

Products **Catalog**



***EMPOWERING the
Human Machine Interface***

DiSTI®

About DiSTI

Founded in 1994, DiSTI is a leading provider of advanced graphical user interface software and services to businesses, governments and militaries worldwide. The company's flagship offering, GL Studio, is a suite of powerful tools which enable developers to build high-fidelity graphics and fully interactive controls into their software products, enhancing the level of realism and sophistication of their development efforts. DiSTI's solutions have been implemented in a wide range of uses in multiple industries, from virtual cockpits for the defense community to safety-critical applications for the aerospace and medical communities.

EMPOWERING THE HUMAN MACHINE INTERFACE™



DiSTIProducts

Visualize...Train...Deploy... with Solutions from DiSTI

DiSTI empowers the creation of robust intuitive human machine interfaces through an innovative suite of software development tools. Military/civil aircraft cockpit displays, automotive dashboards, process/flow controls, medical displays, and communication equipment benefit from state-of-the-art reusable interactive 2D or 3D graphical objects for operating, maintaining, or synthesizing complex systems.

DiSTI human machine interface solutions have been implemented in a wide range of uses across multiple industrial disciplines including virtual cockpits for NASA, prototypes of new equipment designs for Fortune 500 manufacturers, and safety-critical applications in the aerospace and medical communities.

Start empowering your human machine interface with DiSTI and start realizing the benefits:

- » Accelerated production cycles
- » Content that supports total product lifecycle development
- » Reduction in production and training costs
- » Increased throughput on training assets
- » Improved usability
- » Increased safety



GL Studio Developer

The GL Studio Developer is the cornerstone to empowering human machine interface development. The GL Studio Developer is comprised of the editor and code generators. The editor provides the framework for creating or importing the graphical elements and behaviors that drive the application. GL Studio supports a plug-in architecture for extending the tools core capabilities. These extensions include additional code generators and add-on toolkits that expand functionality to match specific HMI requirements.

The editor offers a host of core features for rapidly creating 2D or 3D geometry in a WYSIWYG development environment, alleviating the need to write cumbersome OpenGL code. These features are logically organized in the editor for ease of use. Geometry creation features include basic tools for drawing, grouping, ordering and texturing. The editor also has the ability to import 3D content from industry standard file formats. Geometry is quickly converted into devices such as knobs, push buttons, switches, and odometers using out-of-the-box geometry conversion tools. Customized behaviors are added using high-level ANSI Standard C++ or Java calls. Designs are implemented using the code generator capabilities.

Code Generator Options

GL Studio comes standard with either the C++ or Java code generator. Additional code generators can be added to the editor as needed. The geometry contained within a GL Studio design can be reused across all instances of code generation.



C++ Code Generator

GL Studio was the first object-oriented graphical interface design tool on the market to include a C++ code generator to implement a user's design. Complex graphical interface designs, which typically require numerous hours when written by hand, are completed in just minutes when using the GL Studio approach.

Java Code Generator

A GL Studio design generated with the Java code generator creates interfaces with a combination of accessibility and performance never before obtainable. These interfaces can run on any operating system compatible with the Java Runtime Environment (JRE). The Java code generator is ideal for creating interfaces and applications that need to run on systems with strict security policies on mobile code.

Safety Critical Embedded C++ Code Generator

This code generator is part of the safety critical solution available with GL Studio. The Safety Critical Embedded C++ code generator works in conjunction with the Safety Critical embedded runtime library to produce displays that are suitable for use in Safety Critical applications. Users developing display content for this area can utilize this solution through the entire lifecycle of a product starting from the prototyping phase.

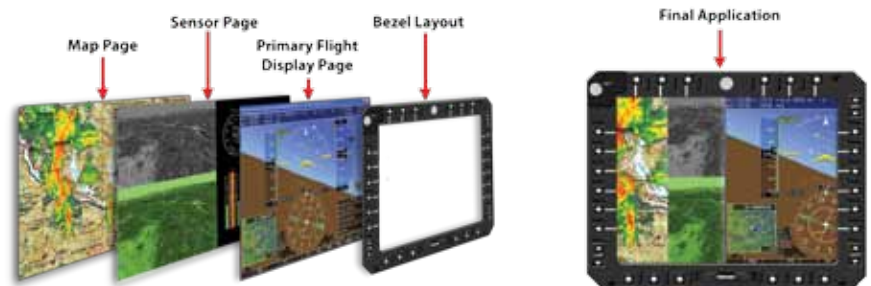
GL StudioPlug-ins

GlsMenu Library

The GL Studio Menu Library is a powerful class library for GL Studio that enables the rapid development and prototyping of multi-function display (MFD) menu hierarchy and navigation. The Menu Library is used with a GL Studio design to create the complex menu structure of today MFD's. The menu structure of the device is read from external text-based script files. The Menu Library drives information such as label syntax, color, and the actions that occur upon selection. Since the structure is driven externally from the application, page changing logic can be updated without recompiling the main application.

Examples where this class can be used include:

- » Aircraft MFD
- » Aircraft CDU
- » Printer LCD
- » Comm gear displays
- » Automotive entertainment systems



GlsVideo Toolkit

The GL Studio Video Toolkit is a plug-in for the GL Studio editor that allows the incorporation of streaming video and prerecorded movies into GL Studio designs running on Microsoft Windows. In just a few clicks the powerful benefit of having recorded video content playing within a finished application can be realized.

The toolkit consists of two components: GlsMovieToTexture and GlsVideoToTexture. The GlsMovieToTexture adds the ability to play prerecorded videos as a texture asset inside of GL Studio. GlsVideoToTexture uses a live video stream from a DirectShow compatible video source as the texture asset inside GL Studio.

GlsA661 Toolkit

The GL Studio ARINC 661 Tool is a set of components that enables the development of ARINC 661 compliant displays using the core GL Studio editor as a foundation. The components of the tool include:

- » Custom Visual Display Object (VDO) Look & Feel Library
- » Widget Library Set
- » Definition File (DF) Generator
- » Simulated Cockpit Display System (CDS)
- » Communications Libraries
- » User Application Generator



Figure 6. GlsA661 Toolkit in action.

3rd PartyProduct

GLS Vega Prime Plug-In

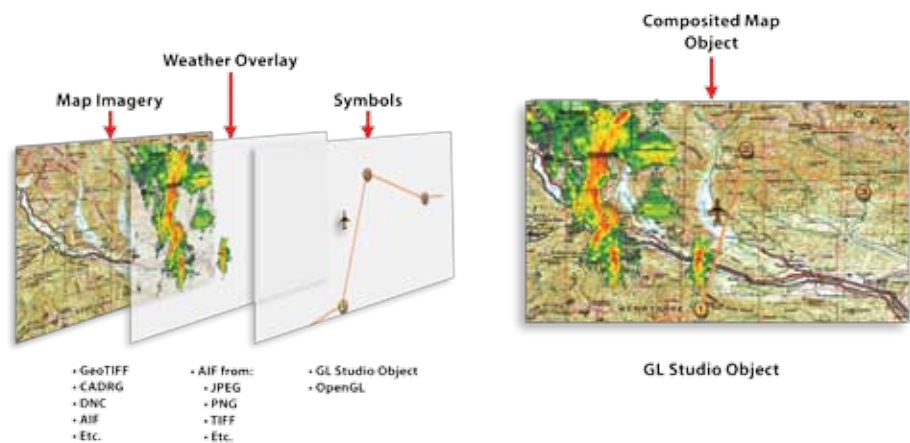
Powered by Presagis' Vega Prime 3D visualization toolkit, the GLS Vega Prime Plug-In allows GL Studio users to quickly and easily insert HMI content into fully immersive virtual reality environments giving users an unprecedented level of interactivity.

DiSTI Map[®] Toolkit



The DiSTI Map Toolkit is a plug-in for the GL Studio editor that allows the development of real-time moving map display applications. The toolkit provides the capability to combine multiple geo-referenced map imagery formats and user defined symbology across multiple layers to produce a single real time 2D map view. Numerous map imagery formats are supported and new formats are easily added using a plug-in reader architecture. The map imagery is dynamically paged as required and the toolkit supports various real time map manipulation functions including:

- » Panning
- » Zooming
- » Rotating
- » Offsetting
- » Layer Visibility



Symbology

The toolkit provides a quick and easy interface to overlay user defined symbology.

The symbology can either be created from GL Studio objects or user defined OpenGL code. This versatile capability allows for the rapid development of custom overlays and symbology to meet any mapping style demands with a minimum of effort.

DiSTI Arbitrary Image Format

DiSTI created a standard method for inserting geo-referenced map imagery layers from any standard image file format supported by GL Studio. The Arbitrary Image Format utilizes an XML schema to define sets of geo-referenced images to be used as map imagery layers. This feature allows developers to expand how they utilize the toolkit to portray data from disparate resources in a single display.

Features

- » High performance real-time map display
- » Fast OpenGL rendering
- » Dynamic paging of map imagery
- » Visibility culling of symbology
- » Full rotation, pan, and zoom capability
- » Easy to use API for user defined symbology overlays
- » Simple integration into GL Studio projects
- » Extendable architecture to support additional map formats

Data DirectorTM Toolkit



The Data Director seamlessly connects multiple data sources, such as math models or simulation data, to user interface objects. This tool is ideal for the S&T and Prototyping communities who wish to quickly connect instrumentation to physical data models in an easy to use GUI environment.

Instruments

The Data Director includes a library of common instrument types for out-of-the-box integration into user layouts using a drag-and-drop methodology. Users can extend the instrumentation library by purchasing additional RSO bundles from DiSTI or utilize content built with GL Studio.

Interoperability Modules

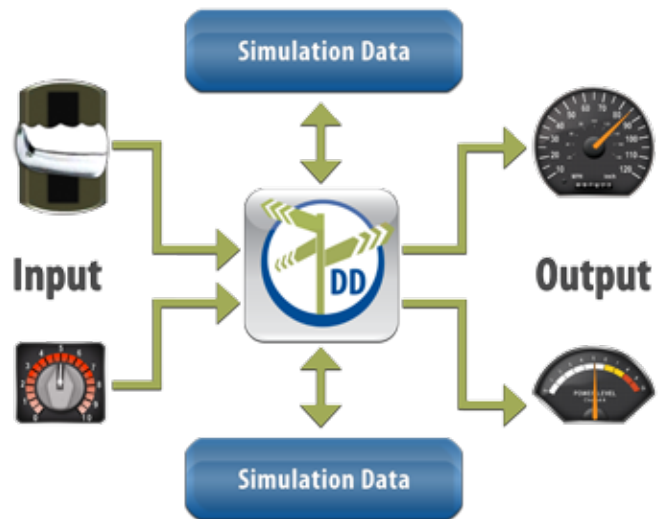
Data interoperability modules are loaded through a plug-in architecture. The interoperability modules serve as the bridge to connect the properties available in the instrumentation to the simulation parameters. The connections are made in the Data Director GUI without writing any application code.

Data Director interoperability modules:

- » UDP
 - RAW
 - DIS Data PDUs
 - X-Plane
- » Spreadsheet

Plug-In SDK

The Data Director includes a software development kit which enables users to embed Data Director configuration files into deployable user applications and create custom converters and importers.



Data Converters

Standard data converters are available to manipulate data values passing through the Data Director. Users select from a list of converter types in the Data Director's GUI to connect the asset data attributes. These converters allow the Data Director to handle disparities between simulator values and the instrumentation such as unit conversions.

Approach Plate™ Toolkit



The Approach Plate Toolkit converts digital Instrument Approach Procedures (IAP) charts produced by the FAA, National Aeronautical Charting Office, into correlated geo-referenced GL Studio objects suitable for a variety of aeronautical based applications. These charts are publically available for download in Adobe PDF format and cover all U.S. airports.

The Approach Plate Toolkit consists of the Approach Plate Configuration Tool and the Approach Plate Viewer. Together these elements convert and configure the Approach Charts and enable rendering in user customized applications.

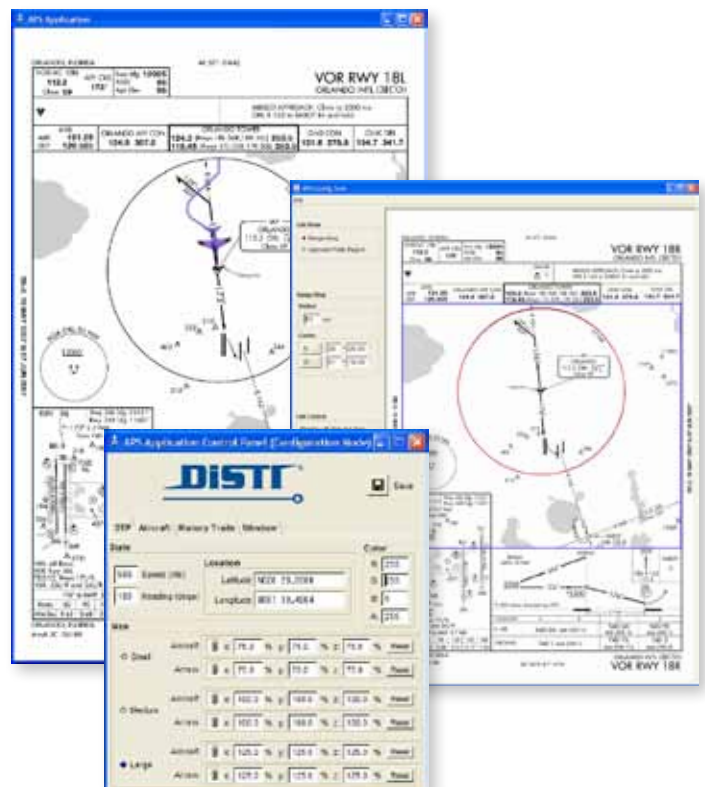
Approach Plate Configuration Tool

The Approach Plate Configuration Tool prepares the electronic IAP charts for use in the Approach Plate Viewer. The tool converts the PDF documents into textures suitable for loading into GL Studio and creates an XML definition file of the charts latitude, longitude, clip region and scale based on user inputs. Since charts are updated every twenty-eight days, the tool allows users to load new chart's for a visual inspection of any changes in configuration parameters.

Approach Plate Viewer

The Approach Plate Viewer is a GL Studio RSO component that can be loaded into any type of user based application for rendering the configured IAP charts. Functionality of the component includes the following features:

- » Chart color inversion
- » Pan/Zoom
- » Aircraft icon
- » Icon latitude/longitude
- » Icon rotation/scale/color
- » Off chart arrow
- » Arrow scale/color
- » History trail mode (dots/line)
- » History trail frequency/size



Pre-BuiltContent

Reusable Software Objects

The object-oriented design paradigm from GL Studio produces self-contained smart graphical elements called Reusable Software Objects (RSO). An RSO includes both the appearance and behavior of the object coupled with a well defined interface. These RSOs are easily merged into master design projects by integration teams to support large modular designs. The RSO is a valuable corporate asset that enhances the build once, use again philosophy of total product lifecycle support.



Generic Instruments - contains 28 analog and digital instruments and controls



Auto Pack I - contains 25 generic high resolution automotive instruments



Aero Pack - contains 19 generic high resolution aviation instruments



Test Equipment Pack - contains a collection of 6 pieces of test equipment



Digital Pack I - contains a collection of 13 generic digital aviation instruments



Digital Pack II - contains 5 generic digital aviation multi-function display pages



Texture Pack - contains 10 high resolution layered texture maps with over 200 images of switches, knobs, buttons, needles, screws, indicator lights and more

Cockpits

DiSTI offers a variety of complete turnkey virtual cockpits to give your project a critical head-start. These pre-built photo realistic virtual cockpits integrate seamlessly into your software designs with minimal effort, saving both production time and money.

Each turnkey virtual cockpit includes the following:

- » A full interface control document (ICD)
- » Available as either a Windows Dynamic Link Library or Shared Object
- » GL Studio .NET Control
- » GL Studio ActiveX Control
- » GL Studio design files*
- » Any associated textures*
- » Any associated behaviors*

*Users of the GL Studio Toolkit can modify the as-delivered content since all associated source material is delivered.



The following is a partial list of cockpits available for distribution. Call us today to find out if your cockpit is available.



A-10



E-6



CH-47



F-15



F-16



F-18



OH-58



TH-57



AH-64



HH/MH/SH/UH-60



Piper Malibu



T-39



T-45



HEMTT



HMMWV



LMTV



LCAC

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