



HungaroControl Zrt.

DATA PRODUCT SPECIFICATION

This document explains the details of the Data Products
published by Hungarocontrol

Version 1

*Document
published by AIS
Hungary*

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0.1 Version history

| <u>Version</u> | <u>Changes</u> | <u>Effective date</u> | <u>Chapters affected</u> |
|-----------------------|---|------------------------------|---------------------------------|
| 1.0 | First version in accordance with 469/2020 EU regulation | 12.10.2021 | Entire document |

1 General

1.1 Purpose

The primary purpose of the document is to comply with regulation EU 469/2020 AIS.TR.335 b) which is the following:

„A description of each available data set shall be provided in the form of a data product specification.”

The Data Product Specification means a detailed description of a data set or a collection of data sets together with additional information that will enable it to be created, supplied to and used by another party.

1.2 Structure of the document

The language of the document is English, in order to allow the international air transport community to understand how to utilize the products made available by Hungarocontrol AIS.

1.3 Publication of the document

The publication of the document is taken care by the Head of Publication Unit in Hungarocontrol AIS. The actual and future version of the document is available on the [Hungarocontrol AIS website](#). Hungarocontrol offers a notification service

1.4 Document maintenance

The maintenance of this document is performed by Hungarocontrol AIS department. The update of the document is necessary when a change is performed in the data products those are available. Each version of the document has an effective date that is accordance with the international AIRAC cycle dates. The update to this document might also be necessary when there is a change to the relevant international recommendations, regulations, or national regulatory framework.

1.5 Consultation

Should any question arise during the understanding of this document or consuming the products, please contact HungaroControl Publication & Static Data Unit at: pubsdo@hungarocontrol.hu

2 Data Product Specification

2.1 Electronic Obstacle Dataset

The Electronic Obstacle Dataset products depicts the obstacles that are in ENR 5.4, and AD 2.10 chapters in the AIP. However ENR 5.4 is published in the AIP, AD 2.10 is omitted because of the exhaustive amount of data.

2.1.1 Excel file

Recommended application to consume the product: Microsoft Excel.

The update interval for this dataset is in accordance with the publication of the eAIP available on Hungarocontrol AIS website. In the eAIP GEN 3.1.

The following description provides details about each column that is available in the spreadsheet:

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|----------------------------|--|-----------------------------------|
| Metadata | a) | Data Originator Identifier | String that identifies the originator of the data. As a metadata, this is considered for the entire dataset | |
| Metadata | b) | Area of coverage | The textual description to depict the area of the coverage. As a metadata this is considered for the entire dataset | |
| Data | c) | Latitude, WGS-84, ICAO | ICAO formatted WGS-84 coordinates. | |
| Data | d) | Latitude, WGS-84, GML | ISO format coordinates, primarily usable by applications. | |
| Data | e) | Longitude, WGS-84, ICAO | ICAO formatted WGS-84 coordinates. | |
| Data | f) | Longitude, WGS-84, GML | ISO format coordinates, primarily usable by applications | |
| Data | g) | Obstacle Identifier | Identifier string for the obstacle on a main level. This value does not change during the lifecycle of the obstacle. Naming convention: | |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|--------------------------|--|-----------------------------------|
| | | | <p>Area 1: LHCC_AREA1_Pxxx Where xxx is an incremental number starting from 001</p> <p>LHXX_AREAYY_Z_### LHXX: ICAO identifier of the airport</p> <p>AREAY: Y identifies the AREA that the obstacle resides. AREA2A, AREA2B, AREA3, AREA4. In case of AREA1 the naming convention is „LHCC_AREA1...”</p> <p>Z: This letter identifies the geometry type of the obstacle. P: point , L: Line , S: Surface</p> <p>###: The incremental identifier number, serves as (main) identifier száma. E.g.: 001, 002, ...</p> | |
| Data | h) | Obstacle Part Identifier | <p>Identifies the vertex within the obstacle. This identifier is unique and shall not change during the lifetime of the obstacle.</p> <p>Some examples of the naming convention:</p> <p>LHDC_AREA2_L_001_001 and LHDC_AREA2_L_001_002, is a line object consists of two verteces.</p> <p>LHDC_AREA2_P_001 is a point object.</p> <p>LHDC_AREA3_S_001_001, LHDC_AREA3_S_001_002, LHDC_AREA3_S_001_003, LHDC_AREA3_S_001_004 is a surface that consists of four verteces.</p> | |

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|--------------|---------------|------------------|---|---|
| | | | In such cases, where there are more than one vertex for the obstacle object, the same elevation values are stored and published. | |
| Data | i) | Owner | Contact information, such as company name of the operator or owner of the obstacle. For further information regarding the obstacle please contact pubsdo@hungarocontrol.hu | For Data Protection purposes, in the datasets there is an identifier for the Land Registry. |
| Data | j) | Type | These values relates to types documented in AIXM 5.1 | <p>AG_EQUIP: Agricultural Equipment</p> <p>ANTENNA: Antenna.</p> <p>ARCH Arch.</p> <p>BRIDGE Bridge.</p> <p>BUILDING Building.</p> <p>CABLE_CAR Cable car.</p> <p>CATENARY Catenary (wire).</p> <p>COMPRESSED_AIR_SYSTEM AirMAT: The components of a compressed air system.</p> <p>CONTROL_MONITORING_SYSTEM AirMAT: The components of an electronic monitoring and control system (EMCS) including cables, devices, and so on.</p> <p>CONTROL_TOWER Control tower.</p> <p>COOLING_TOWER Cooling tower.</p> <p>CRANE Crane.</p> <p>DAM Dam.</p> <p>DOME Dome.</p> <p>ELECTRICAL_EXIT_LIGHT AirMAT: The components of an electrical exterior lighting system including cables, switches, devices, transformers, and so on. Does not include field, navaid, or approach lighting</p> <p>ELECTRICAL_SYSTEM AirMAT: The components of an electrical distribution system</p> |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|------------------|-------------------|---|
| | | | | <p>including cables, switches, devices, motors, transformers, and so on.</p> <p>ELEVATOR Elevator.</p> <p>FENCE Fence.</p> <p>FUEL_SYSTEM AirMAT: The components of a fuel distribution system consisting of pipes, fittings, fixtures, pumps, tanks, and so on</p> <p>GATE Area of a fence which may be opened for passage through the fence or closed to prevent passage through the fence.</p> <p>GENERAL_UTILITY AirMAT: The components of utility system which are universal in use and purpose and do not belong to a specific utility</p> <p>GRAIN_ELEVATOR Grain elevator.</p> <p>HEAT_COOL_SYSTEM AirMAT: The components of a heating and cooling distribution system consisting of pipes, fittings, fixtures, and so on.</p> <p>INDUSTRIAL_SYSTEM AirMAT: The components of an industrial waste collection system including pipes, fittings, fixtures, tanks, lagoons, and so on.</p> <p>LIGHTHOUSE Lighthouse.</p> <p>MONUMENT Monument.</p> <p>NATURAL_GAS_SYSTEM AirMAT: The components of a natural gas distribution system consisting of pipes, fittings, fixtures, and so on.</p> <p>NATURAL_HIGHPOINT Natural high point.</p> <p>NAVAID Navaid (navigation aid)</p> <p>NUCLEAR_REACTOR Nuclear reactor.</p> <p>POLE Pole.</p> <p>POWER_PLANT Power plant.</p> <p>REFINERY Refinery.</p> <p>RIG Rig (oil rig).</p> <p>SALTWATER_SYSTEM</p> |

| Sheet | Column | Attribute | Definition | List of values or Datatype |
|-------|--------|------------------|--|--|
| | | | | <p>AirMAT: The components of a salt water collection system.</p> <p>SIGN Sign.</p> <p>SPIRE Spire (steeple).</p> <p>STACK Stack (smoke, industrial).</p> <p>STADIUM Stadium.</p> <p>STORM_SYSTEM AirMAT: The components of a storm drainage collection system including pipes, fittings, fixtures, and so on).</p> <p>TANK tank.</p> <p>TETHERED_BALLOON Tethered balloon.</p> <p>TOWER Tower.</p> <p>TRAMWAY Tramway.</p> <p>TRANSMISSION_LINE Transmission Line.</p> <p>TREE Tree.</p> <p>URBAN Urban Area</p> <p>VEGETATION Vegetation.</p> <p>WALL Wall.</p> <p>WASTEWATER_SYSTEM AirMAT: The components of a wastewater collection system including pipes, fittings, fixtures, treatment plants, collection locations, and so forth.</p> <p>WATER_SYSTEM AirMAT: The components of a water system including pipes, fittings, fixtures, treatment plants, and so on.</p> <p>WATER_TOWER Water tower.</p> <p>WINDMILL Windmill.</p> <p>WINDMILL_FARMS Windmill Farm.</p> <p>OTHER Other</p> |
| Data | k) | Visible material | The visible material of the obstacle. The values are according to AIXM 5.1 | <p>ADOBE_BRICK Brick made of adobe clay and straw, dried in the sun rather than by oven firing (as are standard bricks). Larger than standard bricks, adobe bricks require a type of clay that contains between 25 and 45 percent aluminium salts.</p> <p>ALUMINIUM A light silvery ductile and malleable metal, not readily tarnished by air, which is a chemical element, atomic number 13. (Symbol Al)</p> |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
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| | | | | <p>BRICK Clay kneaded, moulded, and baked or sun-dried, used as a building material.</p> <p>CONCRETE A heavy-duty building material made from a mixture of broken stone or gravel, sand, cement and water, that forms a stonelike mass on hardening.</p> <p>FIBREGLASS Any material consisting of glass filaments woven into a textile or paper, or embedded in plastic, for use as a construction or insulation material.</p> <p>GLASS A substance made by fusing soda and/or potash with other ingredients. Usually transparent, lustrous, hard, and brittle.</p> <p>IRON A malleable, magnetic, readily oxidizable metal which is a chemical element of the transition series, atomic number 26. (Symbol Fe) Occurs abundantly in certain ores and in meteorites, and is widely used, chiefly in alloys such as steel.</p> <p>MASONRY Building materials (for example: stone, brick, concrete, hollow-tile, concrete block, gypsum block, or other similar building units or materials and/or combination of the same) bonded together with mortar to form a structure (for example: a wall, a pier).</p> <p>METAL Any of the class of substances that are characteristically lustrous, ductile, fusible, malleable solids and are good conductors of heat and electricity. For example, gold, silver, copper, iron, lead, tin, and certain alloys (as brass and bronze).</p> <p>MUD Constructed principally from mud applied to a structural scaffold of plant material (for example: wooden posts). Effective only in extremely dry climates and usually must be resurfaced on a regular basis (for</p> |

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| | | | | <p>example: yearly) otherwise the structure steadily disintegrates under the effect of weather.</p> <p>PLANT Plant material (for example: straw and/or tall coarse grass), possibly also containing the slices of soil to which the plant material is attached. For example, used in thatching or sodding a roof.</p> <p>PRESTRESSED_CONCRETE Reinforced concrete in which internal stresses have been introduced to reduce potential tensile stress in the concrete resulting from loads.</p> <p>REINFORCED_CONCRETE Poured concrete containing steel bars or metal netting to increase its tensile strength.</p> <p>SOD A usually square or oblong piece or slice of earth together with the grass growing on it.</p> <p>STEEL Any of numerous artificially produced alloys of iron containing up to 3 per cent of other elements (including less than about 2.2 per cent carbon) and having great strength and malleability. Able to be tempered to many different degrees of hardness. Used for making tools, weapons, and/or machinery.</p> <p>STONE Pieces of rock or mineral substance (other than metal) of definite form and size, usually artificially shaped, and used for some special purpose. Used, for example, for building, for paving, or in the form of a block, slab, or pillar set up as a memorial and/or a boundary-mark.</p> <p>TREATED_TIMBER A timber that has been impregnated with chemicals (for example: creosote oil) to reduce damage from wood rot and/or insects. Often used for the portions of a structure that are likely to be in</p> |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
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| | | | | ongoing contact with soil and/or water. WOOD The hard, compact, fibrous substance of which the roots, trunks, and branches of trees and shrubs consist. Consists largely of secondary xylem, which forms the strengthening and water-transporting tissue of the plant. OTHER Other |
| Data | l) | Lighted | Information whether the obstacle is lighted or not. | YES Yes NO No OTHER Other |
| Data | m) | Lighting ICAO Standard | Information about the obstacle is lighted according ICAO Annex 14 | YES Yes NO No OTHER Other |
| Data | n) | Synchronized Lighting | Information about the lights of the obstacle are synchronized | Possible values: YES Yes. NO No. OTHER Other |
| Data | o) | Lighting colour | The primary visible colour of the lighting of the obstacle | YELLOW RED WHITE BLUE GREEN PURPLE ORANGE AMBER BLACK BROWN GREY LIGHT_GREY MAGENTA PINK VIOLET OTHER |
| Data | p) | Marking ICAO Standard | Information about whether the obstacle is marked according to ICAO Annex 14. | YES Yes. NO No. OTHER Other |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|-----------------------|---|---|
| | | | | This information is not empty only in such cases where Lighted equals „YES” |
| Data | q) | Marking pattern | The marking pattern of the obstacle. | MONOCOLOUR Markings painted as a single colour. CHEQUERED Markings painted in a chequered pattern. HBANDS Markings painted as horizontal bands. VBANDS Markings painted as vertical bands. FLAG Flag marked with chequered pattern. MARKERS Marks attached to cables or wires. OTHER Other |
| Data | r) | Marking First Colour | | |
| Data | s) | Marking Second Colour | The secondary visible colour of the obstacle. | List of values: YELLOW RED WHITE BLUE GREEN PURPLE ORANGE AMBER BLACK BROWN GREY LIGHT_GREY MAGENTA PINK VIOLET OTHER |
| Data | t) | Datum | The used horizontal reference system during survey. | The default value is WGE throughout all the datasets! |
| Data | u) | Horizontal accuracy | The difference between the recorded horizontal coordinates of a feature | Data type: number |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|-----------------------------|--|--|
| | | | and its true position referenced to the same geodetic datum expressed as a circular error at 95 percent probability. | |
| Data | v) | Horizontal accuracy Uom | The unit of measurement considered for the horizontal accuracy in point u). | List of values: NM Nautical miles. KM Kilometres. M Metres. FT Feet. MI Statute Mile CM Centimetre. OTHER Other |
| Metadata | w) | Horizontal resolution | The horizontal resolution of coordinates. | Possible values: 1 (means 1 geographic second) 0.1 (means 0.1 geographic second) 0.01 (means 0.01 geographic second) 0.001 (means 0.001 geographic second) 0.0001 (means 0.0001 geographic second) |
| Data | x) | Horizontal confidence level | The horizontal confidence level that is considered for the entire dataset. E.g. 95% | |
| Data | y) | Elevation | The distance measured from Mean Sea Level at the top of the obstacle. | Data type: Numeric |
| Data | z) | Elevation Uom | The unit of measurement for the value given in point y). | List of values: NM Nautical miles. KM Kilometres. M Metres. FT Feet. MI Statute Mile CM Centimetre. OTHER Other |
| Data | aa) | Height | The distance measured between the ground and the top of the obstacle. | Data type: numeric |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|--------------|---------------|---------------------------|--|---|
| Data | bb) | Height Uom | The unit of measurement considered for the value given in point aa). | List of values: NM Nautical miles. KM Kilometres. M Metres. FT Feet. MI Statute Mile CM Centimetre. OTHER Other |
| Data | cc) | Vertical accuracy | A degree of conformance between the estimated or measured value and the true value considered for values in point y) and aa). | Data type: numeric |
| Data | dd) | Vertical Accuracy Uom | Unit of measurement considered for the value given point cc) | List of values: NM Nautical miles. KM Kilometres. M Metres. FT Feet. MI Statute Mile CM Centimetre. OTHER Other |
| Data | ee) | Vertical resolution | A number of units or digits to which a measured or calculated value is expressed and used. | 1 (means 1 meter) 0.1 (means 0.1 meter) 0.01 (means 0.01 meter) 0.001 (means 0.001 meter) 0.0001 (means 0.0001 meter) |
| Data | ff) | Vertical datum | A specific datum from which the vertical distance of a level, point or an object considered as a point is measured. | This is by default EGM_96 throughout the entire datasets! |
| Metadata | gg) | Vertical confidence level | The probability that the true value of a parameter is within a certain interval around the estimate of its value. This value is considered for the entire dataset. | |
| Data | hh) | Mobile | Information captured about the possibility that the location of the obstacle is subject to change. | List of values: YES Yes. NO No. OTHER Other |

| <i>Sheet</i> | <i>Column</i> | <i>Attribute</i> | <i>Definition</i> | <i>List of values or Datatype</i> |
|---------------------|----------------------|-------------------------|--------------------------|--|
| Data | ii) | Timestamp | | |
| Metadata | jj) | Integrity | | |