Performance Description

Contents: EPLAN Preplanning 2022
Status: 01/2022

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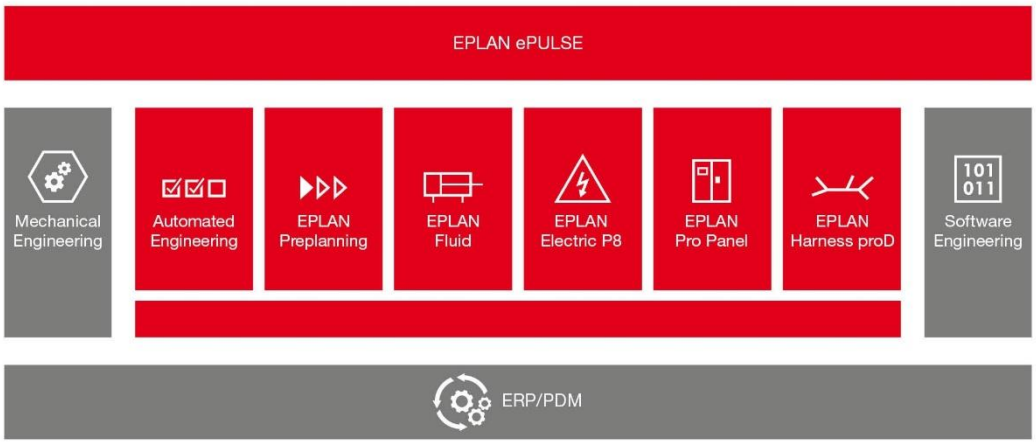
Introduction

EPLAN offers Engineering software and service in the fields of electrical engineering, automation and mechatronics. The company develops one of the world's leading software solutions for engineering, plant engineering and enclosure design. EPLAN is also the ideal partner for simplifying challenging engineering processes.

Standardized and individual ERP and PLM/PDM interfaces ensure consistent data along the entire value chain. Working with EPLAN means unrestricted communication across all engineering disciplines. Whether small or large companies: Customers can use their expertise more efficiently. EPLAN aims to keep growing with its customers and partners and furthers integration and automation in engineering. "Efficient Engineering" is our motto.

EPLAN was founded in 1984 and is part of the Friedhelm Loh Group.

All from one provider: EPLAN Solutions



EPLAN supports you with establishing your engineering across multiple disciplines. The basis is formed by the EPLAN platform that interconnects our software solutions. For you this means a clear increase in efficiency when it comes to working on your EPLAN project. Since your digital data flow seamlessly from solution to solution and are enriched further in every process step. The Cloud products of EPLAN offer added values for collaboration in teams - in particular for tasks across all your locations.

Together the EPLAN Platform and the supplementary Cloud applications form EPLAN Solutions - or, in other words: the key for your future-oriented engineering.

EPLAN offers a comprehensive framework for your daily work. This way interfaces allow the bidirectional exchange with ERP and PDM systems. With the connection to mechatronic processes you expand your view to a mechatronical engineering perspective. With neutral interfaces you can transfer the EPLAN project data into other software environments and continue working on them.

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Extensions and modules for all cases

No matter to what extent you are already working with EPLAN solutions in your company and which requirements have to be fulfilled in the future: Extensions in all directions can be implemented easily thanks to the add-on concept of EPLAN - flexibly and individually for your tasks.

To this purpose EPLAN offers comprehensive extension options through extension modules and in the form of service packages - the "Elements".

You can find a comprehensive overview of the current extension modules in the licensing overview. Should you have any further questions on this topic, please do not hesitate to ask your EPLAN contact person.

EPLAN Electric P8

With EPLAN Electric P8 you configure your electrical design for machines and plants in an engineering system consistently, coherently and quickly. The software supports diverse engineering methods: from manual creation to standardized and template-based work. EPLAN Electric P8 automatically creates detailed reports for you as an integral part of the project documentation - if desired continuously or bundled after project completion. This way you supply the downstream process steps with all required information from the engineering process.

EPLAN Fluid

EPLAN Fluid is your engineering tool, especially for the configuration and automated documentation of circuits of fluid-power plants in the fields of hydraulics, pneumatics, cooling and lubrication.

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EPLAN Preplanning

EPLAN Preplanning allows you to already acquire engineering data in the pre-planning phase. This, for example, includes the actuators and sensors of a plant, machine or a building. You can import data both from external tabular sources as well as plant and machine overviews and furthermore graphically acquire process and instrumentation diagrams. You can also access data that have been collected and enriched in EPLAN Preplanning for downstream planning phases in the engineering.

EPLAN Pro Panel

With EPLAN Pro Panel Professional you conceive and design control system enclosures, switchgear and power distribution systems for the energy supply in 3D. This way you can solve diverse engineering tasks in one software: from the electrical schematic creation through the planning of the mounting layout in 3D to the virtual routing of connections. A variety of data and information for the manufacturing are provided in an automated way - from the component labeling to the support of manual wiring processes.

EPLAN Smart Wiring

EPLAN Smart Wiring is your virtual assistant for manual wiring in the enclosure production. From the connecting point to the exact routing track, the software provides you - as the wirer - with all the required information in digital form - if necessary, also in 3D. You can note the status of the wiring with the traffic light principle. If you need to reassure yourself, you can call up the electrical schematic and counter-check it - on the basis of each individual connection. The provision of the project data on a central server makes it possible to manufacture many identical enclosures in parallel or work together with several wirers.

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EPLAN Harness proD

Use EPLAN Harness proD for the efficient design and documentation of cables and wire harnesses. With the software you digitize the typical work processes in cable and wire harness design: From the importing of the connection information as well as the 3D panel layout from the EPLAN Platform through the intuitive routing up to the creation of manufacturing documentation. The software is open for MCAD systems and can in this way be seamlessly integrated into existing system landscapes.

EPLAN Cogineer

With EPLAN Cogineer you gain the full potential from your engineering in a short time as well as increase the quality of your electrical and fluid-power documentation. You use the switching templates you have already created to structure a macro library and with EPLAN Cogineer realize the automatic schematic creation at the push of a button. Profit from the innovative methods with added value in engineering without long implementation - in all industries and in companies of all sizes.

EPLAN Engineering Configuration (EEC)

With EPLAN Engineering Configuration (EEC) you illustrate your product portfolio in a modular system with interdisciplinary function units. On this stable basis, EEC becomes your tool for the design and application of configuration user interfaces as well as the automated creation of documentations. The interdisciplinary working method integrates sales, order processing, mechanical engineering, electrical engineering and control technology as well as production and documentation.

EPLAN ERP/PDM Integration Suite

Continuous data flows ensure transparency in the product development process. Through the EPLAN Integration Suite, EPLAN manages the integration into existing ERP, PDM and PLM system landscapes. You can optimize your work processes from the schematic through to the master data. The quick and individual provision of the data takes place in bidirectional exchange with the systems, without you having to leave the work environment within the EPLAN platform.

EPLAN eVIEW Free

EPLAN eVIEW Free lets you implement engineering review processes digitally. This free software allows structured collaboration with co-workers, customers and service providers. It enables you to view and comment on changes to a project through redlining workflows by using a browser and irrespective of your location.

EPLAN eBUILD Free

New methodology for your engineering process: With EPLAN eBUILD Free you have the possibility to compile schematics from template libraries with a few clicks. Registered users have this application automatically available as a free service. eBUILD Free offers you predefined libraries and a configurator that allows you to create parts of schematic projects in EPLAN practically at the click of a button.

EPLAN eBUILD

With EPLAN eBUILD you create your own template libraries which can be re-used by employees and colleagues within the EPLAN Cloud environment. This way you can automatically create schematics in EPLAN across the company. eBUILD is composed of two functional areas which are available to you completely in the full version: In Designer experienced users create their own template libraries on the basis of the EPLAN macro technology. In Project Builder they can then be used repeatedly at any time to compile elements of schematics which are frequently used in day-to-day work with a few clicks.

EPLAN Data Portal

With the EPLAN Data Portal you have direct online access to high-quality product catalogs from a continuously growing pool of notable component manufacturers. All the solutions anchored in the EPLAN platform access this Web service equally. Simple transfer of the offered components into the EPLAN documentation reduces the required configuration work and increases the quality of the machine and plant documentation. With its Data Standard based on ECLASS Advanced, EPLAN Data Portal provides a systematic framework for device attributes.

EPLAN eMANAGE Free

EPLAN eMANAGE Free is your Cloud application for collaborations across all your projects and locations with colleagues, partners, suppliers and clients. eMANAGE enables you to share EPLAN projects with selected project partners across all teams and across the company in a protected Cloud environment. The solution enables simple uploading of projects from the EPLAN Platform or via web browser.

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EPLAN eMANAGE

Beyond the functions of the free version, the full version of EPLAN eMANAGE offers you practical, functional extensions as well as additional storage for your data. Share project data via eMANAGE at an extended scope - with familiar access control and the same ease of use. Make your master data available with eMANAGE from the EPLAN Platform 2022 and thus make their usage easier for other users. With a click you make current EPLAN projects available in earlier Platform versions as well. This way you allow project partners who do not yet use the current EPLAN version access to the project data you provided in the Cloud.

Note:

The properties and functionalities specified in this performance description are based on the maximum scope of performance of the product including all extension modules, Elements and add-ons. Extension modules, Elements and add-ons are available optionally and separately and as a rule cost an additional fee. For further details of the available product variants please refer to the "Licensing Overview" chapter.

Basic Engineering with EPLAN Preplanning

EPLAN Preplanning Professional provides functions on the basis of the EPLAN platform functions that allow new and innovative methods in the field of pre-planning.

The engineering process of a machine / plant / building consists of individual phases through which the concept is refined and specified from initial rough drafts and ideas until all documents and information have been created that are necessary for the manufacture and construction of the machine plant / building.

Pre-planning and draft planning (Basic Engineering) represent very early project phases where concepts are elaborated for the technical scope of machines / plant / building and estimates are done on initial quantity requirements. The goal is to determine the concept that is most advantageous technically speaking, and to define the defaults for the subsequent detailed planning (Detail Engineering).

Typical tasks in pre-planning are amongst others:

- Defining and describing of machine / plant / building areas to allow dividing into meaningful structures and units.
- Creating of first graphical overviews as a general planning basis.
- Defining of "rough placeholders" for functions or items that cannot be defined in detail at this point.
- Definition and estimate of initial quantity structures (drives / sensors, PLC inputs and outputs, etc.)
- Creation of first bills of materials for supporting the calculation and detection of long-term items.

Nowadays, this task is often processed in separate systems (graphic tools, spreadsheets / databases, text processing for specifications) that offer only rudimentary or no interfaces at all to the design tool used for the detailed planning. The lack of data consistency and the frequent lack of support through engineering functionalities in these separate systems result in massive extra work and poor quality in the engineering work.

Use

With EPLAN Preplanning you can carry out the first planning activities for the technical aspects of the process, machine, and plant as well as building automation at an early stage in the EPLAN platform. The integration of basic engineering in the design engineering with EPLAN ensures reduced effort in the engineering process while simultaneously increasing the project quality thanks to the data consistency.

In addition EPLAN Preplanning provides a simple introduction into this new planning method on the basis of the EPLAN platform thanks to its flexible workflow support. In combination with further EPLAN products such as EPLAN Electric P8 or EPLAN Fluid or EPLAN Cogineer the schematic generation and detailing of the plant can also be carried out in EPLAN in the further course of the project.

The core features of EPLAN Preplanning are explained individually in the following chapters. However, it is beyond the scope of this document to provide all details. If you have any further questions – particularly on details you don't find in this description – just contact us at info@eplan.help.

EPLAN Preplanning

Look & Feel

The system provides an intuitive user interface. Through an operating concept that is familiar from the Windows usage and easily understandable functionalities - such as, for example, ribbon, Backstage view, quick access toolbar, drag & drop and online help - even beginners and casual users will feel at home quickly.

Users can easily adapt the entire user interface including window arrangement to their needs and wishes. The settings can be saved and retrieved as workspaces as needed. This allows you e.g. to save defaults for work standards and processes.

Workflow & Integration

The system can be configured by means of settings to meet the needs of the user, companies, and project. The result: The workflow is accelerated and the required work result achieved efficiently.

You also have access to an extensive online didactic help system which provides efficient work support.

Functionalities for the backup of projects ensure the required security for the protection of the work results safety reached. A compression function removes the non-essential data from a project to simplify data maintenance and, if necessary, to protect your company know-how when projects are passed on.

Data formats, such as TXT, CSV, XLS, XML, PDF and DXF / DWG with layers and blocks are available as interfaces for exchange with Microsoft Office products and CAD programs.

The possibility of using existing data beyond engineering and the provision of documents are the basis for simple service and maintenance processes.

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The program can be integrated into the existing added value chain. The information and work flow can be automated using scripts or API in the ".NET" environment. An active automatic exchange of information simplifies integration into PDM and ERP systems. And this comprehensive approach doesn't just help project engineers to achieve the correct result faster – other departments such as Materials Management, Production, Controlling, and Sales also benefit from transparent IT processes.

Project Settings

EPLAN Preplanning can be customized to the individual demands and requirements of the user through the project settings.

Using the project-related settings, you specify the properties in a project such as for example the settings for the identification of PCT loops.

You can also configure the work environment user-specifically, adapting the program's functionality to the working method of each user.

The settings enable you to adapt the system's appearance and behavior to individual working methods and specifications.

Structure Settings and Planning Objects

Structuring in the pre-planning is effected by means of so-called "**segments**". These are differentiated into **structure segments** and **planning objects**.

Structure segments

Structure segments are used to structure machines or plants as well as buildings and specify a project structure. Parts of the identification structure can thus be predefined. A structure segment can represent one or several structure identifiers (usually the function designation) in detail planning. The future project structure results from the structure identifiers.

Planning objects

Planning objects define a part of a machine / plant / building in the pre-planning. They describe **one** device each and reference the functions of a device. In this context a device represents a functionality of a machine / plant / building (for example, the motor of a conveyor belt). Each planning object may represent only one device.

PCT loops

PCT loops are managed in parallel to general planning objects and behave similarly to these. Macros can be stored at PCT loops, but not parts or function templates. A PCT loop can be either a loop or a consumer. PCT loops have the following properties: Technical facility Measurand Processing function Number.

The PCT loop concept not only helps you to comply with DIN, ISA, VDI, but also NAMUR recommendations (for example, NA 50) during plant planning. Structuring of the PCT plant is carried out in the pre-planning navigator. You can create, edit and manage structure segments, PCT loops, PCT loop functions, containers and general planning objects in the pre-planning navigator.

PCT loop functions

The PCT loop function describes a subfunction of the PCT loop. This may be either a measuring or a consumer function.

Segment definitions

The segment definition specifies the type of a segment (i,e, of a structure segment or planning object), like a function definition defines the type of a function. The segment definition is a predefinition of the segments available to the system. It determines which segments can be used in the project and what the standard behavior of these segments is.

Segment templates

You can predefine all the relevant data for a segment in a segment template. These predefined data can be used repeatedly when creating new structure segments, planning objects, etc. Through the assignment of a segment template the data defined there are transferred to the segment so that you no longer have to enter the data individually at each segment. The data of the assigned segment template can be displayed at the segments.

Segment templates are stored on a per-project basis. Each segment template has a unique identifying name, a description and a segment definition. The segment template furthermore disposes of all the properties of a segment with the same segment definition.

Templates for pipe classes and substances

The data that describe a piping include the pipe class as well as the substance that is transported through the respective piping (for example, "water", "oil", "oxygen"). In the segment template navigator you can predefine the pipe classes and substances that are required in a project with the relevant data as templates. You can access these templates rapidly and simply when creating new segments in the pre-planning or when defining new pipings in the P&I diagram.

You can additionally store further parts in the "Parts" tab for a pipe class template. This preselection facilitates the part selection for devices later on in the project planning.

Editing in a Table

Using table editing, different objects on different project pages can be edited together in a single dialog.

The properties of the selected objects are shown in the convenient form of a table and can be edited in blocks, e.g. renamed or numbered. The data from the objects is copied and pasted to other programs, edited there and then pasted back.

The functionality allows rapid and well structured editing of large amounts of data at a central point.

Editing Data Externally

EPLAN Preplanning supports bulk processing and data exchange in a neutral format through the functionality for external editing of project data with MS Excel. Transfer of the data is effected through individual templates (so-called schemes).

Here you can specify which data from segments, planning objects and segment templates are to be taken into consideration during external editing. You can export the respective data to edit them at another workstation without having to use EPLAN Preplanning. However, you can also start the external application to modify the data and reimport them directly into EPLAN Preplanning.

This facilitates simplified batch data processing with the look and feel of other applications. Data can be modified automatedly in external programs using scripts and similar functions. Rapid and automatic editing of the project data reduces your project working periods at simultaneously increasing the quality of your plant documentation.

New data, for example, segments or planning objects, can also be generated in the EPLAN Platform through external editing of the data. The newly generated functions can then by dragged-and-dropped easily into the planning from the navigators.

Engineering Aids

In order to inform the user about the editing status of his projects EPLAN Pre-planning provides the option execute check runs through the message management. The properties defined in the project can be checked via theses check runs and status messages can be displayed in the message management. Missing entries can be displayed visually in the pre-planning navigator at the object or be filtered via the filter technique.

The scheme technique in the check runs can be used to adapt the definition of the project status to different project phases (with different required data).

Copy Functions

Several copy functions are available in the pre-planning navigator to facilitate simple and rapid entry and passing on of project data.

The plant objects (plants, PCT loops, PCT loop elements) can be duplicated and moved in the plant structure through the functionalities "Copy", "Cut", "Paste" or by using Drag & Drop. The subordinate objects and structures are taken into consideration respectively in the process.

In addition, the data stored in the property groups at the PCT loops can be copied into the Clipboard of the operating system. From there they can be inserted at other PCT loops, so that the major part of the entries (describing similar PLC loops on the basis of a template PCT loop) can be rationalized. The PCT loop data copied into the Clipboard can, for example, also be inserted into a Microsoft® Excel spreadsheet, edited there and then be pasted back to EPLAN Preplanning via the Clipboard.

The various copy functions allow the designing process to be accelerated through the repeated use of plant parts that are already defined. The usage of standards is simplified and the quality of the designing results is increased through the repeated usage of tried and tested plant parts.

Multi-user

Multiple users can edit one project simultaneously in multi-user operation. You can see which users are currently working on a project in the "EPLAN Multi-User Management" module. This allows users to define defined working sections at large projects in order to have a better overview of the project planning.

Please contact EPLAN Support with regard to the hardware requirements for multi-user operation. We can advise you specifically according to your individual requirements.

Projects

Creating Projects

Process, machine, plant as well as building data are managed project-specifically in EPLAN Preplanning and are stored in a (project-specific) database. Actions such as the creation and opening of projects are controlled through simple file selection dialogs. Optionally the "EPLAN Project Management" extension module provides a comfortable project management that offers extended functionalities for simple access to projects and realizes cross-network management of complete project directories.

Even during the continual standardization in E-I&C technology it is still usual to create individual documentations. Numerous factory standards exist in addition to valid standards such as DIN, IEC, ISO, ISA, VDI, etc. For the user this means that, depending on the customer, individual configurations for properties, devices, symbols, forms etc. have to be used time and again.

EPLAN Preplanning supports you in this working method in that new projects can be created on the basis of templates. Once projects have been created in accordance with the respective customer requirements, it is possible to use these as the template for new projects. Tedious queries, manual checks of the observance of specifications, and errors or misunderstandings through non-standard documentation are avoided.

Project Master Data

The master data pertaining to the project, such as segment templates and forms are stored directly in the project.

This ensures that the project is complete and consistent in itself when it is passed on or data is backed up. At the same time bi-directional synchronization between the project and the master data pool for forms and symbol libraries makes it possible to keep data in projects synchronized with the central company standard.

You can therefore monitor and control the master data used and the entire project can e.g. be adapted as needed to current standards.

Pre-planning Navigator

The central pre-planning dialog of the EPLAN Platform is the new pre-planning navigator. This dialog displays and manages the segments of the pre-planning defined in a project. By using so-called "pre-planning macros" as well as copying and moving existing segments via Drag & Drop, you can create and edit machine / plant / building structures rapidly and simply. Alternatively EPLAN offers you the option to also work directly in the graphical editor in pre-planning.

Editing PCT Loops

A further method of starting project editing in EPLAN Preplanning is to enter the PCT loops (loops and consumers). Editing is also carried out in the pre-planning navigator. The special representation of these PCT loops is divided into two sections in order to ensure a better overview: Header data and freely definable PLC loop properties. The header data include, amongst others, the complete AKS / PI code / KKS code HKL / RDS-PP code, the PCT loop number, the designation of the PCT loops and a multi-line remark. Further information for the schematic documentation can also be placed in combination with EPLAN Electric P8 directly at the PCT loop.

The describing properties for the PCT loops in the section can be defined freely with regard to the contents and quantity and subdivided into categories. Value ranges can be assigned to the individual properties. These can later be chosen from a list during project planning. This functionality can be used to standardize the terms used for the PCT loop description and their spelling, and thus to standardize the documentation generated from the data.

Cable Pre-planning with Cable Planning Objects

The cable planning objects placed in the graphical pre-planning allows you to specify first cable data at an early stage in the project planning before you begin with the detailed planning.

By using the "Pre-planning: Planning object overview" report you can then determine and report source and target segments, required time (planning / construction), first costing data (prices) and also overall cable lengths. In the subsequent detailed planning you can assign the cable planning objects to the cables in the schematic. This allows the values entered in the pre-planning to be transferred into the detailed planning, displayed and reported there.

Schematic Macro

Macros can be assigned to the PCT loops for schematic generation with EPLAN Electric P8 or EPLAN Fluid.

When the schematic is created using EPLAN Electric P8 or EPLAN Fluid, the macro serves as a Typical. On the basis of this optional template the schematic is created in standardized form and therefore makes it possible to create uniform schematic documentation in partially automated form.

Further flexibility at the use of macros is provided by the so-called variant and placeholder technology.

Pages

The program can use a wide variety of page formats to display the actual page sizes. A scale can be assigned to the page to allow mechanical dimensions. This allows documents to be planned and printed on a wide range of page formats.

External Documents

Documents in different formats (*.XLS, *.DOC, *.PDF, Internet links, etc.) can be integrated as so-called external documents. The complete documentation therefore includes information created using different tools. The system therefore provides central access and avoids the need for time-consuming searches to find and compile documents.

External documents can be linked with objects defined in EPLAN Preplanning simply. To this purpose the links to the files are entered in the "Documents / Pages" tab.

The plant documentation can be upgraded by means of external documents (for example, device specifications directly from the manufacturer in PDF format, operating instructions, etc.). This means that important device information can be accessed directly already during the project planning phase, but also later on during commissioning and maintenance of the place.

Editing Devices

The device technology of process, machine, plant or building automation is defined below the PCT loops described above. Devices can initially be kept manufacturer-neutral in EPLAN Preplanning as planning objects and then be specified later in the course of planning.

The device data that are required for basic engineering and – in combination with EPLAN Electric P8 – for detailed engineering are entered at the planning object. This includes specifications about the device type, the required mounting data, the calculation values and additional remarks. In addition, further data fields can be added to the device data. These are preset in the project settings and can be extended or modified later on at any time.

All the data are centrally accessible. The association of the devices to a PCT loop is managed automatically. The project data are represented clearly structured in a tree structure and facilitate project planning for the user, while ensuring transparency.

Hook-ups

Hook-ups can be stored in the parts management at assemblies of the "Hook-up" type. Within these assemblies all the mounting parts can be defined into hook-ups. Hook-ups can be linked with mounting diagrams as graphical macros for detailing.

The combination of the mounting parts can be managed in the assembly and linked in the project with devices. These data are available in EPLAN Preplanning for documentation and calculation purposes.

These hook-ups can be generated automatically as the mounting documentation by using reports of the Assembly/Module overview type.

The plant data are recorded in integrated form on the basis of this consistent plant documentation, ensuring maximum transparency. Information is recorded centrally and the designer has an overview of the important aspects of the device data.

Calculation

Calculation values, such as the device price, mounting time, planning time and required energy, can be differentiated in EPLAN Preplanning.

The calculation values can be listed in corresponding reports. A individual project calculation is obtained by totaling up the individual columns. A detailed calculation on the basis of the PCT loops and device data is thus available to the user in EPLAN Preplanning. This calculation option can be independent of the manufacturer and type, if required.

Monitoring of the current device costs is possible in the individual project phases. Changes to the device configuration are taken into account directly. As the degree of detailing of the device data increases, so does the precision of the calculation. The costs for the device technology are transparent and are based on the current device configuration.

General Calculations

In forms and the reports generated as a result properties can be linked with each other through basic mathematical formulas and the values of a column can be added up. The calculation can be continued across several pages of a form through carrying forward. In addition, an option can be used to specify the currency as well in the column.

Displayed value units can be converted automatically to other units through the display format (for example, Celsius <-> Fahrenheit).

Graphical Editor

The graphical editor of the EPLAN platform is available for the creation of hook-ups, general drawings and sketches, piping and instrumentation, bundle, plant or control schemes. It can also be used to create graphical templates for forms and plot frames. In combination with EPLAN Electric P8 or EPLAN Fluid the graphical editor is used in detailed engineering to create the electrical engineering and fluid power schematics.

This gives the individual areas a uniform, transparent look and feel – and eases familiarization.

Hyperlinks to a document on the network or Internet can be inserted in the graphical editor. You can use this function to dynamically store further information in the documentation itself, so you can store notes on planning and maintenance exactly where they are needed.

The zoom and pan functions can be operated using the mouse wheel. The visible section can be moved and the schematic enlarged or reduced on screen. When moving the cursor and holding the middle mouse button down, the page contents are moved in the direction of movement.

Adapting the mouse functions to the working habits of the user ensures secure intuitive use of the graphical editor within a very short time.

Editing a Graphic

The graphical editor provides constructive support with snap points (for example, end points, center of circle, intersection) for graphical interactions. Graphical elements can be stretched, mirrored, scaled, and rotated. It is possible to insert image formats on the project pages.

A construction mode helps you to align graphical elements to specific points or place them at specific coordinates.

Dimensioning

For dimensioning, there are functionalities for simple dimensions, continued dimensions, incremental dimensions, baseline dimensioning, angular dimensions, radius, and diameter. The dimensioning functions can be used to create norm-compliant mechanical designs and customer-specific drawings.

The representation of dimensions with regard to dimension lines, dimension line limiting, and formatting or moving the dimension value is user-definable. For non-scaled representations, the dimension value can also be edited manually. You can leave out dimension line limits to save space.

Layer Management

Different layers can be used in the drawing. Transparent management permits the generation and labeling of user-defined layers that control font sizes, colors, line strengths, line types etc.

Forms and Reports

Graphical Lists

EPLAN Preplanning provides a form editor for the graphical representation of project data (creation of documents).

The form editor can be used to create templates for documents. On the basis of these documents the project data can be evaluated individually and processed in accordance with the requirements (NAMUR; documentation specifications of the customer, own factory standards or data points lists according to VDI 3814). The manifold possibilities of data evaluation allow rapid and simple creation of high-quality project documentation.

Form Editor

The user can use the form editor to create graphical lists (form templates) on the basis of the individual requirements (for example, specifications of a documentation guideline). The resulting forms serve as a template for reporting project data that can then also be managed in the project as documents.

Filter and sorting criteria are available to the user when reports are generated on the basis of the forms defined in the project. It is thus possible to specifically evaluate and report the required project data in the generally valid forms.

Once created, form templates can be used non-project-specifically. High-quality and meaningful reports form the basis for comprehensive plant documentation that can be created with EPLAN Preplanning at the click of a button.

Interfaces

Data Export

EPLAN Preplanning provides various freely configurable formats for the export of data. These formats can be stored for repeated usage through the scheme technique. The user can combine the data required for an export themselves and then export them into a free format such as TXT, CSV, XML or Excel.

Current project data can be provided simply to project participants who do not have an EPLAN Preplanning installation through the data export.

Filter and sorting criteria allow focusing on the project information relevant for a specific recipient. The project participants receive the specific information that they require in the context of their work.

Importing from Excel

EPLAN Preplanning provides a comfortable data import possibility for PCT loop and device data.

The data structures can be linked with each other through a dialog with assignment tables. Additional filters and options can detail the importing process further during importing.

In particular when a project is started by importing existing data, the Excel interface is the best choice in order to create an initial project structure in EPLAN Preplanning without redundant entry of data.

In the case of a multiple import differences can be detected easily through a preview of results. This allows new, modified or deleted objects in the import file to be recognized both in the pre-planning as well as in the detail engineering in order to ensure consistent data maintenance.

DXF / DWG Drawing Import and Export

This format for exchanging data with the AutoCAD® world is used in particular in the mechanical CAD systems environment. This interface is implemented bi-directionally in EPLAN Preplanning so that, for example, CAD drawings can be read in as a template for forms and hook-ups and on the other hand lists, documents, drawings and sketches generated in EPLAN Preplanning can be exported into DXF / DWG format.

Importing of DXF / DWG data into EPLAN Preplanning and also exporting to DXF / DWG makes the global use of existing drawings possible. Repeated creation of drawings and sketches becomes superfluous when the engineering tools involved in the project can exchange data through this standardized CAD interface.

EPLAN API Extension

The optional "EPLAN API Extension" extension module allows you to control EPLAN externally through a programming interface or to extend and customize it customer-specifically. The program functions available in EPLAN are structured in modules. They can be addressed directly from other programs through the programming interface. It is also possible to integrate customer-specific extensions into the EPLAN user interface.

You generally only need a text editor and a ".NET Compiler" for this functionality. For development support, we recommend an integrated development environment such as "Visual Studio".

Languages supported by .NET can be used as programming languages. The code can be directly loaded, compiled, and executed in the system as a script.

The programming interface can be used to adapt the system very much to your requirements. Maximum integration is achieved in this way, reducing work processes and accelerating the workflow.

Creating P&IDs

EPLAN Preplanning Professional makes extensive editing functions available for the graphical and database-oriented creation of P&IDs – generally plant overviews.

- Process and instrumentation diagram
- Piping and instrumentation diagram
- Plant flow charts
- Instrumentation schemes
- Bundle, plant or controlling schemes

On the basis of a symbol library you create these schemes as an integral component of the process, machine, plant or building documentation and can already record the plant data in the project database during the pre-planning phase.

The efficient graphical and macro functions of the EPLAN graphical editor support you in fast and reliable project planning. Autoconnecting can be used to define piping connections between the items and to automatically report the associated information and process data.

Parallel to the graphical placement of the PCT loops and devices in the P&ID, the planning objects (such as sensors, pumps, containers, etc.) are recorded in the pre-planning navigator and can be managed there in a tree structure. The association of the instruments and automation components to the individual PCT loops is also managed here.

Through the integration into the EPLAN Platform, the project data arising in the course of the P&ID creation, bundle, controlling schemes are available in the subsequent disciplines such as I&C technology (EPLAN Preplanning), fluid power (EPLAN Fluid) and electrical engineering (EPLAN Electric P8). The centralized data maintenance ensures that global information can be synchronized. This guarantees consistent, rapid and simple engineering also between departments.

As a central planning tool, the EPLAN platform offers unified support for the entire engineering process: From pre-planning in the higher-level function overview with P&ID, through management and planning of the PCT loops in basic engineering with EPLAN Preplanning, to documentation of the automation technology in detailed engineering with EPLAN Fluid and EPLAN Electric P8.

Pipings in the Pre-planning and in the P&I Diagram

In order to take pipings into consideration as early as possible in the engineering process you can create planning objects for pipings in the pre-planning. On the basis of this pre-planning you can combine several connections on a P&I diagram into a piping through a piping definition. In the process important information for the pipings such as pipe classes and substances are managed as independent objects in the segment template navigator. The report types Piping overview, Pipe class overview and Substance overview are available for the reporting of the pipings, pipe classes and substances existing in a project.

Planning Objects for Connections on the Pre-planning

So-called "connection planning objects" are available as segments in the pre-planning (piping planning objects, cable planning objects). Connection planning objects define which segments are connected with each other and describe a piping or a cable in the pre-planning. The connection planning objects are managed in parallel to general planning objects, and behave in a way similar to them. External documents / pages, parts and function templates can be stored at a connection planning object, but not PLC addresses or macros.

Elements: Collaboration

The optional and fee-based Elements: "Collaboration" includes the functionalities and options described below.

EPLAN Revision Management allows to automatically record and document modifications at existing projects using a revision control. The user can also access older versions of the project and mark the modified project pages with an approval stamp.

If objects were changed in a revision, these are displayed with a graphical marker in the schematic. The revision states created for a project can be output in revision overviews, which can be either printed or inserted into the current project as separate report pages.

EPLAN Project Management offers the possibility of project management across multiple devices in a local client/server infrastructure. Project-specific and non-project-specific information can be stored and displayed in the project management. Projects which are provided via the EPLAN Cloud Service eMANAGE cannot be managed.

To find existing projects via project management from other workstations, the header data of the EPLAN projects can be read into a project management database.

Project properties can be processed in blocks in project management. An overall view of the project header data of a project can also be output. If desired, the users who are currently editing a project are displayed.

EPLAN Change of Standard offers the possibility of adapting an existing project to the specifications of a different standard on the basis of a wizard function. On the basis of suitable templates you can replace plot frames and forms, rotate schematics (Europe – USA), replace symbol libraries and symbols, and adapt designations and descriptions to the target standard.

EPLAN Multi Language Translation offers the possibility to output mono- or multilingual schematic documentation.

Texts within an EPLAN project are automatically translated. The support of professional translation agencies can be integrated through a data exchange via XML, CSV or TXT. Unicode characters are supported. The "AutoComplete" functionality minimizes manual inputs.

Elements: Professional+

The optional and fee-based Elements: "Professional+" includes the functionalities and options described below.

EPLAN Multiuser Management

Extensive projects are often edited at the same time by several person and are often not transparent for the individual users in view of the amount of data involved. Although the designer only works in a defined part of the project, EPLAN displays the entire project data in dialogs and navigators. In this use case the "EPLAN Multiuser Management" module reduces the amount of data for the individual user.

Defined Working Sections

You can use this option to divide projects structured by identifier blocks into "defined working sections". The division of projects into defined working sections is done on the basis of the existing structure identifiers in the project. Either each user chooses the defined working sections in which he or she wants to work, or the assignment is done centrally by an administrator.

Subproject Management

With this option projects can be divided into smaller subprojects and edited. These subprojects can then be edited independently of the overall project.

Projects can be divided on the basis of different criteria as required, for example, by trades or by structure identifiers. The criteria specified by the user for the division are "schemes". The working method also allows comfortable collaboration with suppliers.

After completed editing, the subprojects can be integrated back into the overall project in order to automatically receive a complete documentation.

EPLAN Multiuser-Monitor offers additional transparency and an overview of the current editing steps, in particular when editing projects with multiple users. For actions with corresponding runtime (for example, check runs, reports etc.), the multi-user monitor shows the status of the action.

EPLAN Multiuser-Monitor provides information which users are active in which project and which actions are performed by whom in the project.

EPLAN Project Options defines areas of a machine or plant as options and then displays or hides them within the EPLAN project. This way, configuration characteristics or different designs of a machine or plant can be easily represented and managed.

The currently activated project options are considered for reports within a project. Hidden project options are not considered.

A project option can also be displayed transparently. With the transparent display it is also graphically easy to recognize that at this point in the documentation a project option has been defined which is, however, currently deactivated and not considered.

Additional information (e.g. in deactivated project options) can be removed from a project prior to delivery. Special reports give an indication which project options are contained in the project and which ones are selected.

EPLAN Project Reference supports the collaboration between client and supplier.

The incoming or outgoing project can be checked by the supplier as well as the client rapidly and without manual work against the specifications and guidelines of the client. A structured overview of the test results allows a substantiated assessment of the project quality and consistency. The assessment whether the project fulfills the acceptance criteria of the client is thus possible at any time.

The following criteria can be used for a project comparison:

- Is the project free of errors? A project is free of errors if none of the scheduled check runs generate messages.
- Are the project-related settings unchanged?

- Are the project data properties unchanged?
- Are they compliant with the project planning specifications?

Differences to the project specifications are documented by means of a message report.

EPLAN User Rights Management

Access to functionalities and options of the EPLAN Platform can be administered, similar to the Windows rights management.

The usage of dialogs, menu items and commands of the user interface can be restricted using **EPLAN User Rights Management**.

The defined access rights can be defined individually or in blocks and can be assigned to users or user groups.

If certain rights are revoked from a user, the associated menu items will be grayed out. In this way, the system only offers users the commands they need to perform their tasks.

Both users as well as user groups that have already been defined in a company can be transferred simply into the rights management by using Active Directory.

If you want to work with the rights management, the Elements: "Collaboration" has to be used at all EPLAN workplaces in the company. This is the only method of ensuring that a user cannot circumvent the defined rights structure.

Hardware Requirements

Workstation

The computer platform is a PC with an Intel Core i5, i7, i9 or compatible processor. Rather select a high-speed computer with less CPU cores than a slower computer with more CPU cores.

Recommended Workstation Configuration

Processor:	Multicore CPU, not older than three years
RAM:	16 GB
Hard disk:	500 GB
Monitor / graphics resolution:	2-screen solution with a resolution of at least 1280 x 1024 recommended 1920 x 1080
3D display:	Graphics card from ATI or Nvidia with the latest OpenGL driver

Network

We recommend using a Microsoft Windows network.

Net transfer rate of the server:	1 Gbits/s
Net transfer rate of the client computer:	100 Mbits/s
Recommended latency	< 1 ms

Multi-user

With regard to minimum requirements for multi-user operation, please contact EPLAN Support. We can advise you specifically according to your individual requirements.

Software Approvals

In the current Version 2022 the programs of the EPLAN platform are available as a 64-bit version.

Operating Systems

The EPLAN Platform supports the 64-bit variants of the Microsoft operating systems Windows 10.
The EPLAN user interface language installed must be supported by the operating system.
The Microsoft .NET framework 4.7.2 is required to operate the EPLAN platform.

The program is identified by EPLAN as compatible in accordance with the requirements specified in this performance description on the following operating systems:

Workstation

- Microsoft Windows 10 (64-bit) Pro, Enterprise
  Version 1809, 1903, 1909, 2004, 20H2

Server

- Microsoft Windows Server 2012 R2 (64 bit)
- Microsoft Windows Server 2016 (64 bit)
- Microsoft Windows Server 2019 (64 bit)

Citrix-Server

- Terminal-Server with Citrix XenApp 7.15 and Citrix Desktop 7.15

Microsoft Office Products

Prerequisite for the creation of Microsoft Office file formats from EPLAN is that an executable MS Office version that is identified by EPLAN as compatible in accordance with the requirements specified in this performance description is installed on the computer.

- Microsoft Office 2016 (64 bit)*
- Microsoft Office 2019 (64 bit)*

*Please observe the notes in the information portal (www.eplan.help).

SQL Server (64-bit)

- Microsoft SQL Server 2016
- Microsoft SQL Server 2017
- Microsoft SQL Server 2019

PDF Redlining

- Adobe Reader Version XI
- Adobe Acrobat Version XI Standard / Pro
- Adobe Reader Version DC
- Adobe Acrobat Version DC Standard / Pro

Licensing Overview

✓ Standard functionality O Optional - Not available

EPLAN Preplanning	Professional Add-on	Professional Stand Alone
Functional Navigator	✓	✓
Overview Reports	✓	✓
Parts management	✓	✓
Graphical editor	✓	✓
Operational Sequence	✓	✓
Multi User	-	✓
Process/Piping & Instrumentation Diagram (P&ID)	✓	✓

Errors and changes reserved.

Licensable elements	Professional Add-on	Professional Stand Alone
Compact +	-	-
Mounting Panel		
Overview Reports		
Multi-user		
Select +	-	-
PLC & Bus Extension		
Single Line		
Netbased Wiring		
Collaboration	-	✓
Revision Management		
Project Management		
Change of Standard		

The described functionalities are only available for certain module packages.

Multi Language Translation		
Professional +	-	o
Multi User Management		
Multi User Monitor		
Project Options		
Project Reference		
User Rights Management		
3D Panel Layout	-	-
Pro Panel (Add-on)		
STEP Import		
STEP Export		
Ultimate*	-	-
FieldSys		
Fluid (Add-on)		
Preplanning Professional (Add-on)		
Pro Panel (Add-on)		
STEP Import		
STEP Export		
Routing & Production	-	-
Project Processing	Requirement is a license "EPLAN Pro Panel Professional"	
Pro Panel Process Wiring		
Pro Panel Process Tubing		
Pro Panel Production Piping		
Pro Panel Production Smart Wiring		
Pro Panel Production Wiring - Rittal Wire Terminal		

The described functionalities are only available for certain module packages.

Copper Design	-	-
Pro Panel Process Copper	Requirement is a license "EPLAN Pro Panel Professional"	
Pro Panel Production Copper DXF		
Pro Panel Production Copper NC		
Wire Production	-	-
Pro Panel Production Wiring Komax	Requirements are a license "EPLAN Pro Panel Professional" and the Elements "Routing & Production"	
Pro Panel Production Wiring Schleuniger		
Pro Panel Production Wiring Steinhauer PWA		
Pro Panel Production Wiring CadCabel		
Pro Panel Production Wiring Cable Center		

Errors and changes reserved.

Licensable add-on systems and modules	Professional Add-on	Professional Stand Alone
FieldSys	-	-
Fluid (Add-on)	-	O
Pro Panel Professional (Add-on)	-	O
Cogineer	-	O
Cogineer Advanced	-	O
API Runtime	-	O

Errors and changes reserved.

The described functionalities are only available for certain module packages.