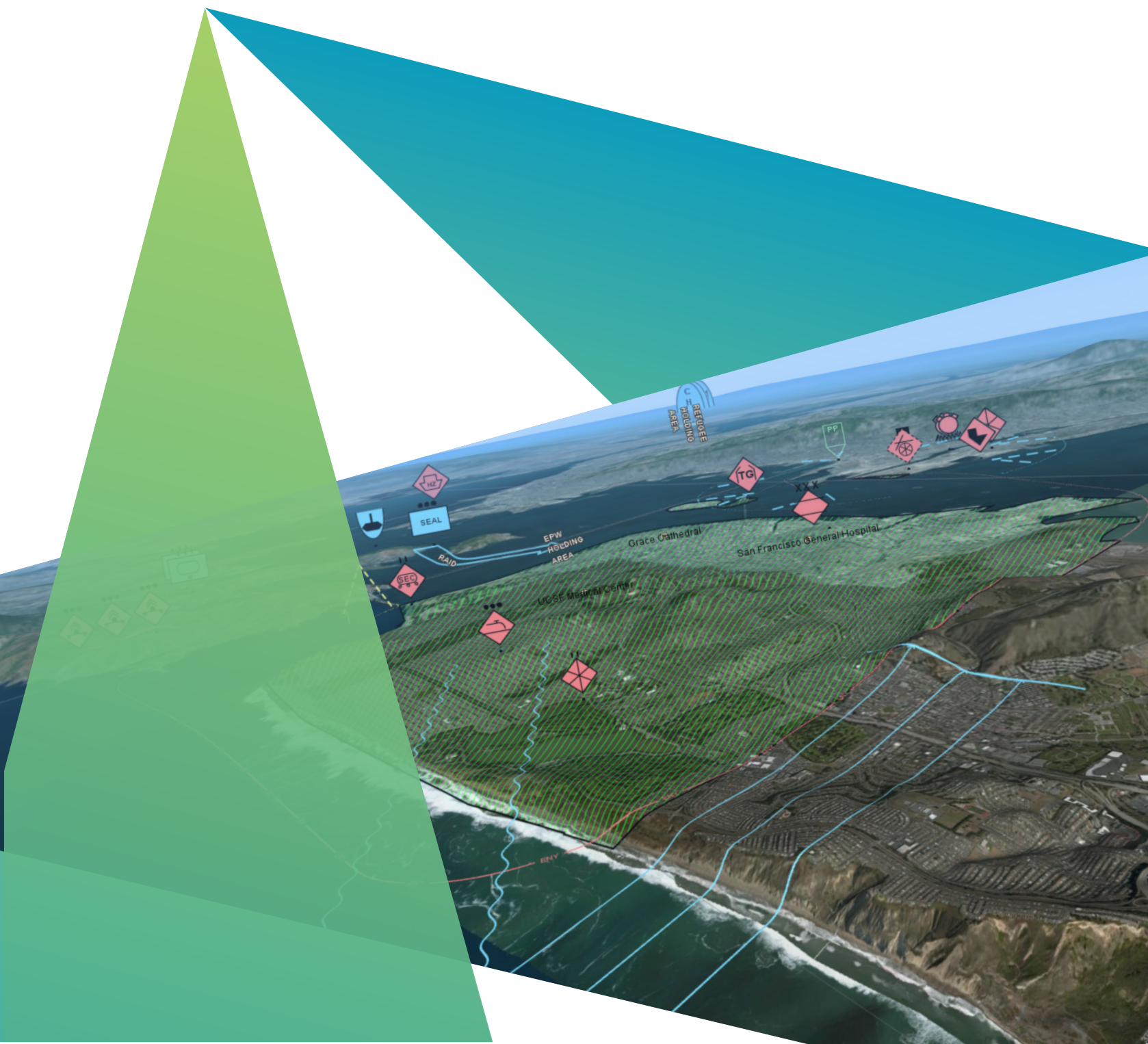
HEXAGON

Brochure

Lucy

For LuciadLightspeed

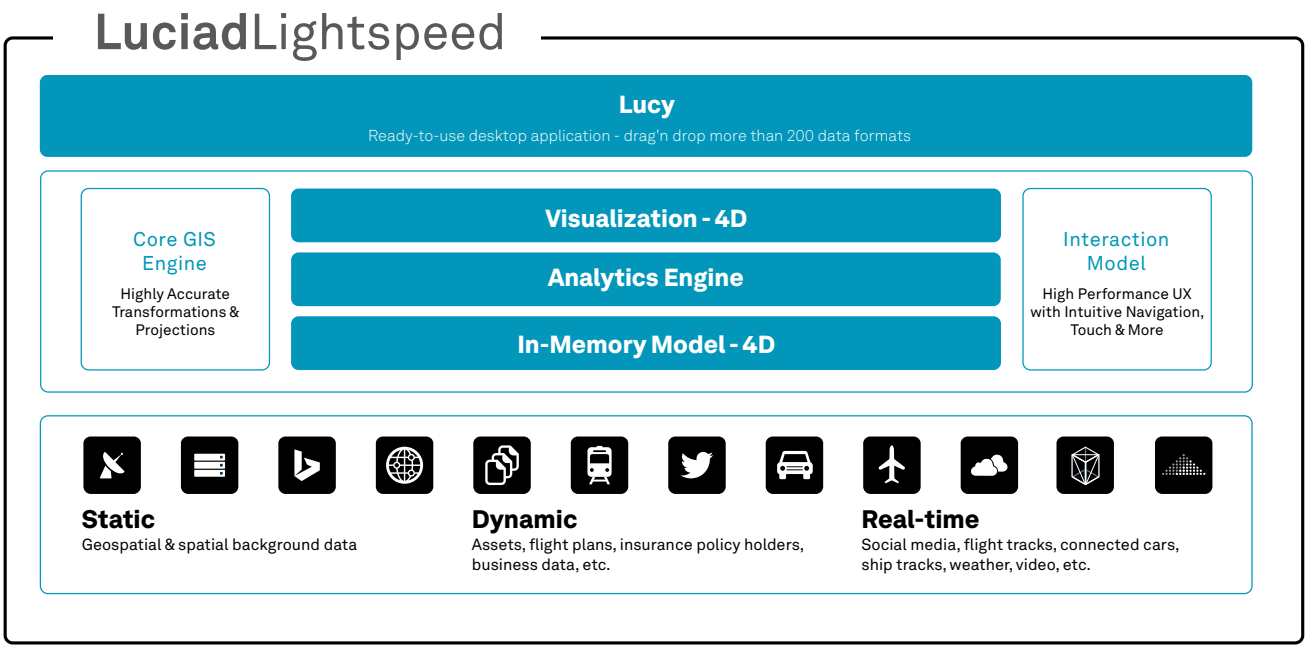


Lucy is the LuciadLightspeed application framework. It provides best-practice integration of the LuciadLightspeed components for common use cases. Configurable default implementations are delivered for both back-end capabilities like data format handling and for UI components, for an optimal user experience. Lucy is delivered as a ready-to-launch application but including configuration options and accompanied by an API.

Lucy is ideally suited for the rapid development of C4ISR applications; mission planning systems; common operational picture (COP) applications for defense; air traffic control (ATC); air traffic management (ATM); aeronautical information services (AIS) and management (AIM) applications for aviation; vehicle traffic control, urban planning, and infrastructure asset management applications; and more.

For the most common use cases, Lucy offers a head start for your application development. The application framework focuses on smooth data connection, instant visualization, and result-driven analysis of geospatial data with impeccable performance and accuracy.

Lucy has a modular structure. You can create a lightweight data viewer that can be installed from a USB key. The full potential is realized, however, by serving as a springboard for your own application: simply plug into Lucy's modular framework and assemble an instantly functional geospatial application that integrates LuciadLightspeed' s powerful features while meeting your development project requirements. Lucy offers an add-on mechanism that enables easy integration of custom capabilities to adjust to any project specifications.

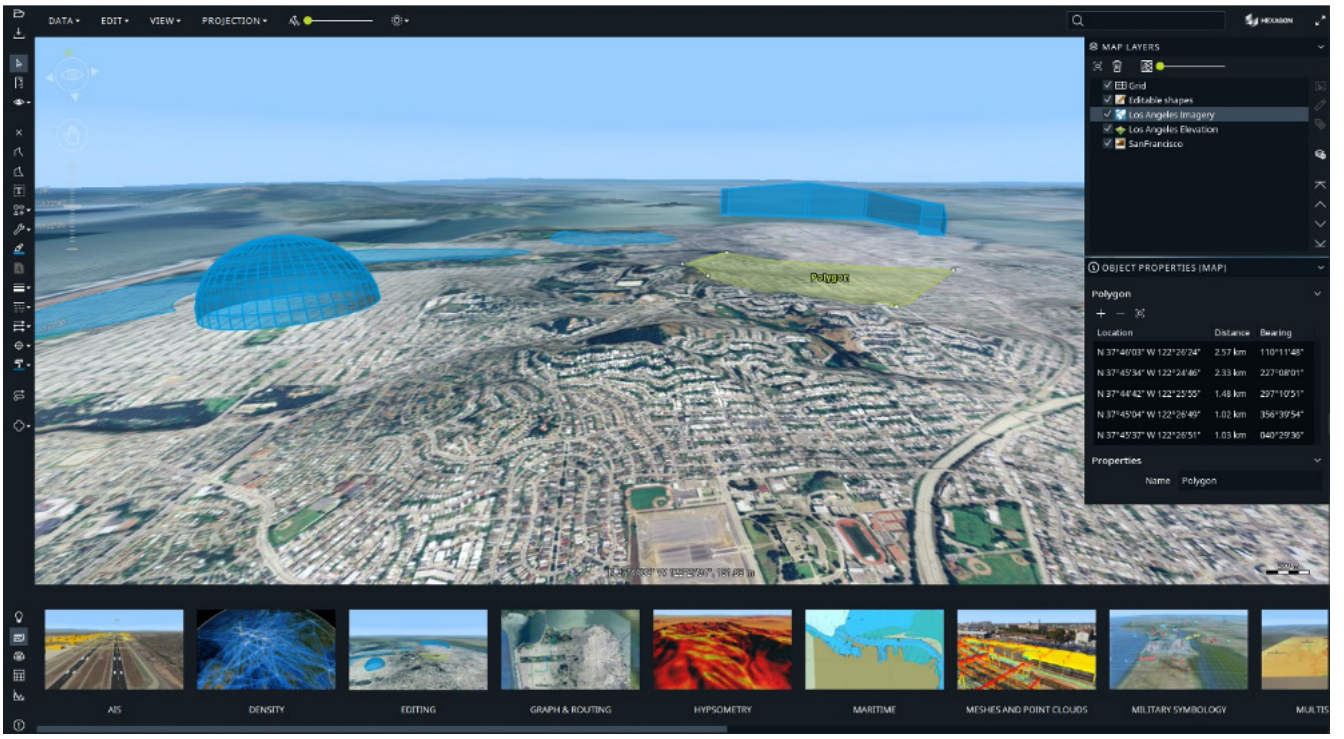


Who needs Lucy?

- You need to preview all types of geospatial data, including raster, vector, 3D and multidimensional data, and excel files.
- You want to explore data in 4D, represented geographically, in a profile view, in a table view, or animated over time.
- You need to analyze complex airspaces delivered as AIXM data using 3D visualization.
- You need to correctly represent data for the polar region.
- You need to present the user with an intuitive API for manipulating data and making annotations.
- You want to create and edit tactical plans.
- You need to offer a solution for mission planning.

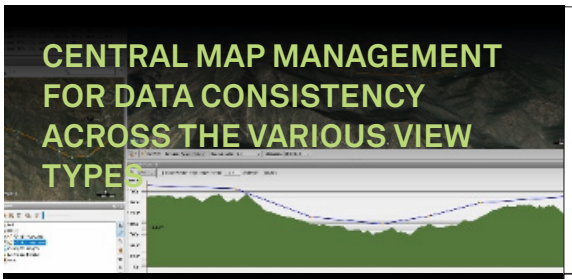
Key Benefits

An application framework dedicated to building geospatial applications.	Focus on connection to a multitude of data formats, instant visualization in both 2D and 3D, and result-driven analysis of geospatial data.
Best-practice integration of the LuciadLightspeed components.	Offers a head start for your development integrating the powerful LuciadLightspeed capabilities. Aligned with the LuciadLightspeed tiers and options. Includes a showcase sample illustrating the main LuciadLightspeed capabilities.
Visualize and analyze any data in a 2D/3D hardware-accelerated view, table view, or vertical intersection view.	Instantly visualize data in one of the many supported formats in a fast 2D/3D view. Integrate data from online and offline sources to create a full situational picture in its geospatial context. Plug in your own custom format with limited effort.
Flexible and configurable.	Customize each aspect and make it your own. Plug in your own application components and/or your own user interface. Designed with customizability and interoperability in mind, allowing you to meet all your project requirements. Easy integration with commonly used development environments.
Efficient development thanks to clean design.	The Model-View-Controller paradigm has been applied, separating business logic from the graphical user interface. It offers maximum GUI flexibility as a result, for optimal integration within your project. Designed to achieve high development speed and sustainable applications.

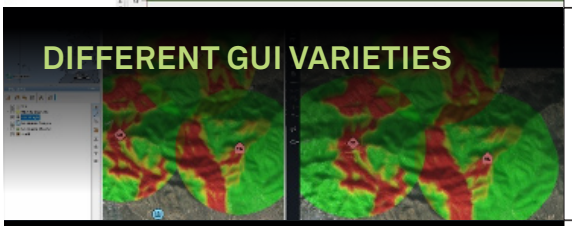


Functional Specification

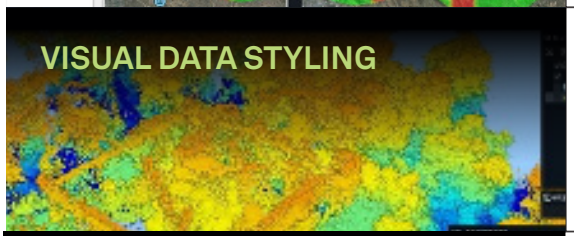
Below is a high-level, non-exhaustive overview of the development functionality available in Lucy. You can use the Lucy development components out-of-the-box or customize them to meet your specific requirements.



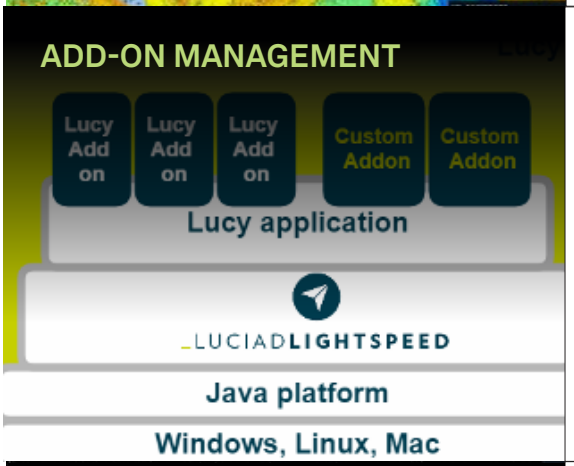
- Consistently display data in a 2D and 3D map view, table view, profile view, or vertical view. Select and edit the data with automatic synchronization across all views.
- The Lucy map managers keep track of all active and inactive map components in the Lucy application and distribute change notifications.



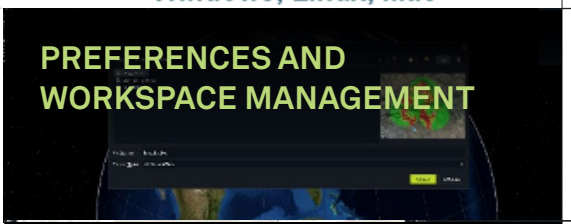
- Start from either the classical or map-centric UI or create your own custom application front-end.



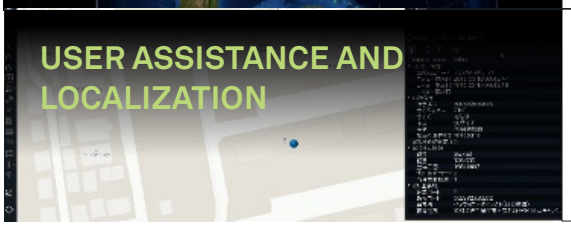
- Style raster, vector, elevation, and 3D data via an intuitive UI. This includes plain styling as well as density-based styling for vector data.



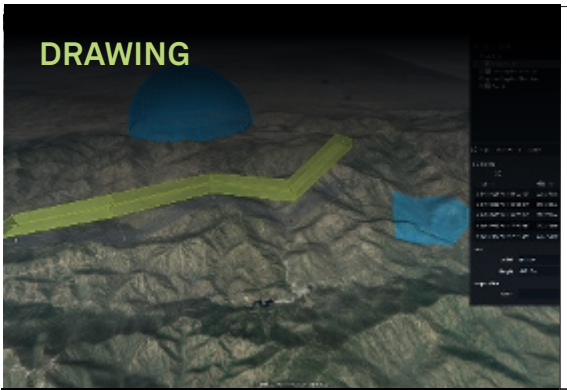
- Lucy offers several standard add-ons, each of which provides a specific piece of functionality: read and process a data format, create a map, perform an analysis, and so on. These add-ons can be configured easily.
- Lucy's modular design allows you to quickly write your own add-ons. Several helper classes assist you with the creation of add-ons.
- The Lucy API with its add-on mechanism plugs onto the LuciadLightspeed API. The LuciadLightspeed API remains accessible while creating custom add-ons, and the integration of existing and newly developed functionality becomes effortless.



- Support for storing preferences and preferred workspace configurations, so that these are immediately applied when Lucy is restarted.
- Workspaces can be easily retrieved via thumbnails.

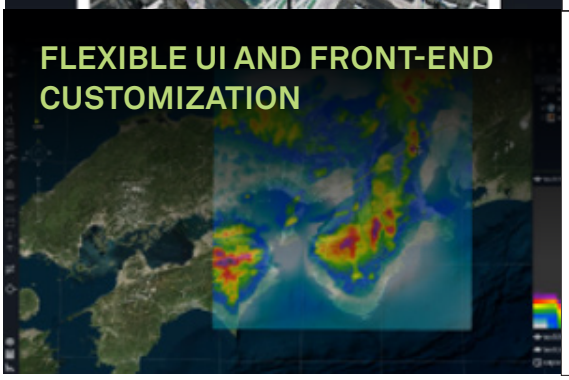


- Localization of the UI is possible for any language, including various character sets and text orientations.



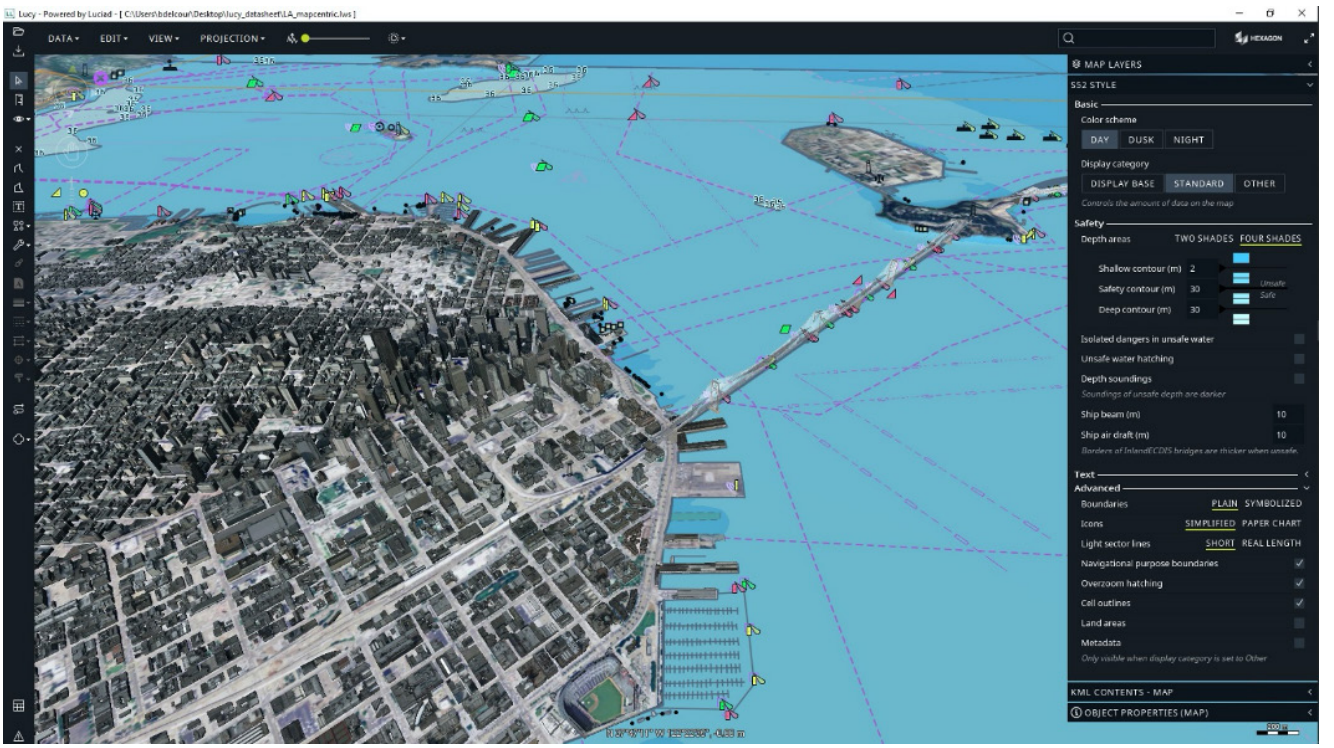
- Extensive drawing capability, including advanced shapes like domes, variable height and width buffers.
- Areas can either be draped on the terrain or have a fixed height.
- 2D as well as 3D views support on-map editing.

- Print view snapshots and generate PDF documents in high quality
- Apply comparison controllers.
- Use drag and drop and copy and paste.

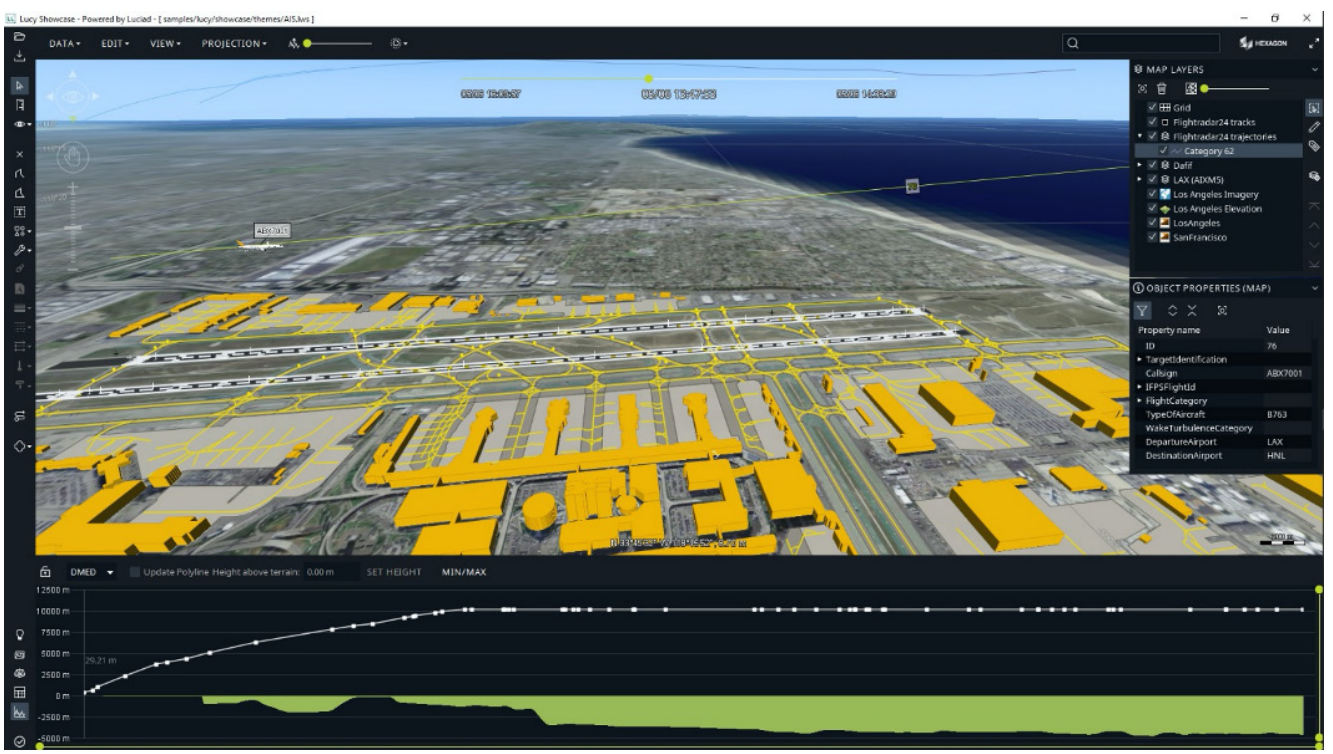


- Lucy has a pluggable user interface that offers several graphical interface styles out of the box. All interfaces allow for customization and give you complete control over menus, toolbars, panels, and positions.
- You can also replace the Lucy front-end application with a custom implementation.
- You can customize the application startup, the add-on loading sequence, and the user interface.

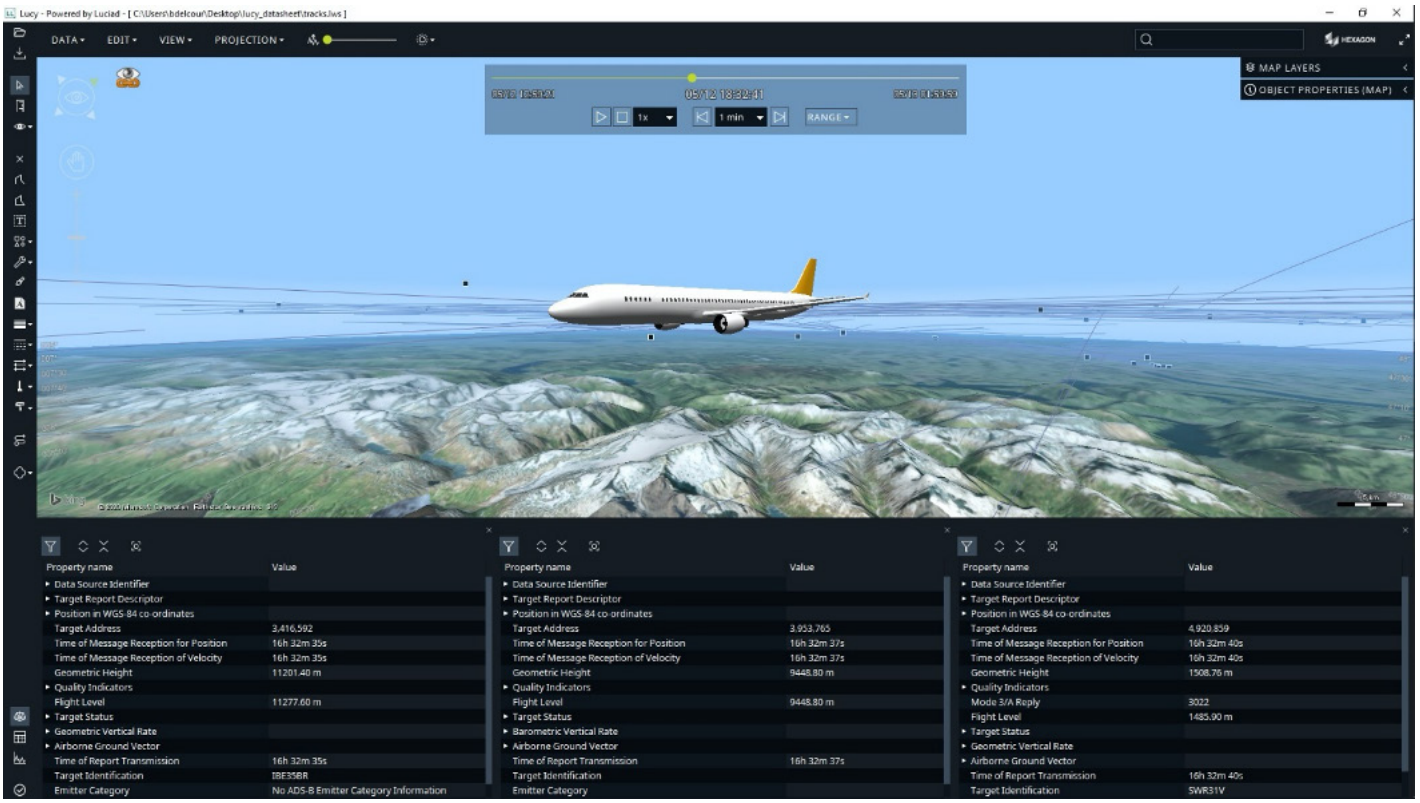
Application Features



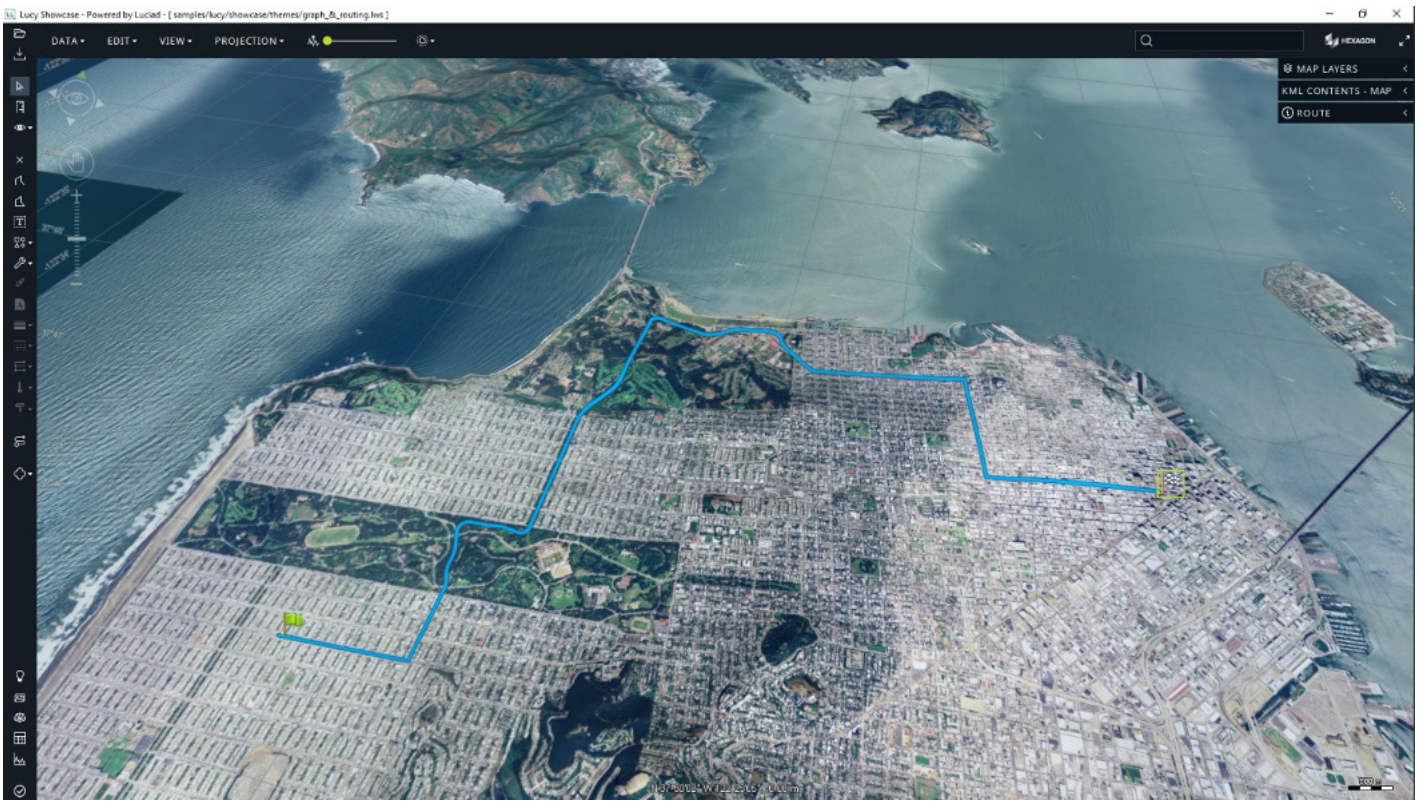
High-quality styling and visualization of maritime charts in Lucy.



Flight profile preview integrated with AIXM airport infrastructure objects in map-centric Lucy.

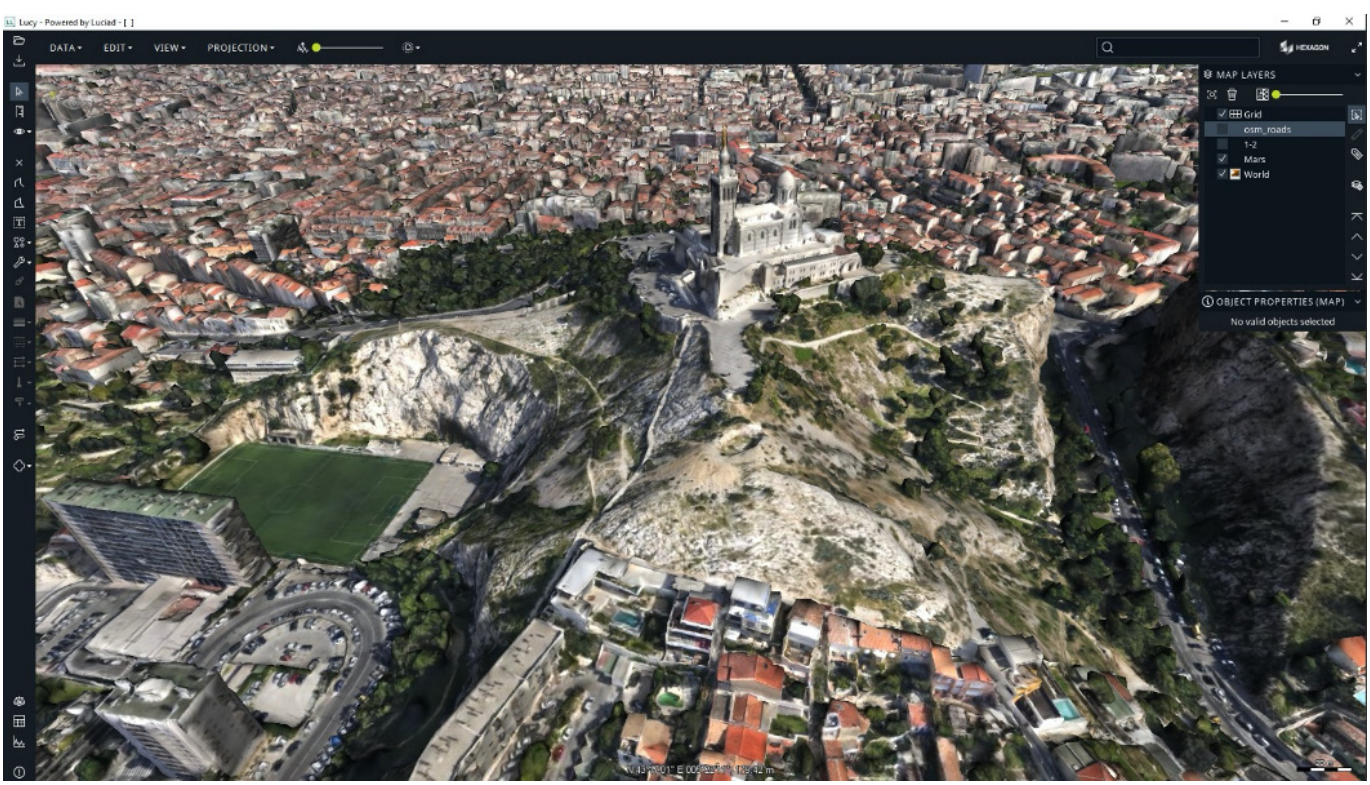


Comparing flight track objects in map-centric Lucy.

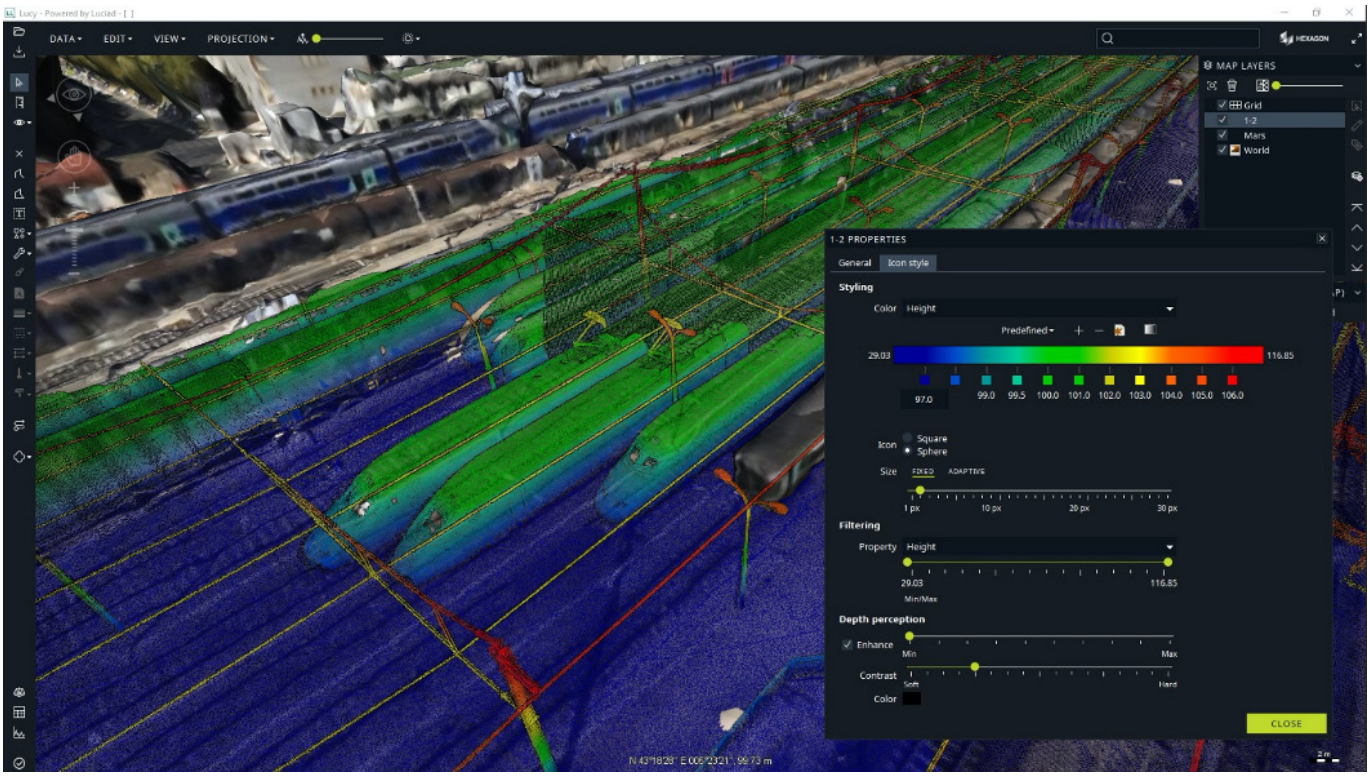


Integrate with the LuciadLightspeed routing component and offer constraint based route calculations.

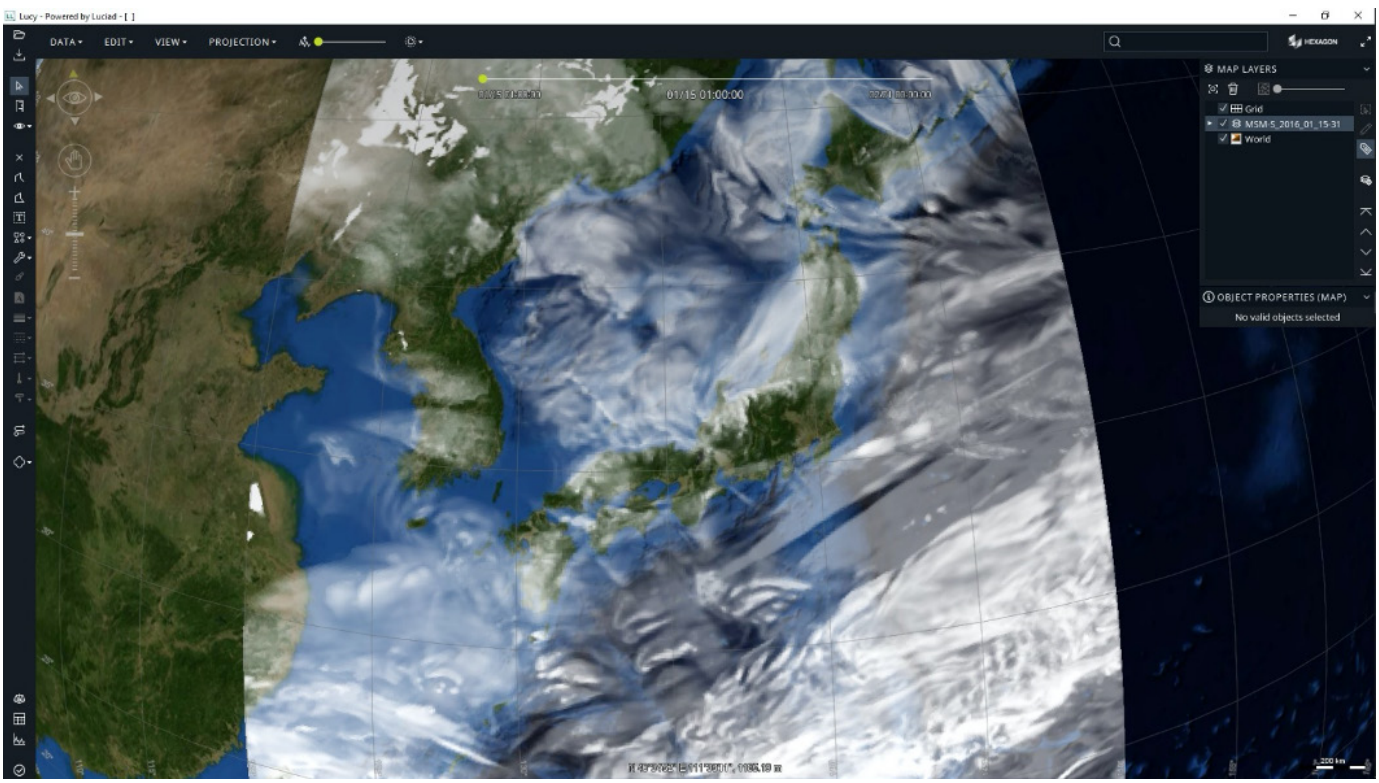
Lucy offers plug and play support for Oculus RIFT.



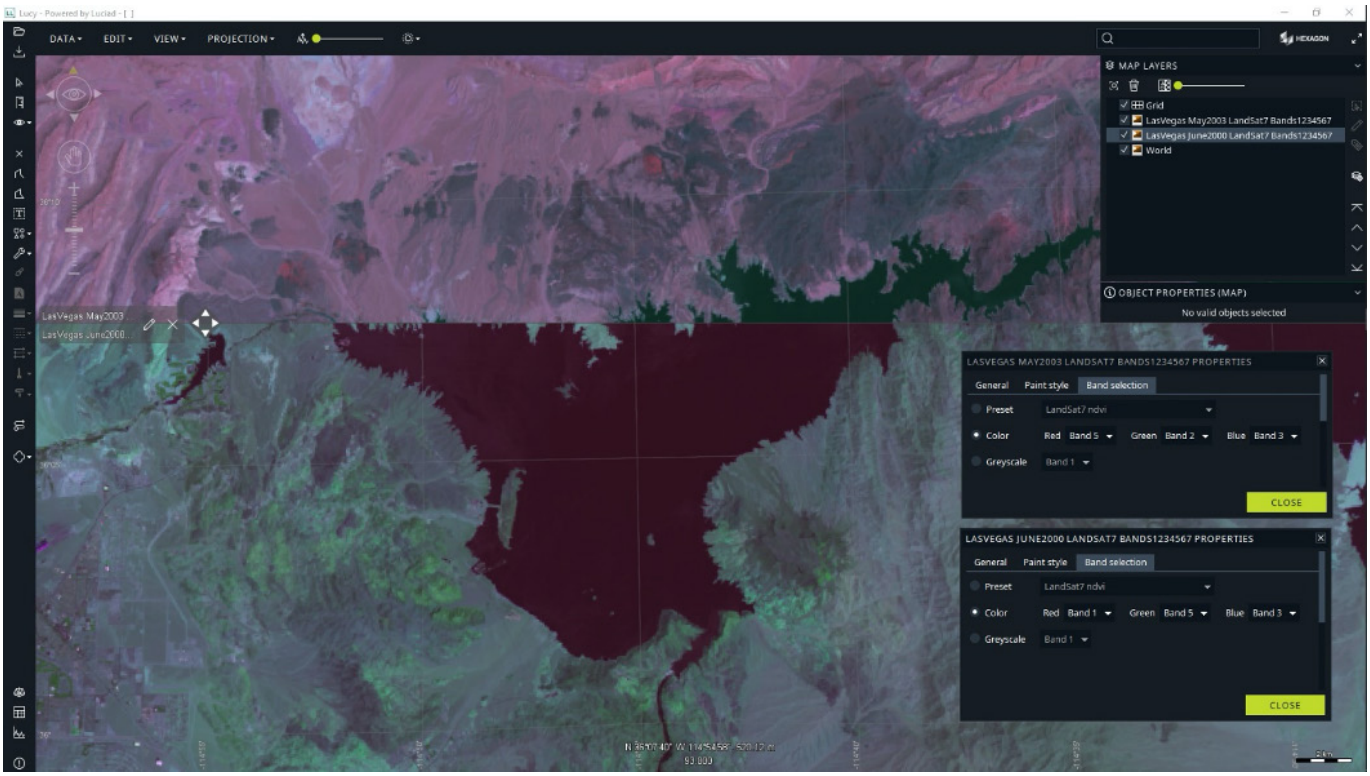
Direct support for 3D meshes.



A LiDAR point cloud visualized in Lucy, with the height attribute selected for visualization. 3D Mesh data created by Airbus Street Factory, lidar data created by Flying-Cam for Altametris and SNCF-Réseaux.



NetCDF scientific data about relative humidity integrated in map-centric Lucy to analyze humidity at various flight levels.



Visually spot differences between multispectral images using the swipe tool.

More Information

Lucy comes with:

- Samples, documentation, and an automated installer and a launcher for applications.
- Code samples for all components, including Lucy Showcase.
- Developer guide with clear explanations and descriptions of best practices.
- API reference offering detailed descriptions of all interfaces and classes.
- User guide with a detailed description of the graphical user interface.
- A default build for both a classic and a map-centric user interface layout.

Stay Connected

The Luciad Developer Platform offers code samples, tips, and much more for developers and architects at dev.luciad.com.

To learn more or schedule a demo, contact us at **info.luciad.gsp@hexagon.com.**

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Hexagon's Geospatial division creates solutions that deliver a 5D smart digital reality with insight into what was, what is, what could be, what should be, and ultimately, what will be.

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