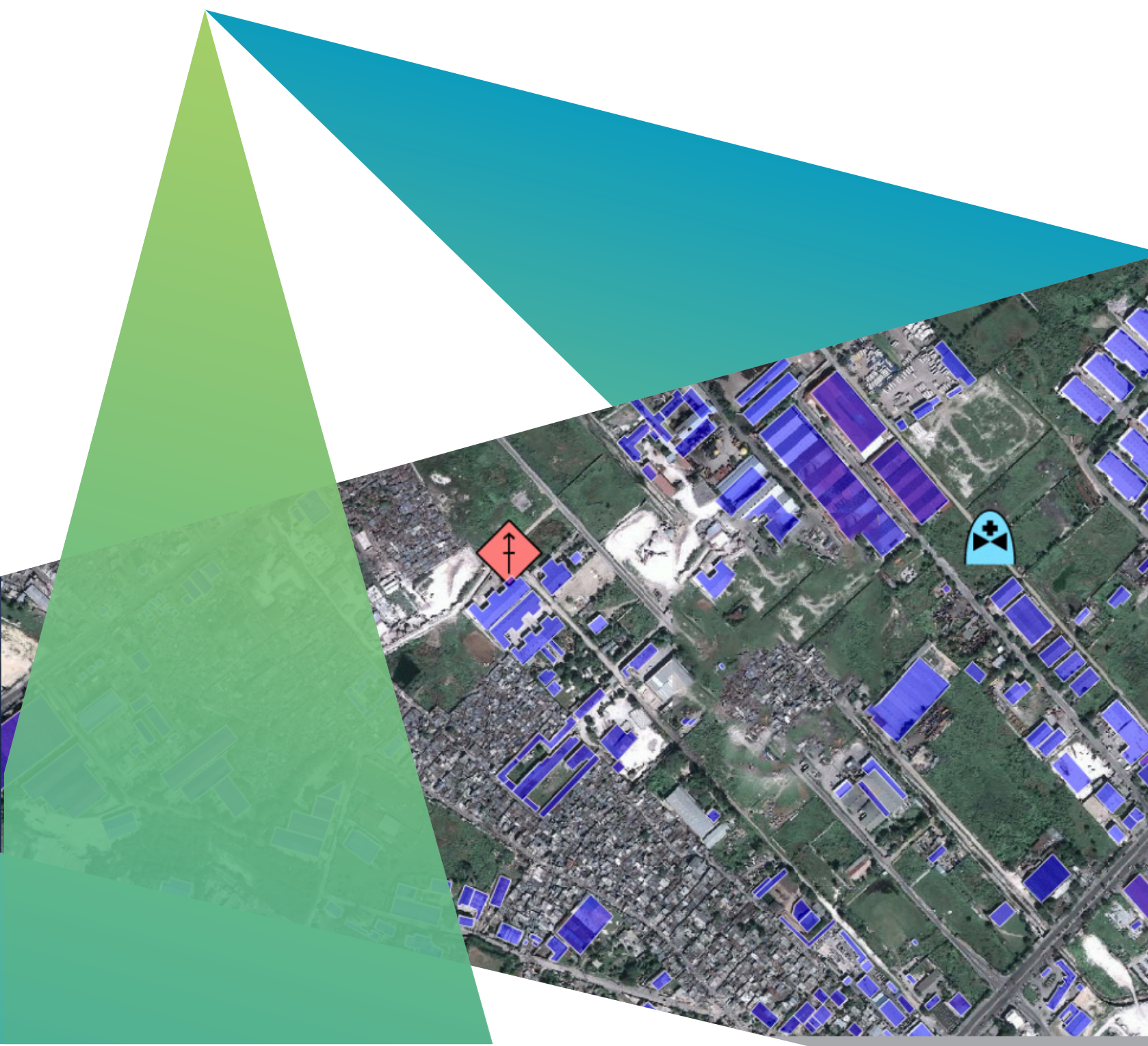# HEXAGON

LuciadMobile

LuciadMobile enables the rapid development of geospatial situational awareness applications on mobile devices running Android, and is specifically designed for situational awareness in the field and in disconnected environments.

LuciadMobile offers powerful capabilities to access, update and send back information and intelligence to associated command and control or management systems. A smooth transition between online and offline operations is ensured. In disconnected mode, users have full access to all the LuciadMobile capabilities, as well as the geospatial data. LuciadMobile is designed for optimal usage in the field. It offers deep integration with Android OS, providing access to the multiple functions of the device, such as the camera, compass and GPS.

Luciad's Mobile solution makes efficient use of mobile hardware resources with a small software footprint, as well as controllable battery usage. The focus of LuciadMobile is on the domains with the most stringent requirements for mobile situational awareness.

Who Needs the LuciadMobile Solution?

These are just a few examples of why users turn to LuciadMobile for their geospatial data challenges:

- You want to offer intuitive touch based access to your application

- Your mobile solution needs to work standalone in disconnected environments

- Visibility calculations need to work when disconnected

- You need to prepare your mission data and then transfer data packages to mobile devices

- You want to integrate device peripherals like compass and camera into your situational awareness application

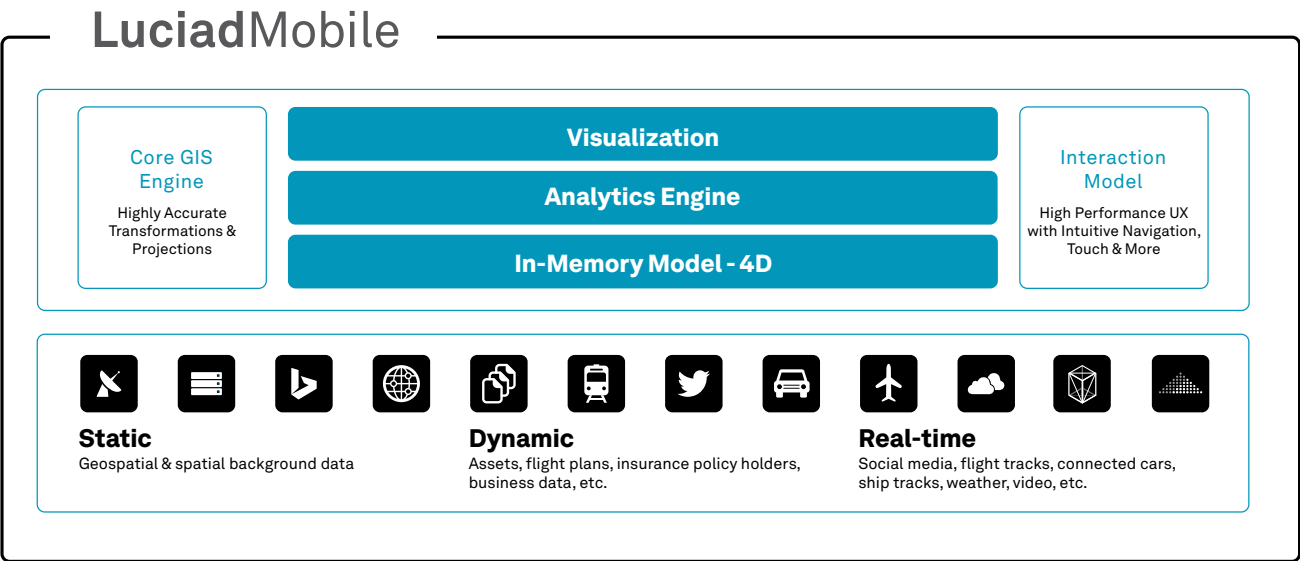- You work with defense symbology, including MS 2525 and APP6 in an Android-based solution

Figure 1 - Luciad's Mobile solution can connect to hundreds of data sources. The Android solution comes with a core GIS engine and analytics capabilities for beautiful visualization and powerful data analysis, even in disconnected environments.

Figure 2 - Interact with the view using well-known touchscreen gestures such as pinching, tapping, long pressing and dragging. LuciadMobile's ready-to-use controller functionality includes standard controls (zoom, pan, select), freehand drawing, editing and rotating. You can easily create other controllers for custom interaction.

Key Benefits

- Support for domain-relevant symbologies, such as MS2525 and APP6 for Defense and Security

- Mobile terrain analysis using the data available on the mobile device (in both online and offline environments)

- An intuitive graphical user interface, enabling fast and effective decision-making

- Support for OGC Geopackage, the standard used for data exchange and offline data storage on mobile devices

Functional Specification

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

Component	Capabilities
Core Gis Engine Geospatial Refrence Models Transformation And Projection Engine	• Access and represent data in different coordinate reference systems (geodetic, geocentric, topocentric, grid) and projections (stereographic, orthographic, Mercator, UTM, …). • Perform advanced geodetic calculations and transformations, re-project data on the fly. • Access dynamic data feeds
4D Cartesian & Geodesic Geometry Model Unified Data Model	• Model any data format, load big data intelligently, represent complex object geometries and their metadata, and filter data. • Support for static data as well as dynamic data feeds.
2D Visualization Engine Customizable Symbology	• Visualize data in a multi-layered 2D view. • Apply flexible styling (icons, line styles, fill styles, transparency) to your data. • Advanced labeling and decluttering. • Tiled, multi-leveled imagery rendering is integrated in the view.
Single & Multi-Touch Interaction Model	• Interact with the view using well-known touch screen gestures such as pinching, tapping, long pressing and dragging. Ready-to-use controller functionality includes standard controls (zoom, pan, select), freehand drawing, editing and rotating. You can easily create other controllers for custom interaction.
Raster Connectors Vector Connectors	• Access data in any vector or raster format via the open LuciadMobile data formats. Prepare and convert your data to OGC GeoPackage for LuciadMobile use. • You can also access selected data formats natively. • Formats: KML, Bing Maps, Digital Terrain Elevation Data (DTED),OGC GeoPackage, LuciadMobile Vector Data-base, LuciadMobile Raster Database, Enhanced Com-pression Wavelet (ECW) and ECW Protocol (ECWP).
OGC Standards	• Access data through common data exchange standards. • LuciadMobile supports the following OGC standards: GeoPackage, WMTS.
Offline Capabilities	• Use your LuciadMobile application in disconnected mode. • Make annotations. • Pick icons from an icon browser.
Device & Sensor Integration	• Insert GPS tracking. • Insert a compass icon. • Create SPOT reports and attach pictures.
Terrain Analysis Engine	• Perform calculations on terrain data, such as line-of-sight (LOS), or hypsometric calculations, and get an alternative view on the terrain data.
Defense Symbology	• Full support for symbols and tactical graphics of the latest military symbology standards in 2-D. This support encompasses the lookup, creation, visualization, and editing of military symbols and tactical graphics. • Supported Standards: MS2525b, MS2525c, MS2525d, APP 6A, APP 6B, APP 6C, APP 6D
Advanced Functionality	• Display military symbology and tactical graphics, perform terrain elevation analysis calculations on your mobile device.

In addition, LuciadMobile offers the following ready-to-use application capabilities for developers. The components cover commonly used functionalities in our domains of focus.

- Create SPOT reports and attach pictures
- Insert GPS tracking
- Access dynamic data feeds
- Make annotations
- Perform search functions
- Pick icons from an icon browser
- Insert a compass icon
- Update and share information
- Prepare and convert your data for LuciadMobile use, using LuciadLightspeed and/or Lucy
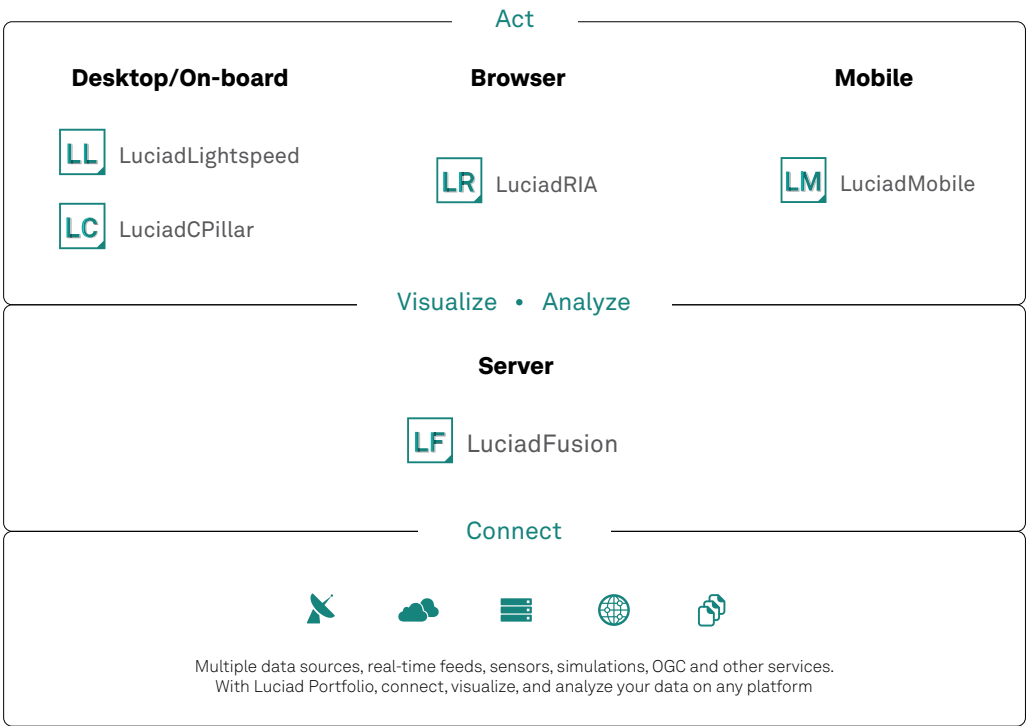
Use Cases

Figure 3 - High-resolution satellite imagery and line of sight (LOS) calculation

Figure 4 - Support for military unit symbols and tactical graphics

Act

Desktop/On-board	Browser	Mobile
LL LuciadLightspeed	**LR** LuciadRIA	**LM** LuciadMobile
LC LuciadCPillar		

Visualize • Analyze

Server

LF LuciadFusion

Connect

Multiple data sources, real-time feeds, sensors, simulations, OGC and other services.
With Luciad Portfolio, connect, visualize, and analyze your data on any platform

More Information

LuciadMobile comes with:

- Code samples for all components
- 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's new
- Technical notes to consult technical requirements

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

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

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.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 4.3bn USD. Learn more at hexagon.com and follow us @HexagonAB.