



Visual ETS Components for Project Engineering

High-level visual tool integration without programming.

- 1 *The EIB Tool Software (ETS) for Visual Project Design will soon have 10'000 professional users. Through EIB's Visual Component technology, all of them can access thousands different products from dozens of manufacturers - and cover any application domain without leaving ETS. Why shouldn't your products be included?*

EIB ensures the right climate for your business

Answering all automation challenges for residential and commercial buildings, EIB is the first solution for Home & Building Electronic (HBE) networks. EIB's decentralised, open network technology is the choice of more than 100 leading companies from industry and engineering. Under various brand names, they market certified, EIB compatible equipment for:

- electrical installation,
- measurement and control,
- heating, ventilation and air conditioning (HVAC),
- security and alarms,
- household appliances, etc.

Originally launched on Twisted Pair communication, EIB now supports all relevant fieldbus media including Powerline and Radio Frequency. EIB.net introduces automation-level capability based on Ethernet.

A network of remotely manageable devices

The EIB network operating system has powerful management features. As a result, each EIB device can be managed across the EIB network.

Concretely, this means that a device's EEPROM and RAM resources can be accessed (read or written) remotely, i.e. via the network. In this way, it becomes possible to modify parameters, set or change addresses and logical links or even entirely exchange the binary applet code for the microprocessor.

By the same token, each EIB device may be seen as a management server. These services may now be exploited by any other communication partner (or node) with corresponding man-

agement client capabilities anywhere on the network.

In particular, such a client can be a powerful PC running appropriate EIB client software like ETS which is connected serially to the network.

A unique, vendor-independent tool platform

ETS, the *EIB Tool Software* is a series of tool suites for different EIB users, ranging from the development engineer to the electrical contractor and professionals from other installation disciplines.

Not surprisingly, it contains universal EIB management client components, which allow it to actively program and manage EIB devices through a serial connection which links the PC to the EIB network.

Visual Project Design

The mainstay of ETS is the *Visual Projects* suite. With it, the user can visually design the configuration of a project, then link up to the actual installation, configure it as designed and set it into operation.

Did we say visually? In the ETS *Visual Project Designer*, you select the required functionality from a palette of *Visual ETS Components*. In a Component, the developer has encapsulated some particular functionality "template", which the person designing the project may now put to use. Via drag and drop operations in visual tree browsers, he selects and combines Components according to the structure of building (or one he defines himself).

For the user, the available library of Visual Components appears as a "catalog" of products (representing the devices) and applications (which

correspond to the choice of binary applets which can be downloaded into them).

This concept gives any professional user full control over any project - from the private apartment to the largest commercial building - without requiring any formal engineering background.

Creating Visual Components for ETS

Visual ETS Components are created by the developer using the ETS *Visual Component Workbench*.

The output of low-level development tools (in the form of a binary "applet" file containing micro-code) can be imported directly into the Workbench. Its special tools and browsers will now help you to create a Visual *Application* Component wrapper for the applet - all without writing a single line of Windows code!

Part of the job is to specify the Component's run-time communication interface, by adding Group Objects. The type information you specify will help ETS Visual Project Designer to guide the user when defining project links, and allows this tool to perform a consistency check.

When you also fit out the Component with parameters, you really gain maximal flexibility: these settings are accessible to the engineer or contractor so that he or she can adjust the behaviour of each instantiated Component individually.

As we saw, the other element is the Visual *Product* Component which represents the actual hardware on which the Application Component will run. This will be the project engineer's main handle to the encapsulated functionality. Its assigned order number corresponds to the manufacturer's actual product.

Thus, as used in a project, the Visual ETS Component is a combination of one Product and one Application Component.

The power of generic HBE devices

Here we discover yet another highlight of the Visual Component concept: ETS allows many-to-many combinations between such Product and Application Component templates. Not randomly of course: the developer controls the possible combinations with the Workbench.

In this way, the manufacturer may offer the same functionality with less hardware variations – in contrast with specialised and dedicated hardware. This in turn translates to reduced development effort and simplified production and logistics.

And when designing a project, users are not bound by rigid predefined solutions: rather, they are free to compose distributed application functionality themselves.

EIB's Common Visual Repository technology

Another part of the trick lies in EIB's *Common Visual Repository*. This is where the Visual Components are stored. (For the experts: in the present versions of ETS, the CVR is realised as a relational database.) The Workbench allows a manufacturer to arrange the Product and Application Components much like an electronic catalogue.

Your Visual Component is now a reusable template, ready for action! To the user, it appears as a blinds actuator, a presence detector, a room temperature controller, a multi-purpose push-button... It can be instantiated by dragging it to the appropriate room in the project's building structure browser. Here, the copy (or instance) can be tailored and linked to other Components.

It's common!

Probably you already guessed it: the key idea lies in the *Common*. Only EIB's CVR technology allows EIB manufacturers to distribute their own CVR catalogue to *all* users of ETS Visual Project Designer.

In the complex underlying global exchange process, the integrity of the user's *product database* repository is guarded by the EIB Association's Registration procedures. Thanks to CVR, any EIB project engineer may build a repository of literally thousands of Visual ETS Components truly covering all application domains - and of course use them in a single unified tool environment.

Don't miss out on this!

Does the idea of a potential 10'000 professionals fitting your products into HBE installations appeal to you? Than this is an opportunity you don't want to miss! □

