

Eplan Next26

WHERE INDUSTRY
MEETS TOMORROW

Master Class – Engineering Automation: Boosting Speed and Accuracy
(English)

PROCESS CONSULTING

ENGINEERING SOFTWARE

IMPLEMENTATION

GLOBAL SUPPORT

FRIEDHELM LOH GROUP



Masterclass

Master Class – Engineering Automation: Boosting Speed and Accuracy (English)

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Agenda

- 1 Who we are**
- 2 Automated Engineering: two solutions
- 3 What is needed
- 4 Presentation of both solutions
- 5 Getting started and how can Eplan support you
- 6 Questions & Answers

Speaker

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Germany

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Automated Engineering: two solutions (eBuild & EEC)

What is the difference between eBuild and Eplan Engineering Configuration

- Both solutions have their justification, they are not in competition with each other
- eBuild is designed to automate the work of the electrical designer
- Eplan Engineering Configuration was developed to automate the workflow around the engineering process
- Over the time, functions and further developments have been added that have softened the boundaries

Automated Engineering: two solutions (eBuild & EEC)

What is the difference between eBuild and Eplan Engineering Configuration

eBuild

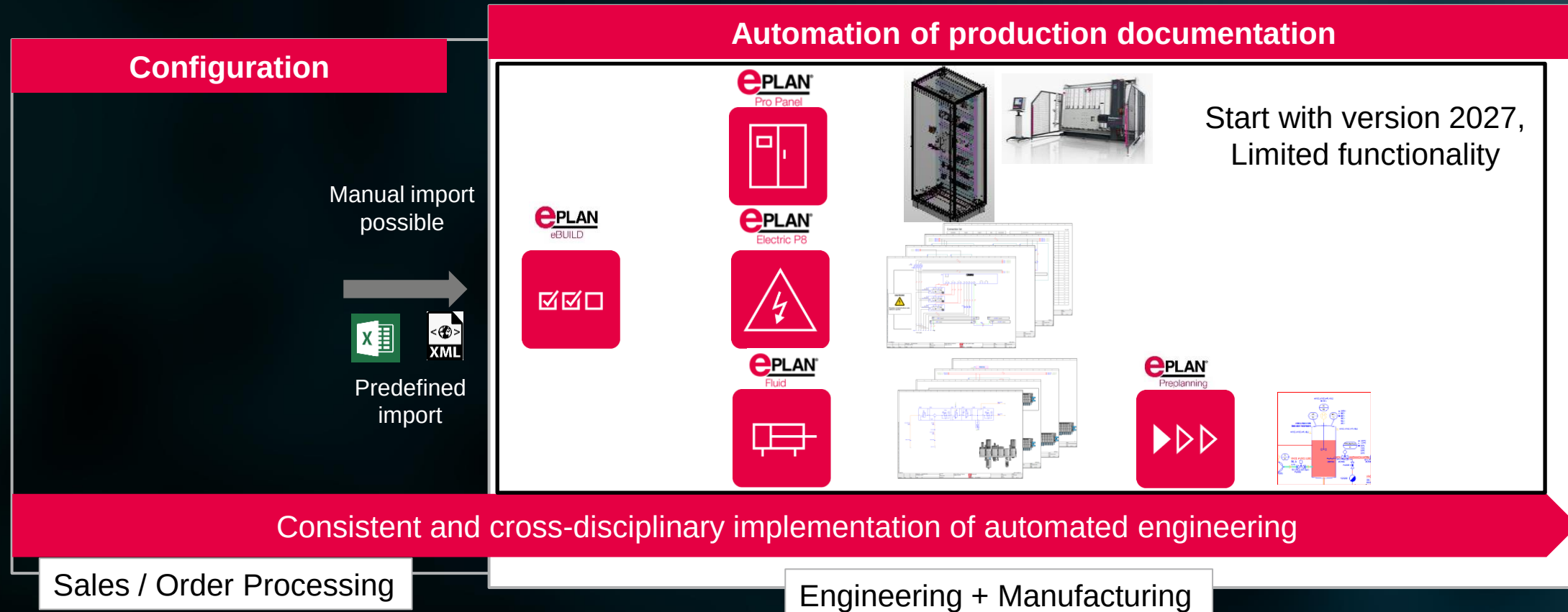
- Cloud based
- Part of the platform
- Focused on Eplan project generation
- Pro Panel: Placement of components on defined DIN rails based on the circuit diagram (from version 2027)
- Fixed defined XML and Excel file import

EEC

- On- Premise (Installed locally)
- Can be started independently
- In addition to Eplan Projects, other documents, such as text documents, can also be generated
- Pro Panel: Free placement (coordinates, mounting rails, mounting points – grid) of components based on article numbers and components
- Open import interface of XML, Excel or...
- Job Server (Automatic operation)

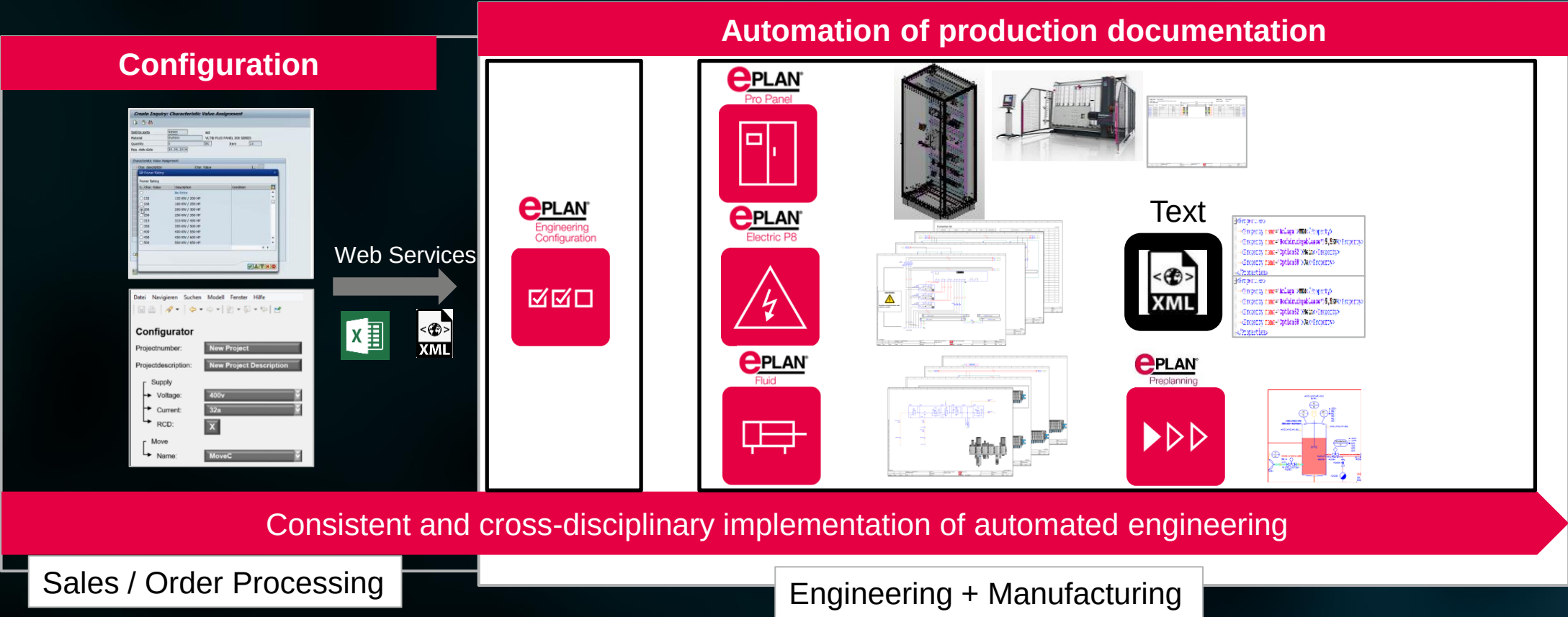
Automated Engineering: two solutions (eBuild & EEC)

What is the difference between eBuild and Eplan Engineering Configuration



Automated Engineering: two solutions (eBuild & EEC)

What is the difference between eBuild and Eplan Engineering Configuration



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What is needed

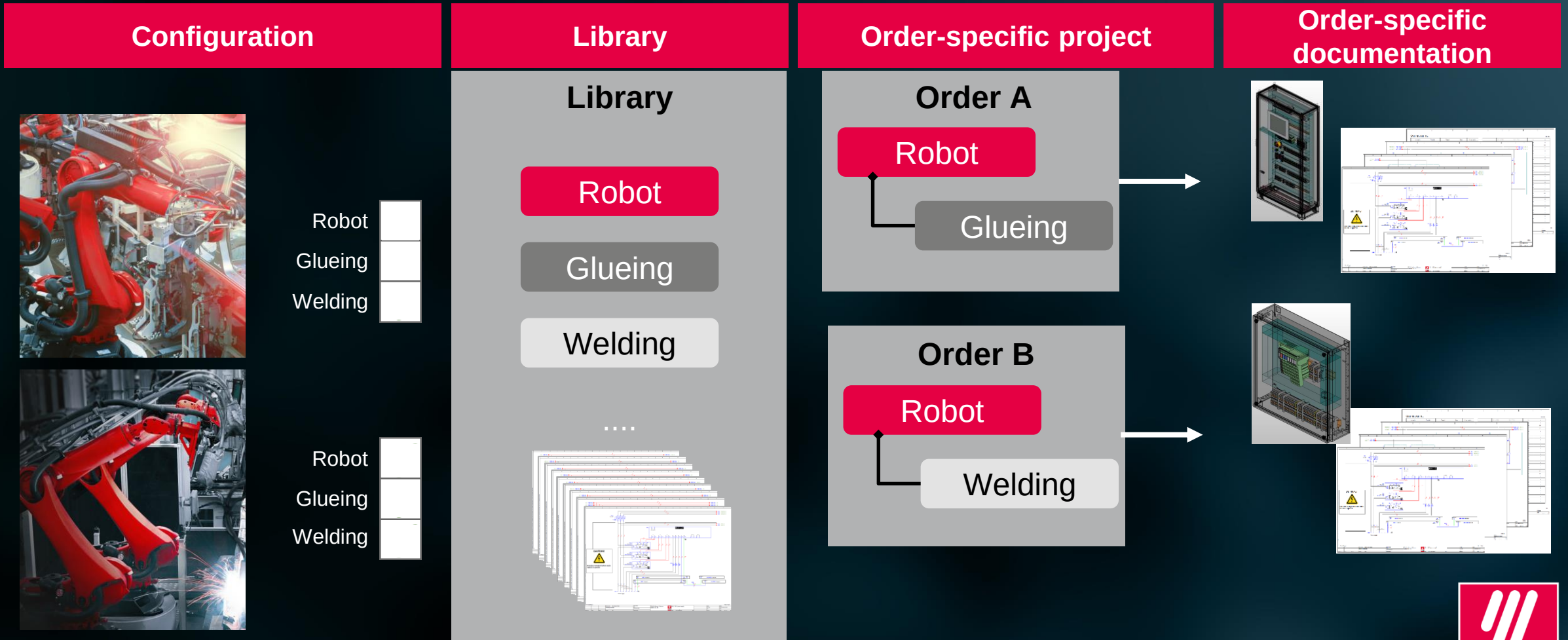
No automation without standardization

Before you can start, you have to do the following homework:

- The product to be automated must be known
 - Possible options and variants
 - How is combinatorics
- Required data for generation must be available
 - Eplan Template Project
 - Eplan Macro Project (eBuild), Eplan Macros (EEC)
- Does the data meet the requirements
 - Are the stored article data still correct
 - Are the parameters and value sets still correct
- Is the mandate and the time for it available?
 - Training is needed
 - Time to set up the "generation solution" must be planned

What is needed

No automation without standardization



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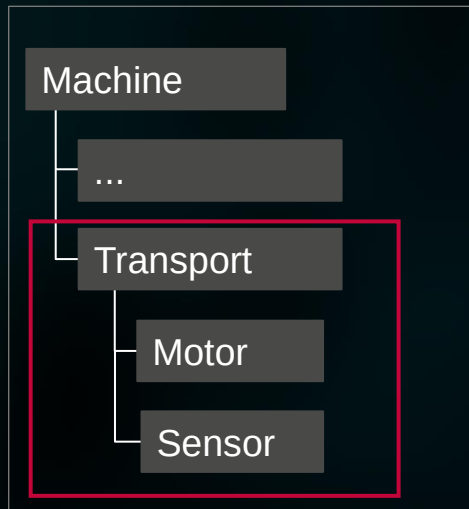
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What is needed

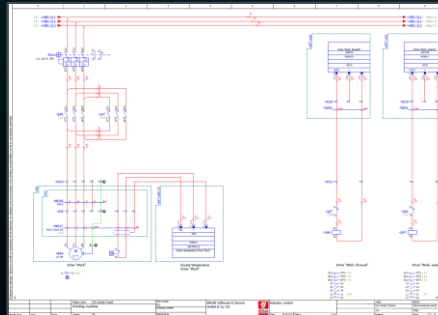
No automation without standardization

Functions

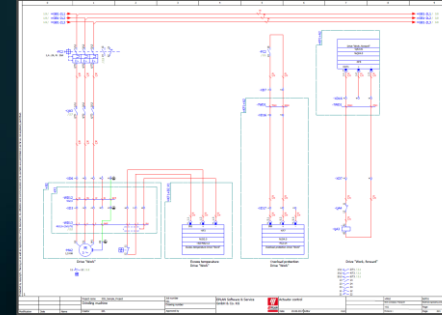


P8 Macros

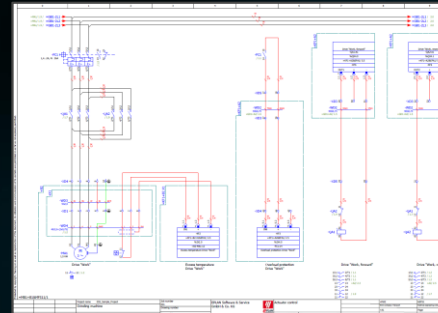
Variant 1



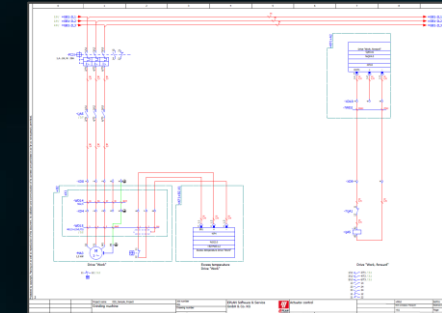
Variant 2



Variant 3



Variant 4

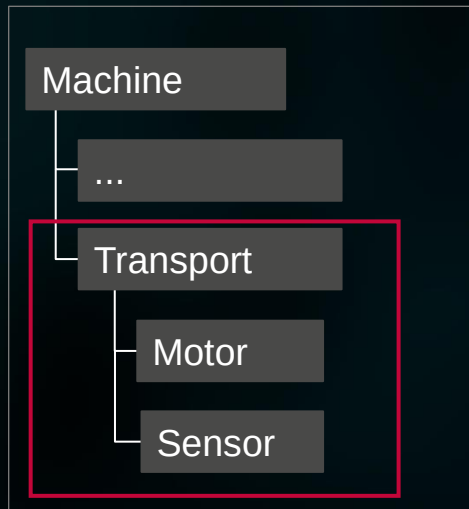


Variants as whole page macros - redundancy in the templates simplifies the rules

What is needed

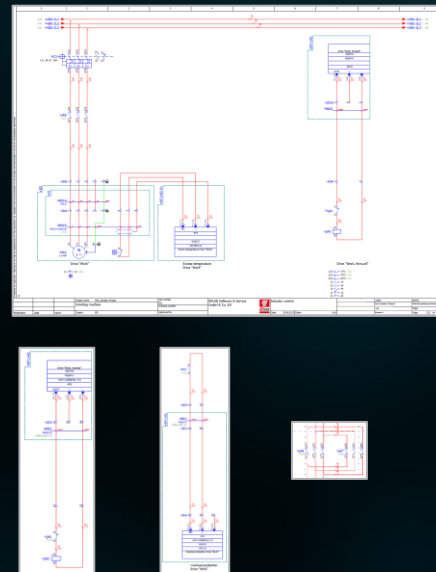
No automation without standardization

Functions



P8 Macros

Fragmentmacros

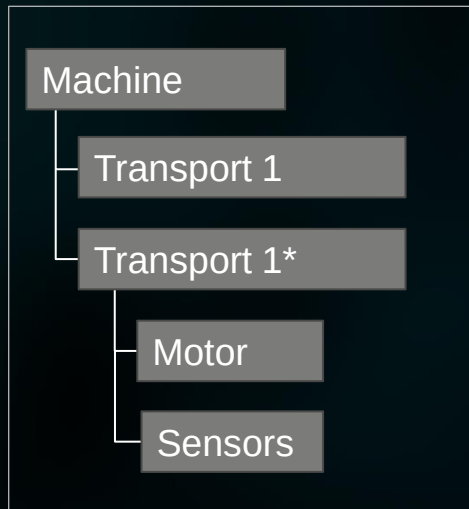


Low redundancy increases flexibility and requires a more detailed set of rules

What is needed

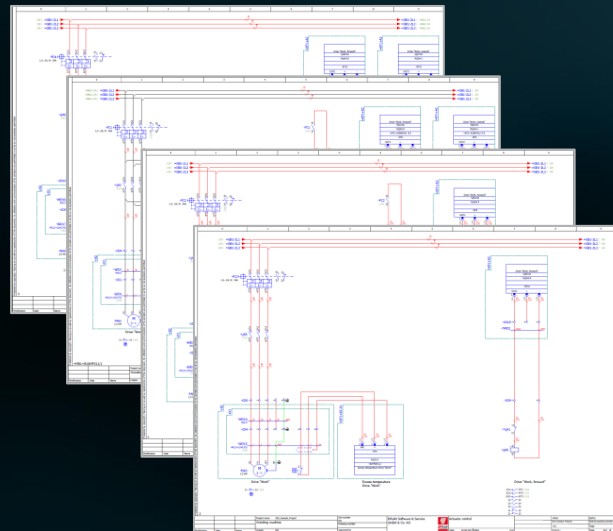
No automation without standardization

Functions



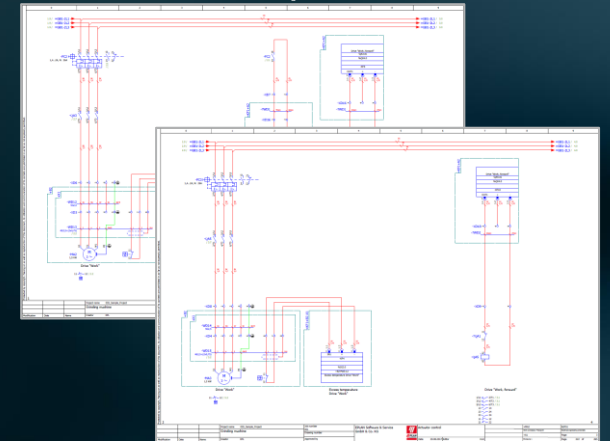
P8 Macros

Variant 1-4



Circuit diagram

Transport 1

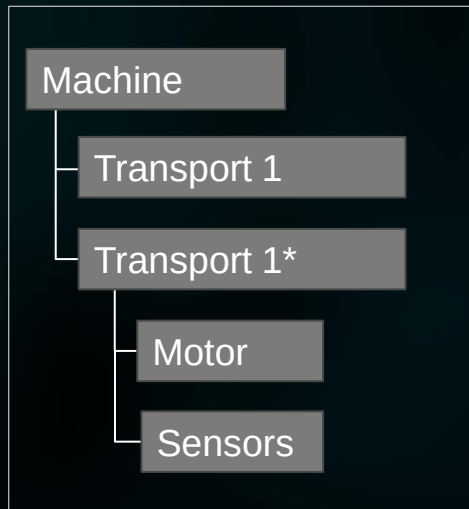


Transport 1*

What is needed

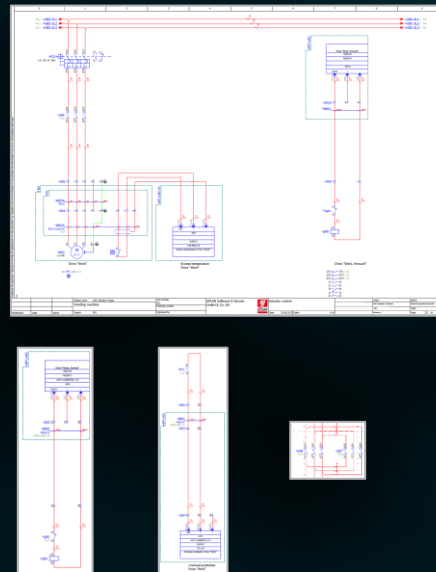
No automation without standardization

Functions



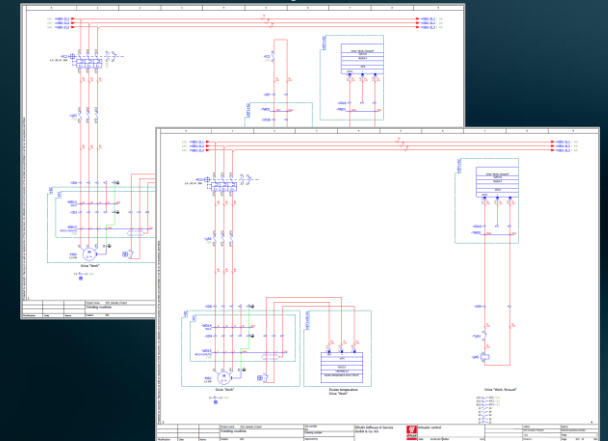
P8 Makros

Fragmentmacros



Variant 1

Transport 1

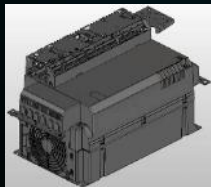
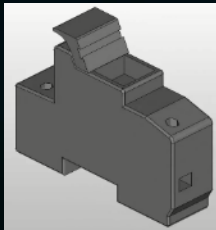


Transport 1*

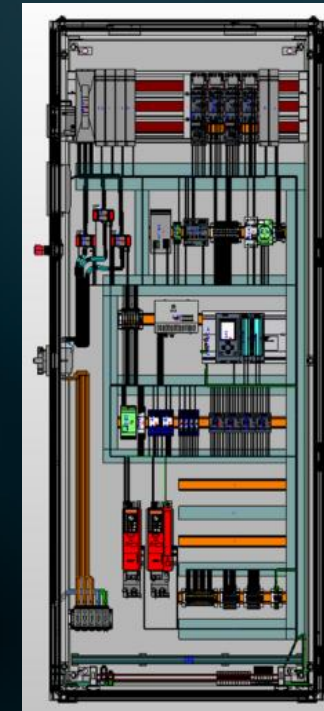
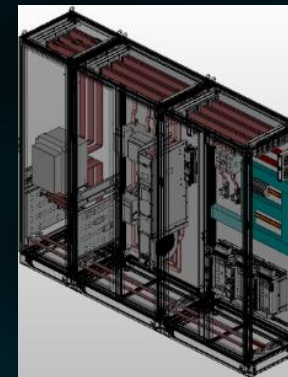
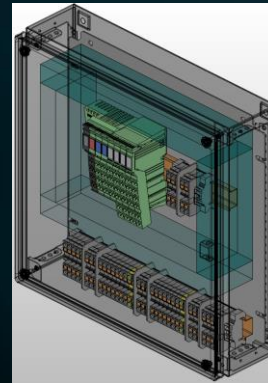
What is needed

No automation without standardization

3D Components



Cabinet



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Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

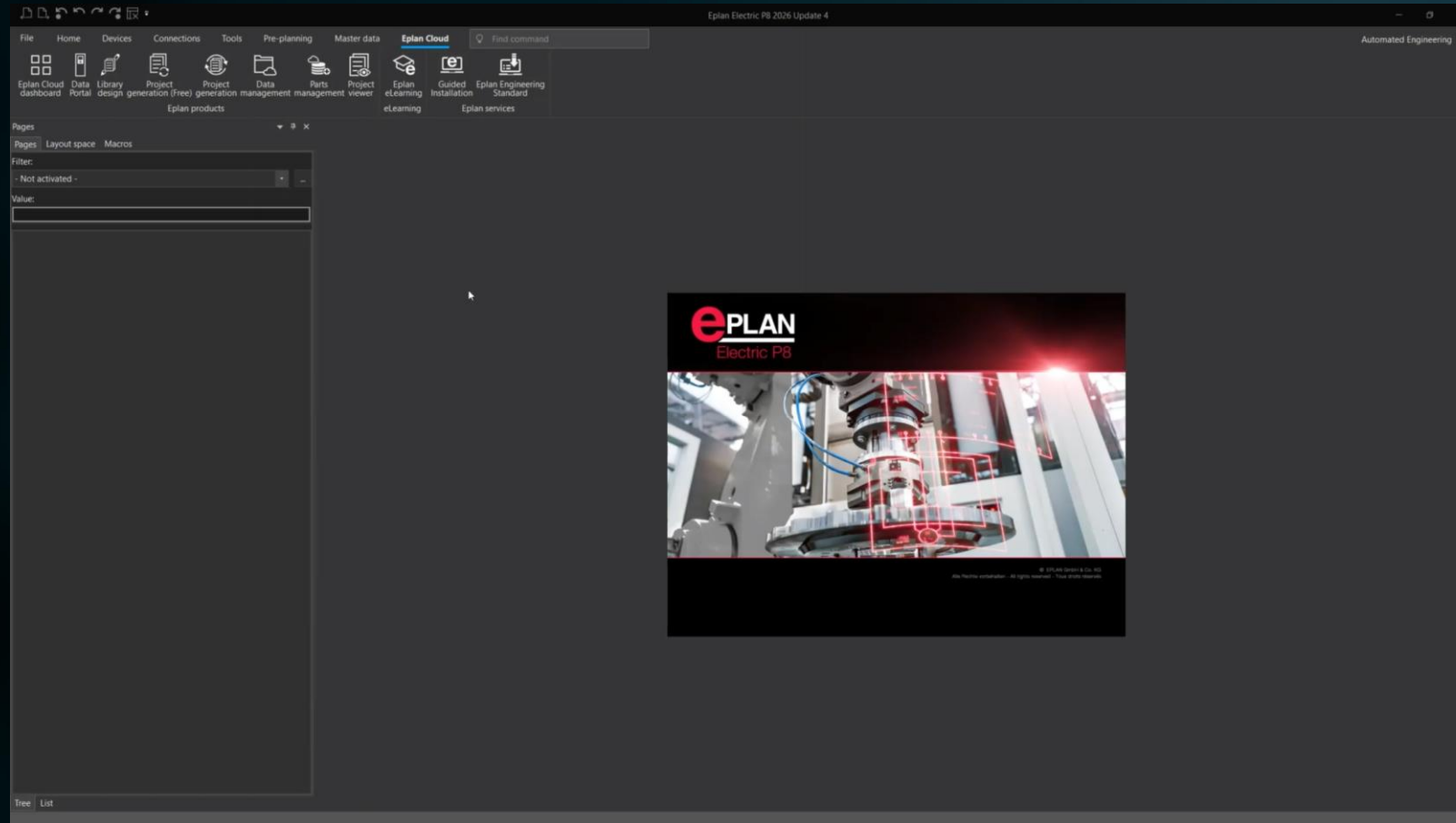
Comparison of both solutions using a standard workflow

- Configuration of a "Handling Unit" via User Interface
 - eBuild: Default UI Based on configuration parameters
 - EEC: Custom UI based on HTML
- Generation of an Eplan project with circuit diagram and layout space
 - eBuild: Placement of components on defined DIN rails based on the circuit diagram
 - EEC: Free placement of components based on defined article numbers and components
- Manual import of a configuration (similar to that of the user interface)
 - eBuild: Fixed defined import structure and syntax possible
 - EEC: Dynamic import of structures possible through XSLT transformation
- Automatic import via Job Server (Eplan Engineering Configuration only)

Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

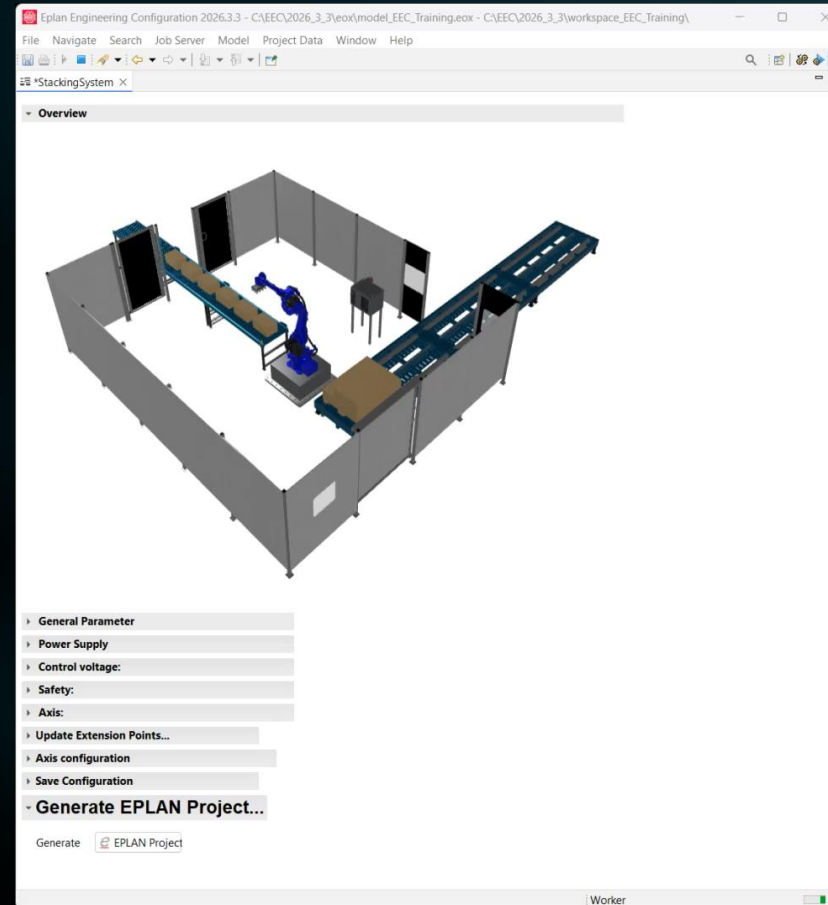
Video about "Configuring a Handling Unit via User Interface" (eBuild)



Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

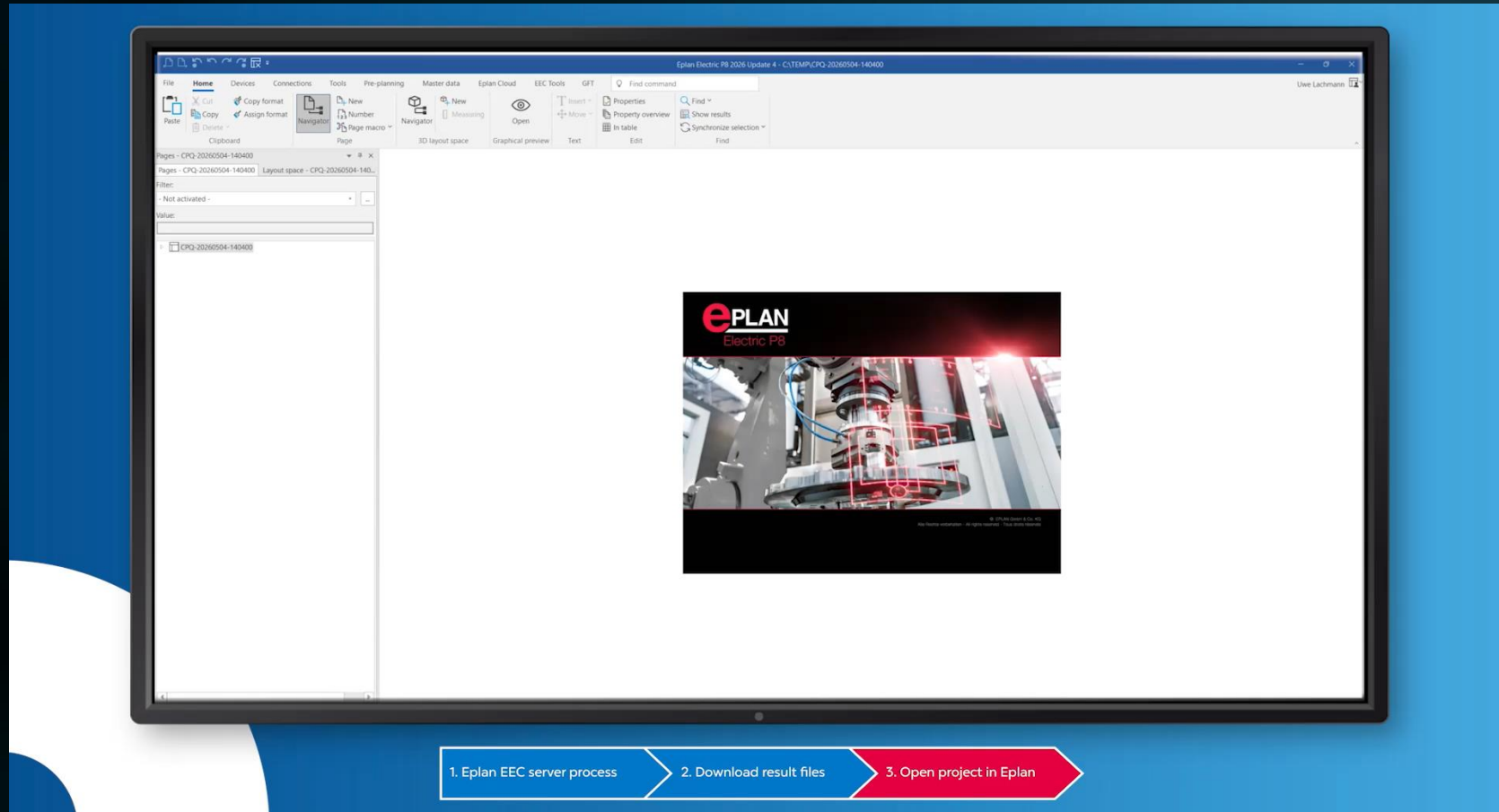
Video about "Configuration of a Handling Unit via User Interface" (EEC)



Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

Video about "Generation of an Eplan project with circuit diagram and installation space" (EEC result)



Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

Example about "Manual import of a configuration (similar result to that of the user interface selection, eBuild)"

	A	B	C	D	E	F	G
1	TG_Stacking_System						
2							
3	EXPORTFILE						
4	Supply_Connector_Type	Terminal					
5	Supply_Current	16 A					
6	Cabinet_Light	false					
7	LayoutSpace_Name	A1					
8	LayoutSpace_Description	A1					
9							
10	TG_Axis	Motor Power	LimitSwitch	Encoder_Dependency	Weight_Dependency	Break_Dependency	
11	TG_Axis	0.55kW	1	false	false	false	
12	TG_Axis	0.55kW	1	false	false	false	
13							

Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

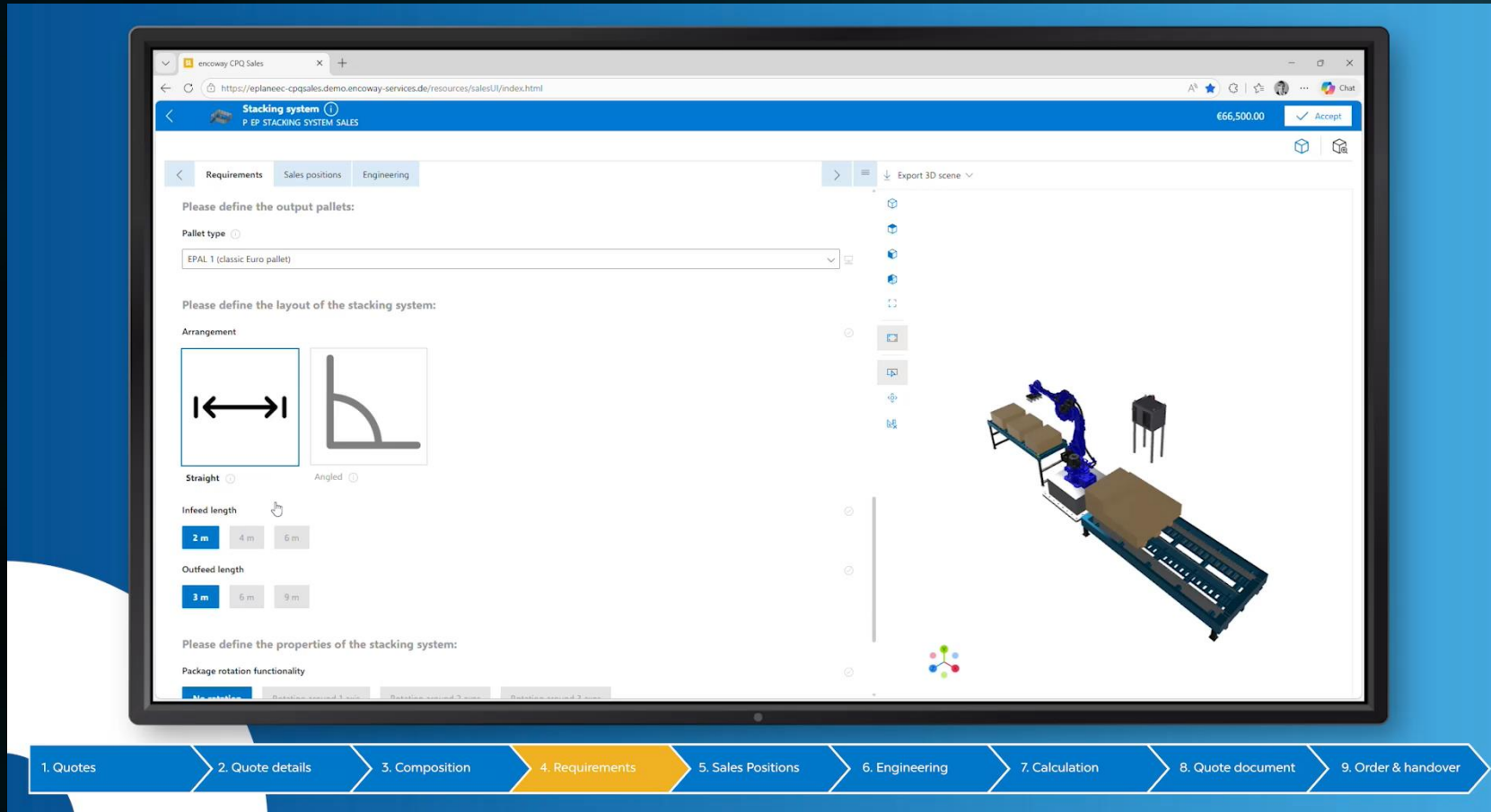
Example about "Manual import of a configuration (similar result to that of the user interface selection, EEC)"

```
<?xml version="1.0" encoding="utf-8"?>
<imx xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xi="http://www.w3.org/2001/XInclude" version="1.0">
  <project name="NewProject" save="true">
    <libraries>
      <add type="String" value="ConstructionKit_StackingSystem"/>
    </libraries>
    <mo name="StackingSystem" typeClass="ConstructionKit_StackingSystem.Machine.StackingSystem">
      <parameter name="AxisAmount" type="Integer" value="2"/>
      <parameter name="DCFuse" type="String" value="MCCB"/>
      <parameter name="GlobalConfiguration" type="String" value="AxisControl"/>
      <parameter name="GlobalDistance" type="Double" value="1.0"/>
      <parameter name="GlobalWeight" type="Integer" value="10"/>
      <parameter name="SafetyEmergencyStopButton" type="Boolean" value="false"/>
      <parameter name="SafetyIndicatorLight" type="Boolean" value="false"/>
      <parameter name="SupplyCabinetFan" type="Boolean" value="true"/>
      <parameter name="SupplyCabinetLighting" type="Boolean" value="true"/>
      <parameter name="SupplyConnection" type="String" value="Terminal"/>
      <parameter name="SupplyVoltage" type="Integer" value="400"/>
      <parameter name="AxisActuatorBreak" type="Boolean" value="false"/>
      <mo name="Axis" typeClass="ConstructionKit_StackingSystem.FunctionGroup.Axis">
        <parameter name="AxisActuatorBreak" type="Boolean" value="true"/>
        <parameter name="AxisControl" type="String" value="Classic"/>
        <parameter name="AxisEncoderArmPos" type="Boolean" value="false"/>
        <parameter name="AxisEncoderLength" type="Boolean" value="false"/>
        <parameter name="AxisLimitSwitch" type="Boolean" value="false"/>
        <parameter name="AxisWeightBalance" type="Boolean" value="false"/>
      </mo>
      <mo name="Axis2" typeClass="ConstructionKit_StackingSystem.FunctionGroup.Axis">
        <parameter name="AxisActuatorBreak" type="Boolean" value="false"/>
        <parameter name="AxisControl" type="String" value="Classic"/>
        <parameter name="AxisEncoderArmPos" type="Boolean" value="false"/>
        <parameter name="AxisEncoderLength" type="Boolean" value="false"/>
        <parameter name="AxisLimitSwitch" type="Boolean" value="true"/>
        <parameter name="AxisWeightBalance" type="Boolean" value="true"/>
      </mo>
    </mo>
  </project>
</imx>
```

Presentation of both solutions

Eplan project generation with eBuild & Eplan Engineering Configuration

Video about “Automatically Import via Job Server (only Eplan Engineering Configuration)”

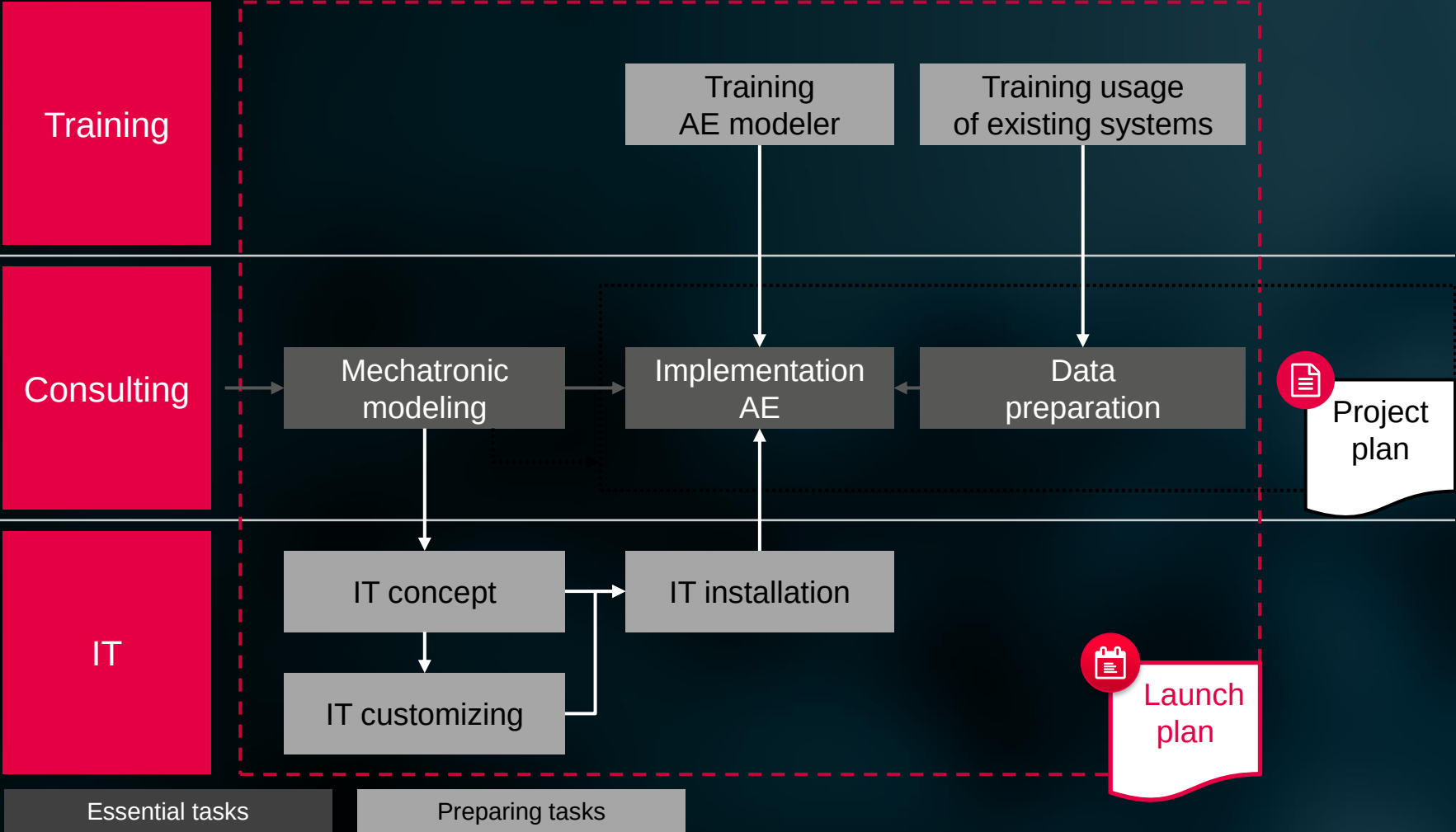


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Getting started and how can Eplan support you

Overview: What could a possible start for AE look like for the hole product (exemplary)

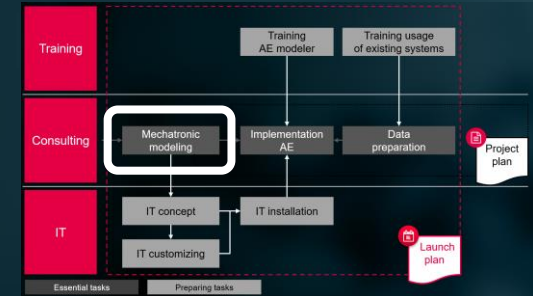


Getting started and how can Eplan support you

Possible steps and how we can support you

Before you can start, you have to do the following homework:

- The product to be automated must be known
 - Possible options and variants
 - How is combinatorics?



We offer product structuring workshops at the Eplan Training Academy
or
individual workshops through consulting

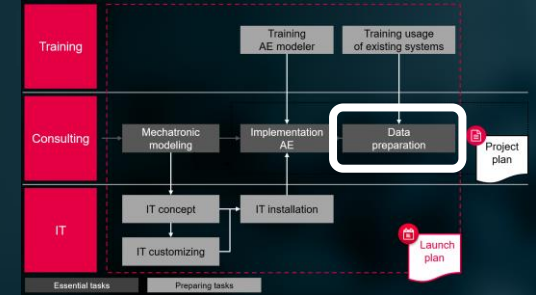
Don't forget the online Eplan eLearnings (eplan.com)

Getting started and how can Eplan support you

Possible steps and how we can support you

Before you can start, you have to do the following homework:

- Required data for generation must be available
 - Eplan Template Project
 - Eplan Macro Project (eBuild), Eplan Macros (EEC)



Even though this will be your main task, in the Eplan Training Academy we will show you how master data is created "today"!

Alternatively, these topics can be worked on selectively during the consulting appointment

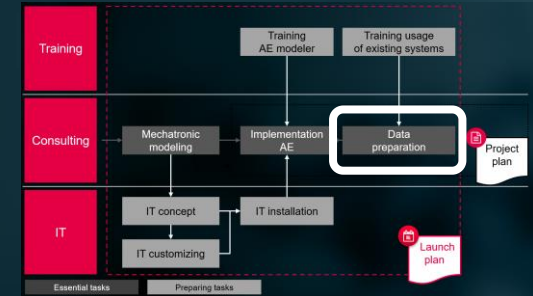
Don't forget the examples of the Eplan Engineering Standard (eplan.com)

Getting started and how can Eplan support you

Possible steps and how we can support you

Before you can start, you have to do the following homework:

- Does the data meet the requirements
 - Are the stored article data still correct?
 - Are the parameters and value sets still correct?



Even if this will be your main task, if you are unsure, get the expertise of consulting!

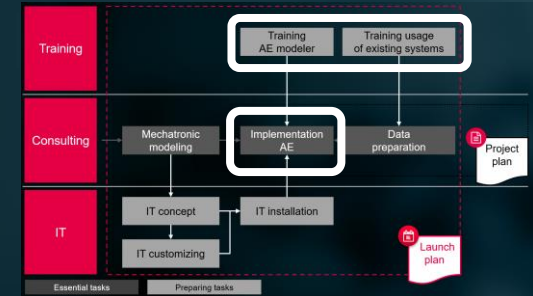
Maybe you have a consulting subscription that you can use for this

Getting started and how can Eplan support you

Possible steps and how we can support you

Before you can start, you have to do the following homework:

- Is the mandate and the time for it available?
 - Training is needed
 - Time to set up the "generation solution" must be planned



We offer you training and consulting concepts tailored to your requirements in the Eplan Training Academy
alternatively
individual workshops through consulting

Don't forget the online Eplan eLearnings (eplan.com)

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Questions and Answers





Thank You!

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