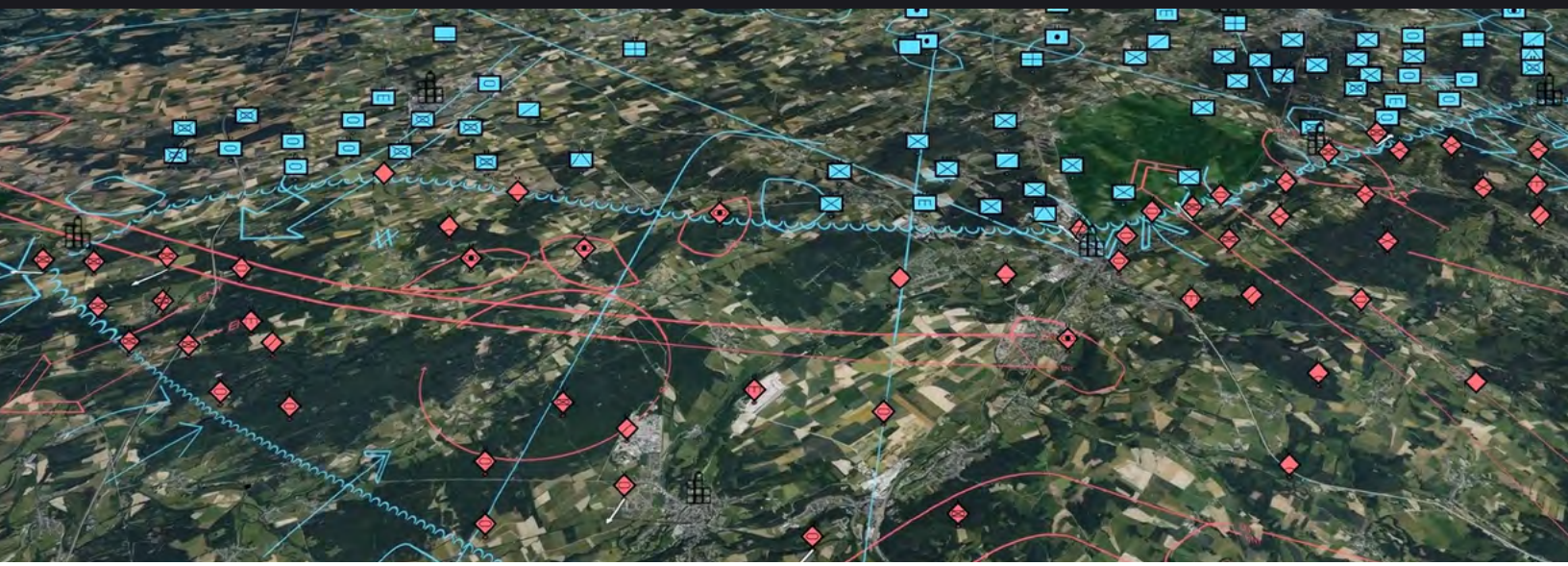
CAPABILITY SHEET

Octave Alto benefits TAK solutions



Team Awareness Kit (TAK) is a widely used geospatial collaboration platform that allows teams in the field to share locations, incidents, tracks, imagery and other operational information in real time on a map. In defence, this same technology is often referred to as Tactical Assault Kit (TAK). The acronym "TAK" is an umbrella term covering different variations (e.g., ATAK for Android, WinTAK for Windows, etc.).

Octave Alto (formerly Luciad) software development kits (SDKs) benefit existing TAK solutions and developers in various ways:

- Connect 200+ data formats
- Stream huge imagery files
- Power Zero Install web applications
- Accelerate mobile 3D graphics
- Streamline cross-platform development
- Employ military symbology
- Achieve backward compatibility

Alto SDKs

Alto SDKs act as high-performance geospatial data fusion and visualization engines that boost the scale, data handling and 3D capabilities of TAK environments.

TAK excels at real-time local tracking and frontline team communications. Alto strengthens capabilities at the server and enterprise levels.



Key benefits for TAK solutions

- **Connected data formats:** TAK typically relies on standard military and civilian formats like KML, KMZ or Cursor-on-Target (CoT) – Alto connects to over 200 different data formats simultaneously, instantly translating complex telemetry, smart city or legacy military data into streams that ATAK users can see on their phones
- **Integrated cyber domain:** Alto has introduced APP-6(E) cyber symbology, allowing the generation and superimposition of critical cyber threat vectors and electronic warfare boundaries directly onto a standard TAK map
- **Unified multi-domain operations (MDO):** In missions involving mixed forces, Alto translates specific standards and symbology including APP-6E for air, land, sea and cyber operations
- **Automated data fusion and cleaning:** Alto continuously ingests disparate formats from radars, sensors and satellite providers, and Octave Alto Server (formerly LuciadFusion) automatically cleans, aligns and tiles this information on the fly, ensuring background maps match precisely across the network
- **Smart OGC Service handling:** Alto dynamically scales the delivery of heavy Web Map Services (WMS) or Web Feature Services (WFS and WFS-T), automatically reducing payload sizes when streaming maps to ATAK users operating over high-latency or low-bandwidth radio nodes
- **Direct S-101 maritime chart streaming:** The server natively decodes complex S-101 maritime charts, dynamically translating these vector-heavy ocean maps into OGC-compliant web services that native TAK clients can display seamlessly
- **Unified multiplatform engine (WinTAK and ATAK cross-compatibility):** Developing separate geospatial pipelines for ATAK and WinTAK is time consuming – Octave Alto Universal (formerly LuciadCPillar) provides a single, consistent API architecture across C++, C# and Android (Java / Kotlin), allowing developers to write complex tactical logic or custom data handlers once and deploy them seamlessly across mobile and desktop TAK platforms
- **Advanced mobile graphics performance:** Alto integrates modern graphics APIs like Vulkan, DirectX 12 and WebGPU; by embedding Alto Universal libraries into custom ATAK plugins, mobile applications can offload rendering workloads straight to the device's hardware, smoothly tracking thousands of moving tactical assets, 3D terrains and dynamic lines of sight without freezing the device
- **On-device heavy raster and vector decoding:** Mobile devices typically struggle with heavy imagery files; Alto Universal brings native support for ECW, JPEG2000 and GML compression formats directly to the device level, instead of relying on a constant network connection to a TAK server to unpack maps
- **Flawless 4D (time-based) calculations:** Tactical missions depend heavily on predictive routing and historical playback – Alto Universal includes math libraries that handle exact geodetic transformations and interactive, 4D analysis, allowing ATAK plugins to calculate precision airspace intercepts, vehicle drop zones or coordinate shifts across varying global coordinate systems with absolute mathematical grounding
- **Zero Install command visualization:** Setting up native Windows applications like WinTAK on every station can be complex, but Alto SDKs enable commands to view live tactical feeds, sensor data and map geometries directly inside any standard web browser without local software installation

Are you developing a custom C++ or Java / Kotlin plugin for ATAK? Explore how to use Alto SDKs to build a stand-alone companion app for tactical edge hardware. Let us know your technical setup so we can discuss the development path with you.

Contact us | Explore Octave Alto

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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