INTRODUCTION TO THE SIMATIC MANAGER

• The four phases for creating an automation solution
• Runtime environment of the SIMATIC Manager
• Integrated tools in STEP 7 Professional
The four phases for creating an automation solution

1. Planning and Configuring
2. Implementation and Module Test
3. Testing and Commissioning
4. Operation and Maintenance

SIMATIC software
Runtime environment of the SIMATIC Manager

SIMATIC software

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Integrated tools in STEP 7 Professional

HMI
Runtime
Controller

SIMATIC MANAGER
Block diagram of the SIMATIC Manager

- Tasks of the SIMATIC Manager
- Project structure of an automation plant in the SIMATIC Manager
Tasks of the SIMATIC Manager

SIMATIC Manager

- Pictures
- Regulation data
- Program-Code
- Back up
- Test data
- Symbols
- Net-Parameters
- HW-Parameters

Runtime software
- e.g. PID control

HMI
- e.g. WinCC flexible

Controller
- LAD, FBD, STL
- S7-SCL
- S7-GRAPH

- Archiving
- Test functions
- Symbol processing
- Network configuration
- Hardware configuration
Project structure of an automation plant in the SIMATIC Manager
Demonstration of a typical project creation with the SIMATIC Manager

**Planning and Configuring**
- Laying out project with station
- Configuring hardware
- Projecting connection

**Implementation and Module Test**
- Create the symbols
- Develop the control program
- Program test module by module
- Configure the visualization

**Testing and Commissioning**
- Loading program
- Test in the regular operation
- Archiving and backup

**Operation and Maintenance**
- Teleservice
Planning and Configuring

Laying out project with Station

1. Generate a new project
2. Insert Station
3. Starting the hardware configuration tool

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Planning and Configuring

Configuring Hardware – HW Config

Update Hardware catalog

Install Manufacturer GSD file

Non SIEMENS Hardware

Hardware catalog
### Planning and Configuring

**Configuring Hardware – HW Config**

![SIMATIC MANAGER](image)

**Module Address and parameters**

<table>
<thead>
<tr>
<th>Slot No</th>
<th>Module Address and Parameters</th>
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<tr>
<td>1</td>
<td>PS 307.5A, 127.317.101.000.002</td>
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<td>2</td>
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Planning and Configuring

Configuring Hardware – HW Config

Manual tuning

Negative result of the check

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Planning and Configuring

Configure network

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SIMATIC MANAGER
Create the symbols

<table>
<thead>
<tr>
<th>Status</th>
<th>Symbol</th>
<th>Address</th>
<th>Data type</th>
<th>Comment</th>
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<tr>
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<td>PMPF_STOP_off</td>
<td>1 0 0</td>
<td>BOOL</td>
<td>The complete plant stops</td>
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<td>2</td>
<td>1-color code</td>
<td>IB 2</td>
<td>BYTE</td>
<td>select color code</td>
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<td>3</td>
<td>1-cycle</td>
<td>QM 1</td>
<td>WORD</td>
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<td>4</td>
<td>1-UB-U100-Laser MS</td>
<td>UB 2</td>
<td>UD 2</td>
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<td>5</td>
<td>1-DB-Glob-QUALITY In</td>
<td>DB 12</td>
<td>DB 12</td>
<td>Memory Quality Data Line 1</td>
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<td>6</td>
<td>1-DB-B3-Laser MS</td>
<td>DB 1</td>
<td>FD 11</td>
<td>Instanz Data Block of FB1 (1-FB1-Laser Marking Sys)</td>
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<td>7</td>
<td>1-DB-Palletizer</td>
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<td>FB 11</td>
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<td>DA 10</td>
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<td>25</td>
<td>1-Start</td>
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<td>BY 01</td>
<td>Start Line 1</td>
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</table>

Press F1 to get Help.
Implement the control program

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<tr>
<th>Object name</th>
<th>Symbolic name</th>
<th>Created in language</th>
<th>Size in the work memory</th>
<th>Type</th>
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<tr>
<td>OB1</td>
<td>Cycle</td>
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<td>SIE</td>
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<tr>
<td>FB1</td>
<td>1 FB1 Laser Marking Sys</td>
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<td></td>
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<td>FB2</td>
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<td>DR2</td>
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</table>

Press F1 to get Help.
Implementation and Module Test

Develop the control program

SCL Editor

Ladder Editor

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Implementation and Module Test

Program test module by module – S7 PLCSIM

PLCSIM Start Button

Simulated inputs

Resulted Outputs
Implementation and Module Test

Configure the visualization – WinCC Flexible

[Image of WinCC Flexible software interface with various folders and options]

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SIMATIC MANAGER
Testing and Commissioning

Loading program

Program Download
Start Button

Show program Online
Testing and Commissioning

Test in the regular operation

Monitoring and control of variables

Forcing of variables

Program status

Single-step mode with stop points
Testing and Commissioning

Archiving and backup

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Co-operative Network Training

Operation and Maintenance

Teleservice

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1. Berger Hans, Automating with Simatic, Controllers, Software, Programming, Data communication, Operator Control and Process Monitoring