

WIND RIVER

Wind River Tilcon Graphics Suite

Wind River Tilcon Graphics Suite enables the development and deployment of rich user interfaces for multifunctional embedded devices, to create better end-user experiences. Its unique codeless development architecture enables device software developers to easily produce, maintain, and rebrand user interfaces at a fraction of the cost of traditional graphics software. It boasts a complete set of tools including an interface builder, APIs for application integration, and a robust graphics run-time engine to render the graphic objects.

Tilcon Graphics Suite is integrated with Wind River's industry-leading VxWorks and Wind River Linux operating systems and backed by Wind River's global technical support, customer education, and professional services—all from the leader in embedded software.

Powerful Tools for User Interface Development

Wind River Tilcon Graphics Suite contains a user interface development environment, Wind River Tilcon Interface Development Tool (formerly Tilcon Interface Development Suite), which allows for rapid development of compelling graphical user interface (GUI) environments. Users can run the resulting GUI on a self-contained simulation engine provided by the development tool or deploy the resulting GUI to an embedded target and integrate it with the underlying application logic. Designers can quickly create high-quality user interfaces by employing Tilcon's sophisticated and customizable widgets, such as gauges, charts, meters, sliders, and many more standard objects. Designers can also import their own artwork with the Adobe Photoshop import feature to use as GUI objects within the Tilcon Interface Development Tool.

In the Tilcon environment, unlike traditional tools, once a GUI screen is laid out, no code is generated. Instead, Tilcon Interface Development Tool's advanced architecture captures

the design as a platform-independent resource file, which is loaded by the device-optimized Wind River Tilcon GUI Engine (formerly Tilcon Embedded Vector Engine) supplied for a particular target device. Developers can create GUI resource files on desktop computers and redeploy them on the device, unmodified and with no compiling necessary. This results in a very streamlined development process, requiring no additional testing or validation resources when changes are introduced to the GUI throughout iterative development stages.

Advanced Graphics Technology

The core of Tilcon technology is the Tilcon GUI Engine, which dynamically renders user interfaces on a target device. A complete GUI infrastructure and a rich array of user interface components have been engineered into a compact and efficient engine that can be easily configured and integrated with a device's application code using the Tilcon API commands and resource files. The engine has been validated, hardened, field tested, and proven in multiple deployments. All low-level graphics code, fonts, text, images, colors, and widgets are preintegrated and optimized. A comprehensive user interface framework manages the relationships between objects and the control application and its data sources, saving developers from writing massive amounts of code to bind the user interface to the application.

Tilcon GUI Engine is preintegrated, tested, and optimized for an embedded target, graphics library, and operating system, to provide out-of-the-box usability, maximum range of functionality, and best performance.

Using the Tilcon Interface Development Tool, the designer builds screens by dropping fully functional objects onto the canvas and making selections for behavior, functionality, and look-and-feel elements. The control application simply needs to start the engine, load the necessary resource files, and relate the data input to the Tilcon objects onscreen. There is no graphics code to write, rewrite, generate, recompile, retest, and document. Prototyping is an extremely rapid process, allowing an excellent blend of artistic, aesthetic, and functional evolution. Graphic artist concepts are rapidly transformed into a functional user interface running on an embedded target.

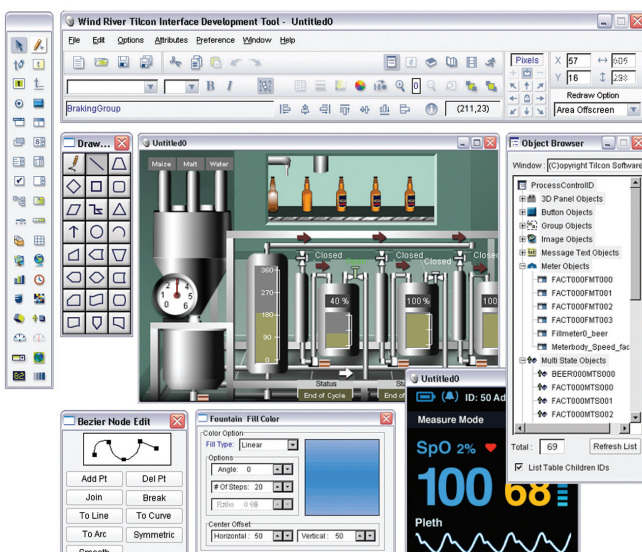


Figure 1: Wind River Tilcon Interface Development Tool

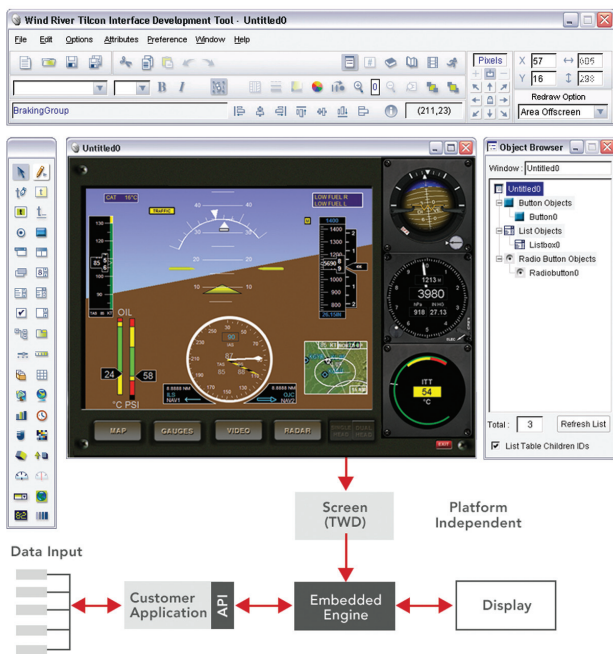


Figure 2: Wind River Tilcon Graphics Suite architecture

The Tilcon GUI Engine technology greatly impacts time-to-market, decreases costs, and enhances the quality and reliability of products. It can also transform businesses with direct impact on a product's user experience, which can affect sales, market share, and competitiveness. The dynamically reconfigurable GUI technology allows a rapid evolution of a product's user interface, encouraging innovation, adjustment to market trends, and agile business models. User interfaces are easily reconfigured without code changes, allowing companies to rebrand products to take advantage of opportunities in diverse worldwide markets.

Wind River Tilcon Graphics Suite allows you to do the following:

- **Build user interfaces your customers will love:** A proven, high-quality Tilcon user interface improves user experience, generates excitement, and builds brand recognition and loyalty.
- **Focus on differentiation:** Free valuable developer resources from developing and maintaining graphics infrastructure code, allowing them to focus on adding unique value to your company's product.
- **Optimize artistic and engineering workflows:** Allow graphic artists to develop Photoshop images for the GUI while engineers focus on software development.
- **Gain platform independence:** Reuse GUI designs, without modification, on new hardware and software platforms, including real-time operating systems and Linux and Windows targets, and standardize across your organization.
- **Integrate with Microsoft Windows and Wind River operating systems:** This product is sold and supported by the industry's leading embedded operating system vendor for use with Microsoft Windows CE, Windows XP, Wind River's VxWorks and Wind River Linux products.

OpenGL 3D Graphics

Tilcon Graphics Suite includes support for OpenGL that makes it easy to incorporate 3D graphics in Tilcon applications. For applications that require advanced visualization techniques, such as flow and process visualization; flight simulation; medical imaging; animation; and 3D modeling, standard 2D and 3D graphics APIs such as OpenGL become essential for embedded system user interfaces. To address high-performance 2D and 3D graphics applications, Tilcon Graphics Suite provides OpenGL 2.1-compliant 3D graphics libraries that are compatible with existing Wind River graphics drivers. Tilcon Graphics Suite, a preintegrated 2D and 3D graphics solution, is ready to run on your VxWorks, Windows CE, Windows XP, or Wind River Linux platform.

Streamlined Design-to-Product Process

As device complexity increases, designers and graphic artists are challenged to create devices with embedded interfaces that are eye-catching and easy to use. Designing and creating with Photoshop is easier, faster, and more effective than traditional approaches. But even the best Photoshop design won't translate into a winning product if the artist, the designer, and the engineer can't work effectively together.

Tilcon Interface Development Tool streamlines the design-to-product process by making it easy to import Photoshop artwork directly into the Tilcon Interface Development Tool canvas. Tilcon's Photoshop import capabilities allow a device's GUI elements and backgrounds to be conceived and implemented in Photoshop and imported directly into Tilcon Interface Development Tool, where they become fully interactive as part of the user interface.

Designers and engineers can now focus on creating the behavior and structure of screen objects, while artists generate attractive elements and backgrounds, each knowing that translating design to reality will be simple and straightforward.

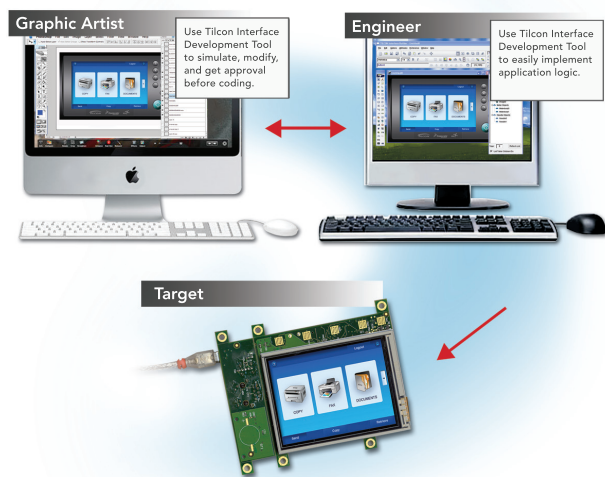


Figure 3: Wind River Tilcon Graphics Suite workflow

WIND RIVER

Wind River is a world leader in embedded and mobile software. We enable companies to develop, run, and manage device software faster, better, at lower cost, and more reliably. www.windriver.com

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