Guiding you through change

Your trusted partner for lifecycle innovation
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Your trusted partner for lifecycle innovation

Axel Lorenz
Head of Process Automation, Siemens Industry Automation Division and Siemens Booth Manager at the Achema 2012
Growth in the industrial sectors...
... and added impetus to our service business

Comprehensive responsibility for an integrated portfolio
- By merging our product, system and solution business for each specific sector of industry we will be providing an even more selectively targeted answer to the needs of our customers.

Greater concentration on technology-based service business
- Integral business and portfolio responsibility across the entire lifecycle
- Linking service activities to the development and optimization of related systems and tools
ACHEMA 2012  
June 18 – 22, 2012 in Frankfurt

Slogan: “Guiding you through change”
- ... A trustworthy partner when it comes to lifecycle innovation
- Campaign slogan: "... you trust"

Exhibition booth mirrors the lifecycle
- 2: Control room with SIMATIC PCS 7 V8.0
- 3: Integrated engineering: SIMATIC PCS 7 with COMOS
- 4: Energy management & energy efficiency

Industry focus
- Chemical industry
- Pharmaceutical industry
“Progress you trust”
Our energies are directed towards addressing the requirements of the market.

**Ethics**
Protecting people and the environment

**Sustainability**
- Saving energy
- Adhering to regulations
- Safety and security
- Optimum use of natural resources

**Money**
- High plant availability
- Process flexibility and optimization
- Remote operation and maintenance
- Investment security (TCO)
- Product quality

**Time**
- Lifecycle, time-to-market
- Plant flexibility
- Engineering efficiency
- Integrated portfolio
- One supplier incl. services

**Trust**
- Industry-specific expertise
- Implementing solutions
- Service & consulting
- Portfolio expertise
- Globalization

**Operating efficiency**
- Remote operation and maintenance
- Product quality

**Expertise in process automation**
- Implementing solutions
- Service & consulting
- Portfolio expertise
- Globalization
# SIMATIC PCS 7 V8.0
## Hardware/software highlights

### Profinet for process automation
- Launch of Profinet for process automation
- First supplier with redundant Profinet for process automation
- Benefit: Flexible, cost-effective architecture

### Process data archive
- New Microsoft-based reporting system
- Fully integrated long-term archiving system from multiple projects in real time
- Benefit: Easy access to historical plant data

### Innovative H system
- New FW V6.0 with Profinet system redundancy
- Highest performing controller on the market
- New medium class CPU416HF permits better graduation
- Benefit: More performance for the same price

### Telecontrol/performance control
- Protocol for control and protection of electrical substations (IEC 61850)
- Integration of SIPROTEC/external devices
- Benefit: Investment security / simple maintenance

### Controller AS mEC RTX
- Embedded controller in S7-300-compatible design
- Central I/O
- Benefit: Low costs, compact design

### Advanced ES
- New user interface
- Extended functionality (e.g. CMT)
- Benefit: Reduced engineering time (bulk engineering)
AS process automation CIS - COMOS
Achievements, challenges and actions for planned growth

### Achievements
- Integration of our entire business in Siemens
- Current software versions provide new functionalities and enhanced performance
- Siemens industry software successfully established
- International software conference with over 250 high-caliber and potential customers

### Project highlights
- Proven blue chip strategy: project successes in pharmaceutical and energy industries (e.g. Sinopec)
- Further rollout activities with existing customers e.g. Petrobras, BMA, P&G, OMV, and Evonik
- SIAS: Highly successful implementation of integrated engineering with COMOS & SIMATIC PCS 7

### Growth
- Development in new countries such as the UK, India, Brazil and France
- New COMOS V10 software generation for greater integration, inter-operability and innovation
- Further rollout of blue chip energy and pharmaceutical program

### Value added
- Improved COMOS portfolio strategy
- New COMOS enterprise platform
- Customized solution concepts
- Global training as well as service & support concept across all project phases

### Innovation leadership:
- Standardization of industry-specific workflows
- New interface technology between SIMATIC PCS 7 and COMOS
“Innovation you trust”
Less time from the idea to production… through seamless integration!

- **Product** design
- **Commissioning**
- **Plant engineering**
- **Operation**
- **Modernization**

**In the future**
... Time-to-market can be reduced by to 30%

- **Product requirements**
- **Plant engineering**
- **Commissioning**
- **Operation**
- **Modernization**

**Today**
- “serial, tool-aided”

**Yesterday**
- “serial”
  - Product
  - Process
  - Machine building
  - Electrical engineering
  - Automation

**Tomorrow**
- “parallel”

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Process instrumentation and process analytics
Smart measurement from research through to optimization

<table>
<thead>
<tr>
<th>Level measurement</th>
<th>Position control</th>
<th>Gas chromatography</th>
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<tbody>
<tr>
<td>SITRANS LR560</td>
<td>SIPART PS2</td>
<td>MAXUM ed. II</td>
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<table>
<thead>
<tr>
<th>Level measurement</th>
<th>Flow rate</th>
<th>Digital pressure transmitters</th>
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<tbody>
<tr>
<td>SITRANS LUT400</td>
<td>SITRANS FC430</td>
<td>SITRANS P300 + SITRANS P500</td>
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<thead>
<tr>
<th>Process instrumentation</th>
<th>Process analytics</th>
<th>Industrial communication</th>
<th>Industrial energy products</th>
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<tbody>
<tr>
<td>Flow rate</td>
<td>Gas chromatography</td>
<td>Industrial Ethernet network</td>
<td>SIMATIC power supplies</td>
</tr>
<tr>
<td>Filling level</td>
<td>Gas analytics</td>
<td>Profibus, Profinet</td>
<td>Uninterruptible power supplies</td>
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<tr>
<td>Pressure</td>
<td>Laser analytics</td>
<td>Industrial WLAN</td>
<td>Power supply modules</td>
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<td>Position control</td>
<td>Emission monitoring</td>
<td>Safety products</td>
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<tr>
<td>Weighing</td>
<td>System integration</td>
<td>Industrial identification</td>
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Industry Sector
## Energy management and energy efficiency
in energy supply and drive technology

### Energy-efficient drive solutions
- Energy-efficient drive solutions for pumps, fans and compressors
- Motors with IE3 efficiency rating
- Frequency converters

**Customer benefit:**
- Improvement of plant energy efficiency
- Reduced costs
- Improved product quality

### Scalable energy management solutions
- Identification, evaluation, reduced energy consumption and energy savings with SENTRON PAC 4200, SIMATIC powerrate, B.Data, EM Consulting etc.

**Customer benefit:**
- Energy management from the machine to the management level
- Simple planning and reporting (KPI)

### Drives for extreme environments
- Loher motors and drives for potentially explosive atmospheres and extreme environmental conditions
- Protection type Ex e
- SIRIUS soft starter

**Customer benefit:**
- Improved plant safety
- Increased plant availability

### Flexible compressor concepts
- Efficient compressor solutions
- Air compressors, steam and gas turbines, e-motors
- Lifecycle concepts

**Customer benefit:**
- Enhanced plant performance
- Improved economy in production
- Increased productivity of air separation processes
**“Service you trust”**
One-stop service and industry-specific expertise for process automation

### Remote servicing
- Common Remote Service Platform (cRSP)
- Three-level solution → customer
  - Level 1: Regional technical support
  - Level 2: Technical support from the parent company
  - Level 3: Worldwide SIMATIC system specialists

### Services for industrial safety
- Comprehensive industrial safety services over the entire lifecycle
- Training & workshops on the subject of safety awareness
- Advice on safety concepts for the implementation customized solutions

### Process safety service
- Execution of safety analyses
- Functional safety management and safety lifecycle
- Evaluation of disturbance impacts
- Explosion protection concepts

### Lifecycle service
- Retaining existing functions of the DCS at minimal cost
- Project engineering and management of discontinued products
- Worldwide service infrastructure (SIMATIC) – regional service organization

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**Benefit**
- Increased plant availability
- Enhanced plant safety
- Investment security
- Reduced overall cost of operation
- Planned modernization & service costs
- Guaranteed spare parts & maintenance suitability

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**Level 1:** Regional technical support
**Level 2:** Technical support from the parent company
**Level 3:** Worldwide SIMATIC system specialists

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**SIEMENS**

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Underlying trends in the chemical industry

### Operational effectiveness

<table>
<thead>
<tr>
<th>Use of working capital</th>
<th>Process reliability</th>
<th>Lifecycle optimization</th>
<th>Environmental protection</th>
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### Workforce excellence

<table>
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<tr>
<th>Conservation of know-how</th>
<th>Training</th>
<th>Safety</th>
<th>Technology</th>
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### Social change

<table>
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<tr>
<th>Legal requirements</th>
<th>New economic realities</th>
<th>Supply chain management</th>
<th>Satisfying requirements on site</th>
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### Energy management

<table>
<thead>
<tr>
<th>Energy efficiency</th>
<th>Reliable power supply</th>
<th>Renewable energies</th>
<th>Alternative processes</th>
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Solutions and products for the chemical industry

**MAV and lifecycle concepts**
- Early involvement and coordination in international projects
  
  **Customer benefit:**
  - Lower input of time and money over the entire plant lifecycle
  - Reduced coordination effort through central point of contact and fewer interfaces between different manufacturers

**Laboratory automation**
- Automation of laboratory processes with SIMATIC PCS 7 LAB and management software SIMATIC IT

  **Customer benefit:**
  - Greater efficiency, quality, security
  - Complete information acquisition with process reproducibility
  - Shorter time-to-market from pilot to production scale operation

**Simulation**
- Open simulation platform for virtual commissioning
  - Support for process design/plant optimization
  - Software testing without an actual plant
  - Training of operating staff

  **Customer benefit:**
  - Efficient engineering
  - High software quality

**Bio-based solutions**
- Integrated automation and energy management for more sustainability
  - Plants for bio fuels (bioethanol, biogas, biomass, bioplastic)

  **Customer benefit:**
  - Production increase through standardized automation concept
  - Investment protection through standardization and modular, scalable solutions
### Solutions and products for the chemical industry

#### Plant and process security
- Sustainable automation solutions
- Integrated security technology through SIL 3 – safety shutdown and redundancy
- Improved diagnostics with "partial stroke" test
- Superior control procedures with APC

**Customer benefit:**
- Enhanced productivity and availability
- Greater efficiency and profitability
- Improved security

#### HMI+ and alarm management
- User-oriented visualization concept
- Alarm management
- Overviews with important process parameters

**Customer benefit:**
- Enhanced productivity
- Fast, reliable intervention in critical situations
- Improved quality

#### Production flexibility
- Flexible production processes, e.g. mixing with SIMATIC PCS 7
- Integrated, simple batch processes

**Customer benefit:**
- Plant / cost efficiency
- Production optimization through transparent material and storage location management
- Data archiving and reporting

#### Migration
- Plant modernization through flexible, customized migration solutions with SIMATIC PCS 7

**Customer benefit:**
- Improved economy of the lifecycle through step-by-step modernization
- Greater security and investment protection (TCO)
### Operational effectiveness

**LANXESS**

Considerable cost savings across a broad portfolio of products and solutions from automation (DCS, SIS) up to electrical (MCC, switchgears, compressor) in Butyl Rubber plant Singapore.

### Workforce excellence

**BASF**

Optimized operational economics through deployment of standard operation & control strategy, HMI+ across the entire plant network.

### Globalization

**WACKER**

Consistency in collaboration helped to transfer know-how from Germany to China. Each new production line standardized on electrical systems, process automation solutions and services.

### Energy management

**Dupont & Purac**

Bio-chemicals such as Bio-butanol are a considerable growth area and the best developing companies are consumed or partner with the largest chemical companies.

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**Rhodia**

Revamping projects in various European plants, development of migration solution and long term Lifecycle Services.

**Bayer**

Enhanced Lifecycle service contracts including extended scope of work and responsibility. Bayer and Siemens focusing on their core competences.

**Klüber**

Klüber will standardize on PCS 7 for all their 11 sites worldwide. Based on a library for global rollout is built based on APL and SIMATIC Batch.

**SHAS**

Diversification of feedstock base for petrochemical industry – Coal gasification-based projects as growing trend in Chinese market. Optimal integration of DCS and SIS solution.
Key trends in the pharmaceutical industry

**Regulations**
- Risk-based approach
- More patient protection
- Anti-counterfeit
- E-submission

**Social change**
- More people
- Getting older
- Less active
- More demanding

**Economic pressure**
- Empty pipelines
- Increasing costs
- More complexity
- Changing supply chain

**Market change**
- Preventive
- Personalized
- Predictive
- Participative
Proven solutions for the pharmaceutical industry

Small scale production
- Supports shift to more personalized drugs

Continuous manufacturing
- Less space, less capital cost, better quality control, increased flexibility

Serialization
- Improved supply chain security and control, leading to reduced counterfeiting risk

Optimized packaging line
- Reduced total cost of ownership (TCO)
Pharmaceutical solutions presented at the ACHEMA

Continuous manufacturing

- Siemens PAT Software SIPAT is a key element of continuous manufacturing
- Real time quality prediction of quality relevant parameters
- Modular & scalable architecture

**Customer benefit:**
- Right first time manufacturing
- Reduced time to market
- Reduced inventory

References:
- Wyeth Pharmaceuticals, Ireland
- GEA Pharma Systems / GlaxoSmithKline, UK

Customer proof by GEA
“SIPAT SW platform is the most evolved and integrated system on the market”

Flexible fermenter control

- Integrated PCS solution for a single-use bioreactor

**Customer benefit:**
- Low level integration of package units using standard products from the SIMATIC family
- Increased flexibility, allowing multi-purpose production
- Higher operating efficiency
Pharmaceutical solutions presented at the ACHEMA

**Serialization (solution)**

- Integrated supervision and tracking of pharmaceutical products
- Configurable solution based on standard components and open architecture
- Answers to global requirements

**Customer benefit:**

- Supply chain security
- Cost reduction in engineering and operation
- Global roll-out capabilities

**References:**

- EFPIA
- Pester
- Alcon Cusi S.A.

**Optimized production line**

- Integrated concept for automation of packaging lines based on common automation and communication standards

**Customer benefit:**

- Consistent standardization and easy integration save costs for integrations, training, maintenance and spare part handling
- Minimize energy consumption
Customer benefits for the pharmaceutical industry

<table>
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<tr>
<th>Increased innovation</th>
<th>Greater efficiency</th>
<th>Improved flexibility</th>
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<tr>
<td><strong>Johnson &amp; Johnson</strong></td>
<td><strong>GSK</strong></td>
<td><strong>CSL</strong></td>
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<tr>
<td>Broad range of collaboration areas developed in “Open Innovation” partnership between J+J and Siemens</td>
<td>Reduced process development time, increase quality, improved equipment efficiency, reduction of raw material and energy usage</td>
<td>Process optimization, production simplification, increased engineering productivity and reduced validation costs</td>
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Following the globalization of process industries and getting closer to our customers

Globally present, locally active

- Presence in 190 countries
- Industry-specific sales hubs
- Account management
- Engineering hubs
- Local cooperation with over 300 certified partners
Thank you for your attention.