Instrumentation & Controls

SPPA-T2000 Innovations
SPPA-T2000 (TELEPERM XP) with SIMATIC S5
System Architecture

TELEPERM XP = SPPA-T2000 (SIEMENS Power Plant Automation)
## SPPA-T2000 Application Processor

Comparison of SIMATIC S5 and SIMATIC S7

### AP based on SIMATIC S5

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZG 155</td>
<td>S5-Rack</td>
</tr>
<tr>
<td>CPU 948R</td>
<td>Processor Module</td>
</tr>
<tr>
<td>CP 1430</td>
<td>Ethernet Communication Processor</td>
</tr>
<tr>
<td>IM 308C</td>
<td>PROFIBUS-DP Master</td>
</tr>
<tr>
<td>IM 304</td>
<td>Interface Module to FUM</td>
</tr>
<tr>
<td>IM 324</td>
<td>Redundancy Coupling</td>
</tr>
</tbody>
</table>

### AP based on SIMATIC S7

Start from Release 8.1

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR 2-H</td>
<td>S7-Rack</td>
</tr>
<tr>
<td>CPU 417H</td>
<td>Processor Module</td>
</tr>
<tr>
<td>CP 443-1</td>
<td>Ethernet Communication Processor</td>
</tr>
<tr>
<td>CP 443-5</td>
<td>PROFIBUS DP Master</td>
</tr>
<tr>
<td></td>
<td>also used for FUM</td>
</tr>
</tbody>
</table>

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Innovation of the Automation System
Moving from SIMATIC S5 and SIMADYN D to
SIMATIC S7

One common System Platform
with SIMATIC S7
for all Automation Functions
Centralized Solution with FUM –
Decentralized Solution with SIM and Intelligent Field Devices

Centralized Solution

- Plant Bus
- SIMATIC S5
- Multi Conductor Cables
- Marshalling Cabinet
- Switch Gear
- Junction Box

Decentralized Solution

- Plant Bus
- SIMATIC S5
- Field Bus PROFIBUS-DP
- Field/Equipment Rooms
- Remote I/O
- Intelligent Field Device

FUM = Function Module
SIM = Signal Module

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AS 620B with AP based on SIMATIC S7
Centralized and decentralized Solution with FUM, SIM and Intelligent Field Devices

Centralized Solution
Plant Bus

AS 620
SIMATIC S5

One Bussystem – PROFIBUS –
to integrate all different I/O Systems and Field Devices

Marshalling Cabinet
Switch Gear
Junction Box
Single Cables

Field Bus – PROFIBUS-DP

DCS Room

FUM Function Module

Field/Equipment Rooms

Field Bus – PROFIBUS-DP

SIMATIC S7
AP

FUM = Function Module  SIM = Signal Module

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Protection of your Investment through a homogenous Extension of SPPA-T2000 Plants

Existing SPPA-T2000 Plants

Extension: AP based on SIMATIC S7

Release 8.1

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Page 7 March-2007 Andreas Lang
Power Generation / Instrumentation & Controls / PG L5
Protection of your Investment through a homogenous Extension of TELEPERM ME (OMME) Plants

Existing TELEPERM ME (OMME) DCS

Release 8.1

Extension:
AP based on SIMATIC S7

CS 275

Web-Client

GET

TME-IO

AS 220

SU

ES

PU-TME with Web-Server

ES/DS-Server

PU-S7 with Web-Server

IEC 60870 Modbus

PROFIBUS-DP

CM-S7

SIM

FUM

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AP based on SIMATIC S7: Powerful Redundancy and PROFIBUS DP Interface

**CPU-Type**
- CPU 417-4H with 20MB onboard

**4 Onboard Interfaces**
- 2 Sync-Modules for redundancy coupling with fiber optic
- 1 PROFIBUS DP Master interface for periphery (FUM, SIM, intelligent field devices)
- 1 MPI/DP-Interface for local access (PG, Laptop)
AP based on SIMATIC S7
Expandable & Flexible

Plant Bus

Power Supply

CPU with PROFIBUS DP Master

CP 443-1 Ethernet

CP 443-5 PROFIBUS DP Master

CP 443-5 PROFIBUS DP Master

SM 421 Digital Input

SM 422 Digital Output
Redundant AP based on SIMATIC S7
Coupled with Function Modules (FUM)

- Redundant AP (SIMATIC S7)
- FUM - subrack (19 modules)
- PROFIBUS-DP
- max. 6 FUM-subracks per AP allowed
Automation with the highest accuracy

- **Central plant clock**
  - Time resolution 1 ms

- **Plant bus**
  - PROFINET
  - SIMATIC S7

- **Time resolution 1 ms**

- **Option: FUM 210GB-I**
  - Time accuracy system wide 6 ms (typical)

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Compact Range of FUM – Function Modules suitable for all Applications

**FUM 210-GB/GB-I/SYS/BIN**
- Drive control interface module
- Signal conditioning for binary signals (GB)
- High-speed binary signal acquisition (GB-I)
- Monitoring and message function (SYS)
- Output of binary signals (BIN)

**FUM 232**
- Analog transmitter signal conditioning module for Pt100 and thermocouples

**FUM 230**
- Analog transmitter signal conditioning module

**FUM 280**
- Module for continuous controllers
- Acquisition for analog and binary signals
From the redundant Automation System over PROFIBUS DP to Field Devices
SPPA-T2000 based on SIMATIC S7 and new PC M440

New PC  M440
Delivery Release 2007-03-01
SPPA-T2000 with SCALANCE (1 GBit/s)
Start from Release 8.2

- Star Coupler
  - 10 MBit/s virtual Ring

- Switch Module (OSM/ESM)
  - 100 MBit/s virtual Ring

- CP 1613 for OM+DS 100 MBit/s

- Switch (SCALANCE)
  - 1 GBit/s virtual Ring
  - Load Limiting

Start from Release 8.2

- 1994
- 2001
- 2007
We thank you for your attention

Subject to change without prior notice.
The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.