

# Data Product Specification of PANSA Obstacle Data Sets (eTOD)



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|----------------------------|--|
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| Published                  | 2022-12-01   |
| Language                   | English  |
| Extent of the data product | <ol style="list-style-type: none"><li>1. eTOD Area 1 Obstacle Data Set: FIR EPWW;</li><li>2. eTOD Area 2 Obstacle Data Sets: Penetrations of the aerodrome Obstacle Limitation Surfaces (OLS) of the following aerodromes: EPBY, EPGD, EPKK, EPKT, EPLB, EPLL, EPMO, EPPO, EPRA, EPRZ, EPSC, EPSY.</li></ol> |
| Topic category             | Transportation   |
| Keywords                   | Obstacles  |

## Overview of the data product

The Polish Obstacle Data Set is not a full eTOD data set as it contains only the eTOD Area 1 Obstacle data set and eTOD Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS) for the following aerodromes: EPBY, EPGD, EPKK, EPKT, EPLB, EPLL, EPMO, EPPO, EPRA, EPRZ, EPSC, EPSY. It is not a full initial data set.

The descriptions and requirements of the Areas 1, 2 (a-d), 3 and 4 obstacles can be found in ICAO Annex 15, 16th Edition and PANS-AIM (Doc 10066), 1st Edition as well as in EUROCONTROL TOD Manual, Edition 3.0.

Area 1 and Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS) are collected and published according to ICAO Annex 15, 16th Edition requirements.

Obstacle data is not provided for Areas: 2a, 2b, 2c, 2d, Area 3 and Area 4.

## History of changes to the DPS

| Version | Date       | Reason for change    | Changed sections  |
|---------|------------|----------------------|---|
| 1.0     | 2022-01-27 | Creation of document | All   |
| 1.1     | 2022-05-19 | Content changes      | Logo on the cover page  |
| 1.2     | 2022-12-01 | Content changes      | Appendix 1. PANSA<br>Obstacle Data Sets<br>(eTOD) available<br>attributes |
|         |            |                      |   |
|         |            |                      |   |
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| <b>1. Specification scope</b>         |   |
|---------------------------------------|---|
| Title                                 | PANSA Obstacle Data Sets (eTOD) for Area 1 (FIR EPWW) and Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS)  |
| This version                          | <a href="https://www.ais.pansa.pl/en/publications/etod/">https://www.ais.pansa.pl/en/publications/etod/</a>   |
| Latest version                        | <a href="https://www.ais.pansa.pl/en/publications/etod/">https://www.ais.pansa.pl/en/publications/etod/</a>   |
| Published                             | 2022-12-01  |
| Updated                               | In accordance with the AIRAC cycle  |
| Language                              | English   |
| Contact                               | Aeronautical Information Service<br>02-147 Warszawa, ul. Wieżowa 8<br>AIS HQ: +48-22-574-5625,<br>fax: +48-22-574-5619<br>e-mail: <a href="mailto:ais.poland@pansa.pl">ais.poland@pansa.pl</a>  |
| Web location                          | <a href="https://ais.pansa.pl">https://ais.pansa.pl</a>   |
| Format                                | CSV   |
| Maintenance                           | The data product specification is updated regularly and reviewed at least once every year.  |
| Handling restrictions                 | Unrestricted  |
| Terms and definitions                 | See ICAO Annex 15, 16th Edition and PANS-AIM (Doc 10066), 1st Edition   |
| Abbreviations                         | eTOD Electronic Terrain and Obstacle Data<br>For additional abbreviations, see ICAO Annex 15, 16th Edition and PANS-AIM (Doc 10066), 1st Edition  |
| <b>2. Data product Identification</b> |   |
| Official title                        | PANSA Obstacle Data Sets (eTOD) for Area 1 and Area 2. Area 2 data sets contain only obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS); These are not full initial data sets.  |
| ID                                    | eTOD_AREA%_Obstacles_%AIRAC_DATE%.csv   |
| Abstract                              | Obstacle data set for eTOD Area 1. eTOD Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS); these are not full initial data sets. Area 1 and Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS) are collected and published according to ICAO Annex 15, 16th Edition requirements.<br>Obstacle data is not provided for Area 2a, 2b, 2c, 2d, Area 3 and Area 4. |
| Purpose                               | The purpose of the data product is to provide obstacle data for air navigation applications. ICAO PANS-AIM, Chapter 5.3.3.2 provides possible uses of the data. It is the responsibility of the users to determine if the data product meets their needs.   |
| Topic category                        | Transportation  |
| Keywords                              | Vector  |
| Spatial representation                | Points  |
| Spatial resolution                    | Not applicable  |
| Supplemental information              | <i>N/L</i>  |

|              |  |
|--------------|--|
| Restrictions | <p>Use limitations: For aviation operational use only.</p> <p>Access restrictions: For subscribers only, order form available under link:<br/> <a href="https://www.ais.pansa.pl/form/order/orderform_en.htm">https://www.ais.pansa.pl/form/order/orderform_en.htm</a></p> <p>Usage restrictions: Please see disclaimer:<br/> <a href="https://www.ais.pansa.pl/en/about-ais/disclaimer">https://www.ais.pansa.pl/en/about-ais/disclaimer</a></p> <p>Legal protection of AIS publications:<br/> <a href="https://www.ais.pansa.pl/en/publications/legal-protection-of-ais-publications">https://www.ais.pansa.pl/en/publications/legal-protection-of-ais-publications</a></p> <p>Security restrictions: After downloading the data, please check attached CRC32 and MD5 checksums.</p> |
|--------------|--|

|        |  |
|--------|--|
| Extent | <p>FIR EPWW: Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS) of the following aerodromes: EPBY, EPGD, EPKK, EPKT, EPLB, EPLL, EPMO, EPPO, EPRA, EPRZ, EPSC, EPSY.</p> |
|--------|--|

### 3. Data content and structure

|                    |                |
|--------------------|----------------|
| Application schema | Not applicable |
| Feature catalogue  | See Appendix 1 |

### 4. Reference system

#### General scope

|                           |  |
|---------------------------|--|
| Spatial reference system  | Horizontal system: WGS-84 (EPSG: 4326).<br>Vertical system: Kronstadt-86 and Amsterdam |
| Temporal reference system | Gregorian Calendar, UTC.   |

### 5. Data quality requirements

#### General scope

|               |  |
|---------------|--|
| Requirement 1 | <p>Data quality element: Assurance (Integrity).</p> <p>Data quality measure: The horizontal and vertical position integrity are classified as “essential”. The procedures for processing obstacles have been setup to meet the integrity requirements.</p> |
| Requirement 2 | <p>Data quality element: Traceability</p> <p>Data quality measure: All actions over the obstacle objects are traced and saved in the metadata. Metadata is available on request.</p>   |
| Requirement 3 | Data quality element: Timeliness   |

|   |   |
|---|---|
|   | Data quality measure: Timeliness is assured by providing the start and end time position of all obstacles.  |
| Requirement 4   | Data quality element: Completeness<br><br>Data quality measure: The content of the data set was checked by visual inspection.   |
| <b>Area 1</b>   |   |
| Requirement 1   | Data quality element: Horizontal accuracy<br><br>Data quality measure: The horizontal accuracy is 50 m at 90% confidence level.   |
| Requirement 2   | Data quality element: Vertical accuracy<br><br>Data quality measure: The vertical accuracy is 30 m at 90% confidence level.   |
| Requirement 3   | Data quality element: Horizontal position resolution<br><br>Data quality measure: The horizontal position resolution is expressed in degrees, minutes, seconds and decimal seconds with 2 decimal places (DDMMSS.ss), commensurate with the accuracy requirements. The resolution is sufficient to guarantee the accuracy requirements. |
| Requirement 4   | Data quality element: Vertical position resolution<br><br>Data quality measure: The vertical position resolution is 0.01 ft, commensurate with the accuracy requirements. The resolution is sufficient to guarantee the accuracy requirements.  |
| <b>Area 2 data sets of obstacles penetrating the aerodrome Obstacle Limitation Surfaces (OLS)</b> |   |
| Requirement 1   | Data quality element: Horizontal accuracy<br><br>Data quality measure: The horizontal accuracy is 5 m at 90% confidence level.  |
| Requirement 2   | Data quality element: Vertical accuracy<br><br>Data quality measure: The vertical accuracy is 3 m at 90% confidence level.  |
| Requirement 3   | Data quality element: Horizontal position resolution<br><br>Data quality measure: The horizontal position resolution is expressed in degrees, minutes, seconds and decimal seconds with 2 decimal places (DDMMSS.ss), commensurate with the accuracy requirements. The resolution is sufficient to guarantee the accuracy requirements. |
| Requirement 4   | Data quality element: Vertical position resolution<br><br>Data quality measure: The vertical position resolution is 0.01 ft, commensurate with the accuracy requirements. The resolution is sufficient to guarantee the accuracy requirements.  |
| <b>Area 3</b>   |   |

|                                 |  |
|---------------------------------|--|
| No data available               |  |
| <b>Area 4</b>                   |  |
| No data available               |  |
| <b>6. Data capture</b>          |  |
| Description                     | <p>Obstacle data capture rules are based on:</p> <ul style="list-style-type: none"> <li>• Commission Implementing Regulation (EU) 2020/469</li> <li>• Regulation of the Minister of Infrastructure of 12 January 2021 on aviation obstacles, obstacle limiting surfaces and hazardous devices (Journal of Laws of the Republic of Poland 2021 item 264)</li> <li>• EUROCONTROL Terrain and Obstacle Data Manual v. 3.0, edition date: 04/05/2021, document reference: EUROCONTROL-GUID-158</li> <li>• EUROCONTROL Specification for the Origination of Aeronautical Data (DO) - Volume 1</li> <li>• EUROCONTROL Specification for the Origination of Aeronautical Data (DO) - Volume 2</li> </ul> <p>Obstacle coverage areas have been created according to ICAO Annex 15, 16th Edition and PANS-AIM, 1st Edition.</p> |
| Guide                           | NIL  |
| Inclusion criteria              | <p>Obstacles must have a minimal height of 100 m above ground level to be included in the Area 1 obstacle dataset.</p> <p>Obstacles must penetrate the aerodrome Obstacle Limitation Surfaces (OLS) to be included in the Area 2 data sets.</p>  |
| Data acquisition and processing | The data was captured and processed by terrestrial survey.   |
| <b>7. Data maintenance</b>      |  |
| <b>General scope</b>            |  |
| Description                     | The data set will be updated every AIRAC cycle.  |
| Frequency                       | Continually  |
| User defined                    | Not applicable   |

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| <b>8. Data portrayal</b>          |                                   |
| Portrayal rules                   | Not applicable                    |
| <b>9. Data product delivery</b>   |                                   |
| <b><i>General scope</i></b>       |                                   |
| Format name                       | csv files                         |
| Format version                    | Not applicable                    |
| Format specification              | Not applicable                    |
| File structure                    | See Appendix 1<br>; csv separator |
| Language                          | English                           |
| Character set                     | UTF-8                             |
| <b>10. Metadata</b>               |                                   |
| <b><i>General scope</i></b>       |                                   |
| Specification                     | NIL                               |
| <b>11. Additional information</b> |                                   |
| <b><i>General scope</i></b>       |                                   |
| Additional information            | Not applicable                    |



## Appendix 1. PANSA Obstacle Data Sets (eTOD) available attributes

| Feature                               |
|---------------------------------------|
| Latitude                              |
| Longitude                             |
| Height                                |
| Height Uom                            |
| Elevation                             |
| Elevation Uom                         |
| Vertical Accuracy                     |
| Vertical Accuracy Uom                 |
| Horizontal Accuracy                   |
| Horizontal Accuracy Uom               |
| Obstacle Identifier                   |
| Location                              |
| Local language obstacle type          |
| Lighting                              |
| Horizontal reference system           |
| Marking                               |
| Obstacle type                         |
| Data originator identifier            |
| Horizontal confidence level           |
| Horizontal confidence level UOM       |
| Horizontal resolution                 |
| Horizontal resolution UOM             |
| Horizontal extent                     |
| Horizontal extent Uom                 |
| Vertical confidence level             |
| Vertical confidence level UOM         |
| Vertical resolution                   |
| Vertical resolution UOM               |
| Geometry type                         |
| Integrity                             |
| Elevation reference                   |
| Identification of the data originator |
| Lighting color                        |
| Lighting intensity                    |
| Lighting type                         |
| Date of construction                  |
| Date of notification                  |