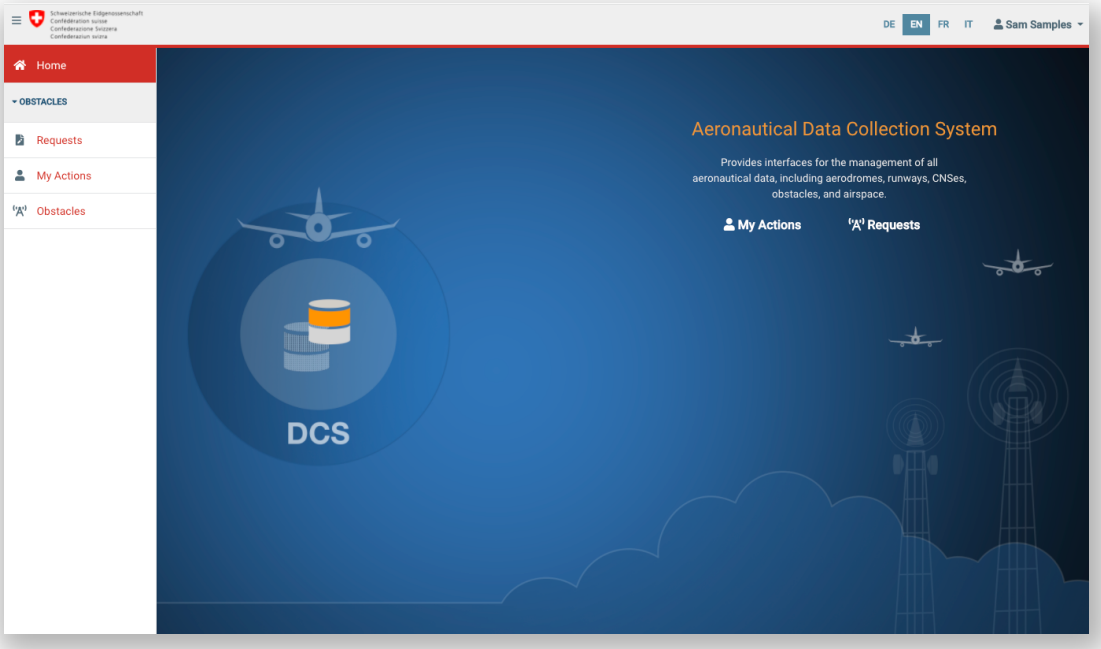
Aeronautical Data Collection Service Specification



DPS: Simplified_Active_Obstacle data in kml format

Exported on 2024-09-25 11:38:16

Table of Contents

Title	Filtered Obstacle export kml
ID	17.1
Planned Release	2.3
Status	**RELEASED**
Revision	

⚠ This data set contains simplified geometries and does not include all recorded points of line obstacles.

DO NOT USE THIS DATA FOR 3-D APPLICATIONS

1 Introduction

Obstacle data is available as KMZ (zipped KML). The KMZ allows the viewing of the obstacles in an 2D or 3D earth viewer. At the same time it serves the delivery of active obstacles to the data users and as a base for creating and updating aeronautical information products (AIP and charts).

The simplification of the line geometries allows to reduce the amount of data in the file without noticeably degrading the graphical representation of the obstacle on a moving map display.

2 Definitions and Abbreviations

Simpliefied_Active_Obstacles	The file Simplified_Active_Obstacle_<yyyy-mm-dd_hhmmss+…>.kml
DCS	Data Collection System
effectiveDate	The date of the last change of the obstacle. This change can be: • The obstacle has been activated or inactivated • Some properties of the obstacle have changed (e.g geometry, marking or lighting)
KML	Keyhole Markup Language
T_{export}	The instance in time of the export
UUID	Universally Unique Identifier, a 128 bit number that is used to identify information across a computer system.

3 Data Product Specifications

ID	Specification	
17.1.01	The file **Simplified_Active_Obstacle.kmz** is a zipped archive containing: • **Simplified_Active_Obstacle_<yyyy-mm-dd_hhmmss+…>.kml** : File containing the obstacles • Simplified_Active_Obstacle_<yyyy-mm-dd_hhmmss+…>.kml.sha512 containing a SHA-512 checksum of the Simplified_Active_Obstacle_<yyyy-mm-dd-hhmmss+…>.kml file • signature : Folder containing the chart symbols for the point obstacles as png files	
17.1.03	The the structure and format of the *Simplified_Active_Obstacles* is KML according to the OGC® KML specification Version 2.2 with extension as specified in https://portal.ogc.org/files/?artifact_id=27810	See Specification *KML File Structure and Format* for more details.
17.1.04	*Simplified_Active_Obstacles* is exported (at T_{export}) every day at approx. 00:00 UTC	
17.1.05	**<yyyy-mm-dd_hhmmss>** in the kml-Filename is the datetime of T_{export}	
17.1.06	**Data content:** • All man-made obstacles reported as being active at T_{export} • Trees (VEGETATION) in the vicinity of airports that are published on the Visual Approach Chart (VAC) or in the AD-INFO section (aerodrome chart) of the VFR Manual. • Obstacles of type Linestring are simplified (generalized) and contain only points that	

ID	Specification	
	are relevant for a cartographic representation.	
17.1.33	Linestring simplification is done with a Douglas-Peucker algorithm	This is a 2D-Filter
17.1.34	The simplification parameter ε (epsilon) is 25 m.	This means that the simplified line geometries are not deviating more than ε from the true geometry.
The content of *Simplified_Active_Obstacles* is defined below.		
17.1.09	Each obstacle is provided as a `kml:Placemark`	
17.1.10	The supported geometry types are • `kml:Point` • `kml:LineString` • `kml:Polygon`	
17.1.29	A single obstacle can consist of multiple point geometries but only one linestring or polygon.	
17.1.11	Linestrings and polygon obstacles are represented as `kml:MultiGeometry` with the first coordinate duplicated as separate `kml:Point`	The `kml:Point` is used by Google Earth to place the label
17.1.12	The horizontal positions are referenced to WGS-84 longitude, latitude in decimal degrees (epsg:4326).	
17.1.13	The elevations are mean sea level elevations of the obstacle top in Swiss LN02 (epsg:5728)	
17.1.14	The `kml:name` contains the Registration Number. The Registration Number is a 10 character text string. There are two types for registration numbers supported: • <mmm><CC><nnnnn> : for obstacls transferred from OMS • <CC><zzzzzzzz> : for obstacles collected in DCS Where: • <mmm> is a 3 digit number • <nnnnn> is a 5 digit number • <zzzzzzzz> is a 8 digit number	`<name>215ZH30387</name>` `<name>SH21001234</name>`

ID	Specification	
	• <CC> is the two letter abbreviation for the Canton (of the first point of the obstacle) or “HL” for power lines or “UN” for obstacles outside Switzerland.	
17.1.30	The `kml:styleURL` indicates the style to apply for graphical representation of the feature.	`<styleUrl>#ms_pole_lighted</styleUrl><styleUrl>#ms_cable_spheres</styleUrl>` See Obstacle Style Map below
17.1.15	Specific information for each obstacle is provided as extended `kml:SimpleData`:	See Specification *KML File Structure and Format* for more details. The obstacle data specific extensions are specified in 17.1.16 - 17.1. 28
17.1.16	UUID of the obstacle	`<SimpleData name="uuid">378ea5e5-a620-45bb-a0ae-aa707e570f35</SimpleData>`
17.1.17	VOID	
17.1.18	Airport reference if the obstacle is within the obstacle limitation surface perimeter	`<SimpleData name="airport">LSZH</SimpleData>`
17.1.19	Obstacle Type according to AIXM 5.1.1. The following types are currently used: • BRIDGE • BUILDING • CABLE_CAR • CATENARY • CRANE • POLE • STACK • TRANSMISSION_LINE • VEGETATION • WINDMILL	`<SimpleData name="obstacleType">POLE</SimpleData>`
17.1.20	Status: • A = active (the obstacle is present)	`<SimpleData name="state">A</SimpleData>`
17.1.21	Max. Height above ground level in meter	`<SimpleData name="maxHeightAGL">99.0</SimpleData>`
17.1.22	Max. Elevation. The largest of the top elevations above mean sea level of all obstacle points in meter	`<SimpleData name="topElevationAMSL">534</SimpleData>`

ID	Specification	
17.1.31	Radius of obstacle in meter if it has a horizontal extent (e.g. boom length of a crane)	`<SimpleData name="radius">34.5</SimpleData>`
17.1.23	Effective date of the obstacle (the date of the last update of the obstacle)	`<SimpleData name="effectiveDate">2021-06-09</SimpleData>`
17.1.25	Marking information: • NONE : no marking • RED_WHITE_RED • ORANGE_CANVAS • ORANGE_SPHERES • CABLE_WARNER • MARKED (type of marking unknown)	`<SimpleData name="marking">RED_WHITE_RED</SimpleData>`
17.1.26	Lighting information: • NONE : no lighting • LOW : Low intensity light • MEDIUM : Medium intensity light • HIGH : High intensity light (can have low intensity light during the night) • LIGHTED (intensity of lighting unknown)	`<SimpleData name="lighting">NONE</SimpleData>`
17.1.27	Group information: • YES : the obstacle represents multiple obstacles in the immediate vicinity • NO : the obstacle is representing a single obstacle	`<SimpleData name="group">NO</SimpleData>`
17.1.29	Small obstacles near airports: • YES : If the obstacle is located within the obstacle limitation surface perimeter AND the max. height above ground level is less than 60 m inside built-up area or less than 25 m outside built-up area. • NO : otherwise	`<SimpleData name="small">YES</SimpleData>`

4 Obstacle Style Map

Style Code	Symbol (pict)	Style Rule				
		AIXM type	**Lighting** (yes/no)	**Marking** (yes/no)	**Min. height AGL**	**Group** (yes/no)
ms_pole		POLE	NONE	n/a	n/a	no
ms_pole_group		POLE	NONE	n/a	n/a	yes
ms_pole_lighted		POLE	LIGHTED, LOW or HIGH	n/a	n/a	no
ms_pole_group_lighted		POLE	LIGHTED, LOW or HIGH	n/a	n/a	yes
ms_crane		CRANE	NONE	n/a	n/a	no
ms_crane_group		CRANE	NONE	n/a	n/a	yes
ms_crane_lighted		CRANE	LIGHTED, LOW or HIGH	n/a	n/a	no
ms_crane_group_lighted		CRANE	LIGHTED, LOW or HIGH	n/a	n/a	yes
ms_stack		STACK	NONE	n/a	n/a	no
ms_stack_group		STACK	NONE	n/a	n/a	yes
ms_stack_lighted		STACK	LIGHTED, LOW or HIGH	n/a	n/a	no
ms_stack_group_lighted		STACK	LIGHTED, LOW or HIGH	n/a	n/a	yes
ms_windmill		WINDMILL	NONE	n/a	n/a	no

Style Code	Symbol (pict)	Style Rule				
		AIXM type	**Lighting** (yes/no)	**Marking** (yes/no)	**Min. height AGL**	**Group** (yes/no)
ms_windmill_group		WINDMILL	NONE	n/a	n/a	yes
ms_windmill_lighted		WINDMILL	LIGHTED, LOW or HIGH	n/a	n/a	no
ms_windmill_group_lighted		WINDMILL	LIGHTED, LOW or HIGH	n/a	n/a	yes
ms_building		BUILDING	NONE	n/a	n/a	no
ms_building_group		BUILDING	NONE	n/a	n/a	yes
ms_building_lighted		BUILDING	LIGHTED, LOW or HIGH	n/a	n/a	no
ms_building_group_lighted		BUILDING	LIGHTED, LOW or HIGH	n/a	n/a	yes
ms_bridge		BRIDGE	NONE	n/a	n/a	n/a
ms_bridge_lighted		BRIDGE	LIGHTED, LOW or HIGH	n/a	n/a	n/a
ms_high_pole_lighted		POLE, BUILDING	LIGHTED, LOW or HIGH	n/a	height >= 150 m	no
ms_high_pole_group_lighted		POLE, BUILDING	LIGHTED, LOW or HIGH	n/a	height >= 150 m	yes
ms_tree		VEGETATION	n/a	n/a	n/a	no
ms_tree_group		VEGETATION	n/a	n/a	n/a	yes

Style Code	Symbol (pict)	Style Rule				
		AIXM type	**Lighting** (yes/no)	**Marking** (yes/no)	**Min. height AGL**	**Group** (yes/no)
ms_line		TRANSMISSION_LINE	n/a	NONE	n/a	n/a
ms_line_spheres		TRANSMISSION_LINE	n/a	MARKED or ORANGE_SPHERES	n/a	n/a
ms_cable		CATENARY, CABLE_CAR	n/a	NONE	n/a	n/a
ms_cable_spheres		CATENARY, CABLE_CAR	n/a	ORANGE_SPHERES	n/a	n/a
ms_cable_warner		CATENARY, CABLE_CAR	n/a	MARKED or CABLE_WARNER	n/a	n/a
ms_polygon		CATENARY, CRANE	n/a	n/a	<polygon> type obstacles (moving obstacles)	