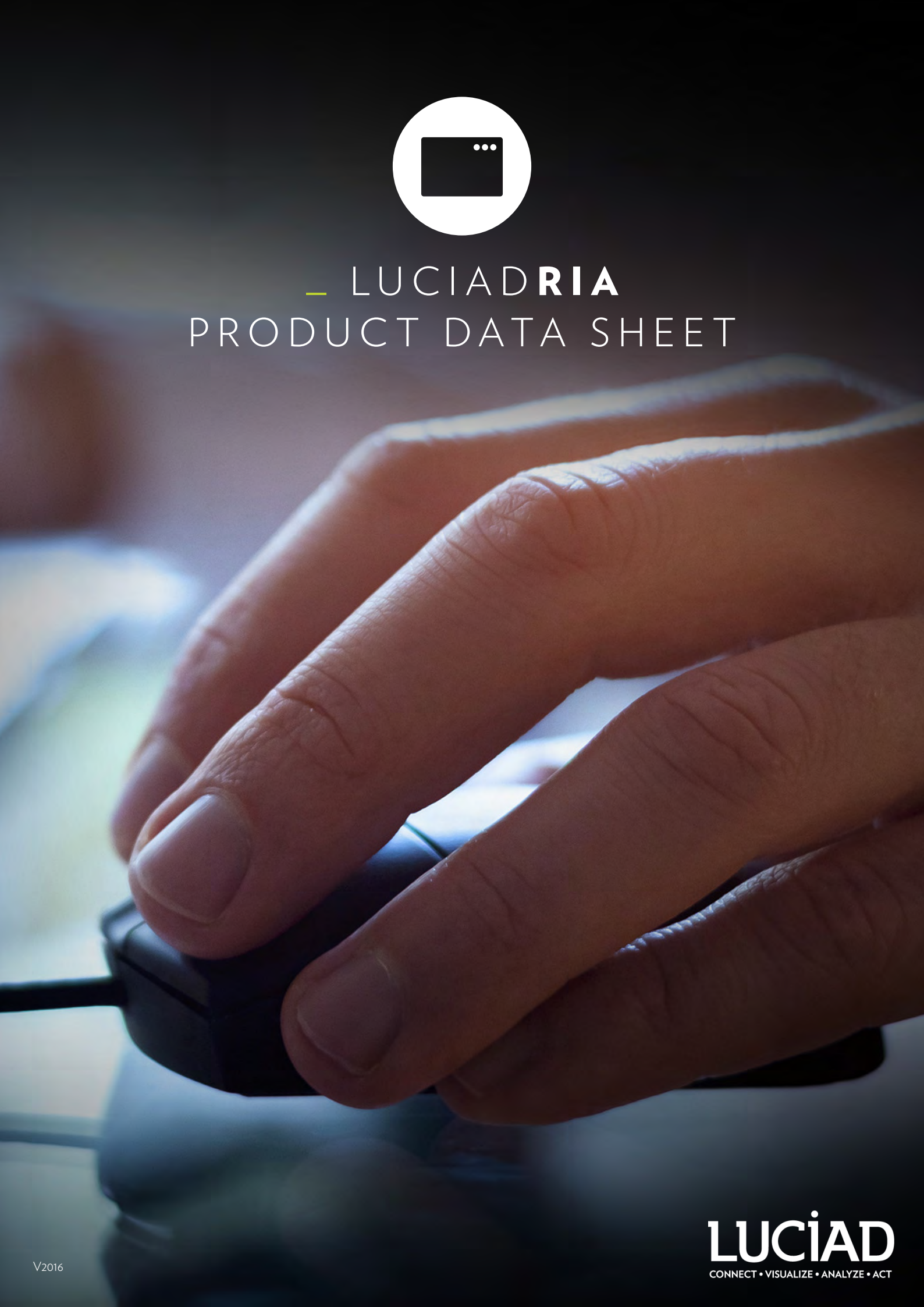
LUCIAD**RIA**
PRODUCT DATA SHEET



V2016

LUCIAD
CONNECT • VISUALIZE • ANALYZE • ACT

_LUCIAD**RIA** V2016.1 PRODUCT DATA SHEET

LuciadRIA offers browser-based geospatial situational awareness with the fluidity and speed of a desktop application. The software components of LuciadRIA have been designed for the development of advanced and easy-to-use cross-browser-based applications, using today's most advanced web-based technologies (HTML5, AJAX and WebGL). Through a single unified API, LuciadRIA provides high-performance 2D maps and 3D globes to web application developers.

PRACTICAL INFORMATION

LuciadRIA is designed to run in any HTML5-capable browser and can be used independently of any other Luciad technology. LuciadLightspeed can access LuciadRIA's data formats, and LuciadFusion can be used to serve data directly to LuciadRIA.

Figure 1 - Luciad product relationship diagram

KEY BENEFITS

BEST-IN-CLASS PERFORMANCE	Offers unprecedented user experience similar to LuciadLightspeed within an HTML 5-equipped browser. If the device supports WebGL, this can be exploited for an even better performance.
RETAINED GEOSPATIAL POSITIONING ACCURACY	Precision on world scale for visualization, transformation and calculation of any data. All geodetic calculations are performed at the client side.

DESKTOP-LIKE EXPERIENCE	Full application running in a browser, enabling desktop-like experience that includes visualization of imagery, vector-based data and dynamic content, such as tracks or annotations.
NO PLUG-INS	Compatible with any HTML5-capable browser including mobile browsers, no plug-ins to be installed.
CUSTOMIZABLE	Straightforward development of interactive browser-based user interfaces, including editing of content and map annotations. One single API allows configuration for 2D software rendering, 2D WebGL-based rendering or 3D rendering, depending on the target platform. The product allows you to meet your requirements 100%. Integrates in any environment (such as SharePoint or cloud-based environments).

USAGE DOMAINS

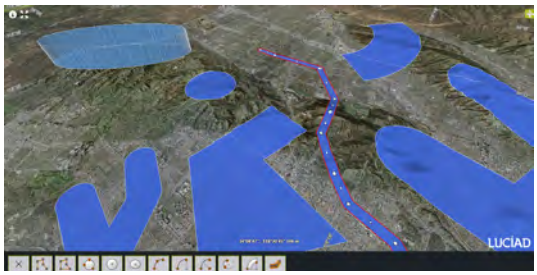
LuciadRIA includes many software components and application capabilities that have been designed specifically for the needs of the Aviation, Defense, Maritime, Public Safety, Homeland Security and Utilities & Logistics domains.

AVIATION	Browser-based applications for air traffic control (ATC), air traffic management (ATM), aeronautical information services (AIS) and management (AIM) systems
DEFENSE	Browser extension of C4ISR system, intelligence sharing, common operational picture (COP)
MARITIME	Vessel tracking, traffic management,harbor operations, anti-smuggling and piracy operations, on-board systems
PUBLIC SAFETY & HOMELAND SECURITY	Common operational picture for all stakeholders, briefing tool, unit tracking
UTILITIES & LOGISTICS	Public info sharing, vehicle traffic control, infrastructure asset management

FUNCTIONAL SPECIFICATION

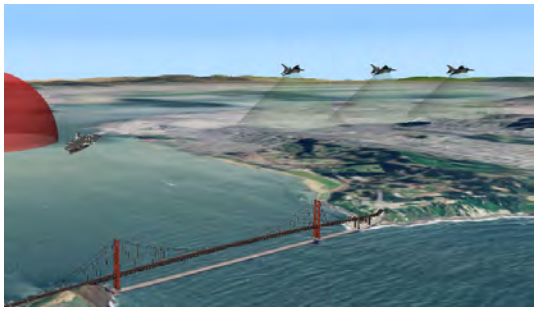
Below is a high-level, non-exhaustive overview of the components available in LuciadRIA. You can use the functionality of these components either out-of-the-box or extend them to meet your advanced requirements.

MODEL



Model any data format, load big data intelligently, load data asynchronously (Ajax), and represent complex geodetic object geometries with their metadata. Supported geometries include points, polylines, polygons, circles, ellipses, circular arcs, elliptical arcs, circular arc bands and buffers.

VIEW

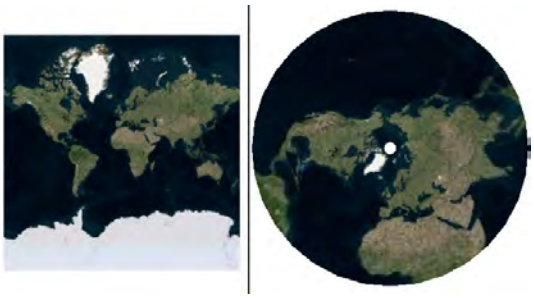


Visualize data in a multi-layered 2D or 3D view, and add a lon-lat grid. Apply flexible styling (2D and 3D icons, meshes, line styles, fill styles, transparency...), and create extremely versatile labels, with options for styling and decluttering. High-performance imagery rendering, using multi-leveling and tiling techniques, is integrated in the view. Draping of any data, including vector data and dynamic data, on terrain. Apply lighting effects to simulate light sources realistically.

CONTROLLER

Ready-to-use controller functionality includes standard controls (zoom, pan, select), freehand drawing, editing, multi-touch support (including Microsoft Pointer events and Gesture events) and snapping. You can easily create other controllers for custom interaction.

GEODESY



Perform on-the-fly map transformations in the browser. Visualize data in any EPSG map projection. Visualize accurate geodetic lines and warp raster data. support for MGRS coordinate formatting.

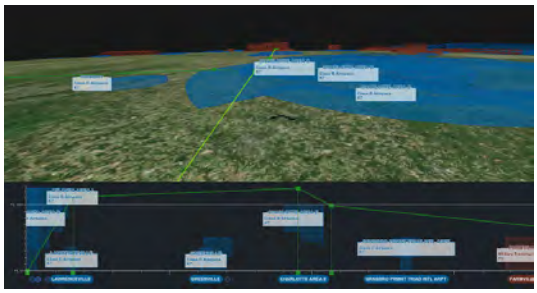
DATA CONNECTORS

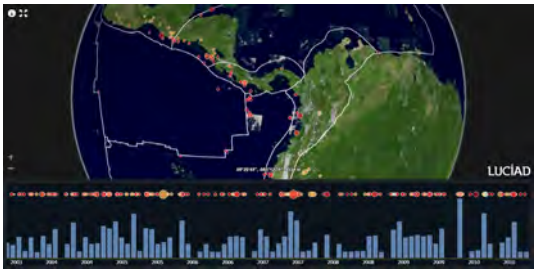
Access both raster and vector data through common data exchange standards (see below in 'Formats & Standards').

DYNAMIC DATA

Dynamically display thousands of moving tracks and generate interactive and dynamic heat maps.

TIMELINE AND VERTICAL VIEWS





A Cartesian view with the ability to display any kind of quantitative data (e.g., altitudes, distances, speed values, time). This view can be configured with a reference that displays these quantities in a certain unit of measure (e.g., flight level, meters, nautical miles). A wide range of customizing options is available for the annotation of the view axes. Concrete examples of this view are provided in the form of a vertical view and timeline view.

VISUAL ANALYTICS

Rapidly gain a thorough understanding of your geospatial data using advanced visual analytics tools. Configure clustering algorithms to aggregate a multitude of data objects into easily distinguishable clusters based on their properties. Analyze trajectory information by applying filters and parameterized styles or interactively and visually explore them simulated over time. Create heat maps based on static as well as dynamic data.

OPTIONAL COMPONENT

MILITARY SYMBOLOGY

Client-side creation, visualization and editing of all tactical graphics from the MS2525 and APP-6 standards, with configurable and customizable symbol styling and graphics stroking.

CONSTRUCTIVE GEOMETRY

Client-side constructive geometry calculations allow the creation and visualization of union, intersection and difference between sets of shapes.

In addition to these components, LuciadRIA offers many application capabilities. These are ready-to-use implementations for developers of common use cases in your domain. These application capabilities are supported by LuciadLightspeed-based services. Below is a non-exhaustive overview:

- Gazetteer search
- Real-time track display
- Annotation drawing and sharing
- Flexible UI widget system (Dojo)
- Application state store and restore
- Google Web Toolkit (GWT) integration
- LuciadLightspeed data support through GeoJSON services
- LuciadLightspeed symbology service for military icons
- LuciadLightspeed track service

FORMATS & STANDARDS*

LuciadRIA's visualization and analysis capabilities are data-agnostic and complementary with any data format. Through LuciadLightspeed, all data formats supported by LuciadLightspeed are available for applications based on LuciadRIA. In addition, the following data formats, services and standards are supported natively in LuciadRIA:

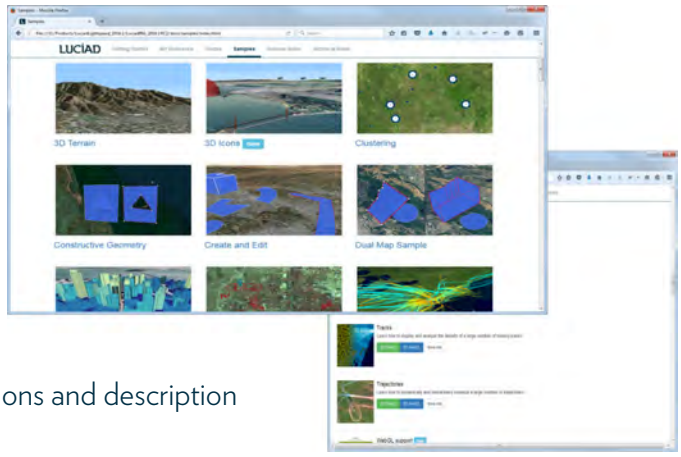
RASTER DATA	LuciadFusion Tile Service, Bing Maps, Google Maps, OGC WMS, OGC WMTS
VECTOR DATA	GeoJSON, glTF, OGC WFS, OGC GML, OGC KML

OTHER SUPPORTED STANDARDS

MILITARY SYMBOLOGY	APP-6A, APP-6B, APP-6C, MS2525b, MS2525c
OGC	GML, KML, Filter, Simple Features, Symbology Encoding, WFS, WMS, WMTS

*Non-exhaustive list of Formats & Standards

MORE INFORMATION



LuciadRIA requires:
- Any HTML5-capable browser

LuciadRIA comes with:
- Code samples for all components
- A convenient sample launcher
- Developer's guide with clear explanations and description of best practices
- API reference offering detailed description of all interfaces and classes
- Release notes to see what is new
- Technical notes to consult technical requirements and device support reporting tool

NEW

The Luciad Developer Platform is now live! The platform offers code samples, tips and much more for developers and architects.
dev.luciad.com

For more technical information about this product or to find out more about our other products and services, please contact us:

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