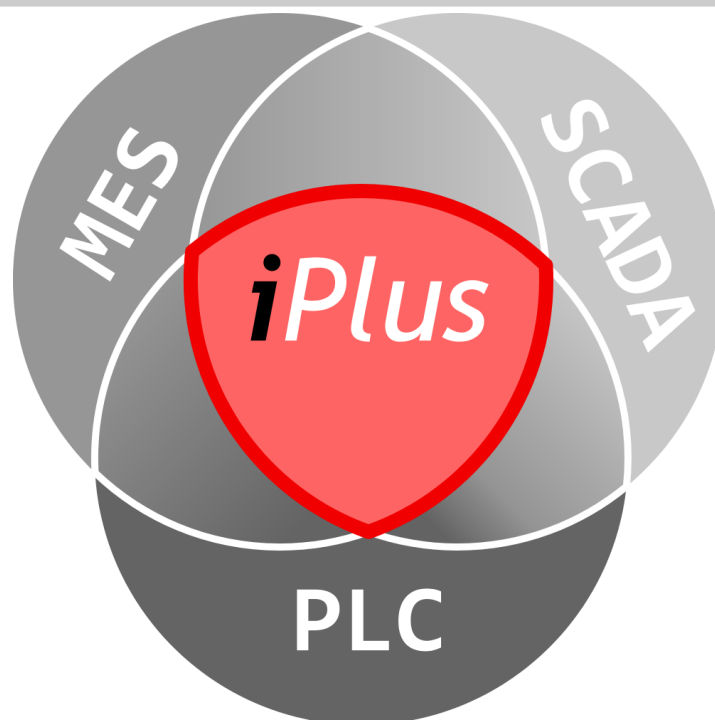


framework



The universal software platform

integrative, productive...



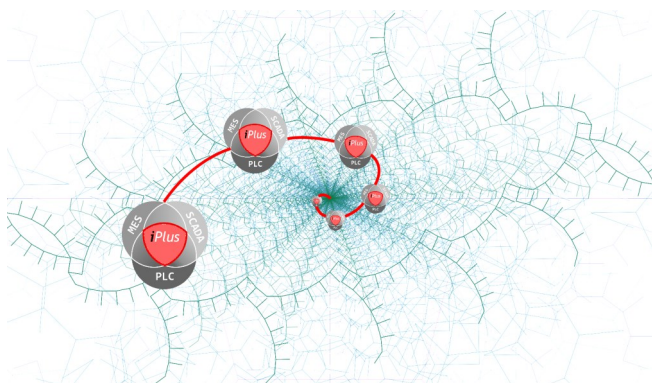
The iPlus-framework is a software platform that combines database-based with object-oriented application development and its presentation layer. It functions **as both development and runtime** environment.

You can use it to develop e.g. transaction-based ERP & MES systems, mobile solutions, SCADA applications, automation solutions, etc. with a uniform programming model. You can also deploy your solutions as software components, which in turn other developers and project or project engineers use to deliver an integrated overall solution to their end customers. A project engineer does not have to have any programming skills, because he only has to orchestrate the components via drag & drop in the iPlus development environment.

This new approach allows for a tremendous **increase in productivity** for automation engineers while being highly **user-friendly** and conveniently **easy** to handle for operators at the production control station.

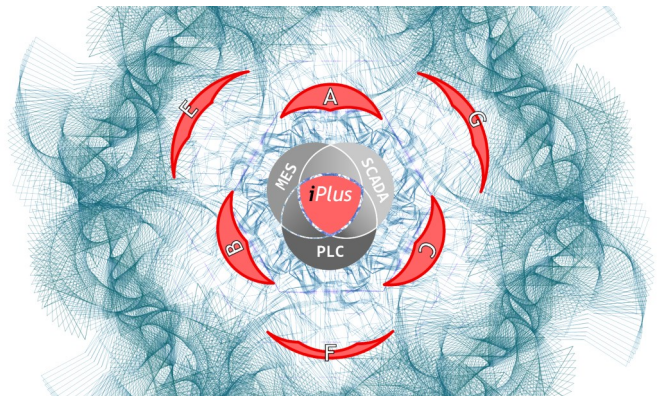
.architecture

An object-oriented, component based framework forms the core of iPlus which is based on the **Microsoft® .NET** framework. The system is structured in an altogether **service-oriented** way, which is to say that all classes and components are brought to life through database configuration only. All instances are capable of collective, **network-transparent communication**. The programming of components is likewise carried out network-transparently. That results in an **unlimited scalability** of the system and enables the building of multitier architectures with one click. In addition, the system operates fully **event-driven** to ensure the event processing and visualization in **near real-time**.



.unlimited expandability

Microsoft Visual Studio® allows you to develop your **own libraries** set on the iPlus framework. There are only a few rules to comply with in order to set up so-called automation components. While doing so you can focus entirely on implementing your logic; other complexities such as network-transparent event processing, asynchronous method calls, access to databases, persistence of object statuses, remain hidden. This abstraction allows for a **universal programming** of all classes including, among others, transaction-based business objects, such as warehouse management components, automation objects, e.g. valves, engines, and communication objects, such as ERP connection, mail components, scanner. The same programming model is used for all classes and **it is always easy to use!**



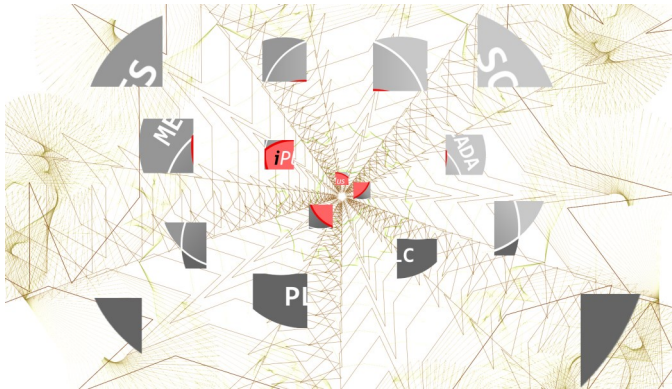
Minor **project-specific customizations** can be developed straight in the **iPlus development environment** without the use of Microsoft Visual Studio®. The development environment consists mainly of a project configurator, a user interface designer, a workflow designer, and a C# editor. The database model (entity framework) can be extended with properties and complex serializable classes. Or you can even add your own customized database model. Since the **iPlus development environment** is programmed with the iPlus framework, **you can expand** it as well and tailor it to the project requirements, build your own tools to speed up your day-to-day business and reduce your period of project development significantly.

intelligent, innovative...



.your industry solution

You can develop your customized industry solution to use on your own projects or sell your iPlus libraries to other companies. iPlus comes with a **built-in licence manager** to facilitate safe external distribution.



.update- und upgrade

iPlus also comes with a built-in **package management system** that helps you export your libraries, project configuration, designs etc. as update package. That enables you to provide your licensees with updates and to supply your customers with modifications tailored to their project requirements which you tested in advance on your own development system. It is even possible to transfer updates directly from one database to another.

Due to the special architecture of the iPlus framework and the dynamic linkage of the libraries, iPlus updates that we supply can be installed independently from your own updates without causing any incompatibilities in the system.

.Integration und cooperation

Due to the **service-oriented architecture**, different manufacturers can develop their own solutions, which later run together on a target system **without** the need to compile an **overall system**. It is comparable to a conventional package management system such as nuget, but with the main differences that

- the software components do not have to be linked together by a final compilation,
- that a software package can only be declarative (no .NET

assemblies, only project configuration files and GUI description in XAML),

- the packages can be added during runtime (e.g. in a production system).

This has the following advantages:

Different parties (project engineers, consultants, developers, teams) can work independently of one another on an overall solution.

For time-critical systems, the overall solution can sometimes even be **expanded during productive operation**. If a suitable time window is then available, the iPlus services can be restarted with the fully configured setting.

Integrated change request management: configurations that have been created on test systems (local computer, shared test system ...) can be transferred to the productive system via export / import.

.GUI & SCADA

The **vector-based 2D-/3D user interface** (WPF) is generated dynamically out of the database (XAML). Designs can be overwritten in order to suit the object orientation. The whole user interface, such as forms, controls, can be customized during runtime while still remaining updateable. What's more, it is adaptive and adjusts to all screen resolutions.

hierarchical and consistent **alarm system** for all components. Unlimited alarm history and relationships with application data, e. g. production order, batch, material management ...

logging process variables. Each property of any given instance can be logged event-based and displayed in a graph. Such graphs can plot both live and history data on various scales. The chart control offers many different setting and presentation options.

simple, consistent...



.Workflows

graphic workflow-designer for programming all kinds of process sequences. This allows you to model your own business processes of any kind (e.g. production processes, logistic processes, machine controls...).

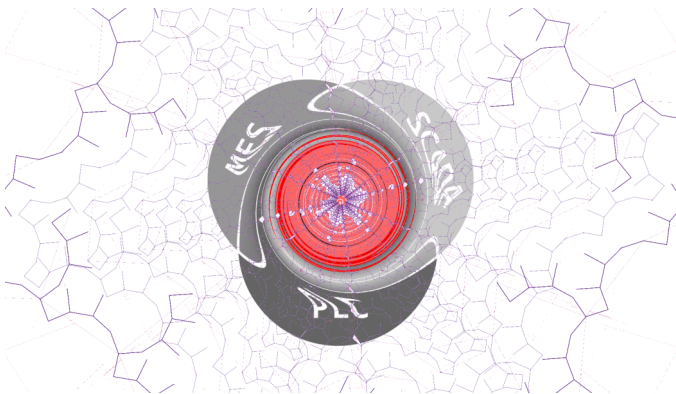
graphic program sequence history. All steps of a process that are performed on executing a workflow or batch are logged along with their parameters enabling you to view the audit trail as a Gantt chart in the log viewer. A comfortable and extensive search system assists users in spotting and improving process issues.

varied options for analysis and logging. In the object explorer (live-debugger) the object status of all instances can be visualized and controlled along with their settings on the server or client.

.PLC

OPC-UA, Modbus-TCP und RFC1006(Simatic®) drivers.

complete Beckhoff®-TwinCAT3® integration. Our iPlus automation component model has also been implemented in TwinCAT3® in order to allow you to represent your iPlus project almost one-to-one in TwinCAT®. The built-in TwinCAT project synchronizer generates or synchronizes your whole iPlus-project with the TwinCAT® project. With iPlus you can save 80% of the time that would be spent programming your PLC and 100% configuration time.



.additional features

XAML-based graphical report generator. Reports can be generated from data bases as well as from the whole available object model using component live data, serializable objects etc.

multilingualism. As many languages as desired can be added. It allows you to translate functions as well as property-values of application tables.

a group-based rights management system allows you to assign read and write access for all objects, properties and methods.

role-based online documentation system. Documentation can be represented and linked according to different roles.

Corporate Design. You can adapt the style and design of iPlus to suit your design standards and your company's Corporate Identity.

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additional information

Download and documentation on

<http://www.iplus-framework.com>



Gipsoft d.o.o.
Repovec 25B
HR-49210 Zabok

E-Mail: info@iplus-framework.com

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