

# **AIXM 5 Viewer**

For LuciadLightspeed



## Overview

AIXM 5 Viewer is a free application for quickly visualizing AIXM data on a map. Based on LuciadLightspeed API technology, AIXM 5 Viewer exposes a selection of LuciadLightspeed's capabilities, relevant for aeronautical information management (AIM). This product provides an API to develop geospatial situational awareness applications, which gives additional flexibility to the user when developing AIXM-related applications.

## Data connectors

The following AIXM data sources are supported:

- AIXM 5.1.x (.aixm51, .xml)

Other supported data sources:

- GeoTIFF (.tif, .tiff)
- Shapefile (.shp, .shp.gz, .shp.zip)
- DTED (including DMED) elevation data (.dem, .dem.gz, .dmed, .dt0, .dt1)
- Bing Maps
- AMXM 2.0 (.amxm, .xml)
- GeoJSON (.json, .geojson, .js)

## AIXM extensions

You can customize the AIXM 5 Viewer using its flexible extensions structure. AIXM extensions can be defined and used to complement the core AIXM format with industry-specific properties.

The following extensions, identified by their XML namespaces, are automatically recognized; this means that they do not require a link to the XML schema in the data:

- [www.aixm.aero/schema/5.1/event](http://www.aixm.aero/schema/5.1/event)
- [www.aixm.aero/schema/5.1/dnotam](http://www.aixm.aero/schema/5.1/dnotam)
- [www.aixm.aero/schema/5.1/extensions/ADR](http://www.aixm.aero/schema/5.1/extensions/ADR)
- [www.aixm.aero/schema/5.1/extensions/EUR/ADR](http://www.aixm.aero/schema/5.1/extensions/EUR/ADR)
- [www.aixm.aero/schema/5.1/extensions/EUR/ADR/message](http://www.aixm.aero/schema/5.1/extensions/EUR/ADR/message)
- [www.aixm.aero/schema/5.1/extensions/EUR/EAD/ADR](http://www.aixm.aero/schema/5.1/extensions/EUR/EAD/ADR)
- [www.aixm.aero/schema/5.1/extensions/EUR/EAD/Audit](http://www.aixm.aero/schema/5.1/extensions/EUR/EAD/Audit)

For all other extensions, it is required and sufficient to have a valid XML schema location in the data that points to the AIXM extension schema.

## AIXM feature types















All AIXM feature types defined by the AIXM XML schemas (airspace, airports, navaids, etc.) can be decoded and accessed by the Viewer. Features are visualized if a geometry is available. Visualization follows ICAO Annex 4 charting guidelines.






## AIXM geometry

### Related to all feature types

AIXM uses Geography Markup Language (GML) to represent the geometry of features. The following table lists the supported geometry types:

Geometry type	Supported
Point, elevated point	
LineString	
GeodesicString	
LinearRing	
Circle by center point	
Circle by 3 points	
Arc by center point	
Arc by 3 points	
Arc by bulge	
Curve, elevated curve, composite curve, ring	
Surface, elevated surface, polygon, polygon patch	
Triangle	
Envelope	
Rectangle	

Additionally, geometry definitions can be embedded or linked, using XLink/XPath. The following table lists the supported possibilities:

Geometry definition	Supported	Notes
Inline		
Local geometry link using the gml:id property of the referred geometry		
Local geometry link using the gml:identifier property of the feature encompassing the referred geometry		
External geometry link		This is possible via the product API. Contact us if you are interested in this capability.

Coordinates can be expressed in a geographic reference defined by an EPSG code. The Luciad AIXM Viewer supports more than 4,500 EPSG reference codes. The full list can be found on the [Luciad Developer Platform](#).

Additionally, multiple references can be used in a single file.



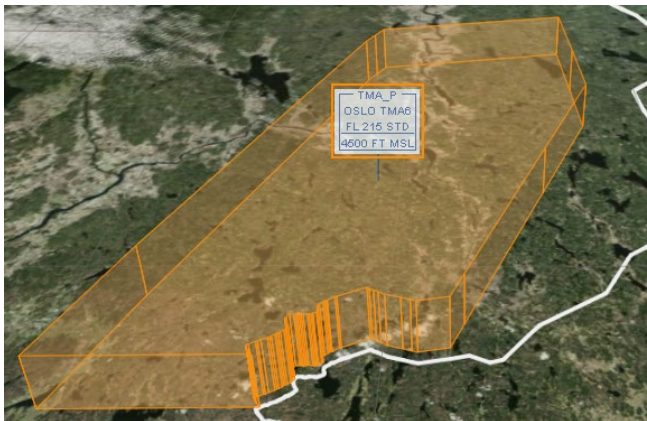
Visualize AIXM and AIXM 5.1 data in 2D and 3D.



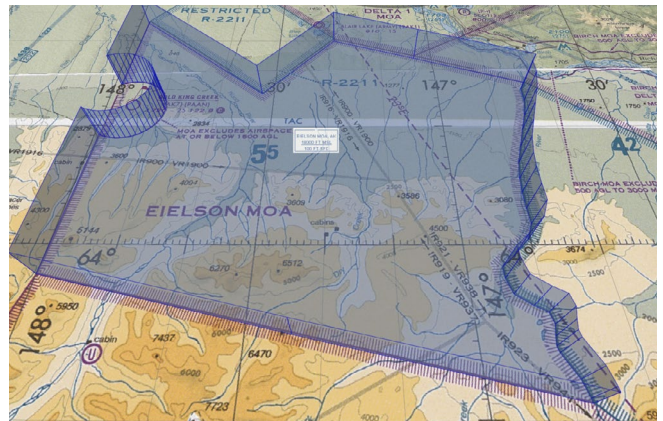
## Related to airspace features

For airspace features, additional geometry possibilities are available in AIXM 5 Viewer. The following table lists the supported possibilities:

Geometry type	Supported
Corridor-based geometry	✓
Geometry aggregations of type UNION	✓
Geometry aggregations of type INTERS	✓
Geometry aggregations of type SUBTR	✓
Hierarchical aggregations	✓
Link to geoborder	✓
Link to a contributor airspace	✓



Link to a geoborder (subset)



Geometry aggregations of type SUBTR

## Related to procedure features













For airspace features, additional geometry possibilities are available in AIXM 5 Viewer. The following table lists the supported possibilities:

Geometry type	Supported	Notes
Geometry defined by an embedded GML trajectory	✓	
Geometry defined by segment legs		This refers to the use of segment legs as defined by the ARINIC Specification 424, Attachment 5, Path and Terminator. Contact us with reference to LCD-1025 if you would need this.

## AIXM temporality model

The Viewer supports the AIXM temporality model by means of a time filter mode in the application. This mode enables a time slider that triggers on-the-fly SNAPSHOT calculations, providing the user with the state of the feature at the selected time. These snapshot calculations take into account both timeslices and timesheets.

The following table lists the supported temporality concepts in detail:

Temporality concept	Temporality property/type	Supported	Notes
Timeslice	BASELINE		
	PERMDELTA		
	TEMPDELTA		
	SNAPSHOT		
Timesheet	Time reference		
	Start and end date		
	Day and day til	All except holidays and busy fridays, because they depend on local government practices.	Contact us with reference to LCD-983 if you would need this.
	Start and end time		
	Start and end event		
	Start and end time relative event		
	Start and event interpretation		
	Daylight saving adjustment		
	Excluded		

## AIXM visualization

The Luciad AIXM 5 Viewer supports 2D, 3D and 4D visualization of AIXM data. The visualization is largely based on ICAO Annex 4 charting guidelines. Based on community feedback, a number of features have received a dedicated style in 2D and/or 3D, to improve the awareness of their geographical extent.

The following table gives an overview:

Feature type	2D	3D
Feature types with a point geometry	2D icon	3D icon (billboard)
Feature types with a curve geometry	2D curve	3D curve
Feature types with a surface geometry	2D surface	3D extruded surface using the specified vertical extent (if available)
Vertical structure with a point geometry	2D icon	3D cylinder indicating the horizontal and vertical extent of the obstacle
Route segment	2D curve	3D corridor indicating the horizontal and vertical extent of the route segment
Safe altitude area	2D arc band	3D arc band

To learn more or schedule a demo, contact us at [info.luciad.gsp@hexagon.com](mailto:info.luciad.gsp@hexagon.com).



Hexagon is the global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications. Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government. Learn more at [hexagon.com](https://www.hexagon.com) and follow us [@HexagonAB](https://twitter.com/HexagonAB).