



# InterMAPhics

## High Performance Geospatial Data Visualization SDK

### InterMAPhics

InterMAPhics is a high performance geospatial data visualization software development tool kit. Standards-based and object-oriented, it's fielded in 2D and 3D real time command and control and situational awareness applications around the world.

Optimized for performance, InterMAPhics also provides the ability to customize all elements of a user interface. With over 30 different data types and formats currently supported and new formats added regularly, InterMAPhics can support virtually any map, imagery or data format in existence today.

### Field Proven

InterMAPhics has been fielded in some of the most performance-demanding applications;

Air and Missile Defense Systems including the Radiant, Sentry, ASOC, Arrow, THAAD, and AN/TPS-6x/7x.

Naval Command and Control Systems including CATCC/AATC, Aegis, Littoral Combat, Canadian Patrol Frigate, Spanish F105 and Australian Air Warfare Destroyer Ships.

Land Based systems including the Joint Battle Command-Platform, and Ground/Air Task Oriented Radar.

Unmanned Systems Control Stations including the Broad Area Maritime Surveillance system.

Airborne surveillance systems including the NATO AWACS

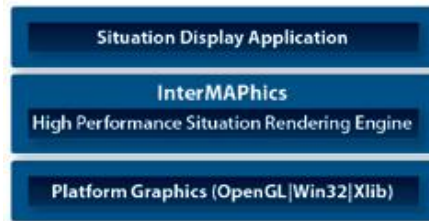
Wedgetail and Peace Eagle systems, as well as special mission aircraft.

Air Traffic Control and Vessel Traffic Management systems around the world.

### Reduce Implementation Risk and Cost

InterMAPhics reduces complexity by transforming low level platform graphics into a powerful situation display engine. Developers use a purpose built API to interact with domain objects instead of building a display framework from scratch.

This allows developers to focus on system-unique requirements significantly reducing development schedule and risk.



### Unique Requirements of Situational Awareness Displays

Situational awareness applications often have demanding requirements including:

- Displaying tens of thousands of data objects over complex maps and images
- High data refresh rates
- High fidelity displays
- Operational responsiveness

- Minimizing latency between system data update and operator awareness
- Providing predictable, deterministic use of system resources

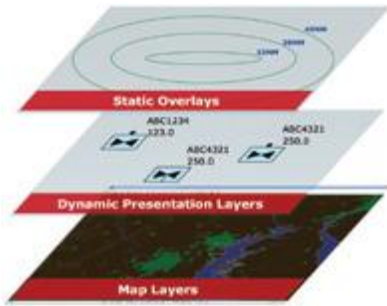
InterMAPhics meets these challenges by dynamically displaying exactly what is required at all times. As a result, InterMAPhics applications produce the most responsive and accurate representation of the operational pictures. Tools, techniques and examples are provided to meet a variety of real world performance requirements.

### Get Purpose-Built Tools to Render Situation Data

All display aspects are dynamically controllable. Geographic projection is performed on-the-fly at runtime using a choice of spheroids and projections.

Overlays to represent data from real time data sources such as sensors, data fusion engines and track correlators are provided. Standards-based symbology, e.g., MIL-STD-2525, is provided directly in the InterMAPhics API, or fully customized symbology may be used.

A vast array of commonly used data products for situational awareness applications are supported; including raster maps, vector maps, imagery and terrain.



## Build Layered Designs for Easy Fusion of Visual Data

InterMAPhics visualizes data sources using a flexible layered concept. InterMAPhics incorporates data from multiple sources including real-time data feeds, databases, maps and images. Any number of data sources can be visually fused in the situation display, independent of their source.

The layered design allows InterMAPhics to visualize existing or new data sources.

## Create Customized Operator Displays

InterMAPhics based displays are completely customizable, including GUI, appearance, behavior and interaction with displayed objects. This flexibility ensures that unique requirements are easily implemented and modifiable, thereby ensuring operational acceptability.

## Specifications

### Documentation & Training

- Complete developer-oriented documentation set
- Online application programmatic interface reference
- Sample application demonstrating all key components and functionality
- Example model-view-controller development framework
- Viewer for previewing map products
- Programming tutorials to exercise implementation concepts
- Available instructor-led training course

### Features

- Easy to learn and use object-oriented API

- Uses container-based view/layer/presentation/primitive hierarchy
- Open standards based
- Unlimited 2D and 3D situation viewports
- 2D views are extensible to 3D
- Wide assortment of 2D primitives
- Wide assortment of 3D volumes
- Complex 2D and 3D domain objects including tracks, range rings, grid, compass rose, history trails, velocity vectors and data blocks
- Built-in object de-cluttering
- Fully customizable user interface, look and feel
- Built-in filters to control object display by any data attribute

### Data Formats

- Raster/Imagery: ADRD, CADRG, CIB, MrSID, JPEG2000, NITF, TIFF, GEOTIFF, PNG, JPEG, BMP
- Vector VMAP, DNC, WVS+, S57, SHAPE, DAFIF
- Terrain: DTED
- 3D models: SVG

### Coordinate Systems

- Lat/Long
- Georef
- UTM
- MGRS
- Fully extensible by application

### Display Control

Runtime control of all graphical attributes including:

- Layering, priority
- Intensity, blending
- Colour, shading, fill, font style

### Web Services

- Web Map Service
- Web Feature Service

### Symbology

- MIL-STD-2525
- S52
- GML
- Fully customizable symbology using primitives including fonts, icons, bitmaps, and CGM

### Projection

- On-the-fly geographic projection of all graphics at runtime
- Supports over 20 spheroid models
- Supports over 30 display projections

## Performance

- Highly optimized display rendering kernel handles complex maps, images and dynamic objects
- Full application control of display update
- Updates different layers at different rates
- Displays tens of thousands of objects while maintaining responsiveness
- Minimizes processor use
- Typical use case of thousands of objects updated sub-second with dynamic zooming and panning

## Platform & Environment Support

- Programming languages: C++, C#/ .NET, Java
- Operating systems: Android™, HP-UX, Linux, SE Linux, Solaris, Windows, Windows Mobile/Phone. Others available on request.
- Development environments: Eclipse, GCC, HP aC++, Java SDKs, Sun Studio, Visual Studio. Others available on request.
- Integrates with Java, WPF/.NET, Qt, MFC, Motif and other GUI toolkits
- Requires no proprietary hardware or drivers
- Leverages platform capabilities where available including multi-CPU and GPU
- Works with existing tools and software processes for design, profiling, tuning, testing and configuration management

## Get the Support You Need

InterMAPhics is compatible with a wide variety of technology and tools in your platform environment, and is fully scalable from small handheld devices to large operator workstations – all using the same API to maximize reuse of application components.

InterMAPhics is available for different object-oriented programming languages, operating systems, and architectures without requiring proprietary hardware and drivers. New platforms and environments are regularly added.

Product support is available online and via telephone for the entire program lifecycle ensuring your deployed applications are always supported.

Find out more – Contact Gallium today

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