zenon Operations Data Management
Information | Integrity | Insight

Christopher Hausmanns, Global Product Manager SCADA
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zenon Operations Data Management

In zenon, we do ABB Ability TODAY

Ubiquity: Information on any browsing device

Flexibility: on-Premises and offshore Cloud

1 – Field
2 – Control
3 – Supervise
4 – Plan Production, document, control Quality, KPI
5 – Plan production, handle orders, optimize
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The Product Family

- **ERP**
  - 1-Click-Connectivity with ABB, SAP- and Microsoft-ERP-Systems

- **MES/ Control Room**
  - Power- und Consumption Management (i.e. ISO 50001)
  - Advanced Reporting, OEE, KPIs

- **SCADA/ Control Room**
  - Supervision, Control, Data Management, A&E, Reporting

- **Local HMI**
  - Data acquisition, local and mobile access

- **Production/ Field Level**
  - Measure, control, actuate

1-Click-Connectivity with ABB, SAP- and Microsoft-ERP-Systems

- **zenon Analyzer**
  - Dynamic Production Reporting

- **zenon Supervisor**
  - SCADA Solutions

- **zenon Operator**
  - HMI Solutions

- **zenon Logic**
  - PLC Engine
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HMI features: Zoom
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HMI features: Two-Hand Operation
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HMI features: Pattern Login
Resolution Independence through Vector Graphics
Native Language Support

**System**
- 8 languages in zenon Editor
- Unicode-based

**Project**
- Online change of project and system language
  - Language, Font, Physical units
- HTML pages, Sound and Video, Online Help, Lists
- Runtime-Preview of project languages in zenon Editor
- Automatic creation of translation lists through wizard
- Project Translation Interface für translator and translation agencies
Switching skins dynamically
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Multi Protocol

300 Protocols and Drivers

More than 300 protocols natively supported
Smooth migration - start with SCADA then harmonize control
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Redundancy

**Flexible Redundancy**
- 100% data security
- Bumpless switchover

**(Non-) Dominant Redundancy**
- Simple Redundancy, symmetric servers

**Rated Redundancy**
- Redundancy based on service quality levels (connectivity, power quality)

**Circular Redundancy**
- Chains of n Redundant Servers
## Security

### System
- Code signing
- Gapless Change History
- Secure Audit Trail - FDA 21 Part 11 conformity
- Encrypted data storage and transfer
- Secure communication
- Storage in binary format
- Separation of applications and engineering
- Network supervision

### User
- Role Based Access Control on object level
- Single action Log-Over
- Two factor authentication
- Password policy
- Password stored encrypted
- User administration – Active Directory (AD LDS/ ADAM)
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Webserver
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Reporting
ABB Ability™ Integration
Certified Microsoft Azure IoT Hub Interface

Certified SAP interface
Direct SQL connect
OPC UA Interface
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Collaborative Engineering

- Single Engineering Tool
- Multi User Engineering
- Parametrize instead of program
- Object oriented engineering
- Strong library concept
- Template libraries
- Version Control
- Change history
- Backup
- Comparison

https://www.youtube.com/watch?v=ut7NW3aL74E
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Single Engineering Tool
zenon WAVE 2 Rollout
Supplier References
zenon WAVE 2 Rollout

One System – Many Industries

zenon WAVE 2 Rollout
Successful Customers: Automotive

AUDI  VOLKSWAGEN  BMW GROUP  FORD  DAIMLER
zenon WAVE 2 Rollout
Automotive: Success Factors

High performance drivers for S7 and TIA
Robot control
Hardware independent production HMI
Combining all technologies in a automotive plant: assembly, paint shop, building automation...
Horizontal integration with Multi-Project management
Seamless and circular redundancy
Reports- for production and performance management
FIS-, INTEGRA-, SAP-Connection
Perfect for standardization
zenon WAVE 2 Rollout

Food & Beverage: Examples and References
zenon WAVE 2 Rollout

Applications with zenon in a F&B Plant

Production
- Production Data Collection
- Batch Control
- Traceability reporting

Utilities
- Central Supervision
- Water and Waste Supervision

Packaging
- Classical HMI
- Line Management System
- Efficiency System / OEE

Entire Plant
- Energy Data Management
- Plant Reporting

Buildings & Infrastructure
- Building Automation
- Security Systems

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Company Confidential – Supplier Slide - Further information at www.copadata.com/references
zenon WAVE 2 Rollout

Food & Beverage: Success Factors

- High market penetration in F&B
- FDA CFR Part 11 compliance
- Connectivity with more than 300 drivers
- Hardware independence
- Parametrizing instead of programming
- Automatic engineering
- Extensive Recipe Handling and Batch Control
- Online language- and unit switch
- One Tool for HMI, Line Management, SCADA and Batch Production
- Company wide reporting for OEE and energy consumption
zenon WAVE 2 Rollout

Pharma: Examples and References

Further information at www.copadata.com/references
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Pharma: Success Factors

- Ready for FDA 21 CFR Part 11, GAMP Software Category 4/5, No Programming Knowledge necessary
- Secure access control with Active Directory connection and eSignatures
- Project version control and comparison, history of changes
- Solutions for HMI, Process Data Collection & SCADA
- Paper on Glass
- Batch S88 support for the process area
- Transparent lot- and batch reports
- Easy and standardized data exchange to other systems like PI from OSI
Excursus: Building Automation and EDMS

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Success factors: Building automation and EDMS

Scalable solution for all medias
Cover different areas such as building automation, EDMS, load management, scheduling
TÜV certification for ISO 50001:2011
Support of typical drivers such as BACnet, EIB, KNX, M-Bus, OPC, Modbus
Display data where it is needed (native, Web, HTML5, SMS, E-Mail, Cloud)
Multi Monitor applications
Future oriented strategies in terms of product compatibility
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Automation Solutions - Successful Customers

TEXAS INSTRUMENTS     LG INNOTEK     SAMSUNG ELECTRONICS

HYUNDAI ROTEM         GOODYEARDUNLOP   PHILIPS       SWAROVSKI

IMPERIAL TOBACCO      VOESTALPINE     KUKA ROBOTER
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Get started with zenon
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zenon is known and grown in Food and Beverages
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Applications with zenon in a F&B Plant

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Entire Plant
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zenon makes our customers value chain transparent

Certified ISO 50001 Energy Management System
Overall Equipment Effectiveness
Freely definable KPIs
Alarm Management
Realtime Management Dashboards
Extensive production data analytics
Audit Trail
IoTSP from machines to multi factory
Batch and recipe handling – ANSI/ISA–88.01 compliant
Equipment Model – ISA S95 compliant
Production Scheduler
FDA CFR 21 Part 11 compliant
GAMP 5 compliant
Weihenstephan pack and food standard compliant
Certified SAP ERP interface
Certified MS Azure interface
Paper on Glass Technology for Digital Process Documentation
Connectivity through more than 300 native protocols and drivers
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Value proposition

Transparency
- Energy efficiency > reduce operations cost
- Productivity > increases output

Connectivity

Security
- Food safety (Audit Trail)
- Tracking and tracing
- Real time ERP integration

Information (Connectivity)
- Integrity (Security, Redundancy, Quality control)
- Insight (Energy efficiency, OEE, ...)

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Value Chain - schedule, supervise, control, report and optimize

Flexibility: on-Premises and offshore Cloud

Ubiquity: Information on any web device

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Operations Data Management/ Control Room

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Dynamic Production Reporting

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HMI Solutions

zenon Logic
PLC Engine
Machine and Line Control

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Brownfield – zenon as multi-protocol gateway

- Cloud Data
  - customer services
- ABB Ability™
  - Cloud Data
  - ABB services
- ERP
- MES
- Line
- Machine
- HMI
- HMI
- HMI
- HMI
- ERP
- ecS
- On-premises/cloud
  - Business and Base Data
- On-premises or cloud
  - Production Data
- On-premises
  - Operational Data & Historian
- zenon as data router
- Engineered interfaces
to all controllers
(network / fieldbus / discrete I/O)
- 300 protocols to start with
- Filler
- Buffer
- Straw
- Shrinker
- Packer
- Palletizer