic Aeronautical Information Publication (eAIP) – Edition 3.0 (30 November 2021)

[3] To be replaced in January 2022 by the Data and Data Quality requirements which will be included in UK Reg (EU) 2017/373 and UK Reg (EU) No. 139/2014

- EUROCONTROL Specification for the Origination of Aeronautical Data: Guidance Material (DO) – Edition 2.0 (16 December 2021)
- EUROCONTROL Specification for Aeronautical Information Exchange (AIX) – Edition 1.0 (14 Dec 2012)
- EUROCONTROL Terrain and Obstacle Data Manual ('TOD Manual') – Edition 3.0 (4 May 2021)
- EUROCONTROL Guidelines on the Implementation of Safety Support Assessment for AIS – Edition 1.0 (7 Dec 2020)
- EUROCONTROL 'Guidelines for the provision of Metadata to support the Exchange of Aeronautical Data' – Edition 1.0 (28 November 2019)
- CAA Publication CAP 1732 – Aerodrome Survey Guidance
- CAA Publication CAP 232 – Aerodrome Survey Information[4]
- CAA Publication CAP 738 – Aerodrome Safeguarding
- CAA Publication CAP 779 – Regulation of Aeronautical Information Management Services
- CAA Publication CAP 785 - Approval Requirements for Instrument Flight Procedures for use in UK Airspace
- CAA Publication CAP 1616 - Airspace change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information
- CAA Publication CAP 722C Unmanned Aircraft Systems – UK Airspace Restrictions
- EUROCAE ED-76A Standards for Processing Aeronautical Data

[4] Only applicable to aerodromes which are not in the scope of the 'ADQ' requirements. All other aerodromes are expected to achieve full compliance with CAP 1732 by Dec 2023.

Glossary of terms and recognised acronyms

In CAP 1054, where a term is used, which is defined by UK Regulation (EU) 2017/373, by another UK Regulation, or by another CAA Publication (CAP) that definition will apply unless:

- the contrary is indicated; or
- there is a different definition in the Air Navigation Order.

The terms in the table below have been listed for convenience or have been defined to avoid ambiguity or misunderstanding, or to provide definition of words or phrases which have specific meanings within this document. In some cases, they may be slight modifications of definitions in other documents.

Note: Some of the terms defined below may not be used in CAP 1054 but may be used in the UK in relation to aeronautical information products or services and as such have also been included for convenience and for general reference.

Aeronautical Chart	A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.
Aeronautical Information (AI)	Information resulting from the assembly, analysis, and formatting of aeronautical data.
AIP Sponsor	The person nominated by the Authorised Source (party) to provide data to the UK AISP. The Authorised Source may nominate one or more individuals as AIP Sponsors and the Authorised Source (person) may act as the AIP Sponsor. See the definition of “Authorised Source”.
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.
UK Aeronautical Information Service Provider (UK AISP)	The Air Navigation Service Provider (NATS (En Route) plc) certified by the CAA to provide the UK Aeronautical Information Service.
Air Navigation Service Provider (ANSP)	Any public or private entity providing air navigation services for general air traffic.

Air Traffic Management	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
ATS Surveillance Service	Term used to indicate a service provided directly by means of an ATS surveillance system.
Aurora	The Aeronautical Information Management System used by the UK AISP to receive, process, publish and store aeronautical data and aeronautical information.
Aurora Data Originators Portal	An integral part of the Aurora AIM System providing a single interface between Authorised Sources (and their nominated AIP Sponsors) and the AISP.
Authorised Source	The party responsible for the provision of aeronautical data to AIS and the person (role) nominated to represent the organization, ultimately accountable for the provision and maintenance of aeronautical data and aeronautical information published by the organisation in the Aeronautical Information Products. Normally the Accountable Manager or a competent person formally appointed by the Accountable Manager is directly responsible for all aeronautical data activities and aeronautical information provision activities in the organisation. The Authorised Source can sign a Formal Arrangement with AIS on the provision of aeronautical data/information on behalf of the organization. The Authorised Source can nominate individuals (“AIP Sponsors”), who are responsible for submitting changes to AIS products within a clearly defined scope of authorised changes (data items).
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

Canopy	Bare Earth supplemented by vegetation height.
Constituents	Tangible objects such as hardware and intangible objects such as software upon which the interoperability of the EATMN depends. In context of the ADQIR, the constituents are those that specifically make up the systems for AIS.
Contour Line	A line on a map or chart connecting points of equal elevation
Culture	All man-made features constructed on the surface of the Earth, such as cities, railways, and canals.
Critical Data	ICAO integrity level equivalent to a Data Assurance Level of DAL 1.
Database (db)	One or more files of data so structured that appropriate applications may draw from the files and update them.
Data Chain	Describes all the elements of the Controlled and Harmonised Aeronautical Information Network from origination through to publication.
Data Item	A single attribute of a complete data set, which is allocated a value that defines its current status.
Data Origination	The creation of a new data item with its associated value, the modification of the value of an existing data item or the deletion of an existing data item.
Data Originator (DO)	Person or persons authorised to originate aeronautical data on behalf of the 'Authorised Source'.

Data Product	Data set or data set series that conforms to a data product specification.
Data Set Series	Collection of data sets sharing the same product specification
Declared Distances	The distances declared by the aerodrome authority for the purpose of application of the requirement of the Air Navigation (General) Regulations in respect of airplanes flying for the purpose of public transport.
Derived Data	Co-ordinate data selected through human interaction from source data that has been defined in WGS-84 rather than surveyed or calculated. For example: • Manually selected points along a line of longitude or latitude; • Manually selected points determined "by definition" (typical examples for such objects are restricted airspaces or danger areas.)
Digital Elevation Model (DEM)	The representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum. *Note.— Digital Terrain Model (DTM) is sometimes referred to as DEM*
Digital NOTAM	A data set that contains the information included in a NOTAM in a structured format which can be fully interpreted by an automated computer system without human interpretation.
Direct Electronic Connection	A digital connection between computer systems such that data may be transferred between them without manual interaction with the data itself (thus avoiding error prone copy/paste actions).
Electronic aeronautical chart display	An electronic device by which flight crews are enabled to execute, in a convenient and timely manner, route planning, route monitoring and navigation by displaying required information.

Ellipsoid height (geodetic height)	The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.
European Air Traffic Management Network (EATMN)	Network of constituents and systems that together form the interoperable functions of the Single European Sky.
Essential Data	ICAO integrity level equivalent to a Data Assurance Level of DAL 2.
Extensible Mark-up Language (XML)	A version of SGML that allows design of a customized mark-up language, used to allow for easy interchange of documents and data on the World Wide Web or between software components.
Feature Catalogue	Catalogue containing definitions and descriptions of the feature types, feature attributes, and feature associations occurring in one or more sets of geographic data, together with any feature operations that may be applied.
Feature Operation	Operation that every instance of a feature type may perform
Feature Relationship	Relationship that links instances of one feature type with instances of the same or a different feature type.
Format (data format)	A structure of data elements, records and files arranged to meet standards, specifications, or data quality requirements.
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.

Geospatial	Information that identifies where particular features are in relation to the earth's surface.
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. *Note.— In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months.*
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.
International Airport	Any airport designated by the UK 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.
Magnetic Variation	The angular difference between True North and Magnetic North. *Note: The value given indicates whether the angular difference is East or West of True North.*
Mean Sea Level (MSL)	The Sea Level halfway between the mean levels of high and low water.
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.
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.
Next Intended User	The entity that receives the aeronautical data or information from the aeronautical information service.
Notified Body	A body listed in the Official Journal of the European Union who has been appointed to carry out tasks pertaining to the assessment of conformity and declaration of suitability for use of constituents.
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 (Authorised Source)	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.
Period of Validity	The period between the date and time on which aeronautical information is published and the date and time on which the information ceases to be effective.
Portrayal	Presentation of information to humans
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.
Quality Control	Part of quality management focused on fulfilling quality requirements.
Procedure Design	The combination of aeronautical data with specific flight instructions to define instrument arrival and/or departure procedures that ensures adequate standards of flight safety.
Requirement	Need or expectation that is stated, generally implied or obligatory *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., regulatory requirement, product requirement, quality management requirement, customer requirement.* *Note 3.— A specified requirement is one which is stated, for example, in a document.* *Note 4.— Based on the qualifier, requirements can be generated by different interested parties.*
Resolution	A number of units or digits to which a measured or calculated value is expressed and used.
Routine Data	ICAO integrity level equivalent to a Data Assurance Level of DAL 3.
Safety Management System (SMS)	A safety management system (SMS) is an organised approach to managing safety including the necessary organisational structure, accountabilities, policies, and procedures.
Single European Sky (SES)	A legislative framework for European Aviation development.

Standard Generalised Mark-up Language (SGML)	A standardised mark-up language for describing the logical structure of a computer document.
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 Data	Data about the surface of the earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice, and snow obstacles;
Traceability	Ability to trace the history, application, or location of that which is under consideration. *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.
Verification	Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled. *Note.— The term "verified" is used to designate the corresponding status.*
Unified Modelling Language (UML)	UML is an ISO Standard for modeling objects and a refinement of earlier Oriented Design and Object-Oriented Analysis methodologies.

Chapter 1

Aeronautical Information Management in the UK

Background to Aeronautical Information Provision

Role of UK CAA and UK AIS and obligations placed on the United Kingdom under the Chicago Convention

1.1. The Transport Act 2000, and Air Navigation Directions 2017 (as amended) made under section 66 of that Act (the Directions) placed upon the UK Civil Aviation Authority (UK CAA) by the Secretary of State, require the provision of an Aeronautical Information Service (AIS) in accordance with the UK's international obligations (including Annex 15 of the International Convention on Civil Aviation), and any additional requirements the CAA may determine from time to time.

1.2. The Secretary of State for Transport has additionally given the CAA the Civil Aviation Authority (Chicago Convention) Directions 2007, in order to ensure that the CAA, when exercising its statutory functions, acts consistently with the obligations placed on the United Kingdom under the Chicago Convention (1944).

1.3. The CAA's Safety & Airspace Regulation Group (SARG) carries out the CAA's functions under the Directions, and the Aeronautical Information Management section undertakes this function in respect of the UK AIS on behalf of the CAA.

1.4. The Secretary of State has granted a licence to NATS (En Route) Plc (NATS for the purposes of this document) under Section 6(1) of the Transport Act 2000 authorising NATS to provide Air Traffic Services (ATS) in the United Kingdom and certain other international airspace for which the UK is responsible, including the Shanwick Oceanic area.

1.5. Under this licence NATS is required to make available Specified Services which include the UK Aeronautical Information Service (AIS), aeronautical chart production and data management tasks.

1.6. The objective of the AIS is to ensure the flow of accurate aeronautical information necessary for the safety, regularity, and efficiency of international air navigation. This is achieved by the publication and distribution of the Aeronautical Information Products the elements of which originate from the requirements specified in applicable European and international regulations including:

- ICAO Annex 15[5] – Standards and Recommended Practices for Aeronautical Information Services, and
- ICAO Annex 4 – Standards and Recommended practices for Aeronautical Charts.

[5] Amendment 40 to ICAO Annex 15 'Aeronautical Information Services' (Amdt 40) became applicable on the 8th November 2018 and introduced a completely new structure for the Annex and introduced a new Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM) to facilitate incorporation of aeronautical information management (AIM) requirements and changes to the technical content of Annex 15 to facilitate the transition from AIS to AIM.

European Commission Regulation (EU) No 73/2010

1.7. European Commission Regulation (EU) No 73/2010 lays down the requirements on the quality of aeronautical data and aeronautical information for the Single European Sky (SES). The regulation first entered into force on 27th January 2010 and was subsequently updated on 26 September 2014 as (EU) No. 1029/2014 to reflect updated document references and minor administrative changes and in the UK, by UK Statutory Instrument 2019 No. 459 which came into force on the EU exit day. The regulation is commonly referred to as the 'ADQ IR' and will be referred to as such throughout this CAP. ADQ IR supplements and strengthens the requirements of ICAO Annex 15.

1.8. The ADQ IR was first introduced to achieve aeronautical data and aeronautical information of sufficient quality as a key enabler of the European Air Traffic Management Network (EATMN) and takes into account the provisions of the Single European Sky (SES) Regulations and in particular the Interoperability Regulation[6].

Aeronautical Data Quality Requirements from 27th January 2022

1.9. Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, entered into EU law on 1 March 2017 and took effect on 2 January 2020 replacing Commission Implementing Regulations (EU) 1034/2011, 1035/2011 and 482/2008.

1.10. EU Regulation 2017/373 is based on ATM-related ICAO Standards, Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS).

1.11. UK Regulation (EU) 2017/373 was amended by the UK Statutory Instrument 2019 No. 459, which came into force on the EU Exit day.

1.12. Commission Regulation (EU) No. 139/2014 of February 2014 laying down requirements and administrative procedures related to aerodromes took effect on 31 December 2017.

1.13. UK Regulation (EU) 139/2014 was amended by the UK Statutory Instrument 2019 No. 645, which came into force on the EU Exit day.

1.14. Commission Implementing Regulation (EU) 2020/469 of 14 February 2020 amending Regulation (EU) No 923/2012, Regulation (EU) No 139/2014 and Regulation (EU) 2017/373 as regards requirements for air traffic management/air navigation services, design of airspace structures and data quality, runway safety and repealing Regulation (EC) No 73/2010 take effect from 27th January 2022.

1.15. Commission Delegated Regulation (EU) 2020/2148 of 8 October 2020 amending Regulation (EU) No 139/2014 as regards runway safety and aeronautical data take effect from 27th January 2022.

1.16. Regulations (EU) 2017/373 and (EU) 139/2014, as amended by (EU) 2020/469 and

[6] Was replaced by Regulation (EU) 2018/1139 the Basic Regulation from 11 September 2018. However, certain articles and annexes of 552/2004 continue to apply until the date of application of the relevant delegated acts covering the subject matter of the relevant provisions of Regulation (EC) No 552/2004, and in any case not later than 12 September 2023.

(EU) 2020/2148, include complete package of requirements on the quality of aeronautical data and aeronautical information and data quality and together fully replace (EU) 73/2010.

1.17. Similarly, in the UK regulatory environment UK Statutory Instrument 2021 No 1203 amended UK Reg (EU) 2017/373 and UK Reg (EU) No. 139/2014 and repealed UK Reg (EU) 73/2010, as it is not considered appropriate to maintain multiple regulations with overlapping requirements.

1.18. Therefore, the amended ATM IR and ADR IR provide all the provisions on the quality of aeronautical data and aeronautical information.

1.19. Until 27 Jan 2022, the ADQ IR remains in force.

1.20. This CAP provides guidance on the implementation of the ADQ IR, but a pragmatic approach has been taken to allow and support the smooth transition to the ATM IR and ADR IR amended by the Statutory Instrument 2021 No 1203.

1.21. The CAA recognizes that the term 'ADQ' is widely used and commonly understood, therefore, to maintain consistency and ensure smooth transition to the ATM IR and ADQ IR amended by the Statutory Instrument 2021 No 1203, all data quality requirements (whether included in the ADQ IR or in amended ATM IR and ADR IR) are referred to throughout this CAP as 'ADQ' requirements.

1.22. As well as providing guidance on meeting data quality requirements, CAP 1054 also includes CAA policy for the provision of aeronautical information. This ensures that all aspects of aeronautical information management have been considered by the CAA.

1.23. EUROCONTROL Guidelines Supporting the Implementation of Aeronautical Information Requirements ('the AIR Guide') should be used in conjunction with this document (for elements not covered by CAP 1054).

EUROCONTROL Specifications supporting compliance with 'ADQ' requirements

1.24. EUROCONTROL Specifications have been produced under the EUROCONTROL Regulatory and Advisory Framework and delivered as "possible means of compliance" with the relevant articles and annexes of the ADQ IR. They are not "Community Specifications" under Article 4 of the Interoperability Regulation, compliance with which would have resulted in a legal presumption of compliance with the ADQ IR itself. However, the CAA recognises the EUROCONTROL Specifications, and their use enables conformity with the relevant ADQ IR articles and annexes. Many EUROCONTROL Specifications created to support compliance with ADQ IR will be repealed on the 27th Jan 2022 (together with the revocation of the ADQ IR). Specifications supporting compliance with the amended UK Reg (EU) 2017/373 and UK Reg (EU) 139/2014 have been updated by EUROCONTROL to reflect the new regulatory environment.

1.25. The remaining EUROCONTROL Specifications are described below:

- EUROCONTROL Specification for the Origination of Aeronautical Data – Specification provides guidance and comprehensive requirements which should be met when originating aeronautical data in order to comply with requirements concerning the quality of aeronautical data and aeronautical information.
- EUROCONTROL Specification for EUROCONTROL Specification for Aeronautical Information Exchange – Specification enables the standardised encoding and the

distribution in digital format of the aeronautical information/data that is in the scope of ADQ IR and sets out the use of the Aeronautical Information Exchange Model (AIXM), proposing the use of the AIXM V5.1 to demonstrate compliance with data exchange requirements.

- EUROCONTROL Specification for the Electronic Aeronautical Information Publication (eAIP) – The Specification is designed to enable the harmonised visualisation of the contents of the AIP, which has to be provided by the national Aeronautical Information Services (AIS) in accordance with European legislation and the Convention on Civil Aviation, in electronic form. The objective is to define a specification that supports the interoperability and the quality of aeronautical data and aeronautical information aiming at visualising the electronic AIP in a consistent and harmonised way.

1.26. In addition to the Specifications listed above, EUROCONTROL also provided comprehensive guidance material, which is recommended to be used by all Stakeholders while implementing and/or demonstrating their compliance with aeronautical information and data quality requirements:

- EUROCONTROL Guidelines Supporting the Implementation of Aeronautical Information Requirements ('the AIR Guide') - This document supports affected Stakeholders in their transitioning to, and achieving compliance with, the amended regulations.
- EUROCONTROL Guidelines Operating Procedures AIS Dynamic Data (OPADD) - This document describes operating procedures for AIS dynamic data.
- EUROCONTROL Terrain and Obstacle Data Manual ('TOD Manual') - This Manual is intended to be used by those bodies involved in the origination, processing and provision of electronic terrain and obstacle data, from the point at which the need for origination is identified, through to the point when the State makes it available in accordance with the requirements of ICAO Annex 15.
- EUROCONTROL Guidelines on the Implementation of Safety Support Assessment for AIS/AIM - This document provides guidance to ensure a common understanding of requirements for the implementation of Safety Support Assessment applicable to AIS providers.
- EUROCONTROL 'Guidelines for the provision of Metadata to support the Exchange of Aeronautical Data' - This document provides guidance to ensure a common understanding of requirements for the collection and provision of metadata. It is mainly aimed at supporting aeronautical data originators and data providers in the upstream data supply chain.

1.27. EUROCONTROL Specifications and other guidelines supporting the harmonised application and implementation of data quality requirements are available to download from the Aeronautical Data Quality area of the EUROCONTROL web site[7].

UK 'ADQ' Compliance status (2020)

1.28. UK Aeronautical Information Products that fall within the scope of the 'ADQ' requirements (i.e., the UK Aeronautical Information Publication, Aeronautical Charts, NOTAM, and digital data sets) are provided in accordance with the 'ADQ' requirements and relevant ICAO Annex 4 and Annex 15 requirements (unless a difference has been filed to ICAO – as per UK AIP GEN 1.7).

1.29. In October 2018 NATS AIM implemented a new Aeronautical Information Management

[7] https://www.eurocontrol.int/service/aeronautical-data-and-information-quality

System called Aurora. The system is used by the UK AIS to receive, process, publish and store aeronautical data and aeronautical information in compliance with the 'ADQ' requirements.

1.30. The Aurora Data Originators Portal (an integral part of Aurora, providing the interface between the AISP and Authorised Sources) was opened on the 3rd Jan 2019. Since then, UK Aeronautical Information Product Change Request submissions have been made via the portal and received directly in the Aurora system. To gain access to the portal all Authorised Sources were required to sign Formal Arrangements with AIS. More information about Formal Arrangements, Authorised Sources and AIP Sponsors can be found in Chapter 3.

1.31. Following implementation of the Aurora system the UK AIS is considered to be fully 'ADQ' compliant by the CAA.

1.32. To assist Aerodrome Operators in preparing the necessary evidence to demonstrate their compliance during CAA regulatory oversight audits, the CAA created a 5-year Transition Plan. In summary:

- Aerodrome operators are required to deliver a CAP 1732 survey before the date of their next scheduled 5-year Instrument Flight Procedure (IFP) review, sooner if possible and not later than in December 2023.

  Note: Aerodrome operator should review their IFPs within 5 months following the 'ADQ' compliant survey, regardless of when the next 5-year review is scheduled.

- The CAA expects that all numerical data items that are within scope will be 'ADQ' compliant by December 2023.

Aeronautical Data Availability

1.33. The AISP shall ensure that the most current aeronautical information publication cycles applicable to AIP amendments and AIP supplements and AIC are made publicly available with submission cut-off dates.

1.34. Aeronautical data and aeronautical information should be delivered by AIP Sponsors to the AISP prior to their effective date and in accordance with the printing and publication schedules made available by the AISP.

Note: AIP publication schedules include an AIRAC "cut-off date" which is the last date by which Change Requests must be submitted. Where possible, Change Requests should be submitted ahead of the cut-off date. It is not possible to select a specific AIRAC after its' associated cut-off date.

1.35. The AISP shall ensure that all aeronautical data and aeronautical information within the AIP, AIP amendments and AIP supplements are made available to the users, as a minimum:

- in accordance with the publication requirements stated in ICAO Annex 15 and Doc 10066 (PANS-AIM).
- in a way that allows the content and format of the AIP, AIP amendments and supplements to be directly readable on a computer screen; and
- in accordance with the data exchange formats described in Chapter 5.

Chapter 2

Applicability of the data quality requirements

Data in the scope of the 'ADQ' requirements

2.1 Requirements on the quality of aeronautical data and aeronautical information apply to aeronautical data and aeronautical information with an ICAO integrity level and/or intended for use in IFR traffic and which are included in the following products made available by or through the UK AISP:

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

— aeronautical charts;

— NOTAM; and

— digital data sets.

2.2 Compliance with data quality requirements shall not inhibit the urgent distribution of aeronautical information necessary to ensure the safety of flight via NOTAM.

2.3 Aeronautical Information Circulars (AIC) are exempt from the data quality requirements.

2.4 Integrity requirements apply to all numerical and non-numerical data and information published in AIS products listed in paragraph 2.1 above.

2.5 The table included in Annex A identifies all data items published in the AIP which are in the scope of the data quality requirements (that includes requirements and UK-specific policies).

Note 1: All data items marked in Annex A as in the scope of data quality requirements, are considered as intended for use in IFR traffic.
Note 2: Annex A includes UK-specific input to the requirements included in the ICAO Data Catalogue.

Parties in the scope of the 'ADQ' requirements

2.6 Requirements on the quality of aeronautical data and aeronautical information apply to all parties involved in the upstream data chain (for data in the scope of the 'ADQ' requirements, as per paragraph 2.1 above) from the point of origination to the point of publication by AIS. This includes aerodrome operators, air navigation service providers, entities providing services for the origination and provision of survey data, airspace structure design and flight procedure design services and entities providing electronic terrain and obstacle data and any other parties originating, processing, or providing data in the scope of the data quality requirements (as described in paragraphs 2.1-2.5).

2.7 Requirements on the quality of aeronautical data and aeronautical information do not apply to operators of aerodromes and heliports for which no IFR (or SVFR) procedure is published in the AIP, even if those aerodromes/heliports are referenced in any part of

the AIP.

Note 1: Aeronautical information and data are necessary for the safety of air navigation and operators of aerodromes and heliports which are out of scope of the 'ADQ' requirements should, where applicable, use the guidance in this document as best practice on a proportionate basis when processing aeronautical information and data.
Note 2: Some provisions described in this CAP are not mandatory for organisations other than regulated ATM/ANS providers (including airspace structure design and flight procedure design services) or certified/licensed aerodrome operators. Appropriate notes regarding applicability are included at the beginning of each relevant section or within specific requirements.

2.8 For each section of the AIP there is an Authorised Source that is responsible for the provision and maintenance of data items published in their associated section of the AIP. The table included in Annex A identifies the Authorised Sources and the sections of the AIP for which they are responsible.

2.9 Only compliant parties can deliver compliant data and information (data items which are in the scope of the 'ADQ' requirements are described above) for inclusion in UK Aeronautical Information Products.

Applicability of CAP 1054

2.10 This CAP applies to all parties described in paragraph 2.6 above.

2.11 The guidance in this CAP (and the associated requirements) applies up to the moment when the aeronautical data and/or aeronautical information are made available to the users by the aeronautical information service provider.

1. In the case of provision via the AISP website, this CAP applies up to the moment the information has been made available for download to a user's web browsing device.

2. In the case of distribution by physical means, this CAP applies up to the moment when the aeronautical data and/or information has been published and made available to the organisation responsible for providing the physical distribution service.

3. In the case of automatic distribution through the use of a direct electronic connection between the aeronautical information service provider and the entity receiving the data, this CAP applies up to the moment the aeronautical data and/or information is made available by the aeronautical information service provider.

2.12 Where applicable, all parties in the "downstream" data chain, including organisations and other third parties that provide data services and/or process data using information sourced from official UK Aeronautical Information Products, and who then make this information available to users within their own products and services (with or without charge), should use this document as guidance on best practice (see also CAP 779, Chapter 1, Data Providers and Third-Party Service Providers).

CAA Oversight & Verification of 'ADQ' compliance

2.13 In accordance with the requirements, and in its capacity as the UK Competent Authority, the CAA carries out oversight to verify that all parties within the scope of the 'ADQ'

requirements (including any party referred to in formal arrangements – see Chapters 3 and 4) are compliant with its requirements, and that aeronautical data and aeronautical information origination activities are able to provide data with sufficient quality to meet its intended use.

2.14 Oversight is achieved through periodic audits and assessments carried out by auditors from the CAA section relevant to the party being inspected e.g., Aerodrome, AIM Regulation or Airspace Regulation. Wherever possible, the regulatory oversight activities necessary to ensure 'ADQ' compliance are subsumed into existing CAA oversight arrangements.

2.15 All parties within the scope of the 'ADQ' requirements are required to declare whether their data meets the requirements at the point of submission to the AISP by completing the "compliance/non-compliance" checkbox for each data item with defined data quality requirements (see Annex A), submitted into the Aurora Data Originators Portal.

2.16 When requested by the CAA, all parties within the scope of the 'ADQ' requirements (including any party referred to in formal arrangements – see Chapters 3 and 4) should be able to provide sufficient evidence that the organisation and the data that it processes meet the relevant requirements. Providing evidence of compliance is a responsibility of the Authorised Source (see Chapter 3 and 4).

2.17 It is necessary that certain aeronautical data and aeronautical information submitted to the AISP will require regulatory approval by the CAA before it is published in the AIP (see Chapter 4). Aeronautical data and aeronautical information requiring approval by the CAA is identified in the table at Annex A which also provides details on the CAA regulatory department that is responsible for the approval of each data item published in the AIP, and also indicates which party (Authorised Source) is responsible for the provision and maintenance of this data.

The minimum set of data quality requirements

2.18 ATM IR Article 3, paragraph 5 defines the minimum set of requirements applicable to all parties in the scope of the 'ADQ' requirements, with no exemptions. For convenience those requirements are listed below.

2.19 All parties in the scope of the 'ADQ' requirements shall:

- ensure that aeronautical data referred to in Appendix 1 conform to the specifications of the aeronautical data catalogue;
- ensure that the following data quality requirements are met:
  (1) the accuracy of aeronautical data is as specified in the aeronautical data catalogue and Appendix A;
  (2) the integrity of aeronautical data is maintained;
  (3) based on the integrity classification specified in the aeronautical data catalogue, procedures are put in place so that:
  (i) for routine data, corruption is avoided throughout the processing of the data;
  (ii) for essential data, corruption does not occur at any stage of the entire process and additional processes are included, as needed, to address potential risks in the overall system architecture to further assure data integrity at this level; (iii) for critical data, corruption does not occur at any stage of the entire process and additional integrity assurance processes are included to fully

mitigate the effects of faults identified as potential data integrity risks by thorough analysis of the overall system architecture;

(4) the resolution of aeronautical data is commensurate with the actual data accuracy;

(5) the traceability of aeronautical data is ensured;

(6) the timeliness of the aeronautical data is ensured, including any limits on the effective period of the data;

(7) the completeness of the aeronautical data is ensured;

(8) the delivered data meet the specified format requirements.

- transmit aeronautical data by electronic means;
- establish formal arrangements with ATM/ANS providers or aerodrome operators when exchanging aeronautical data and aeronautical information;
- ensure that the information listed in point AIS.OR.505(a) is provided in due time to the AIS provider;
- collect and transmit metadata which include as a minimum:

  (1) the identification of the organisations or entities performing any action of originating, transmitting or manipulating the aeronautical data;

  (2) the action performed;

  (3) the date and time the action was performed.

- ensure that digital data error detection techniques are used during the transmission or storage of aeronautical data, or both, in order to support the applicable data integrity levels;
- ensure that the transfer of aeronautical data is subject to a suitable authentication process such that recipients are able to confirm that the data has been transmitted by an authorised source;
- ensure that errors identified during data origination and after data delivery are addressed, corrected, or resolved and that priority is given to managing errors in critical and essential aeronautical data.
- for the purpose of air navigation, use:

  (a) the World Geodetic System – 1984 (WGS-84) as the horizontal reference system;

  (b) the mean sea level (MSL) datum as the vertical reference system;

  (c) the Gregorian calendar and coordinated universal time (UTC) as the temporal reference systems.

- ensure that aeronautical data and aeronautical information are originated, processed, and transmitted by adequately trained, competent and authorised personnel.

Chapter 3

Authorised Sources of Aeronautical Information

Authorised Sources & AIP Sponsors

3.1 Aeronautical data and aeronautical information published in UK Aeronautical Information Products are submitted to the AISP by various sources.

3.2 Annex A identifies parties which are considered as 'Authorised Sources' of information published in each section of the AIP and also a list of additional data items in the scope of the requirements. Parties not currently listed in Annex A, if/when relevant, can approach the CAA or AISP and if accepted become Authorised Sources for a whole AIP section or its part or a specific data item, in addition to those listed in Annex A.

3.3 Each Authorised Source must nominate a person (role) acting on behalf of the whole organisation, to be directly responsible for all aeronautical data and aeronautical data activities in the organisation, and who is ultimately accountable for providing specific aeronautical data and aeronautical information to AIS for publication in the Aeronautical Information Products. This may be the Accountable Manager, or a competent person formally appointed by the Accountable Manager.

3.4 Authorised Sources are required to ensure that their organisation declares whether in scope data meets 'ADQ' requirements at the point of submission to the AISP by completing the "compliance/non-compliance" checkbox for each data item with defined ICAO data quality requirements (see Annex A) entered in the Aurora Data Originators Portal.

3.5 Details of the responsibilities for the provision of aeronautical data and aeronautical information for the Aeronautical Information Products are identified in UK legislation and CAA licensing, guidance, and policy documents.

3.6 All parties submitting data to the AISP are required to have Formal Arrangements with the AISP for the provision of aeronautical data and aeronautical information and access to the Aurora Data Originators Portal. Formal Arrangements must be signed by the Authorised Source (see paragraph 3.2 and 3.3)

3.7 The Authorised Source holds ultimate responsibility for sponsoring changes to Aeronautical Information Products and must notify the AISP if their contact details change or if the responsibilities of the Authorised Source are transferred to another party.

Note: Formal Arrangements remain valid and do not need to be re-established as a result of changes to the personnel representing the Authorised Source.

3.8 Formal Arrangements are described in greater detail at Chapter 4.

3.9 The Accountable Manager (or another formally appointed person) who has signed the Formal Arrangement with the AISP can nominate individuals ('AIP Sponsors'), who are responsible for submitting changes to Aeronautical Information Products within a clearly defined scope of authorised changes (data items).

3.10 The Authorised Source must provide a list of all nominated AIP Sponsors to the AISP ('AIP Sponsors List') and is also responsible for notifying the AISP of any changes to

the List.

3.11 Once notified to the AISP each individual AIP Sponsor is required to register on the Aurora Data Originators Portal as a portal ‘user’. As a result of the registration process users will be assigned with authorisations and responsibilities in accordance with the details contained in their organisation’s formal arrangement.

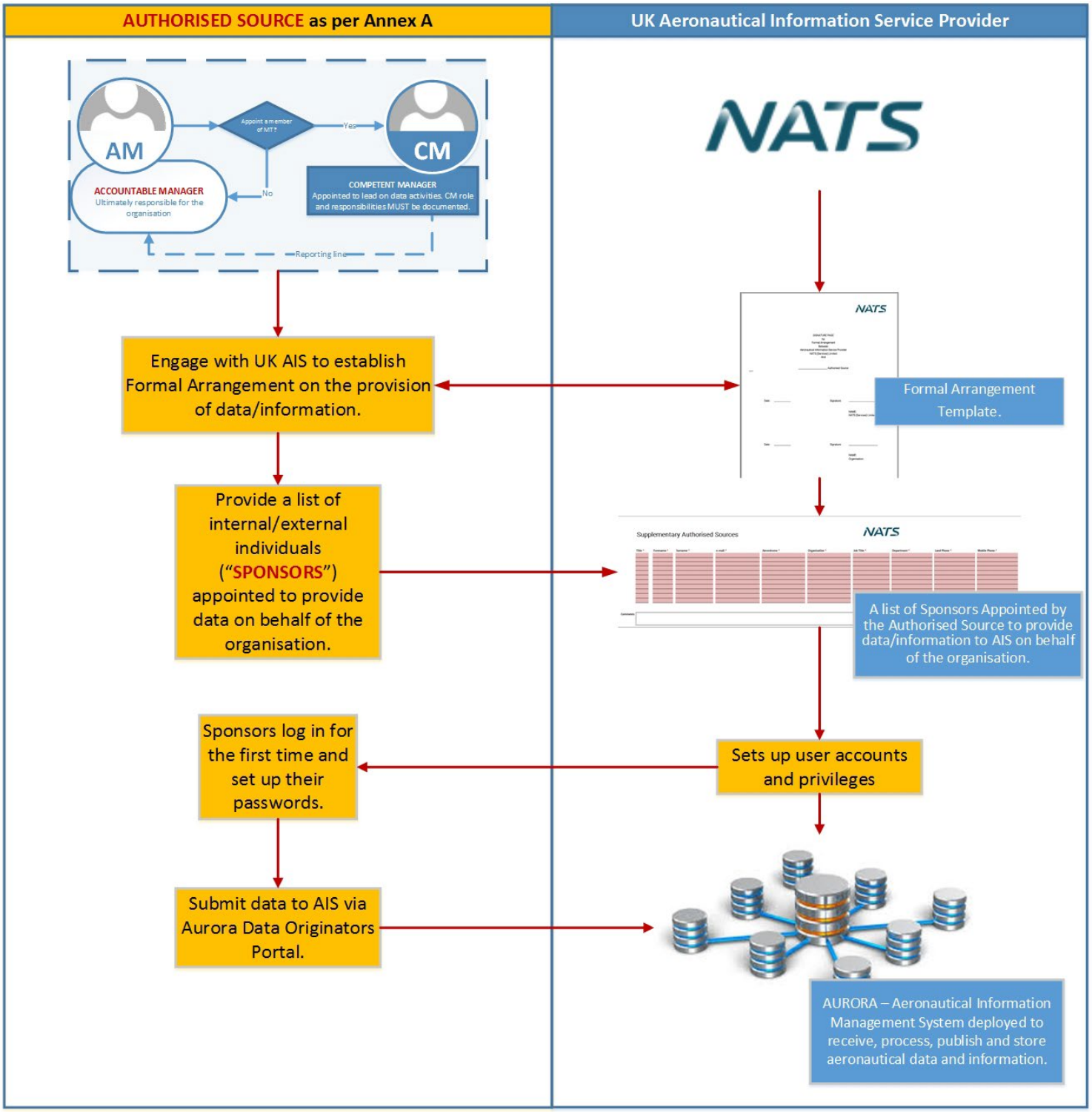
Note: Once registered, an AIS Portal User Guide and Portal user training videos can be accessed via the Portal. Users can also contact the AISP during office hours by phone or email if experiencing any difficulties in accessing or using the portal:

Phone: 01489 88 7000/7462/7463/7506

Email: support.aissupervisor@nats.co.uk

3.12 The ultimate responsibility for the data and information provided to the AISP always remains with the Authorised Source.

3.13 The relationship between the Authorised Source, AIP Sponsors and AIS is depicted on the flowchart below:



Flowchart 1. The relationship between the Authorised Source, AIP Sponsors and AIS.
Credit: Flowchart provided by NATS AIM.

Chapter 4

Regulatory Approval of Aeronautical Information & Data

Regulatory Approval

4.1 Certain aeronautical data and aeronautical information submitted to the AISP require regulatory approval by the relevant party approving, verifying, regulating, or overseeing data item (as per Annex A) before it is published in the AIP. This is separate to any regulatory approval process required by the CAA to be completed before the Aeronautical Information Product Change Request is submitted to AISP.

4.2 Aeronautical data or information requiring approval by the CAA every time it is submitted to AISP, includes but is not limited to:

- Aerodrome Runway Declared Distances (RDD)
- Aerodrome Rescue & Fire Fighting categories (RFF)
- Obstacle Clearance Altitude/Height (OCA(H))
- Aerodrome elevation (AEP)
- Threshold elevation (THR ELEV)
- Threshold position (THR)
- ARP position (ARP)
- NavAid position (NAVAID)
- RWY/FATO True Bearing (TRUE BRG)
- Minimum Sector Altitude (MSA)

4.3 The table included in Annex A identifies the regulators responsible for providing regulatory approval of each data item.

4.4 Upon submission of the aeronautical data to the AISP, AISP generate an approval task for the appropriate party approving, verifying, regulating, or overseeing data item (in accordance with Annex A). The approver can either:

- “Pass” and approve the Change Request and aeronautical data for further processing by AISP; or
- “Fail” and reject the Change Request and aeronautical data – in this case the Change Request is redirected in Aurora Data Originators Portal to the Sponsor.

The regulator may also leave additional comments to accompany any decision made at this stage.

4.5 The AISP may also create additional approval tasks for the relevant party approving, verifying, regulating, or overseeing data item (as per Annex A), when requested by the Sponsor or when the submission raises any concerns. In any case, it remains the Sponsor’s responsibility to provide compliant data and – if required - complete any necessary regulatory approval processes before the Aeronautical Information Product

Change Request is submitted to AISP.

4.6 Compliance with regulatory approval requirements shall not inhibit the urgent distribution of aeronautical information necessary to ensure the safety of flight. Notifying the CAA about any temporary changes promulgated via NOTAM, to data items requiring regulatory approval, remain the responsibility of the Sponsor but the UK NOTAM Office may be asked for assistance or coordination.

4.7 Authorised Sources shall take account that the regulatory approval process may introduce delays to the data process and could affect the Change Request success of meeting the requested AIRAC. Authorised Sources shall always follow the publication schedules (and associated submission cut-off dates) available on the AIS website.

Regulatory Notifications

4.8 Changes submitted to certain data items (as indicated by "**" in Annex A) will be notified to the relevant party approving, verifying, regulating, or overseeing data item (as per Annex A) at dedicated trigger points in the data process, as described below.

4.9 Upon submission of the aeronautical data to the AISP, the Aurora system will automatically notify the appropriate party approving, verifying, regulating, or overseeing data item (as per Annex A) if submitted change is affecting one or more data items which require notification. If the data is delivered to the AISP in a dataset, the notification trigger will send the notification later in the data process (at the point of identification). No response from the notified regulator is required, however, if the notified regulator identifies any issue with the Change Request, they will contact the AIS Supervisor within 3 working days and request further actions.

4.10 Also, some changes to aeronautical data will also be notified to the CAA at the draft-product[8] stage, which include but are not limited to the following Airspace Change Proposals identified by a CAA ACP Number:

- Introduction, amendment, or withdrawal of any details in relation to Instrument Flight Procedure Charts or Coding Tables.
- Introduction, amendment, or withdrawal of Lateral or Vertical dimensions in relation to:
  - Airspace Classes A, C, D, E
  - Danger Areas
  - RMZ
  - TMZ

4.11 A notification requires no response from the regulator for AIS to process. If, however, the notified regulator identifies any issues within the draft product, they will contact the AIS Supervisor within 3 working days and request further actions.

4.12 Regulatory notifications should not introduce any delays to the data process unless issues with the Change Requests are identified.

Summary

4.13 Depending on the content of the Change Request submitted to AIS, approval tasks and

[8] draft-product – draft of an amendment to the AIP or an AIP SUP ready to be reviewed by the CAA or the AIS Supervisor before publication.

notifications which can be generated by the AISP in the Aurora Data Originators Portal include but are not limited to:

- Approval tasks for the relevant party approving, verifying, regulating, or overseeing data item (used for all changes to the data items listed in paragraph 4.2 submitted to AISP via Aurora Data Originators Portal);
- Additional approval tasks requested by the Sponsor or generated by AISP;
- Notification at the point of submission sent to the relevant party approving, verifying, regulating or overseeing data item (as described in paragraph 4.8, items to be notified are identified by "**" in in Annex A);
- Notification of the draft product sent to the relevant party approving, verifying, regulating, or overseeing data item (as per paragraph 4.10);
- Additionally, any Authorised Source will be asked to confirm (using the approval task in Aurora) that changes proposed by another Authorised Source are correct if the submitted Change Request amends data items within their area of responsibility (as per the Formal Arrangement with the AISP) or after the AISP has processed data or dataset on behalf of this Authorised Source and identified consequential changes to the Aeronautical Information Products.

Note: It is possible that a data item is notified to the CAA at the point of submission or identification, then sent to the CAA for approval and also notified to the CAA at a draft-product stage. All of these tasks are conducted independently.

Chapter 5

Common Elements of Compliance

This chapter is relevant to all parties in the scope of the 'ADQ' requirements (as described in Chapter 2), within this Chapter referred to as 'parties', unless stated otherwise.

Management System

Applicability: Specific requirements on Management System apply only to ATM/ANS providers and Aerodrome Operators, it must be noted that necessary processes and procedures should be established by all parties in the scope of the 'ADQ' requirements to ensure their compliance with the minimum set of requirements as per paragraph 2.18 and 2.19.

ADQ IR requirement: Article 10 and Article 13

ATM IR and ADR IR requirements: ATM/ANS.OR.B.005; ATS.OR.200; ADR.OR.D.005; ADR.OR.D.007

Relevant objectives from the AIR Guide: Implement and Maintain Management System; Define and Implement Processes and Procedures; Self-Assess and Monitor Compliance with Relevant Regulations; Provide and Maintain Operations Manuals

5.1 Parties shall implement and maintain a Management System (MS) which addresses quality, safety and security objectives and covers all of their aeronautical data and aeronautical information provision activities.

5.2 A management system is a set of policies, processes and procedures used by an organization to ensure that it can fulfill the tasks required to achieve its objectives. The established quality management system shall provide the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.

5.3 An EN ISO 9001 certificate, issued by an appropriately accredited organisation is considered an Acceptable Means of Compliance but it is not mandatory.

5.4 All parties should identify and document:

- roles responsible for data and data activities (roles and responsibilities MUST be clearly defined);
- roles within the organisation responsible for development and maintenance of Management System objectives related to data and data activities.

5.5 Parties should establish and maintain:

- evidence of the functioning of the management system by means of manuals and monitoring documents referring to 'ADQ' requirements covering all data activities (with associated roles and responsibilities);
- work instructions for all data activities together with their assigned personnel responsibilities;

- Job descriptions including roles and responsibilities regarding data activities;
- regular reviews (internal and external) of the management system in place and take remedial actions, as appropriate;
- periodic and ongoing reviews of data and data-related documentation.

5.6 Parties should avoid assigning too many responsibilities to one person.

Safety and Security Management

Applicability: Specific requirements on Safety and Security Management apply only to ATM/ANS providers and Aerodrome Operators, however it must be noted that necessary processes and procedures should be established by all parties in the scope of the 'ADQ' requirements to ensure their compliance with the minimum set of requirements as per paragraph 2.18 and 2.19.

ADQ IR requirement: Article 9, Article 10, and Article 13

ATM IR and ADR IR requirements: ATM/ANS.OR.B.005, ATM/ANS.OR.D.010; ATS.OR.200; ADR.OR.D.005; ADR.OR.D.007; ADR.OR.E.005

Relevant objectives from the AIR Guide: Implement and Maintain Management System

5.7 Parties shall ensure that their Management System defines procedures to meet the safety and security management objectives as laid down in the legislation.

5.8 Parties should identify and document:

- role(s) within the organisation responsible for the development and maintenance of the safety management objectives related to data and data activities;
- role(s) within the organisation responsible for the development and maintenance of the security management objectives related to data and data activities;
- safety and security risks related to data and data activities.

5.9 Parties should establish and maintain:

- safety and security processes, measures, and standards so that data is protected from interference and restricted only to those authorized while in storage and transit and therefore the risk of any aviation incident arising from data errors (intentional or accidental) is minimised;
- procedures relating to data security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;
- means designed to detect security breaches and controlling the effects of security breaches, identifying recovery action and mitigation procedures to prevent reoccurrence;
- measures to protect its aeronautical data against cyber security threats;
- mandatory criminal record check for all personnel involved in data activities.

5.10 The CAA holds responsibility for cyber security oversight for aviation and all cyber security regulatory activity within any of the CAA regulatory domains. CAP 1753 outlines the CAA's approach to cyber security oversight.

5.11 If appropriate, a Disclosure & Barring Service (DBS) Check should be considered as the acceptable level of security clearance for personnel involved in processing of aeronautical data on behalf of ATM/ANS providers and Aerodrome Operators in the scope of the 'ADQ' requirements. Further information regarding these checks can be found on the Disclosure & Barring Service web page of the GOV.UK website.

Formal Arrangements

Applicability: ATM/ANS Providers and Aerodrome Operators in the scope of the 'ADQ' requirements need to have compliant Formal Arrangements with all parties with which they exchange aeronautical data and/or which exchange this data on their behalf. All other parties in the scope of the 'ADQ' requirements are only required to establish Formal Arrangements with ATM/ANS providers and Aerodrome Operators when exchanging aeronautical data with them or exchanging data on behalf of those ATM/ANS Providers and/or Aerodrome Operators.

ADQ IR requirement: Article 6

ATM IR and ADR IR requirements: ATM IR Article 3 paragraph 5(a); ATM/ANS.OR.A.085; AIS.OR.205; ADR.OPS.A.010

Relevant objectives from the AIR Guide: Establish and Manage Formal Arrangements

5.12 Parties shall establish arrangements with parties with which they exchange aeronautical data and/or which exchange this data on their behalf.

5.13 The formal arrangements shall include the minimum content required by the legislation and can also include any other elements relevant to the provision and exchange of data between parties, if agreed between those parties.

5.14 Parties should identify and document:

- All aeronautical data items provided by the party, together with associated 'ADQ' requirements;
- specific data activities (origination, processing, storage, provision, publication, distribution etc.);
- organisations or individuals exchanging any aeronautical data items with the party or on behalf of the party (including contracted activities).

5.15 Parties should establish and maintain:

- Formal Arrangement Template, if not already established (e.g. all Authorised Sources submitting data to AISP will be provided by AISP with a Formal Arrangement Template approved by the CAA);
- Formal Arrangements with all organisations or individuals exchanging data with the party or on behalf of the party.

5.16 When a party contracts any part of its data activities to another organisation, the contracted organisation works under the oversight of the Authorised Source. The Authorised Source remains the party ultimately accountable for the information delivered to AISP and published in the Aeronautical Information Products.

5.17 Every data activity conducted by a contracted organisation needs to be described in a Formal Arrangement between the party (e.g., Aerodrome Operator or ANSP) and the

contracted organization (e.g., survey company or Approved Procedure Design Organisation).

5.18 A Formal Arrangement may form part of a contract, Letter of Agreement (LoA), Service Level Agreement (SLA), Memorandum of Understanding (MoU). Or, as a stand-alone Formal Arrangement covering all aspects of the service and product to be delivered.

5.19 The UK AISP uses a standard template to establish Formal Arrangements with all parties that submit aeronautical data and aeronautical information for publication in the AIP. The CAA considers that the AISP standard template is compliant with the requirements of the ADQ IR.

5.20 Additional guidance on the content of Formal Arrangements between the Aerodrome Operator and the external organisation providing a survey of aeronautical data for the aerodrome is provided in CAP 1732 Appendix 1.

Competent Personnel

Applicability: Requirements on training and competency are applicable to all parties in the scope of the 'ADQ' requirements.

ADQ IR requirement: Article 7 and Article 13

ATM IR and ADR IR requirements: ATM IR Article 3 paragraph 5(b); ATM/ANS.OR.B.005; ATM/ANS.OR.B.015; ATS.OR.200; ATSEP.OR; ADR.OR.D.017; ADR.OPS.A.057

Relevant objectives from the AIR Guide: Define and Implement Training Programme

5.21 Each party must nominate an individual (role) to be directly responsible for all aeronautical data activities and aeronautical information provision activities in the organisation, as per Chapter 3. Additionally, personnel (roles) should be appointed for all tasks associated with the provision of aeronautical data or aeronautical information. All roles and responsibilities associated with the provision of aeronautical data or aeronautical information should be clearly defined, as described in the Quality Management System section above.

5.22 All parties should identify, establish and document the following requirements for personnel involved in any data activities:

- minimum competency levels (requirements);
- an adequate training programme (including contractors if relevant);
- an adequate training programme for the whole organisation (including as a minimum) promoting organizational awareness of safety risks and issues related to aeronautical data and aeronautical information e.g., by sharing lessons arising from safety activities and by encouraging all staff to propose solutions to identified safety issues, and improvements to assist the effectiveness and efficiency of the processes.

Error prevention, detection, and handling

Applicability: Requirements on error detection, authentication, reporting, measurement, and corrective actions are applicable to all parties in the scope of the 'ADQ' requirements. Requirements on Verification and Validation are only applicable to ATM/ANS providers and Aerodrome Operators in the scope of the 'ADQ' requirements.

Relevant ADQ IR requirement: Article 6 and Article 9

ATM IR and ADR IR: ATM/ANS.OR.A.085; AIS.OR.220; AIS.OR.230; AIS.OR.235; AIS.TR.235; ADR.OPS.A.025; ADR.OPS.A.035; ADR.OPS.A.040

Relevant objectives from the AIR Guide: Establish Verification and Validation Procedures; Error Reporting, Measurement and Corrective Actions

5.23 All parties shall ensure that error detection and authentication, reporting, measurement, and corrective actions mechanisms are established, maintained, and included in the Management System.

5.24 Parties should identify and document:

- all aeronautical data transfers conducted by the organisaton;
- all aeronautical data items being entered manually by the organisation;
- tools required for the verification and validation processes;
- parties that should be notified about any identified data errors alongside with AIS (e.g., data originator, next user);

5.25 Parties should establish and maintain:

- validation and verification processes to ensure that data is acceptable for its intended use and has not been corrupted by the data process;
- digital data error detection techniques and authentication process for any data transfer;
- independent verification of manually inputted aeronautical data (if any) to detect any errors that may have been introduced;
- mechanism to ensure the currency of the aeronautical data within their responsibility (maintenance of data);
- process of monitoring relevant aeronautical data promulgated by AISP;
- mechanisms to report to AIS, with minimum delay changes to data items within the responsibility of the Authorised Source (standard updates or identified errors);
- mechanisms to notify all other relevant parties with minimum delay changes to data items within the responsibility of the Authorised Source (identified errors);
- data error detection and handling process;
- records of identified data errors and the consequential corrective measures taken for errors identified after data delivery to AIS.

5.26 Different data validation techniques can be used for different data items and/or parties in the scope of ‘ADQ’ requirements. Every time validation technique should be fit for purpose and sufficient to give the party the level of assurance that the data is checked as having a value that is fully applicable to the identity ascribed to the data element, or a set of data is checked as being acceptable for their intended use.

5.27 All parties should deliver data to UK AISP via the Aurora Data Originators Portal as a .zip file with all required files. Other data error detection techniques can also be used and described in the Formal Arrangements between parties exchanging data.

Note: Examples of data protection solutions are “checksum” or “hash functions” such as MD5, SHA1 or XML Signature. XML Signature is used in AIXM files but is currently not covered by the

AIXM 5.1 coding guidelines. There is a draft document dealing with this topic: "EUROCONTROL Guidelines for the use of CRC in AIXM 5.1" (6.12.2013) including a chapter about XML Signature. This GM has never been finalised due to the changing focus on CRC but also due to other priorities applied at this stage considering that existing industry solutions were sufficiently addressing these aspects.

5.28 AIXM files can also be exchanged with the AISP but due to the fact that harmonised AIXM coding guidance haven't been finalised yet, parties willing to exchange data using AIXM format should engage with the UK AISP to test those files and receive feedback ahead of the required date of submission.

5.29 All errors, inconsistencies and anomalies detected in any aeronautical data published by AIS should be reported to AISP.

5.30 Problems identified by users and reported to the AISP, should also be referred by AISP to the Authorised Source identified at Annex A.

5.31 All errors, inconsistencies and anomalies detected in published critical and essential aeronautical data and aeronautical information are to be notified immediately by the Authorised Source to all users via the promulgation of a NOTAM and resolved permanently as soon as possible thereafter.

Data origination, processing, and provision

Applicability: All parties in the scope of the 'ADQ' requirements shall ensure that data quality requirements in terms of accuracy, integrity, resolution, traceability, timeliness, completeness, and format are met when originating, processing, or providing data; aeronautical data in the scope of the 'ADQ' requirements conform to the specifications included in Annex A; data is transmitted by electronic means and provided in due to AISP.

ADQ IR requirement: Article 5 and Article 6

ATM IR and ADR IR requirements: ATM/ANS.OR.A.085; ATM/ANS.OR.A.090; AIS.OR.200; ADR.OR.D.007; ADR.OPS.A.020; ADR.OPS.A.050

Relevant objectives from the AIR Guide: Define and Implement Processes and Procedures, Request Data Origination/Provision, Originate Data, Define Catalogue of AIS Products and Services; Assemble AIS products; Collect Data; Annotate AIS Data/Products for Limitations

5.32 Any activity conducted as part of origination, processing, and provision of aeronautical data, whether manual or automated is considered as part of the data process.

5.33 Parties should identify and document:

- Data product specifications – e.g., dataset specifications requirements including the minimum metadata requirements (survey, IFP design, airspace design etc.);
- Data provision and maintenance requirements (e.g. annual reviews of surveyed data);
- All data transfers conducted by the organisation;
- Relationships between data items, if relevant (e.g. change to one data item can trigger an update/recalculation of another data item based on it);
- Non-compliant data items.

5.34 Parties should establish and maintain:

- Data product specifications, if necessary (when specifications are not already established) – e.g., Dataset specifications used by and/or required by organisation including the minimum metadata requirements;
- Electronic means for all data exchange processes;
- Mechanisms to ensure consistency of data items that are duplicated or cross-dependent;
- Data provision and maintenance plan (with timescales and evidence);
- transition plan for achieving full compliance with 'ADQ' requirements (if not already achieved), including date of the full compliant survey and date when all Aeronautical Information Products, including aerodrome data, will be compliant;

5.35 Aeronautical data should not be subject to re-origination unless the Authorised Source identifies the need to re-originate data (e.g., as part of the data maintenance throughout the lifetime of each data item), such as:

- Physical changes to the surveyed features (including new/removed features);
- Limited lifetime of the data;
- New user's needs;
- Changes to the requirements applicable to the data;
- Inability to demonstrate compliance of the data with any applicable requirements;
- Detection of an error, inconsistency, or anomaly in existing data e.g., when processing data or originating new data.

5.36 Aeronautical data and aeronautical information to be provided by surveyors, procedure designers, and airspace designers shall include all attributes (complete data set), or part (if amending existing full data set) described in relevant CAA publications:

- CAP 1732 Aerodrome Survey Guidance, Appendix 5; or
- Policy Statement - AERONAUTICAL DATA ASSOCIATED WITH AIRSPACE DESIGN (CAP 1616) - Annex A including the Aeronautical Data Template Spreadsheet.

5.37 To meet the data set specification requirements, the aeronautical information exchange model AIXM developed by EUROCONTROL and the Federal Aviation Authority (FAA) should be used, therefore AIXM files can also be exchanged with the AISP but due to the fact that the UK is in the process of implementing AIXM datasets in the upstream data chain, parties willing to exchange AIXM files with AISP, should engage with AISP first to test those files and receive feedback ahead of the required date of submission.

Note: AIXM can become the primary format used for providing data to AIS, even if the relevant CAA publications (such as CAP 1616 or CAP 1732) specify a different format to be used for a specific process involving aeronautical data exchange, but only if it has been agreed with the CAA and AIS and is reflected in the formal arrangements.

5.38 Guidance on AIXM can be found on the EUROCONTROL website[9]. Please note that the use of AIXM is mandatory only for the UK AISP (more information can be found in Chapter 6 below).

5.39 The dataset and exchange specification requirement is designed to ensure that, not only can a whole and complete data set be exchanged, but also that a particular feature can be exchanged individually. This is particularly important for providers of limited subsets of the whole data set or even just the value of one property, such as a position, elevation, frequency, identifier, etc.

5.40 In order to ensure a common implementation of the exchange specification EUROCONTROL is in the process of establishing harmonized coding rules for AIXM.

5.41 All parties providing data to AIS, are required to declare which data items do not meet data quality requirements. This can be done during the submission of data to AIS or via the Aurora Data Originators Portal for all data items already stored in AIS AIXM database.

5.42 All parties in the data chain are required to exchange data using electronic means.

5.43 In the case where no direct electronic network connection is available between parties in the data chain, other than with the AISP, it is acceptable to use e-mail if the following conditions (as specified in the EUROCONTROL, ADQ Regulators Working Group, Common Understanding 08/2014 (CU 08/2014), Provisions of EU 73/2010 for electronic data exchange) can be met:

- Aeronautical data and aeronautical information are provided in an attached file that can be automatically ingested into the recipient's system without the need for manual input.
- Receipt of the data can be confirmed to the sender.

5.44 During the UK Transition Period to CAP 1732 Aerodrome Survey Guidance (and UK TOD implementation plan), the transfer of encrypted data on DVDs will be acceptable when it meets the conditions specified in CU 08/2014 for email exchange. Use of portable memory drives should be completely eliminated from the upstream data-chain.

5.45 Final submission of data to the AISP shall be performed via the Aurora Data Originators Portal:

- individual data items can be submitted manually using the Change Request (double blind entry is required for data items with an ICAO integrity level of critical or essential to ensure a proportionate degree of data quality assurance to meet ICAO Annex 15 integrity requirements);
- multiple data items can be attached to the Change Request (files containing data in the scope of the 'ADQ' requirements should be compressed and attached as .crc files);
- changes to the data that are already published in the AIP (especially textural data) can also be applied using the AIP editor (available via the Change Request).

Metadata

Applicability: Requirements on metadata are applicable to all parties in the scope of the 'ADQ'

[9] http://www.aixm.aero/public/standard_page/download.html

requirements.

ADQ IR requirement: Article 4

ATM IR and ADR IR requirements: ATM/ANS.OR.A.085; AIS.OR.225; AIS.OR.240; AIS.OR.340; AIS.TR.225; AIS.TR.240; AIS.TR.340; ADR.OPS.A.010; ADR.OPS.A.045

Relevant objectives from the AIR Guide: Originate data; Collect data; Store data; Annotate AIS Data/Product for Limitations; Transmit data.

5.46 The term 'data' is intended to cover both the data and its associated metadata. This section covers some specific requirements and policies applicable to metadata only.

5.47 Aeronautical data and aeronautical information that is required to meet the 'ADQ' requirements shall include metadata. The table below specify the required metadata for each category of data required to meet the 'ADQ' requirements.

5.48 Some metadata may originate from another Authorised Source further back in the aeronautical data chain, such as survey data provided to an aerodrome operator prior to submission of the survey data by the aerodrome operator to the AISP. The original metadata shall be retained at all stages of data management and final submission to the AISP.

5.49 To ensure consistent metadata from the data origination stages of aeronautical information through to publication in the AIP, or when made available to the next intended user, the EUROCONTROL Metadata profile shall be used. The EUROCONTROL Metadata profile can be obtained from the media and info area of the EUROCONTROL website. www.eurocontrol.int

5.50 Failure to include the required metadata will result in the aeronautical data being marked as non-complaint.

5.51 The following tables specify the required metadata.

- Common Metadata Attributes

Metadata items	**Mandatory or Optional**
Metadata elements about the originator of data*	**Mandatory**
Metadata elements about amendments*	**Mandatory**
Metadata elements about persons or organisations that have interacted with data*	**Mandatory**
Metadata elements about any validation and verification performed*	**Mandatory**
Metadata elements about effective start date and time of data	**Mandatory**

Metadata elements, for geospatial data, about the Earth reference model used* **	**Mandatory**
Metadata elements, for geospatial data, about the coordinate system used* **	**Mandatory**
Metadata elements, for numerical data, about the statistical accuracy or calculation technique used	**Mandatory**
Metadata elements about the data resolution	**Mandatory**
Metadata elements about the confidence level	**Optional****
Metadata elements about any functions applied during conversion/transformation	**Mandatory**
Metadata elements about any limitations on the use of data.	**Mandatory**

"*" In every case the organization or entity performing any action of originating, transmitting, or manipulating the aeronautical data should be identified together with the action performed and the date and time the action was performed.
"**" Required if it is requested in the required format (e.g., required to be provided in survey package as per CAP 1732 survey format but taken as a condition (rather than an attribute to be provided) within the CAP 1616 Aero Data Spreadsheet accuracy requirements.
"***" The geographical co-ordinates indicating Latitude and Longitude are expressed in terms of the World Geodetic Survey of 1984 (WGS84) geodetic reference datum. The CAA recognises the fact that geographical positions in the UK have been supplied in ETRF89, therefore, it is acceptable to use ETRF89 reference frame and Newlyn Datum for vertical reference in the UK. This position statement may be revised when the difference between ETRF89 and ITRF2008 becomes intolerable.

- Metadata to be provided for data sets (applicable to all data sets)

Metadata elements about the organisations or entities providing the data set	**Mandatory**
Metadata elements about effective start date and time of the data set.	**Mandatory**
Metadata elements about any limitations on the use of the data set.	**Mandatory**

Note: ISO 19115 – Geographic Information – Metadata is used as the basis the metadata information facilitates interoperability. Metadata elements should be drawn from the 19115 — Geographic information — Metadata Standard. Further information on the schema for describing geographic information and services by means of metadata can be found in the ISO 19115 — Geographic information — Metadata, Part I.

Chapter 6

Additional requirements for certified/licensed parties

Data exchange format

Applicability: Requirements on format specified in the formal arrangements apply to all signatories of the formal arrangements. Specific requirements on the aeronautical information exchange model apply to AIS providers only.

Relevant ADQ IR requirement: Article 5

ATM IR and ADR IR requirements: AIS.OR.210; ATM/ANS.OR.A.085; ADR.OPS.A.010 Data quality requirements

Relevant objectives from the AIR Guide: Assemble AIS products; Establish and Manage Formal Arrangements

6.1 AIXM 5.1 fully complies with the 'ADQ' requirements for aeronautical information exchange model.

6.2 The AIXM model has two main components. One component describes the concepts of the aeronautical information domain as a collection of features, properties, and relationships. This component is referred to as the AIXM logical information model and it is defined using the Unified Modelling Language (UML) and shall be used as the basis of the UK common data set specification.

6.3 A common data set specification does not mean that existing or future systems have to use it for their internal data management. It only means that the data input/output by the system needs to be organised according to the common data set specification, which is achievable through mapping and data conversions.

6.4 The AIXM logical information model enforces the use of Universally Unique Identifiers (UUID). For the provision of data to the AISP, UUID's shall persist for the entire lifecycle of the feature and shall not be re-used upon deprecation of the feature.

Note 1: UUID for obstacle areas and aerodrome features can be obtained from the SDO Explorer tool in the Aurora Data Originators Portal.
Note 2: The provision of Obstacle UUIDs by surveyors is welcomed and UUIDs can be submitted by appending an extra (last) field to the existing fields in the survey data delivery format as specified in CAP 1732, Appendix 5 (Digital Data Specification).
Note 3: UUID generation algorithms guarantee that the risk for the same UUID value to be generated by another system, for another feature, is extremely low. Information about such algorithms is provided in EUROCONTROL Document, AIXM 5, Feature Identification and Reference, Appendix 1 (UUID algorithms)[10]

6.5 The second component is derived from the AIXM logical information model and describes how to encode aeronautical data in a format that can be transmitted electronically between computer systems. The second component uses XML (Extensible Mark-up Language) as a language for system-to-system exchange. This component is also referred to as the XML Schema of AIXM and should be used as the basis of the UK common data exchange

[10] http://www.aixm.aero/sites/aixm.aero/files/imce/AIXM51/aixm_feature_identification_and_reference-1.0.pdf

specification.

6.6 UK NOTAM exchange format does not comply with the AIXM data exchange requirements (no Digital NOTAM service provided).

Delivery of Aeronautical Information Products

Applicability: Specific requirements on the provision of Aeronautical Information Products are only applicable to AIS providers.

ADQ IR requirement: Article 2, Article 6, and Article 7

ATM IR and ADR IR requirements: AIS.OR.305 – AIS.OR.515; AIS.TR.305 - AIS.TR.515

Relevant objectives from the AIR Guide: Assemble AIS products; Distribute AIS Products

6.7 UK Aeronautical Information Products are provided in accordance with the relevant ATM IR and ICAO Annex 4 and Annex 15 requirements (unless a difference has been filed to ICAO – as per UK AIP GEN 1.7).

6.8 There are cases when there is more than one Authorised Source of the information. It is the AISP responsibility to establish mechanisms to ensure consistency across different data sources. An element of the UK-specific mechanisms is described in paragraph 4.13.

6.9 There are cases when the aeronautical information is published in the AIP of more than one Member State, and it is the AISP's responsibility to establish mechanisms to ensure consistency across the duplicated information.

6.10 There are cases when the AISP is provided with aeronautical data and aeronautical information which does not meet the data quality requirements (where there is no evidence available to give a degree of assurance that the requirements are met). It is the AISP's responsibility to inform users which data items do not fully comply with the data quality requirements. As described in paragraphs 2.15, 3.4 and 5.41, data sponsors are required to declare compliance status for each data item in the scope of the 'ADQ' requirements at the point of data submission to the AISP. The UK AISP publishes a list of non-compliant data items in AIP GEN 1.7.

Tools and Software

Applicability: Requirements on tools and software are only applicable to ATM/ANS providers and Aerodrome Operators in the scope of the 'ADQ' requirements.

ADQ IR requirement: Article 8

ATM IR and ADR IR requirements: ATM/ANS.OR.A.085; AIS.OR.215; ADR.OPS.A.055

Relevant objectives from the AIR Guide: Assure Tools and Software

6.11 Parties shall ensure that tools (including software) used to support or automate aeronautical data processes perform their functions without adversely impacting the quality of the aeronautical data.

6.12 In order to prove that tools used in data processes do not adversely impact on the quality

of data, the potential contribution to failure conditions should be assessed and documented.

6.13 All parties should identify and document:

- Tools used in data processes.

6.14 Parties should establish and maintain:

- Tool assessment process to qualify tool to further verification and/or qualification processes;
- Tool verification processes;
- Tool qualification processes.

Note: Tools and software can be qualified meeting paragraph 2.4.5 Aeronautical Data Tool Qualification of EUROCAE ED76A Standards for Processing Aeronautical Data, dated June 2015.

Record keeping and Contingency

Applicability: Requirements on record keeping, contingency plan and back-up arrangements apply only to ATM/ANS providers and Aerodrome Operators in the scope of the 'ADQ' requirements.

ADQ IR requirement: Article 9

ATM IR and ADR IR requirements: ATM/ANS.OR.A.070; ATM/ANS.OR.A.085; ATM/ANS.OR.B.030; ADR.OPS.A.010; ADR.AR.B.020

Relevant objectives from the AIR Guide: Establish Contingency Plans; Assure Tools and Software; Store Data

6.15 Parties shall establish an adequate system of record keeping and back-up arrangements.

6.16 Parties should identify and document:

- Record keeping requirements for aeronautical data including records format, storage and reference to safety and security measures established for stored data;

6.17 Parties should establish and maintain:

- Record-keeping system including format, storage and retention arrangements and referring to safety and security measures established for stored data;
- processes and facilities for archiving and the back-up of stored data;
- contingency plan in place that addresses the arrangements in case of loss or temporary loss of the ability to access or publish data.

Conformity or suitability for use of constituents

Applicability: Requirements on conformity or suitability for use are only applicable to ATM/ANS providers.

ADQ IR requirement: Article 11

ATM IR and ADR IR requirements: ATM/ANS.AR.C.005; ATM/ANS.OR.A.065

Relevant objectives from the AIR Guide: Assure Tools and Software

6.18 Putting into service systems listed in Annex I to Regulation (EC) 552/2004 is subject to verification of compliance with the essential requirements and relevant implementing rules for interoperability, use of Community specifications ensures conformity with the essential requirements and relevant implementing rules for interoperability. ANSPs and manufacturers are required to demonstrate their compliance with the single European sky Interoperability Regulation (EC) 552/2004.

6.19 The manufacturer is responsible for verifying constituents of the EATMN system (software and hardware elements used to provide aeronautical information services which shall be interoperable between themselves) compliance with the 'ADQ' requirements. This should result in a creation of an EC Declaration of Verification (DoV) supported by a Technical File (TF) and in most cases a manufacturer's Declaration of Suitability for Use (DSU) through self-assessment, a notified body or both.

6.20 As manufacturers are not included in the scope of the 'ADQ' requirements, it is the responsibility of the ANSP to ensure that the manufacturers of the constituents of the systems in use comply with the requirements of Article 11.

6.21 A detailed description of all the processes involved in the demonstration of compliance with the single European sky interoperability Regulation is provided in the "CAA ANSP Interoperability Guidance" document, and further guidance on Single European Sky interoperability requirements can be found on the CAA website.

Verification of Systems

Applicability: Requirements on verification of systems are only applicable to ATM/ANS providers.

ADQ IR requirement: Article 12

ATM IR and ADR IR requirements: ATM/ANS.AR.C.005

Relevant objectives from the AIR Guide: No specific objective.

6.22 The ANSP is responsible for verifying their EATMN systems compliance with the 'ADQ' requirements. The verification must demonstrate that the system is compliant with the 'ADQ' provisions which relate to systems - interoperability, performance, and safety requirements. This should result in a creation of an EC Declaration of Verification (DoV) supported by a Technical File (TF) and in some cases also a certificate of conformity delivered by a notified body.

6.23 ANSPs which cannot demonstrate that they fulfil the conditions laid down in ADQ IR, Annex X, Part A, shall have the verification activity performed by an external, notified body (subcontract). That verification shall be conducted in accordance with the requirements for verification of systems included in Annex X, Part B.

6.24 In the EU, the list of notified bodies is maintained by the Commission on the Notified Bodies Nando website https://ec.europa.eu/growth/tools-databases/nando/ and published in the Official Journal of the European Union. At the time of publication there was only one body notified to EC in the area of the Interoperability Regulation 552/2004.

6.25 Further guidance for ANSPs, and manufactures of systems used by ANSPs, regarding Declarations of Verification (DoV) can be found in the Single European Sky interoperability requirements area of the CAA website. EUROCONTROL has also published Guidelines on conformity assessment for the interoperability Regulation of the single European sky which provides guidance on the content of the DoV and TF.

Change Management and Change Notification

Applicability: Requirements on Change Management are only applicable to ATM/ANS providers and Aerodrome Operators.

ADQ IR requirement: No specific requirement.

ATM IR and ADR IR requirements: ATM/ANS.OR.A.045; ATM/ANS.OR.B.005; ATM/ANS.OR.B.010; ATM/ANS.OR.C.005; ATS.OR.205; ADR.OR.B.040; ADR.OR.D.005.

Relevant objectives from the AIR Guide: Manage Changes to the Functional System

6.26 Guidance for ANSPs regarding Change Management and Change Notification process can be found in the Air Navigation Services part of the CAA website.

6.27 Guidance for Aerodrome Operators regarding Change Management and Change Notification process can be found in the Certificated Aerodromes and Licenced Aerodromes part of the CAA website.

Chapter 7

Types of data

General

7.1 Aeronautical data and aeronautical information include:

- numerical aeronautical data and aeronautical information;
- non-numerical aeronautical data and aeronautical information.

7.2 Types of data describing the nature of the property are used in the ICAO Data Catalogue, as follows:

- Point
- Line
- Polygon
- Height
- Altitude
- Elevation
- Distance
- Angle / Bearing
- Value
- Date
- Schedule
- Code list
- Text

7.3 Positional data is also classified by its origination type:

- surveyed;
- calculated; or
- declared.

Note 1: It is common to use the term "derived" for manually selected data that is still based on processed data defined in WGS-84.

Note 2: The methods(s) employed to calculate or derive data shall be recorded as metadata. In Data Catalogue derived data is be visible as declared data.

7.4 Every party originating, processing, and transmitting aeronautical data or information should have identified and documented types of every data item that they are responsible for to ensure that the most appropriate processes for the data type are implemented to provide and maintain specific data items.

Surveyed data

7.5 Full details regarding CAA survey requirements and periodicity are specified in CAP 1732 Aerodrome Survey Guidance.

7.6 The review period metadata attribute in Aurora AIM System is set up by the AISP to generate a task for the relevant Authorised Sources of the survey data published in the AIP, to review the critical or essential surveyed data on annual basis and confirm that it is still valid or provide updates.

7.7 Surveyed data categorised as critical or essential data shall be monitored for changes on a yearly basis (as a minimum). Where changes are detected, re-survey of the relevant data shall be undertaken. Authorised Sources of such data items will be sent a notice by AISP via Aurora Data Originators Portal, as per paragraph 7,6 and will be required to respond within defined timescale. If Authorised Source cannot confirm that the data still meets the data quality requirements, the data can no longer be assured beyond the annual review date and therefore the Authorised Source must change their declaration in the Aurora Portal so the data can be referenced in the AIP at GEN 1.7 as not meeting the data quality requirements.

Note: CAP 1732 Aerodrome Survey Guidance, Chapter 4, includes guidance material on continuous monitoring of the obstacle environment and annual review of the aerodrome survey data

Chapter 8

Data Quality Attributes

General

8.1 The ICAO Data Catalogue specifies only three data quality attributes for each data item – accuracy, resolution, and integrity level. These attributes were implemented as the original data quality attributes in ICAO Annexes and the ADQ IR and they are considered as 'numerical data quality requirements'.

8.2 Currently, ATM IR, ADR IR and EUROCAE ED-76A *Standards for processing aeronautical data* require seven characteristics (attributes) of data quality (accuracy, resolution, integrity, timeliness, completeness, traceability, and format). Amendment 40 to ICAO Annex 15 also included four new data quality attributes and the new attributes should be considered equally important and need to be considered in a wider data-exchange context – not only for individual data items but also data sets and other AIS products.

8.3 Aeronautical data quality attributes for specific data items in scope of the 'ADQ' requirements are based upon the ICAO Data Catalogue and UK national policies as specified at Annex A. As explained in Chapter 2, the Table included in Annex A includes all data items published in the AIP which should meet data quality requirements.

8.4 The aeronautical data quality attributes for data items referred to in Annex A have been developed in accordance with a standardised process describing the methodology for the derivation and validation of these requirements prior to publication, taking due account of the potential impact on relevant ICAO provisions.

8.5 All applicable data quality requirements and methods of demonstrating that the data provided conforms with the specified requirements should always be included in the formal arrangements covering data exchange activities between parties involved in the data chain from the point of data origination to the point of publication by the AISP. More details about Formal Arrangements can be found in Chapter 5.

8.6 EUROCAE ED-77 *User Requirements for Navigational Data* provides a comprehensive overview of the data quality characteristics and requirements.

Accuracy

8.7 For positional data, accuracy is expressed in terms of a distance from a stated position within which there is a defined confidence of the true position falling. Accuracy requirements are specified at Annex A.

Resolution

8.8 Publication Resolution is the smallest separation that can be employed to make the positional statement. Publication Resolution is always a rounded value.

8.9 Resolution supports the accuracy requirements. Resolution values are specified at Annex A.

Integrity

8.10 The integrity of aeronautical data shall be maintained throughout the data process. Based on the applicable integrity classification, the validation and verification procedures shall:

- **For critical data:** assure that corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.
- **For essential data:** assure corruption does not occur at any stage of the entire process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level.
- **For routine data:** avoid corruption throughout the processing of the data.

8.11 As a minimum, measures should be applied for processing numerical data with associated data integrity classification (as per Annex A).

Traceability

8.12 The data traceability requirements are met through the provision of appropriate metadata.

8.13 All parties in the scope of the 'ADQ' requirements, processing data in the scope of the 'ADQ' requirements, shall record and maintain evidence and change history for each item identified in this chapter in order to ensure that traceability is maintained on each data item during its period of validity and for at least 5 years following the end of that period.

Timeliness

8.14 The timely submission and publication of new or amended aeronautical data and aeronautical information in accordance with published AIS publication schedules (including cut-off and publication dates) to ensure that up to date data are available to users without undue delay are considered essential to support the achievement of data quality.

Completeness

8.15 All parties in the scope of the 'ADQ' requirements, processing data in the scope of the 'ADQ' requirements, shall ensure the data and information is complete and as agreed in the Formal Arrangements between the parties concerned. Any missing data items shall be declared by the party providing the data.

Format

8.16 All parties in the scope of the 'ADQ' requirements, processing data in the scope of the 'ADQ' requirements, should deliver and receive data in formats agreed in the formal arrangements covering data exchange activities between parties involved in the data chain from the point of data origination to the point of publication by AIS.

8.17 Some datasets in the upstream data chain have a defined exchange format, e.g.:

- ICAO data sets provided by AIS (AIXM & GeoTIFF);
- Data sets to be delivered to AIS via the Aurora Data Originators Portal are described in paragraph 5.36.

Annex A: UK AIP Authorised Sources and data quality requirements

UK AIP AUTHORISED SOURCES & DATA QUALITY REQUIREMENTS									
	N/a = Not applicable								
Sub-Heading	AIP Section	Authorised Source	*Party approving, verifying, regulating, or overseeing data item*	*Data item in the scope of data quality requirements*	*Integrity Level (critical/essential/routine)*	*Accuracy Requirements (ICAO Data Catalogue)*	*Publication Resolution (ICAO Data Catalogue)*	*Method of Origination Surveyed (S), Calculated (C), declared (D)*	

Note: All requirements associated with data items listed below (published in the AIP) apply to those items when they are published in any Aeronautical Information Product (not only in the AIP).

GEN									
Preface	GEN	0.1	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a
Record of AIP Amendments	GEN	0.2	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a

Record of AIP Supplements	GEN	0.3	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a
Checklist of AIP pages	GEN	0.4	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a
List of hand amendments to the AIP	GEN	0.5	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a
Table of contents to Part 1	GEN	0.6	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a

GEN 1. NATIONAL REGULATIONS AND REQUIREMENTS

Designated authorities	GEN	1.1	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Entry, transit, and departure of aircraft	GEN	1.2	FLT OPS/DfT/HMRC/ HO	FLT OPS	No	N/a	N/a	N/a	N/a
Entry, transit and departure of passengers and crew	GEN	1.3	FLT OPS/HMRC/HO	FLT OPS	No	N/a	N/a	N/a	N/a
Entry, transit, and departure of cargo	GEN	1.4	FLT OPS/HMRC	FLT OPS	No	N/a	N/a	N/a	N/a
Aircraft instruments, equipment, and flight documents	GEN	1.5	FLT OPS / AR / CNS / ATM Policy	FLT OPS / AR / CNS / ATM	No	N/a	N/a	N/a	N/a
Summary of national regulations and international agreements/conventions	GEN	1.6	Legal	Legal	No	N/a	N/a	N/a	N/a

Differences from ICAO Standards, Recommended Practices and Procedures	GEN	1.7	ICAO FP/AIMR	AIMR	No	N/a	N/a	N/a	N/a

GEN 2. TABLES AND CODES

Measuring system, aircraft markings, holidays	GEN	2.1	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Abbreviations used in aeronautical information products	GEN	2.2	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Chart Symbols	GEN	2.3	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Location Indicators	GEN	2.4	AR/ANSP	AR	No	N/a	N/a	N/a	N/a
List of Radio Navigation Aids	GEN	2.5	AERODROME/ ANSP	CNS	No	N/a	N/a	N/a	N/a
Conversion of units of measurement	GEN	2.6	NATS AIM/AR	AR	No	N/a	N/a	N/a	N/a
Sunrise/sunset	GEN	2.7	NATS AIM	AIMR	No	N/a	N/a	N/a	N/a

GEN 3. SERVICES

Aeronautical information services	GEN	3.1	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Aeronautical charts	GEN	3.2	NATS AIM/AIMR	AIMR	No	N/a	N/a	N/a	N/a
Air traffic services	GEN	3.3	AR, ATM	ATM	No	N/a	N/a	N/a	N/a

Communication and navigation services	GEN	3.4	CNS	CNS	No	N/a	N/a	N/a	N/a
Meteorological services	GEN	3.5	MET	MET	No	N/a	N/a	N/a	N/a
Search and rescue	GEN	3.6	AR	ATM	No	N/a	N/a	N/a	N/a

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

Aerodrome/heliport charges	GEN	4.1	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Air navigation services charges	GEN	4.2	NATS	AR	No	N/a	N/a	N/a	N/a

ENR

ENR 1. GENERAL RULES AND PROCEDURES

General rules	ENR	1.1	CAA/AR, NATS/ATFCM	AR	No	N/a	N/a	N/a	N/a
Visual flight rules	ENR	1.2	ATM	ATM	No	N/a	N/a	N/a	N/a
Instrument flight rules	ENR	1.3	ATM	ATM	No	N/a	N/a	N/a	N/a

ATS airspace classification and description	ENR	1.4	AR, ATM	ATM	No	N/a	N/a	N/a	N/a
Holding, approach and departure procedures	ENR	1.5	AR	AR	No	N/a	N/a	N/a	N/a
ATS surveillance services and procedures	ENR	1.6	AR, CNS	AR	No	N/a	N/a	N/a	N/a
Altimeter setting procedures	ENR	1.7	AR	AR	No	N/a	N/a	N/a	N/a
Regional supplementary procedures	ENR	1.8	AR	AR	No	N/a	N/a	N/a	N/a
Air traffic flow management and airspace management	ENR	1.9	AR, NATS	AR	No	N/a	N/a	N/a	N/a
Flight planning	ENR	1.10	AR, MOD	AR	No	N/a	N/a	N/a	N/a
Addressing of flight plan messages	ENR	1.11	AR	AR	No	N/a	N/a	N/a	N/a
Interception of civil aircraft	ENR	1.12	AR	AR	No	N/a	N/a	N/a	N/a
Unlawful interference	ENR	1.13	AR	AR	No	N/a	N/a	N/a	N/a

Air traffic incidents	ENR	1.14	UKAB	AR	No	N/a	N/a	N/a	N/a

ENR 2. ATS AIRSPACE

FIR, UIR, TMA and CTA	ENR	2.1							
Name**	ENR	2.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Lateral Limits (FIR/UIR)**	ENR	2.1	ANSP	AR	Yes	ROUTINE	2km	1 min	D
Lateral Limits (TMA/CTA/CTR)**	ENR	2.1	ANSP	AR	Yes	ESSENTIAL	30m*	1 sec	C
Vertical Limits**	ENR	2.1	ANSP	AR	Yes	ROUTINE	50m	50m or 100ft	C/D
Class of Airspace**	ENR	2.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Unit Providing Service	ENR	2.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Call Sign	ENR	2.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Languages	ENR	2.1	ANSP	AR	No	N/a	N/a	N/a	N/a
Area and Conditions of Use**	ENR	2.1	ANSP	AR	No	N/a	N/a	N/a	N/a
Hours of Service**	ENR	2.1	ANSP	AR	No	N/a	N/a	N/a	N/a
Frequency / Purpose**	ENR	2.1	ANSP	CNS	Yes	Ref C	N/a	N/a	N/a
Remarks (Descriptive table FIR/TMA/CTR/CTA)**	ENR	2.1	ANSP	AR	Yes	Cont C	N/a	N/a	N/a

Other regulated airspace	ENR	2.2							
ATZs - Other than Civil Licensed/Certified Aerodromes**	ENR	2.2							
Name**	ENR	2.2	AERODROME/AR/MOD	AR	Yes*	Ref C	N/a	N/a	N/a
Lateral Limits**	ENR	2.2	AERODROME/AR/MOD	AR	Yes*	ESSENTIAL*	30m*	1 sec*	C*
Vertical Limits**	ENR	2.2	AERODROME/AR/MOD	AR	Yes*	ROUTINE*	50m	50m or 100ft*	C/D*
Class of Airspace**	ENR	2.2	AERODROME/AR/MOD	AR	Yes*	Ref C	N/a	N/a	N/a
Unit Providing Service	ENR	2.2	AERODROME/AR/MOD	CNS	No	N/a	N/a	N/a	N/a
Call Sign	ENR	2.2	AERODROME/AR/MOD	CNS	No	N/a	N/a	N/a	N/a
Languages	ENR	2.2	AERODROME/AR/MOD	AR	No	N/a	N/a	N/a	N/a
Area and Conditions of Use**	ENR	2.2	AERODROME/AR/MOD	AR	No	N/a	N/a	N/a	N/a
Hours of Service**	ENR	2.2	AERODROME/AR/MOD	AR	No	N/a	N/a	N/a	N/a
Frequency / Purpose**	ENR	2.2	AERODROME/AR/MOD	CNS	Yes*	Ref C	N/a	N/a	N/a
Remarks **	ENR	2.2	AERODROME/AR/MOD	AR	Yes*	Cont C	N/a	N/a	N/a
Airspace within which ATS is delegated**	ENR	2.2.1	AR	AR	Yes*	Cont C	N/a	N/a	N/a

MATZ Participating Aerodromes**	ENR	2.2.2							
Name**	ENR	2.2.2	MOD	AR	Yes*	Ref C	N/a	N/a	N/a
Mid-point of the Longest Runway**	ENR	2.2.2	MOD	AR	Yes*	CRITICAL*	1m*	1 m or 1ft*	C*
AD elevation **	ENR	2.2	MOD	AR	Yes*	ESSENTIAL*	0.5m*	1m or 1ft*	S*
Stub Heading(s) °T to AD **	ENR	2.2	MOD	AR	Yes*	Ref C	N/a	N/a	N/a
Controlling Aerodrome **	ENR	2.2	MOD	CNS	Yes*	Ref C	N/a	N/a	N/a
Frequency **	ENR	2.2	MOD	CNS	Yes*	Ref C	N/a	N/a	N/a
Remarks **	ENR	2.2	MOD	AR	Yes*	Cont C	N/a	N/a	N/a
Shanwick OCA (NAT)**	ENR	2.2.3	ANSP	AR	No	N/a	N/a	N/a	N/a
En-Route Transponder Mandatory Zone**	ENR	2.2.4	ANSP	AR	No	N/a	N/a	N/a	N/a
En-Route Radio Mandatory Zone**	ENR	2.2.5	ANSP	AR	No	N/a	N/a	N/a	N/a
North Sea reduced co-ordination area**	ENR	2.2.6	ANSP	AR	No	N/a	N/a	N/a	N/a

ENR 3. ATS ROUTES

Lower ATS routes	**ENR**	**3.1**							
Route Designator**	ENR	3.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Name of Significant Points**	ENR	3.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Co-ordinates**	ENR	3.1	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
RNP Type**	ENR	3.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

Track Mag**	ENR	3.1	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Distance**	ENR	3.1	ANSP	AR	Yes	ROUTINE	1/10 km or 1/10 NM	1/10 km or 1/10 NM	C
Upper Limits**	ENR	3.1	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Lower Limits**	ENR	3.1	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Minimum Flight Altitude**	ENR	3.1	ANSP	AR	Yes	ROUTINE	50m or 100ft	50m or 100ft	C
Lateral Limits (Fillets of airspace) **	ENR	3.1	ANSP	AR	Yes*	ESSENTIAL*	30 m*	1 sec*	C*
Lateral Limits (airway width)**	ENR	3.1	ANSP	AR	Yes*	ROUTINE*	1/10 km or 1/10 NM*	1/10 km or 1/10 NM*	D*
Direction of Cruising Levels**	ENR	3.1	ANSP	AR	No	N/a	N/a	N/a	N/a
Remarks**	ENR	3.1	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Controlling Unit	ENR	3.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency**	ENR	3.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Airspace Classification**	ENR	3.1	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

Upper ATS routes	ENR	3.2							
Route Designator**	ENR	3.2	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Name of Significant Points**	ENR	3.2	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

Co-ordinates**	ENR	3.2	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
RNP Type**	ENR	3.2	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Track Mag**	ENR	3.2	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Distance**	ENR	3.2	ANSP	AR	Yes	ROUTINE	1/10 km or 1/10 NM	1/10 km or 1/10 NM	C
Upper Limits**	ENR	3.2	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Lower Limits**	ENR	3.2	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Minimum Flight Altitude**	ENR	3.2	ANSP	AR	Yes	ROUTINE	50m or 100ft	50m or 100ft	C
Lateral Limits (Fillets of airspace) **	ENR	3.2	ANSP	AR	Yes*	ESSENTIAL*	30 m*	1 sec*	C*
Lateral Limits (airway width) **	ENR	3.2	ANSP	AR	Yes*	ROUTINE*	1/10 km or 1/10 NM*	1/10 km or 1/10 NM*	D*
Direction of Cruising Levels**	ENR	3.2	ANSP	AR	No	N/a	N/a	N/a	N/a
Remarks**	ENR	3.2	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Controlling Unit	ENR	3.2	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency**	ENR	3.2	ANSP	CNS	No	N/a	N/a	N/a	N/a
Airspace Classification**	ENR	3.2	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

Area navigation routes	ENR	3.3							

Route Designator**	ENR	3.3	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Name of Significant Points**	ENR	3.3	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Station identification of the reference VOR/DME**	ENR	3.3	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Co-ordinates**	ENR	3.3	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
RNP Type**	ENR	3.3	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Bearing **	ENR	3.3	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Distance**	ENR	3.3	ANSP	AR	Yes	ROUTINE	1/10 km	1/10 km or 1/10 NM	C
Elevation of the transmitting antenna DME	ENR	3.3	ANSP	CNS	Yes	ESSENTIAL	30m of 100 ft	30m or 100ft	S
Elevation of the transmitting antenna DME/P	ENR	3.3	ANSP	CNS	Yes	ESSENTIAL	3m	3m or 10ft	S
Elevation of GBAS reference point	ENR	3.3	ANSP	CNS	Yes	ESSENTIAL	0.25m	1m or 1 ft	S*
Initial Track Mag**	ENR	3.3	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Great Circle Dist**	ENR	3.3	ANSP	AR	Yes	ROUTINE	1/10 km	1/10 km or 1/10 NM	C
Upper Limits**	ENR	3.2	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Lower Limits**	ENR	3.2	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Direction of Cruising Levels**	ENR	3.3	ANSP	AR	No	N/a	N/a	N/a	N/a

Remarks**	ENR	3.3	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Controlling Unit	ENR	3.3	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency**	ENR	3.3	ANSP	CNS	No	N/a	N/a	N/a	N/a
Airspace Classification**	ENR	3.3	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

Helicopter routes	ENR	3.4							
Route Designator**	ENR	3.4	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Name of Significant Points**	ENR	3.4	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Station identification of the reference VOR/DME**	ENR	3.4	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Co-ordinates**	ENR	3.4	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
RNP Type**	ENR	3.4	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Tracks/VOR radials**	ENR	3.4	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Distance between significant points/changeover points**	ENR	3.4	ANSP	AR	Yes	ROUTINE	1/10 km or 1/10 NM	1/10 km or 1/10 NM	C
Upper Limits**	ENR	3.4	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Lower Limits**	ENR	3.4	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Airspace Classification**	ENR	3.4	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Minimum flight altitudes**	ENR	3.4	ANSP	AR	Yes	ROUTINE	50m or 100ft	50m or 100ft	C

Remarks**	ENR	3.4	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Controlling Unit	ENR	3.4	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency/Channel**	ENR	3.4	ANSP	CNS	No	N/a	N/a	N/a	N/a

Other routes	ENR	3.5							
Route Designator**	ENR	3.5	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Name of Significant Points**	ENR	3.5	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Co-ordinates**	ENR	3.5	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
RNP Type**	ENR	3.5	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Station identification of the reference VOR/DME**	ENR	3.5	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
Initial Track Mag**	ENR	3.5	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Great Circle DIST**	ENR	3.5	ANSP	AR	Yes	ROUTINE	1/10 km	1/10 km or 1/10 NM	C
Upper Limits**	ENR	3.5	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Lower Limits**	ENR	3.5	ANSP	AR	Yes*	ROUTINE*	50m or 100ft	50m or 100ft	C/D*
Direction of Cruising Levels**	ENR	3.5	ANSP	AR	No	N/a	N/a	N/a	N/a
Remarks**	ENR	3.5	ANSP	AR	Yes	Cont C	N/a	N/a	N/a

Controlling Unit	ENR	3.5	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency**	ENR	3.5	ANSP	CNS	No	N/a	N/a	N/a	N/a
Airspace Classification**	ENR	3.5	ANSP	AR	Yes	Ref C	N/a	N/a	N/a

En-route holding	ENR	3.6							
HOLD ID**	ENR	3.6	ANSP	AR	Yes	Ref C	N/a	N/a	N/a
FIX / Waypoint coordinates**	ENR	3.6	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
Inbound Track Mag**	ENR	3.6	ANSP	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Direction of the procedure turn**	ENR	3.6	ANSP	AR	No	N/a	N/a	N/a	N/a
MAX Indicated airspeed**	ENR	3.6	ANSP	AR	No	N/a	N/a	10 kts	N/a
Minimum and Maximum Holding Level**	ENR	3.6	ANSP	AR	Yes*	ROUTINE*	50m or 100ft*	50m or 100ft*	C
Time (MIN) **	ENR	3.6	ANSP	AR	No	N/a	N/a	N/a	N/a
Distance outbound**	ENR	3.6	ANSP	AR	No	N/a	N/a	N/a	N/a
Controlling Unit	ENR	3.6	ANSP	CNS	No	N/a	N/a	N/a	N/a
Frequency/Channel**	ENR	3.6	ANSP	CNS	No	N/a	N/a	N/a	N/a
Remarks**	ENR	3.6	ANSP	AR	Yes	Cont C	N/a	N/a	N/a

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS

Radio navigation aids — en-route	ENR	4.1							
Name of Station**	ENR	4.1	ANSP	CNS	Yes	Ref C	N/a	N/a	N/a
Magnetic Variation (VAR) ILS Loc	ENR	4.1	ANSP	CNS	Yes	ESSENTIAL	1 degree	1 degree	S
Magnetic Variation (VAR) NDB	ENR	4.1	ANSP	CNS	Yes	ROUTINE	1 degree	1 degree	S
Station Declination**	ENR	4.1	ANSP	CNS	Yes*	ESSENTIAL*	1/10 degree*	1/10 degree*	D/C*
ID**	ENR	4.1	ANSP	CNS	Yes	Ref C	N/a	N/a	N/a
Frequency/Channel**	ENR	4.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Hours of Operation	ENR	4.1	ANSP	CNS	No	N/a	N/a	N/a	N/a
Position Coordinates**	ENR	4.1	ANSP	CNS	Yes	ESSENTIAL	30m*	1 sec	S
Elevation of the transmitting antenna DME**	AD- EGXX	3.18.5	AERODROME	CNS	Yes	ESSENTIAL	30m of 100 ft	30m or 100ft	S
Elevation of the transmitting antenna DME/P**	AD- EGXX	3.18.5	AERODROME	CNS	Yes	ESSENTIAL	3m	3m or 10ft	S
Remarks	ENR	4.1	ANSP	CNS	Yes	Cont C	N/a	N/a	N/a

Special navigation systems	ENR	4.2	AR	AR	No	N/a	N/a	N/a	N/a

Global navigation satellite system (GNSS)	ENR	4.3							
Name of the GNSS element	ENR	4.3	AR	AR	No	N/a	N/a	N/a	N/a
Frequency/Channel	ENR	4.3	AR	AR	No	N/a	N/a	N/a	N/a
Coordinates	ENR	4.3	AR	AR	No	N/a	N/a	N/a	N/a
Remarks	ENR	4.3	AR	AR	No	N/a	N/a	N/a	N/a

Name-code designators for significant points	ENR	4.4							
Name-code designator**	ENR	4.4	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Coordinates**	ENR	4.4	ANSP	AR	Yes	ESSENTIAL	30 m*	1 sec	S/C
ATS route or other route**	ENR	4.4	ANSP	AR	Yes	Cont C	N/a	N/a	N/a
Remarks**	ENR	4.4	ANSP	AR	No	N/a	N/a	N/a	N/a

Aeronautical ground lights — en-route	ENR	4.5							

Name IDENT	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Coordinates	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Type of beacon and intensity of the light	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Characteristics of the signal	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Operating hours	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Remarks	ENR	4.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a

ENR 5. NAVIGATION WARNINGS

Prohibited, restricted, danger areas	ENR	5.1							
Identification**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Name**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Lateral Limits inside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL	30m*	1 sec	C
Lateral Limits outside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL*	30m*	1 sec	C*
Upper Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
Lower Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
Remarks**	ENR	5.1	GOV, MOD, AD	AR	Yes	Cont C	N/a	N/a	N/a

EG RU Flight Restriction Zones (FRZ)[8]	ENR	5.1							
Identification**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Name**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Lateral Limits inside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL	30m*	1 sec	C
Lateral Limits outside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL*	30m*	1 sec	C*
Upper Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
Lower Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
Remarks**	ENR	5.1	GOV, MOD, AD	AR	Yes	Cont C	N/a	N/a	N/a

EG RU Runway Protection Zones (RPZ)[8]	ENR	5.1							
Identification**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Name**	ENR	5.1	GOV, MOD, AD	AR	Yes	Ref C	N/a	N/a	N/a
Lateral Limits inside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL	30m*	1 sec	C
Lateral Limits outside CTA/CTR**	ENR	5.1	GOV, MOD, AD	AR	Yes	ESSENTIAL*	30m*	1 sec	C*
Upper Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*

Lower Limit**	ENR	5.1	GOV, MOD, AD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
Remarks**	ENR	5.1	GOV, MOD, AD	AR	Yes	Cont C	N/a	N/a	N/a

Military exercise and training areas and air defence identification zone (ADIZ)	ENR	5.2							
Name**	ENR	5.2	MOD	AR/MOD	Yes	Ref C	N/a	N/a	N/a
Lateral Limits**	ENR	5.2	MOD	AR	Yes	ESSENTIAL	30m*	1 sec	C*
Upper Limit**	ENR	5.2	MOD	AR	Yes	ROUTINE	50m or 100ft*	50m or 100ft	C/D*
Lower Limit**	ENR	5.2	MOD	AR	Yes	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D*
System**	ENR	5.2	MOD	AR	No	N/a	N/a	N/a	N/a
Means of activation**	ENR	5.2	MOD	AR	No	N/a	N/a	N/a	N/a
INFO for CIV FLT**	ENR	5.2	MOD	AR	No	N/a	N/a	N/a	N/a
Remarks**	ENR	5.2	MOD	AR	Yes	Cont C	N/a	N/a	N/a
Time of ACT**	ENR	5.2	MOD	AR	No	N/a	N/a	N/a	N/a
Risk of Interception (ADIZ) **	ENR	5.2	MOD	AR	No	N/a	N/a	N/a	N/a

Other activities of a dangerous nature and other potential hazards	ENR	5.3							
Name**	ENR	5.3	GOV, MOD, IND, UNI	AR	Yes*	Ref C*	N/a	N/a	N/a

Coordinates/Lateral Limits**	ENR	5.3	GOV, MOD, IND, UNI	AR	Yes*	ESSENTIAL*	30m*	1 sec*	C*
Vertical Limits**	ENR	5.3	GOV, MOD, IND, UNI	AR	Yes*	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D
Advisory Measures**	ENR	5.3	GOV, MOD, IND, UNI	AR	Yes	Cont C	N/a	N/a	N/a
Authority responsible for information**	ENR	5.3	GOV, MOD, IND, UNI	AR	No	N/a	N/a	N/a	N/a
Remarks**	ENR	5.3	GOV, MOD, IND, UNI	AR	Yes	Cont C	N/a	N/a	N/a
Activity times**	ENR	5.3	GOV, MOD, IND, UNI	AR	No	N/a	N/a	N/a	N/a

Air navigation obstacles	ENR	5.4							
En-route obstacles (textural description)	ENR	5.4	AIM, AIMR	AIMR	No	N/a	N/a	N/a	N/a
Air Navigation Obstacles Area Codes	ENR	5.4	AR	AR	No	N/a	N/a	N/a	N/a
Obstacle identification/designation	ENR	5.4	MOD	NATS AIM	Yes	Ref C	N/a	N/a	N/a
Type of Obstacle	ENR	5.4	MOD	MAA	Yes	Ref C	N/a	N/a	N/a
Coordinates	ENR	5.4	MOD	MAA	Yes	ROUTINE	50m	1 sec	S
Obstacle elevation (AMSL)	ENR	5.4	MOD	MAA	Yes	ROUTINE	30m	3m or 10ft	S
Height (AGL)	ENR	5.4	MOD	MAA	Yes	ROUTINE	30m	3m or 10ft	S
Obstacle Lighting – Type	ENR	5.4	MOD	MAA	Yes	Ref C	N/a	N/a	N/a

Obstacle Lighting – Colour	ENR	5.4	MOD	MAA	Yes	Ref C	N/a	N/a	N/a
Aerial sporting and recreational activities	ENR	5.5							
Designation**	ENR	5.5	OPERATOR, OWNER	AR	Yes*	Ref C	N/a	N/a	N/a
Lateral Limits**	ENR	5.5	OPERATOR, OWNER	AR	Yes*	ESSENTIAL*	30m*	1 sec*	C*
Vertical Limits**	ENR	5.5	OPERATOR, OWNER	AR	Yes*	ROUTINE*	50m or 100ft*	50m or 100ft*	C/D
Operator/User Telephone number	ENR	5.5	OPERATOR, OWNER	AR	No	N/a	N/a	N/a	N/a
Remarks	ENR	5.5	OPERATOR, OWNER	AR	Yes	Cont C	N/a	N/a	N/a
Time of activity	ENR	5.5	OPERATOR, OWNER	AR	No	N/a	N/a	N/a	N/a
Site elevation	ENR	5.5	OPERATOR, OWNER	AR	No	N/a	N/a	N/a	N/a
Bird Migration and Areas with Sensitive Fauna	ENR	5.6	RSPB, WTT, RPRA	AR (ENV)	No	N/a	N/a	N/a	N/a

AD

AD 1. AERODROMES/HELIPORTS — INTRODUCTION

Aerodrome/heliport availability and conditions of use	AD	1.1	AD Policy	AD Policy	No	N/a	N/a	N/a	N/a
Rescue and firefighting services and snow plan	AD	1.2	AD Policy	AD Policy	No	N/a	N/a	N/a	N/a
Index to aerodromes and heliports	AD	1.3	NATS AIM	AD Policy	No	N/a	N/a	N/a	N/a
Grouping of aerodromes/heliports	AD	1.4	AD Policy	AD Policy	No	N/a	N/a	N/a	N/a
Status of certification of aerodromes	AD	1.5	AERODROME	AD Policy	No	N/a	N/a	N/a	N/a

AD 2. AERODROMES

Location Indicator	AD-EGXX	2.1	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a

Aerodrome geographical and administrative data	AD- EGXX	2.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Aerodrome Reference Point (ARP) coordinates**	AD- EGXX	2.2.1	AERODROME	AAA AD	Yes	ROUTINE	30m	1 sec	S/C
Direction and distance of ARP from centre of the city or town which the aerodrome serves	AD- EGXX	2.2.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Elevation**	AD- EGXX	2.2.3	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S

Geoid Undulation at the aerodrome elevation position	AD- EGXX	2.2.4	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S
Magnetic Variation (VAR) / Annual Change	ENR	2.2.5	NATS AIM	AR	Yes	ESSENTIAL	1 degree	1 degree	S
AD Administration	AD-EGXX	2.2.6	AERODROME	No	No	N/a	N/a	N/a	N/a
Type of traffic permitted (IFR/VFR)	AD-EGXX	2.2.7	AERODROME	NATS AIM/AAA AD	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	2.2.8	AERODROME	No	Yes	Cont C	N/a	N/a	N/a
Operational hours	AD- EGXX	2.3	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Handling services and facilities	AD- EGXX	2.4	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Passenger facilities	AD- EGXX	2.5	AERODROME	No	No	N/a	N/a	N/a	N/a
Rescue and firefighting services**	AD- EGXX	2.6	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Seasonal availability — clearing	AD- EGXX	2.7	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a

Aprons, taxiways, and check locations/positions data	AD- EGXX	2.8							
Designation, surface, and strength of aprons	AD- EGXX	2.8.1	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Designation, surface, and strength of taxiways	AD- EGXX	2.8.1	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Taxiway width	AD- EGXX	2.8.2	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1 ft	S
Altimeter checkpoint location and elevation	AD- EGXX	2.8.3	AERODROME	AAA AD	Yes*	ROUTINE*	0.5m*	1/100sec*	S*
Location of VOR checkpoints	AD- EGXX	2.8.4	AERODROME	AAA AD	Yes*	ROUTINE*	0.5m*	1/100sec*	S*
INS Checkpoints	AD- EGXX	2.8.5	AERODROME	AAA AD	Yes	ROUTINE	0.5m	1/100sec	S
Remarks	AD- EGXX	2.8.6	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a

Surface movement guidance and control system and markings	AD- EGXX	2.9	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a

Aerodrome obstacles	AD- EGXX	2.10							
Area 2 - Obstacle ID or designation**	AD- EGXX	2.10	AERODROME	NATS AIM	Yes	Ref C	N/a	N/a	N/a
Area 2 – Type of obstacle	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a

Area 2 - Obstacle position (coordinates)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	5m	1/10 sec	S
Area 2 - Obstacle elevation (AMSL)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	3m	1m or 1ft	S
Area 2 – Obstacle height (AGL)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	3m	1m or 1ft	S
Area 2 – Obstacle marking and type and colour of obstacle lighting	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Area 2 - Remarks	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a
Area 3 - Obstacle ID or designation**	AD- EGXX	2.10	AERODROME	NATS AIM	Yes	Ref C	N/a	N/a	N/a
Area 3 – Type of obstacle	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Area 3 - Obstacle position (coordinates)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/10 sec	S
Area 3 - Obstacle elevation (AMSL)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	0.1m or 0.1ft	S
Area 3 - Obstacle height (AGL)	AD- EGXX	2.10	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	0.1m or 0.1ft	S
Area 3 – Obstacle marking and type and colour of obstacle lighting	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Area 3 – Remarks	AD- EGXX	2.10	AERODROME	AAA AD	Yes	Cont C	N/A	N/A	N/a

Meteorological information provided	AD- EGXX	2.11	AERODROME	MET	No	N/a	N/a	N/a	N/a

Runway physical characteristics	AD- EGXX	2.12							
Designations RWY	AD- EGXX	2.12.1	AERODROME	NATS AIM/AAA AD	Yes	Ref C	N/a	N/a	N/a
True bearing	AD- EGXX	2.12.2	NATS/AIM	NATS AIM/AAA AD	Yes	ROUTINE	1/100 degree	1/100 degree	S
Dimensions of RWY - length**	AD- EGXX	2.12.3	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
Dimensions of RWY - width**	AD- EGXX	2.12.3	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1ft	S
Strength of pavement (PCN and associated data) and surface of each runway and associated stopways	AD- EGXX	2.12.4	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
THR Coordinates** [applicable also to the RWY end position]	AD- EGXX	2.12.5	AERODROME	AAA AD	Yes	CRITICAL	1m	1/100 sec	S
THR Elevation & Geoid undulation (non-precision)** [applicable also to the RWY end elevation]	AD- EGXX	2.12.6	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S
THR Elevation & Geoid undulation (precision)** [applicable also to the RWY end elevation]	AD- EGXX	2.12.6	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1m or 0.1ft	S
Highest elevation of touchdown zone for precision approach runways	AD- EGXX	2.12.6	AERODROME	AAA AD	Yes	CRITICAL	0.25m or 1 ft	0.1m or 0.1ft*	S*
Slope of RWY	AD- EGXX	2.12.7	AERODROME	AAA AD	Yes*	CRITICAL*	1m*	1m or 1ft*	S/C*
Stopway length and width	AD- EGXX	2.12.8	AERODROME	AD	Yes	ESSENTIAL	1m	1m or 1ft	S
Clearway length and width	AD- EGXX	2.12.9	AERODROME	AAA	Yes	CRITICAL	1m	1m or 1ft	S

				AD					
RWY Strip length and width**	AD- EGXX	2.12.10	AERODROME	AAA AD	Yes*	CRITICAL*	1m*	1m or 1ft*	S/C*
RESA dimensions, Overshoot/Undershoot	AD- EGXX	2.12.11	AERODROME	AAA AD	Yes	CRITICAL*	1m*	1m or 1ft*	S*
Location/description of arresting system	AD- EGXX	2.12.12	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
OFZ	AD- EGXX	2.12.12	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	2.12.12	AERODROME	No	Yes	Cont C	N/a	N/a	N/a

Declared distances	AD- EGXX	2.13							
Runway Designator	AD- EGXX	2.13.1	AERODROME	NATS AIM/AAA AD	Yes	Ref C	N/a	N/a	N/a
TORA**	AD- EGXX	2.13.2	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
TODA**	AD- EGXX	2.13.3	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
ASDA**	AD- EGXX	2.13.4	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
LDA**	AD- EGXX	2.13.5	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
Remarks	AD-EGXX	2.13.6	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a

Approach and runway lighting	AD- EGXX	2.14							
Runway Designator	AD- EGXX	2.14.1	AERODROME	NATS AIM/AAA AD	No	N/a	N/a	N/a	N/a
Approach lighting Type/ Length/ Intensity	AD- EGXX	2.14.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Threshold lighting Colour/ Wing bars	AD- EGXX	2.14.3	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
type of visual approach slope indicator system & Distance from THR	AD- EGXX	2.14.4	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Length of runway touchdown zone lights	AD- EGXX	2.14.5	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Length, spacing, colour and intensity of runway centre line lights	AD- EGXX	2.14.6	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Length, spacing, colour and intensity of runway edge lights	AD- EGXX	2.14.7	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Colour of runway end lights and wing bars	AD- EGXX	2.14.8	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Length and colour of stopway lights	AD- EGXX	2.14.9	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	2.14.10	AERODROME	No	No	N/a	N/a	N/a	N/a

Other lighting and secondary power supply	AD- EGXX	2.15	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a

Coordinates TLOF or THR of FATO [applicable also to the departure end of the runway DER]	AD- EGXX	2.16.1	AERODROME	AAA AD	Yes	CRITICAL	1m	1/100 sec	S
Geoid Undulation (non precision) of the centre of TLOF or THR of FATO	AD- EGXX	2.16.1	AERODROME	AAA AD	Yes	CRITICAL	0.25m	1m or 1ft	S
Geoid Undulation (precision) of the centre of TLOF or THR of FATO	AD- EGXX	2.16.1	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1 m of ft	S
Geoid Undulation of the centre of TLOF or THR of FATO for heliports with or without a PinS approach	AD- EGXX	2.16.1	AERODROME	AAA AD	Yes	ESSENTIAL	0.5	1m or 1ft	S
TLOF / FATO Area elevation (non precision)	AD- EGXX	2.16.2	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S
TLOF / FATO Area elevation (precision)	AD- EGXX	2.16.2	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1m or 0.1ft	S
TLOF and FATO area dimensions	AD- EGXX	2.16.3	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
TLOF and FATO surface type, strength, marking and lighting	AD- EGXX	2.16.3	AERODROME	AAA AD	Yes	Ref C	Strength 1 tone	N/a	N/a
FATO True bearing	AD- EGXX	2.16.4	AERODROME	NATS AIM/AAA AD	Yes	ROUTINE	1/100 degree	1/100 degree	S

Declared distance available	AD- EGXX	2.16.5	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
Approach and FATO lighting	AD- EGXX	2.16.6	AERODROME	AAA AD	N/a	N/a	N/a	N/a	No
Remarks	AD- EGXX	2.16.7	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	No

Air traffic services airspace	AD- EGXX	2.17	AERODROME						
Designation	AD- EGXX	2.17.1	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a
Lateral Limits (Coordinates) ** (Use vertical limit attributes if not described as lat/long)	AD- EGXX	2.17.1	AERODROME	AR	Yes	ESSENTIAL	30m*	1 sec	C
Vertical limits**	AD- EGXX	2.17.2	AERODROME	AR	Yes	ROUTINE	50m	50m or 100ft	C/D
Airspace classification**	AD- EGXX	2.17.3	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a
Call sign and languages of the ATSU	AD- EGXX	2.17.3	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Transition Altitude**	AD- EGXX	2.17.5	AERODROME	AR	Yes*	ROUTINE*	50m*	50m or 100ft*	C/D*
Hours of applicability	AD- EGXX	2.17.5	AERODROME	AR	No	N/a	N/a	N/a	N/a

Remarks	AD- EGXX	2.17.7	AERODROME	No	Yes	Cont C	N/a	N/a	N/a

Air traffic services communication facilities	AD- EGXX	2.18							
Service Designation	AD- EGXX	2.18.1	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Call Sign	AD- EGXX	2.18.2	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Frequency/Channel**	AD- EGXX	2.18.3	AERODROME	CNS	No	N/a	N/a	N/a	N/a
SATVOICE number	AD- EGXX	2.18.4	AERODROME	CNS	N/a	N/a	N/a	N/a	N/a
Logon address	AD- EGXX	2.18.5	AERODROME	CNS	N/a	N/a	N/a	N/a	N/a
Hours of operation	AD- EGXX	2.18.6	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	2.18.7	AERODROME	CNS	No	N/a	N/a	N/a	N/a

Radio navigation and landing aids	AD- EGXX	2.19							
Type of Aid**	AD- EGXX	2.19.1	AERODROME	CNS	Yes	Ref C	N/a	N/a	N/a

Magnetic Variation (VAR) ILS Loc / Annual Change	AD- EGXX	2.19.1	ANSP	CNS	Yes	ESSENTIAL	1 degree	1 degree	S
Magnetic Variation (VAR) NDB / Annual Change	AD- EGXX	2.19.1	ANSP	CNS	Yes	ROUTINE	1 degree	1 degree	S
Type of supported operation for ILS/MLS, basic GNSS, SBAS, and GBAS, and for VOR/ILS/MLS**	AD- EGXX	2.19.1	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Station Declination**	AD- EGXX	2.19.1	NATS/AIM	CNS	Yes*	ESSENTIAL*	1 degree*	1 degree*	C*
ID**	AD- EGXX	2.19.2	AERODROME	CNS	Yes	Ref C	N/a	N/a	N/a
Frequency/Channel**	AD- EGXX	2.19.3	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Hours of Operation	AD- EGXX	2.19.4	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Position of transmitting antenna coordinates**	AD- EGXX	2.19.5	AERODROME	CNS	Yes	ESSENTIAL	3m	1/10 sec	S
Position of the GBAS Ref Point**	AD- EGXX	2.19.5	AERODROME	CNS	Yes	N/a	1m	N/a	N/a
Elevation of the transmitting antenna DME**	AD- EGXX	2.19.6	AERODROME	CNS	Yes	ESSENTIAL	30m of 100 ft	30m or 100ft	S
Elevation of the transmitting antenna DME/P**	AD- EGXX	2.19.6	AERODROME	CNS	Yes	ESSENTIAL	3m	3m or 10ft	S
Elevation of GBAS reference point **	AD- EGXX	2.19.6	AERODROME	CNS	Yes	ESSENTIAL	0.25m	1m or 1 ft	S*

Ellipsoid height of the point (e.g., LTP or FTP)	AD- EGXX	2.19.6	AERODROME	CNS	Yes	CRITICAL	1m or 1ft	1m or 1 ft	C*
Remarks	AD- EGXX	2.19.7	AERODROME	CNS	Yes	Cont C	N/a	N/a	N/a
Local aerodrome regulations	AD- EGXX	2.20	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a
Noise Abatement Text & Tables**	AD- EGXX	2.21	AERODROME	ENV	Yes	Cont C	N/a	N/a	N/a
Flight procedures	AD- EGXX	2.22							
VRPs**	AD- EGXX	2.22	AERODROME	AR	Yes*	Cont C	N/a	N/a	N/a
VFR and Special VFR routes**	AD- EGXX	2.22	AERODROME	AR	Yes*	Cont C	N/a	N/a	N/a
London Heli Routes**	AD- EGXX	2.22	AERODROME	AR	Yes*	Cont C	N/a	N/a	N/a
FMC**	AD- EGXX	2.22	AERODROME	AR	Yes*	Cont C	N/a	N/a	N/a
Additional information	AD- EGXX	2.23	AERODROME	No	Yes	Cont C	N/a	N/a	N/a

Charts related to an aerodrome	AD- EGXX	2.24	AERODROME	AR/AAA AD	Yes	Cont C	N/a	N/a	N/a

AD 3. HELIPORTS

Heliport location indicator	AD- EGXX	3.1	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a

Heliport geographical and administrative data	AD- EGXX	3.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Heliport reference point	AD- EGXX	3.2.1	AERODROME	AAA AD	Yes	ROUTINE	30m	1 sec	S/C
Direction and distance of HRP from centre of the city or town which the aerodrome serves	AD- EGXX	3.2.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Elevation	AD- EGXX	3.2.3	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S
Geoid Undulation at the aerodrome elevation position	AD- EGXX	3.2.4	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1ft	S
Magnetic Variation (VAR) / Annual Change	ENR	3.2.5	NATS AIM	AR	Yes	ESSENTIAL	1 degree	1 degree	S
AD Administration	AD-EGXX	3.2.6	AERODROME	No	No	N/a	N/a	N/a	N/a
Type of traffic permitted (IFR/VFR)	AD-EGXX	3.2.7	AERODROME	NATS AIM/AAA AD	No	N/a	N/a	N/a	N/a

Remarks	AD- EGXX	3.2.8	AERODROME	No	Yes	Cont C	N/a	N/a	N/a
Operational hours	AD- EGXX	3.3	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Handling services and facilities	AD- EGXX	3.4	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Passenger facilities	AD- EGXX	3.5	AERODROME	No	No	N/a	N/a	N/a	N/a
Rescue and firefighting services**	AD- EGXX	3.6	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Seasonal availability — clearing	AD- EGXX	3.7	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Aprons, taxiways, and check locations/positions data	AD- EGXX	3.8							
Designation, surface and strength of aprons, helicopter stands	AD- EGXX	3.8.1	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Designation, surface, and strength of helicopter ground taxiways	AD- EGXX	3.8.2	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Helicopter ground taxiway width	AD- EGXX	3.8.2	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1 ft*	S

Designation of helicopter air transit routes	AD- EGXX	3.8.3	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Helicopter air taxiway width [applicable to air transit routes]	AD- EGXX	3.8.3	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1 ft*	S
Altimeter checkpoint location and elevation	AD- EGXX	3.8.3	AERODROME	No	Yes*	ROUTINE*	0.5m*	1/100sec*	S*
Location of VOR checkpoints	AD- EGXX	3.8.4	AERODROME	No	Yes*	ROUTINE*	0.5m*	1/100sec*	S*
INS Checkpoints	AD- EGXX	3.8.5	AERODROME	AAA AD	Yes	ROUTINE	0.5m	1/100sec	S
Remarks	AD- EGXX	3.8.6	AERODROME	No	Yes	Cont C	N/a	N/a	N/a

Markings and markers	AD- EGXX	2.9	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a

Heliport obstacles	AD- EGXX	3.10	AERODROME						
Obstacle ID or designation	AD- EGXX	3.10	AERODROME	NATS AIM	Yes	Ref C	N/a	N/a	N/a
Type of obstacle	AD- EGXX	3.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Obstacle position (coordinates)	AD- EGXX	3.10	AERODROME	AAA AD	Yes	ESSENTIAL	5m	1/10 sec	S
Obstacle elevation (AMSL)	AD- EGXX	3.10	AERODROME	AAA AD	Yes	ESSENTIAL	3m	1m or 1ft	S

Obstacle height (AGL)	AD- EGXX	3.10	AERODROME	AAA AD	Yes	ESSENTIAL	3m	1m or 1ft	S
Obstacle marking and type and colour of obstacle lighting	AD- EGXX	3.10	AERODROME	AAA AD	Yes	Ref C	N/a	N/a	N/a
Remarks	AD- EGXX	3.10	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a

Meteorological information provided	AD- EGXX	3.11	AERODROME	MET	No	N/a	N/a	N/a	N/a

HELIPORT DATA	AD- EGXX	3.12	AERODROME						
Heliport type (surface-level, elevated or helideck)	AD- EGXX	3.12.1	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
TLOF dimensions**	AD- EGXX	3.12.2	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
FATO True bearing	AD- EGXX	3.12.3	AERODROME	NATS AIM/AAA AD	Yes	ROUTINE	1/100 degree	1/100 degree	S
FATO dimensions**	AD- EGXX	3.12.4	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
Surface and bearing strength in tonnes (1 000 kg) of TLOF	AD- EGXX	3.12.5	AERODROME	AAA AD	No	N/a	1 tone	N/a	N/a
Co-ordinates of the geometric centre of TLOF or of each threshold of FATO	AD- EGXX	3.12.6	AERODROME	AAA AD	Yes	CRITICAL	1m	1/100 sec	S

Geoid Undulation (non precision) of the centre of TLOF or THR of FATO	AD- EGXX	3.12.6	AERODROME	AAA AD	Yes	CRITICAL	0.25m	1m or 1ft	S
Geoid Undulation (precision) of the centre of TLOF or THR of FATO	AD- EGXX	3.12.6	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1 m of ft	S
Geoid Undulation of the centre of TLOF or THR of FATO for heliports with or without a PinS approach	AD- EGXX	3.12.6	AERODROME	AAA AD	Yes	ESSENTIAL	0.5	1m or 1ft	S
TLOF and/or FATO Slope	AD-	3.12.	AERODROME	AAA AD	No	N/a	N/a	N/a	S/C*
TLOF and/or FATO Elevation	AD- EGXX	3.12.7	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1m or 0.1ft	S
Safety Area dimensions	AD- EGXX	3.12.8	AERODROME	AAA AD	Yes*	CRITICAL*	1m*	1m or 1ft*	S*
Helicopter CWY dimensions	AD- EGXX	3.12.9	AERODROME	AAA AD	Yes*	ESSENTIAL*	1m*	1m or 1ft*	S*
Obstacle Free Sector	AD- EGXX	3.12.10	AERODROME	AAA AD	Yes*	ESSENTIAL*	1m*	1m or 1ft*	S*
Remarks	AD- EGXX	3.12.11	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a

Declared distances	AD- EGXX	3.13							
TODAH	AD- EGXX	3.13.1	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
RTODAH	AD- EGXX	3.13.2	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S

LDAH	AD- EGXX	3.13.3	AERODROME	AAA AD	Yes	CRITICAL	1m	1m or 1ft	S
Remarks	AD- EGXX	3.13.4	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a
Approach and FATO lighting	AD- EGXX	3.14	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Other lighting and secondary power supply	AD- EGXX	3.15	AERODROME	AAA AD	No	N/a	N/a	N/a	N/a
Air traffic services airspace	AD- EGXX	3.16							
Airspace designation	AD- EGXX	3.16.1	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a
Lateral limits (coordinates) ** (Use vertical limit attributes if not described as lat/long)	AD- EGXX	3.16.1	AERODROME	AR	Yes	ESSENTIAL	30m*	1 sec	C
Vertical limits**	AD- EGXX	3.16.2	AERODROME	AR	Yes	ROUTINE	50m	50m or 100ft	C/D
Airspace classification**	AD- EGXX	3.16.3	AERODROME	AR	Yes	Ref C	N/a	N/a	N/a
ATS Unit(s) Call Sign and language(s)	AD- EGXX	3.16.4	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Transition Altitude**	AD- EGXX	3.16.5	AERODROME	AR	Yes*	ROUTINE*	50m*	50m or 100ft*	C/D*

Hours of applicability	AD- EGXX	3.16.6	AERODROME	No	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	3.16.7	AERODROME	No	Yes	Cont C	N/a	N/a	N/a

Air traffic services communication facilities	AD- EGXX	3.17							
Service Designation	AD- EGXX	3.17.1	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Call Sign	AD- EGXX	3.17.2	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Frequency/Channel**	AD- EGXX	3.17.3	AERODROME	CNS	No	N/a	N/a	N/a	N/a
SATVOICE number	AD- EGXX	3.17.4	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Logon address	AD- EGXX	3.17.5	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Hours of operation	AD- EGXX	3.17.4	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Remarks	AD- EGXX	3.17.5	AERODROME	CNS	No	N/a	N/a	N/a	N/a

Radio navigation and landing aids	AD- EGXX	3.18							

Type of Aid**	AD- EGXX	3.18.1	AERODROME	CNS	Yes	Ref C	N/a	N/a	N/a
Magnetic Variation (VAR) ILS Loc	AD- EGXX	3.18.1	ANSP	CNS	Yes	ESSENTIAL	1 degree	1 degree	S
Magnetic Variation (VAR) NDB	AD- EGXX	3.18.1	ANSP	CNS	Yes	ROUTINE	1 degree	1 degree	S
Type of supported operation for ILS/MLS, basic GNSS, SBAS and GBAS, and for VOR/ILS/MLS**	AD- EGXX	3.18.1	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Station declination**	AD- EGXX	3.18.1	AERODROME	CNS	Yes*	ESSENTIAL*	1 degree*	1 degree*	C*
ID**	AD- EGXX	3.18.2	AERODROME	CNS	Yes	Ref C	N/a	N/a	N/a
Frequency/Channel**	AD- EGXX	3.18.3	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Hours of Operation	AD- EGXX	3.18.4	AERODROME	CNS	No	N/a	N/a	N/a	N/a
Position of the transmitting Antenna coordinates**	AD- EGXX	3.18.5	AERODROME	CNS	Yes	ESSENTIAL	3m	1/10 sec	S
Position of the GBAS Ref Point**	AD- EGXX	3.18.5	AERODROME	CNS	Yes	N/a	1m	N/a	N/a
Elevation of the transmitting antenna DME**	AD- EGXX	3.18.6	AERODROME	CNS	Yes	ESSENTIAL	30m of 100 ft	30m or 100ft	S
Elevation of the transmitting antenna DME/P**	AD- EGXX	3.18.6	AERODROME	CNS	Yes	ESSENTIAL	3m	3m or 10ft	S

Elevation of GBAS reference point **	AD- EGXX	3.18.6	AERODROME	CNS	Yes	ESSENTIAL	0.25m	1m or 1 ft	S*
Ellipsoid height of the point (e.g., LTP or FTP)	AD- EGXX	3.18.6	AERODROME	CNS	Yes	CRITICAL	1m or 1ft	1m or 1 ft	C*
Service volume radius from the GBAS reference point	AD- EGXX	3.18.7	AERODROME	CNS	No	N/a	1km or 1NM	1km or 1NM	N/a
Remarks	AD- EGXX	3.18.7	AERODROME	CNS	Yes	Cont C	N/a	N/a	N/a
Local heliport regulations	AD- EGXX	3.19	AERODROME	AAA AD	Yes	Cont C	N/a	N/a	N/a
Noise abatement procedures**	AD- EGXX	3.20	AERODROME	ENV	Yes	Cont C	N/a	N/a	N/a
Flight procedures	AD- EGXX	3.21	AERODROME	AR	Yes	Cont C	N/a	N/a	N/a
Additional information	AD- EGXX	3.22	AERODROME	No	Yes	Cont C	N/a	N/a	N/a
Charts related to a heliport	AD- EGXX	3.23	AERODROME	AR/AAA AD	Yes	Cont C	N/a	N/a	N/a

Additional Data Items published in the Aeronautical Information Products in the scope of data quality requirements:

Runway holding position	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S
Stop bars and RWY Markings	AD- EGXX	N/a	AERODROME	AAA AD	Yes*	CRITICAL*	0.5m*	1/100 sec*	S*
Runway centre line points position	AD- EGXX	N/a	AERODROME	AAA AD	Yes	CRITICAL	1m	1/100 sec*	S
Runway centre line points elevation	AD- EGXX	N/a	AERODROME	AAA AD	Yes	CRITICAL	0.25m	1/100 sec*	S
Taxiway centre line/parking guidance line points position [applicable also to helicopter ground taxiways and air taxiways]	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S
Taxiway centre line points elevation [applicable also to helicopter ground taxiways and air taxiways]	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1ft*	S
Aircraft stand guidance line	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S
Aircraft stand guidance line elevation	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1/100 sec*	S
Aircraft stand point position	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ROUTINE	0.5m	1/100 sec	S
Helicopter stand point position	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S

Apron boundaries (polygon)	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ROUTINE	1m	1/10sec	S
De-icing/anti-icing facility (polygon)	AD- EGXX	N/a	AERODROME	No	Yes	ROUTINE	1m	1/10sec	S
Runway Exit guidance line	AD- EGXX	N/a	AERODROME	No	Yes	ESSENTIAL	0.5m	1/100 sec	S
Runway shoulder width	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1ft	S
Helicopter ground taxiway intersection marking line	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S
Intermediate holding position marking line	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1/100 sec	S
Taxiway shoulder width	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	1m	1m or 1ft	S
Elevation of FATO threshold and TLOF centre point for heliports with or without a PinS approach	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ESSENTIAL	0.5m	1m or 1 ft	S
Elevation of FATO threshold and TLOF centre point for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2 (non-precision)	AD- EGXX	N/a	AERODROME	AAA AD	Yes	CRITICAL	0.25m	1m or 1ft	S
Elevation of FATO threshold and TLOF centre point for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2 (precision)	AD- EGXX	N/a	AERODROME	AAA AD	Yes	CRITICAL	0.25m	0.1m or 0.1ft	S
ILS localizer antenna – runway/FATO end, distance	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	3m	1m or 1 ft	C
ILS glide-slope antenna-threshold distance along centreline	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	3m	1m or 1 ft	C

ILS marker – threshold distance	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	3m	1m or 1 ft	C
ILS DME antenna-threshold distance along centreline	AD-EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	3m	1m or 1 ft	C
Terminal arrival/departure route segments track**	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	1/10 degree	1 degree	C
Terminal arrival/departure route segments length**	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	1/100 km	1/100 km or 1/100 NM	C
En-route fixes	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	100m	1 sec	S/C
STAR/SID points	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	100m	1 sec	S/C
Final Approach fixes and other essential fixes/points comprising the Instrument Approach**	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	3m	1/10 sec	S/C
Procedure holding – minimum and maximum* altitude	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	50m	50 m or 100 ft/flight level	C
Procedure holding – inbound and outbound course	AD- EGXX	N/a	AERODROME	AR	No	N/a	N/a	1/10 deg	C*
Procedure holding – leg distance	AD- EGXX	N/a	AERODROME	AR	No	N/a	N/a	1/10km or 1/10 NM	C*
Procedure holding – max indicated air speed	AD- EGXX	N/a	AERODROME	AR	No	N/a	N/a	10 kts	C*
Heliport crossing height HCH	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	0.5m	1m of 1ft	C
Speed Limit Point (SLP) **	AD- EGXX	N/a	AERODROME	AR	Yes*	ESSENTIAL*	1NM*	1NM*	C*

MLS zero azimuth alignment (True bearing)	AD- EGXX	N/a	AERODROME	No	Yes	ESSENTIAL	1/100 degree	1/100 degree	S
MLS azimuth antenna - runway/FATO end, distance	AD- EGXX	N/a	AERODROME	No	Yes	ROUTINE	3m	1m or 1ft	C
MLS elevation antenna - threshold distance along centreline	AD- EGXX	N/a	AERODROME	No	Yes	ROUTINE	3m	1m or 1ft	C
MLS DME/P antenna - threshold distance along centreline	AD- EGXX	N/a	AERODROME	No	Yes	ROUTINE	3m	1m or 1ft	C
Obstacle clearance altitude/height (OCA/H)**	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	1 ft	1 ft	C
Procedure segment altitude/height	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	50m	50 m or 100 ft/flight level	C
Procedure segment distance	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	1/100km	1/100km or 1/100NM	C
Procedure segment true bearing	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	1/10 deg	1/10 deg	C
Procedure segment magnetic bearing	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	1/10 deg	1 deg	C
Final Approach Segment LTP/FTP position	AD- EGXX	N/a	AERODROME	AR	Yes	CRITICAL	0.3m or 1ft	0.0005" (0.01")	C*
Final Approach Segment LTP/FTP elevation (ellipsoid height)	AD- EGXX	N/a	AERODROME	AR	Yes	CRITICAL	0.25m	0.1m	C*
Final Approach Segment FP/AP position	AD- EGXX	N/a	AERODROME	AR	Yes	CRITICAL	0.3m or 1ft	0.0005" (0.01")	C*

Final Approach Segment Threshold Crossing Height TCH**	AD- EGXX	N/a	AERODROME	AR	Yes	CRITICAL	0.5m	0.05m	C
Final Approach Segment GPA	AD- EGXX	N/a	AERODROME	AR	No	N/a	0.01m	0.01m	C*
Final Approach Segment Course Width at threshold	AD- EGXX	N/a	AERODROME	AR	Yes	CRITICAL	N/a	0.25m	C*
Final Approach Segment Delta Length Offset	AD- EGXX	N/a	AERODROME	AR	No	N/a	N/a	8m	C*
Displaced threshold distance**	AD- EGXX	N/a	AERODROME	AAA AD	Yes	ROUTINE	1m	1m or 1ft	S
Minimum en-route altitude (MEA)	N/a	N/a	ANSP	AR	Yes	ROUTINE	50m	50 m or 100 ft	C
Minimum obstacle clearance altitude (MOCA)	N/a	N/a	ANSP	AR	Yes	ROUTINE	50m	50 m or 100 ft	C
Bearing used for the formation of an en-route fix (from the reference VOR/DME, if the waypoint is not collocated with it.)	N/a	N/a	ANSP	AR	Yes	ROUTINE	1/10 degree	1/10 degree	C
Distance used for the formation of an en-route fix (The distance from the reference VOR/DME, if the waypoint is not collocated with it)	N/a	N/a	ANSP	AR	Yes	ROUTINE	1/10 km	1/10 km or 1/10 NM	C
Distance used for the formation of a terminal and instrument approach procedure fix (The distance from the reference VOR/DME, if the waypoint is not collocated with it) **	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	1/100 km	1/100 km or 1/100 NM	C
Bearing used for the formation of a terminal fix	AD- EGXX	N/a	AERODROME	AR	Yes	ROUTINE	1/10 degree	1/10 degree	C

Bearing used for the formation of an instrument approach procedure fix	AD- EGXX	N/a	AERODROME	AR	Yes	ESSENTIAL	1/100 degree	1/100 degree	C
ILS Localizer alignment Bearing (Localizer course)**	N/a	N/a	ANSP	AR	Yes	ESSENTIAL	1/100 deg	1/100 deg	S
The value of the ILS Reference Datum Height (ILS RDH).	N/a	N/a	ANSP	AR	Yes	CRITICAL	0.5m	0.1m or 0.1 ft	C
Lower Airspace Radar Service Coverage**	N/a	N/a	ANSP	AR	No	N/a	N/a	N/a	N/a

Notes

1. Any AIP data item listed at Annex A and identified as being in scope of the 'ADQ' requirements, shall also be subject to the same requirements stated in this CAP if included as part of a permanent NOTAM.

2. Any AIP data item listed at Annex A and identified as being in scope of the 'ADQ' requirements, shall also be subject to the same requirements stated in this CAP if included as part of a temporary NOTAM, except where to do so would inhibit the distribution of aeronautical information necessary to ensure the safety of a flight.

3. Any AIP data item listed at Annex A and identified as being in scope of the 'ADQ' requirements, shall also be subject to the same requirements stated in this CAP if included as part of any AIP Amendments, AIP Supplements, aeronautical charts, and digital datasets.

4. The Annex should be used to support the use of the ICAO Data Catalogue in relation to the AIP.

5. 'Ref C' or 'Reference Conditional' indicates that the integrity value for this data is conditionally referenced to the data that it is combined with. An example of Ref C might be the aerodrome ICAO code 'EGXX' when combined with critical survey data such as a threshold position and elevation.

6. 'Cont C' or 'Content Conditional' indicates that this section of the AIP may (or may not) contain data that is in the scope of the data quality requirements, but the table above does not specify what kind of data can be included e.g., "Remarks" section can potentially include numerical data with associated data quality requirements, or VRP section in AD 2.22 can include a number of data items in the scope of the data quality requirements, such as coordinates or Mag Track.

7. Policy on the Application of Magnetic Variation in the UK Aeronautical Information Publication is available in Annex C.

8. Full details of the CAA's policy and guidance regarding the establishment and dimensions of FRZ/RPZs can be found in CAA Policy Statement – *Establishment of Permanent Flight Restriction Zones at Protected Aerodromes (FRZ)*, but the key information is provided in Annex D.

“*” indicates UK-specific policy (e.g., UK-specific accuracy requirement which is more demanding that the international requirement).
“**” indicates AIP sections or data items which are in the scope of regulatory notifications – the CAA will be notified every time change request is affecting those sections or data items.

Annex B: Contact Details of CAA Regulatory Departments referred to in Annex A

AIMR	CAA Future Safety Aeronautical Information Management Regulation	Aviation House, Gatwick Airport South, RH6 0YR aimr@caa.co.uk
AAA AD	CAA Aerodromes, Airspace, & ATM (AAA) Aerodromes	Aviation House, Gatwick Airport South, RH6 0YR Aerodromes.ATM@caa.co.uk
AR	CAA Aerodromes, Airspace, & ATM (AAA) Airspace Regulation	Aviation House, Gatwick Airport South, RH6 0YR airspace.policy@caa.co.uk
AR (ENV)	Airspace Regulator (Environment)	Aviation House, Gatwick Airport South, RH6 0YR airspace.policy@caa.co.uk
CNS	Spectrum & Surveillance, Comms, Navigation & Surveillance	Aviation House, Gatwick Airport South, RH6 0YR spectrum@caa.co.uk
Flt Ops	CAA Future Safety Flight Operations Policy	Aviation House, Gatwick Airport South, RH6 0YR

NATS AIM	UK Aeronautical Information Service Provider	UK Aeronautical Information Service NATS Swanwick Room 3115 aissupervisor@nats.co.uk
ATM	CAA Future Safety ATM Policy	Aviation House, Gatwick Airport South, RH6 0Y.0R ATS.Enquiries@caa.co.uk
Legal	CAA Office of the General Counsel Safety and Airspace Legal Team	Westferry 11 Westferry Circus Canary Wharf, London E14 4HD OGCMailbox@caa.co.uk
ICAO FP	CAA International Strategy & Engagement	Aviation House, Gatwick Airport South, RH6 0YR icaofocalpoint@caa.co.uk
UKAB	UK AIRPROX BOARD	Building 59 RAF Northolt West End Road, Ruislip HA4 6NG admin@airproxboard.org.uk
MAA	Military Aviation Authority	Juniper Building MOD Abbey Wood (North) Bristol BS34 8QW DSA-MAA-MRPEnquiries@mod.gov.uk
MET	CAA Future Safety MET Policy	Aviation House, Gatwick Airport South, RH6 0YR metauthority@caa.co.uk

Annex C: Application of Magnetic Variation in the UK Aeronautical Information Publication

Policy Details

At the time of a consequential change to AIP related information, NATS/AIM shall update all associated information containing the consequential change with the current magnetic variation values, applied as follows;

1) For information published prior to the mid-point of the current magnetic variation EPOCH cycle1, the mid-EPOCH (2.5 year) value shall be applied.

2) For information published after the mid-point of the current EPOC cycle1, the end of EPOCH (5 year) value shall be applied.

The application of the method described above will ensure that all AIP information is consistently updated with 'forward looking' magnetic variation values.

3) If an AIP chart that is being updated for consequential changes is one of a series of charts i.e., IFP, SID or STAR, and the updated Magnetic variation results in a difference between the same information within the rest of the charts in that series, then the complete series of charts shall be updated.

4) All AIP data containing a magnetic value, magnetic track, magnetic bearing, and not previously updated within the five-year EPOCH cycle1, shall be updated as a consequence of applying magnetic variation at the start of each EPOCH cycle1, i.e., every five years.

5) Update of aerodrome runway QDM markings, as a consequence of the application of magnetic variation, shall not be updated without co-ordination with the aerodrome operator and CAA.

The application of magnetic variation shall be based upon the World Magnetic Model (WMM) obtained from the National Oceanic and Atmospheric Administration (NOAA).

En-Route - ATS routes.

1) ENR 3.1 and ENR 3.2 ATS routes shall include magnetic tracks for each segment of a route.

2) The magnetic tracks shall be calculated as absolute values for forward and reverse 'True-North' headings, with the respective magnetic variation values for the start and end of each segment added.

3) The periodicity for application of magnetic variation to ATS routes shall be as described above.

It should be noted that the method for applying magnetic variation to an ATS route, as described in point 1, could result in non-reciprocal ATS route headings.

4) ENR 3.3 does not require tracks for RNAV type routes; instead, where waypoints are established and referenced to a VOR/DME, these magnetic radials shall be updated in accordance with process described in points above.

UK definition of sources of variation for UK features

Feature	**Source of Variation**
IFP Segment Leg/Final Leg	• Magnetic variation of the associated Airport Heliport will be used or • VOR declination of the associated VOR component (PlgRadialCourse)
Holding Pattern	• Magnetic variation of the associated Designated Point will be used or • Declination of the first associated VOR component of the Navaid will be used or (for conventional hold only) • Magnetic variation the associated navaid component of the Navaid will be used
Angle Indication	• Magnetic variation of the associated Designated Point will be used or • Declination of the first associated VOR component of the Navaid will be used or • Magnetic variation the associated navaid component of the Navaid will be used
Azimuth/Localizer/SDF	• Magnetic variation of the Entity itself
Runway Direction	• Magnetic variation of the associated Airport Heliport will be used
Route Segment	• Magnetic variation of the associated starting Designated Point will be used or • Magnetic variation of the first associated starting VOR component of the Navaid will be used or • Magnetic variation the associated starting navaid component of the Navaid will be used

Annex D: Flight Restriction Zone (FRZ)/Runway Protection Zone (RPZ) Data

Full details of the CAA's policy and guidance regarding the establishment and dimensions of FRZ/RPZs can be found in CAA Policy Statement – Establishment of Permanent Flight Restriction Zones at Protected Aerodromes (FRZ), but the following details should be noted:

1. To maintain FRZ/RPZ data on an ongoing basis changes to the shape or dimensions of an aerodrome's FRZ/RPZ will require the AIP to be updated by the aerodrome operator by submitting an AIP Change Request through the Aurora portal. An Airspace Change Proposal may also be required for some changes.
2. Changes to aerodrome data arising from the re-surveying of the aerodrome, changes to the boundary which affect the FRZ, changes to the ARP, changes to runway thresholds or any other such change, may also result in a change to the notified shape and/or dimensions of the FRZ/RPZ (in accordance with Annex A). Therefore, in such cases, **the aerodrome operator must re-calculate their FRZ/RPZ dimensions,** and an ACP must be submitted.
3. FRZ/RPZ data must comply with the data quality requirements and CAA policies for the provision of aeronautical information as detailed in this CAP (and with reference as applicable to CAA Policy Statement – Aeronautical Data associated with Airspace Design).

Note: Operators of aerodromes and heliports which are out of scope of the 'ADQ' requirements should use the guidance contained in this CAP as best practice on a proportionate basis when processing FRZ/RPZ, and other, aeronautical information and data.