



# WinCC OA User Days Amsterdam 2017

Report on keynotes/roadmap based on  
event's slides available in ETM Portal

Piotr Golonka, CERN BE/ICS-SDS  
22 May 2017



- Participants: Jean-Charles, Lukasz, Rafal, Piotr
- Plus some friends...
- Venue: Renaissance Hotel, Koepelkerk
  - 17-century old Luteran church
  - Concert hall with impressive organ



# Pre-event: Inner Circle (ICP)

- Brief on what will be presented next days, with demos
- Working groups on topics of interest
  - Alarm system evolution
    - Clearly the same problematics and needs
    - Likely topic for collaboration with CERN
  - Static Code Analysis (followup of Eclipse IDE)
    - „Fresh“ topic yet programmer-aids would be welcome
    - To be followed up further



## Alarm Enhancements

- Delay Alarm (TS after delay, delay in secs)
- Alarm in-action notification
- Shelving IEC 18.2.2009  
perminate vs one-shot
- Alarm Pick user name vs. ID #
- Alarm Filter performance
  - Too Big data fail - get in pieces
  - Filter on user bits
- Alarm on quality/user bits
  - new tab on Alert Handler
- Alarm List/View easier config
- Allow more than 1 alarm config per View

## STATIC CODE ANALYSIS

- "POWERFUL IDE", "BETTER GEDI"
- CODE-QUALITY CHECKS
  - "AS YOU TYPE"
  - ON DEPLOYMENT
  - METRICS OF QUALITY OF LARGE CODE BASES

1) ETM KEEPS ENHANCING GEDI SCRIPT EDITOR  
~~POSSIBLY~~ POSSIBLE WITH NEW RULES

2) ETM

- A) opens the editor
- B) maintain SPEC of the language (library? API?)  
→ USERS COULD ~~HACK~~ HOOK THEIR OWN TOOLS
  - e.g. VS CODE, ECLIPSE, ... IDE
  - e.g. SonarQube, ... code-line syntax checkers with powerful rules

Delivered by already existing tools.  
GEDI WOULD USE THE SAME SPEC/API TO DO CODE-HINTING AND ~~BUILT-IN~~ BUILT-IN SYNTAX CHECK

## Program of first day

### **Morning - WinCC OA keynotes**

- News about WinCC OA

### **Afternoon – Partner present their WinCC OA projects**

- Automation enables integration of water supply chain in Zeeland
- Multiple production plant integration
- Virtual Sea Lock - Simulation for test and design
- WinCC OA as the SCADA system for Hydroponics Growing Facility
- Smarter engineering @ Siemens Mobility

# Second Day

- Workshops
    - What's new in WinCC OA
    - Design tips for WinCC OA application
    - SmartSCADA – seamless data analytics with WinCC OA
    - Meet the Management
    - OOP Quick Start
  - Reference presentations:
    - Industry 4.0 system for petrochemical terminals (CleverDist, former CMS)
    - Remote Control operating system for large cranes
    - CBI Amsterdam metro project in combination with Amsterdam by bike
- 

# Mobile event service - Question tool

etm.at C



SIEMENS  
Ingenuity for life

WinCC OA User Days  
Amsterdam, 2017

Welcome to the mobile event service 2017!

Ask now!

Emergency contacts

List of attendees

< > Up Bookmarks

etm.at



SIEMENS  
Ingenuity for life

WinCC OA User Days  
Amsterdam, 2017

Submit your questions here, please!

Your question:

Select category:

General

Type & select your name:

## Questions & Answers

C# driver?  
Anonymous  
General 11.05.2017 16:49:30

What is planned for SIMIT communication?  
Anonymous  
Keynote 11.05.2017 16:48:36

Any enhancements planned about gedi panel designer and script editor ? Please think to developers :)  
Anonymous  
General 11.05.2017 16:46:38

## Partner mini fair



**Demo application of a fast cycling gas storage system**  
Industry: Oil & Gas – Gas storage



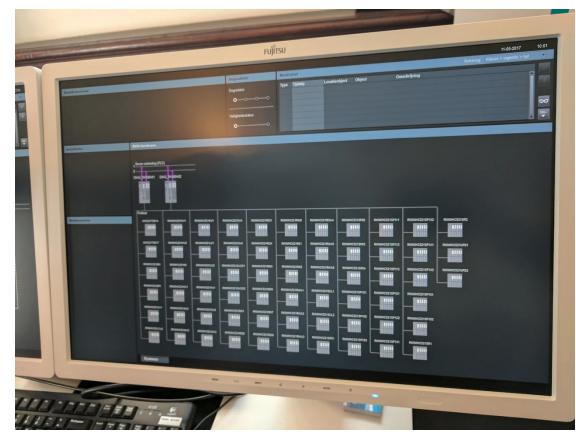
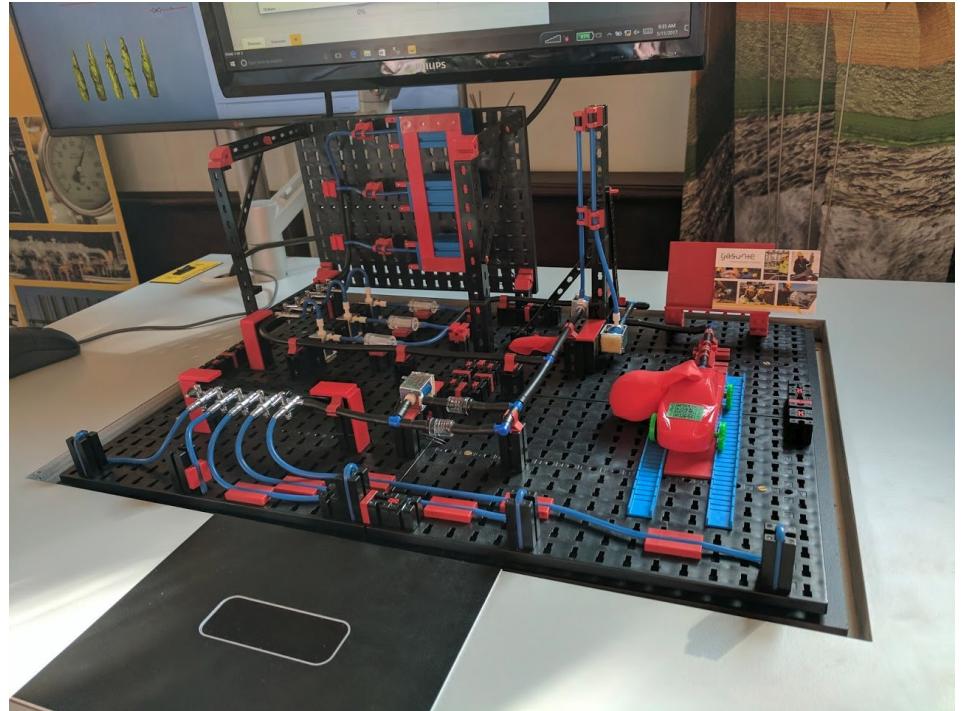
**Project CBI – Central control for the Amsterdam Metro**  
Industry: Traffic & Transport – Metro



**Customized SCADA products for different industries**  
Industry: Oil & Gas / Building Automation

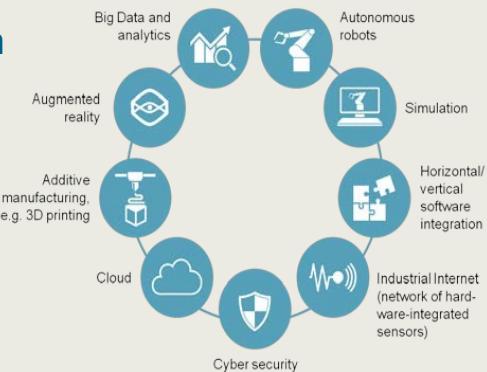
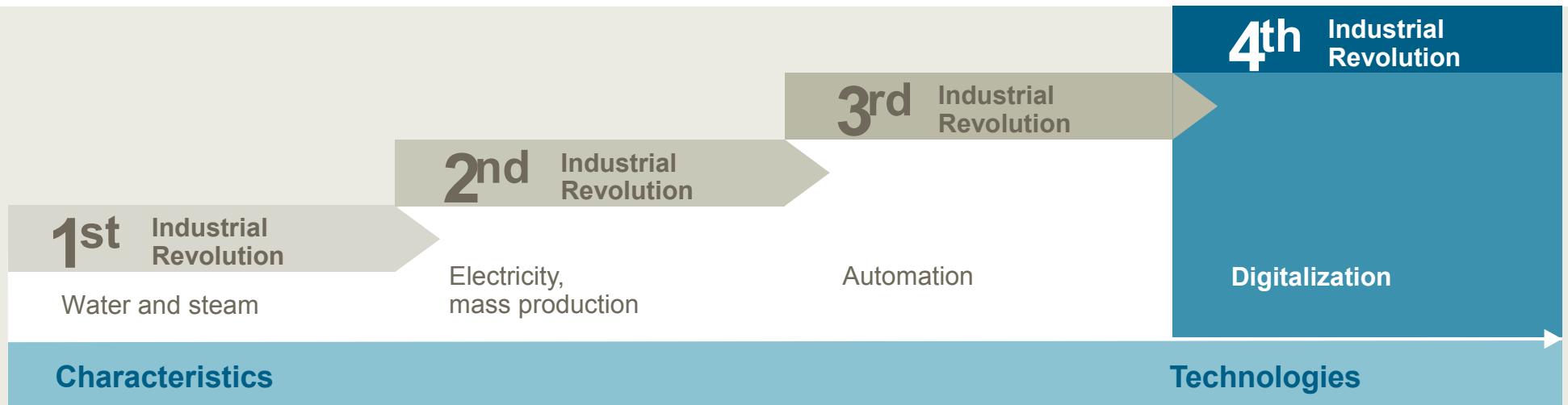


**Demo application Industry 4.0 – in cooperation with the  
Fraunhofer Institute**





# Phases of the Industrial Revolution



"Industrie 4.0 basically takes the cost of scale close to zero."



# 10 Years with Siemens

SIEMENS

## Everything started with the Subway New York

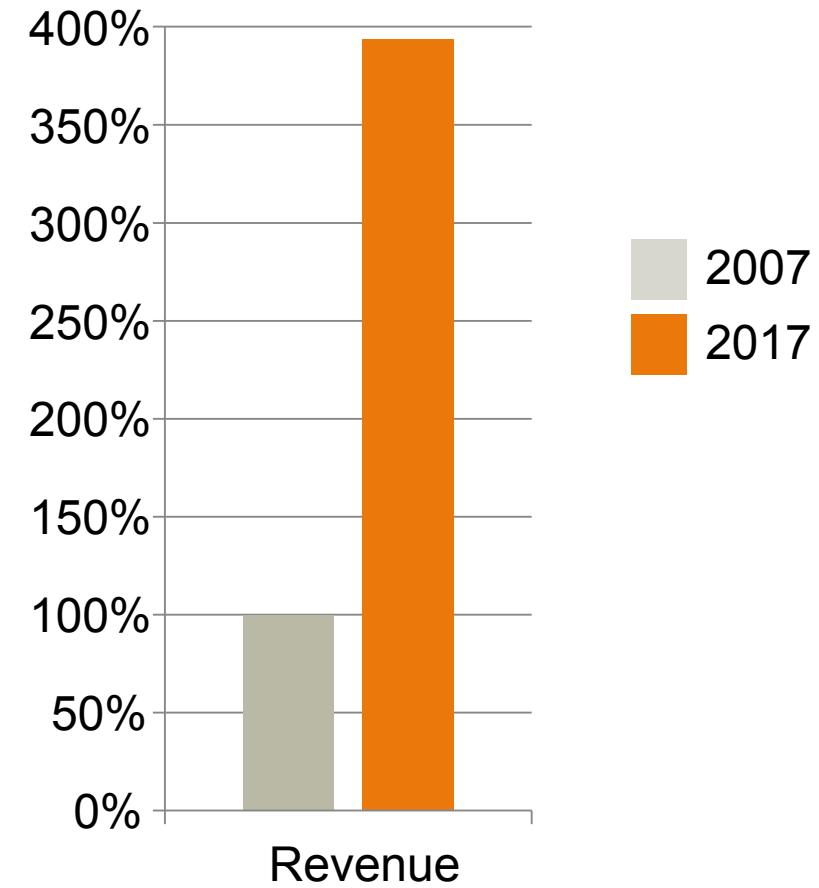
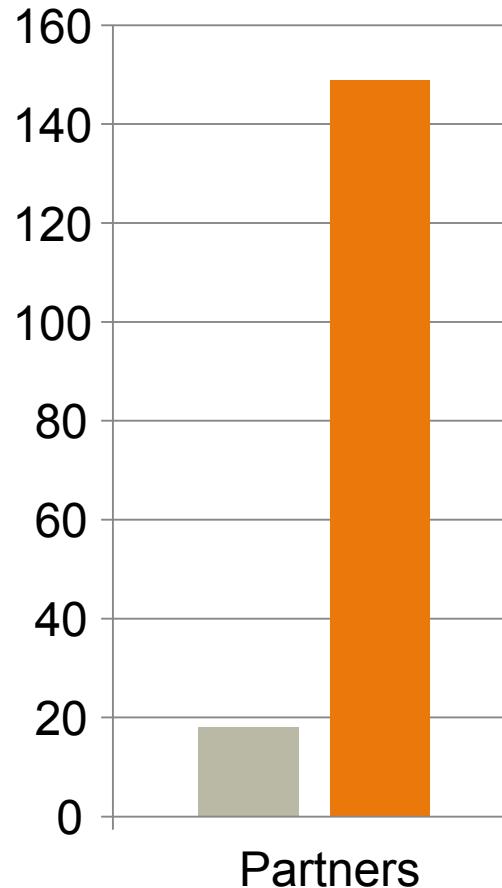
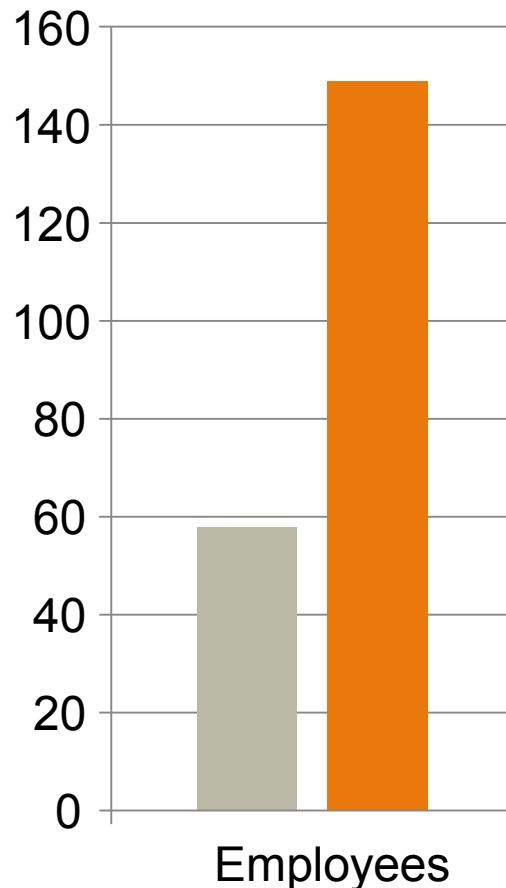
- Millions of tags
- Hundreds of servers

... and it worked already in 2007



PA/CIS for New York  
subway

## Some figures

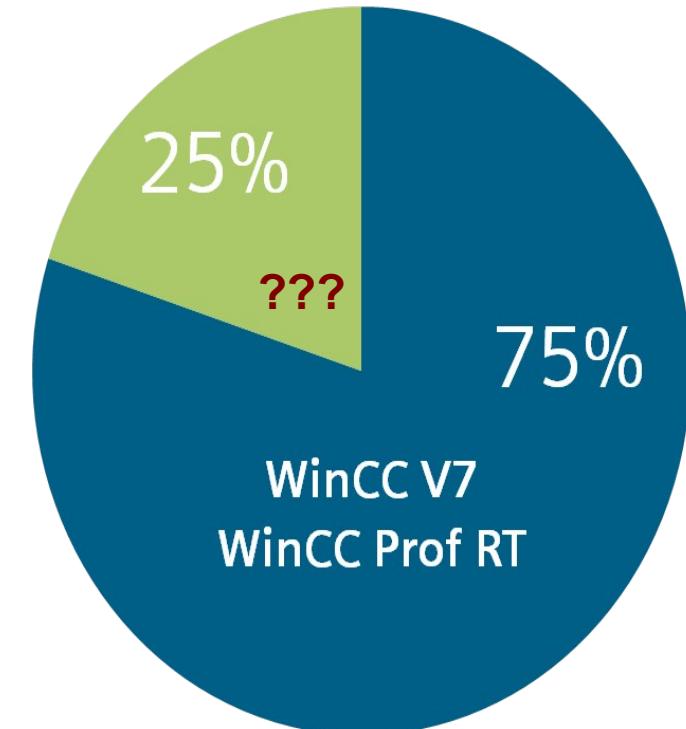


## The Success Story continuous

### Volume Growth



WinCC OA is 25% of  
SIMATIC SCADA business



# New Solution Partners



NORTHROP GRUMMAN  
Sperry Marine



AKATT

ICT<sup>+</sup>



CROC



ITECH515  
IT & reliability

oasys  
Outsourcing Automation Systems

SIGREN  
ENGINEERING AG

STING.NU



InfraSoft  
SOFTWARE & AUTOMATION PROVIDER

electro croon polska

Акционерное Общество  
«СибКом»

Vertech<sup>o</sup>  
TAKE CONTROL.



# Control System for world 4<sup>th</sup> longest suspension bridge



## IZMIT BAY BRIDGE (2,9km /242m)

- Redundant Server
- 60,000 I/Os
- Lighting
- Structure monitoring
- Dehumidification
- HVAC, Fire and Access control
- Power management



SIEMENS

UniCom  
25. Yıl

## Tunnel Control System for world longest rail tunnel (57km)



### Gotthard Base Tunnel

operative since 11<sup>th</sup> December 2016

- Redundant Tunnel Control System
- Disaster Recovery System
- Oracle database cluster
- OPC UA as common interface
- Interface to other 3<sup>rd</sup> party systems



SIEMENS



SBB CFF FFS

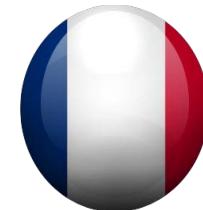
## Building Management

# Control System for Paris Train Station



## Gare Montparnasse

- Control of energy, lighting, escalators, elevators, temperature, entrances/exits and many more
- Redundant server pair
- Oracle Long-term historian



# **News about SIMATIC WinCC Open Architecture**

**Lukas SCHOPP**

Head of Product Management WinCC OA

## SIMATIC WinCC Open Architecture

WinCC OA  
3.15 Update

Released  
January 2017

Research &  
Development

WinCC OA  
3.16 &  
Roadmap

## Updates

Object Oriented Panels

3.15 P3

JavaScript

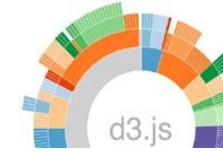
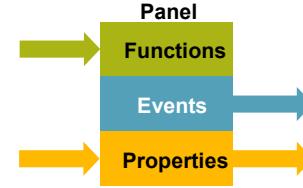
3.15 P3  
Beta

Windows Server 2016

3.15 P3

BACnet certification

3.15 P4



Windows Server 2016



## „Top 5 Features of WinCC OA V3.15“

CTRL++

OOP

Layout Management

SmartSCADA

S7 Plus

OOP & Ctrl++  
Workshop

## Research & Development

Usability &  
Teamwork

No SQL

Security

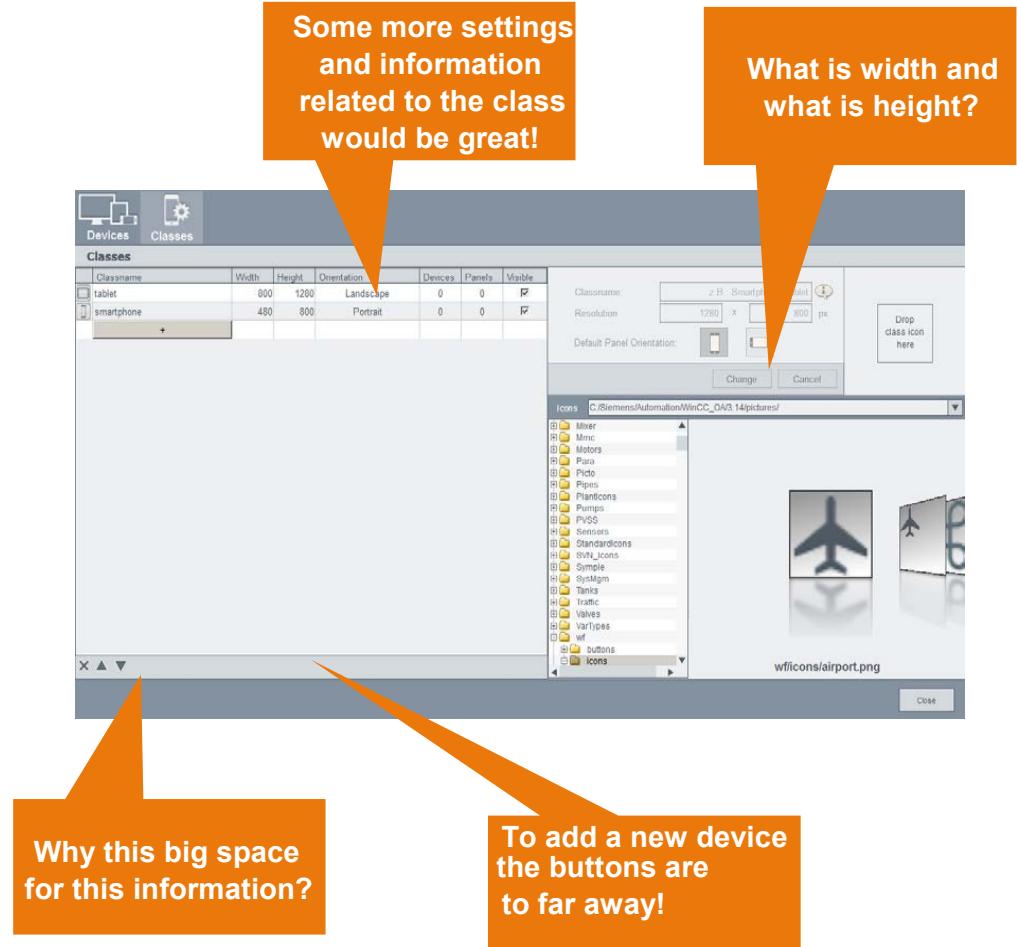
## Usability Tests @ User Days

Get feedback to design

Get feedback to workflows

Get feedback on user experience

This year focus on engineering



## Demo - Fraunhofer collaboration

Modern Look & Feel

Mobile devices

Supervisory &  
Operation

Plug & Play



## Notifications

SIEMENS

Get alarms

Communicate with  
your plant

Notification Bot

Chat with other  
operators

WinCC OA Notification Bot

Demo LIVE



Source: Microsoft Bot Framework

# R&D and Security news on WinCC Open Architecture

**Elisabeth BAKANY**

Director WinCC Open Architecture

## R&D and Security news around WinCC OA

### SmartSCADA Workshop

- Seamless Data analytics in WinCC OA

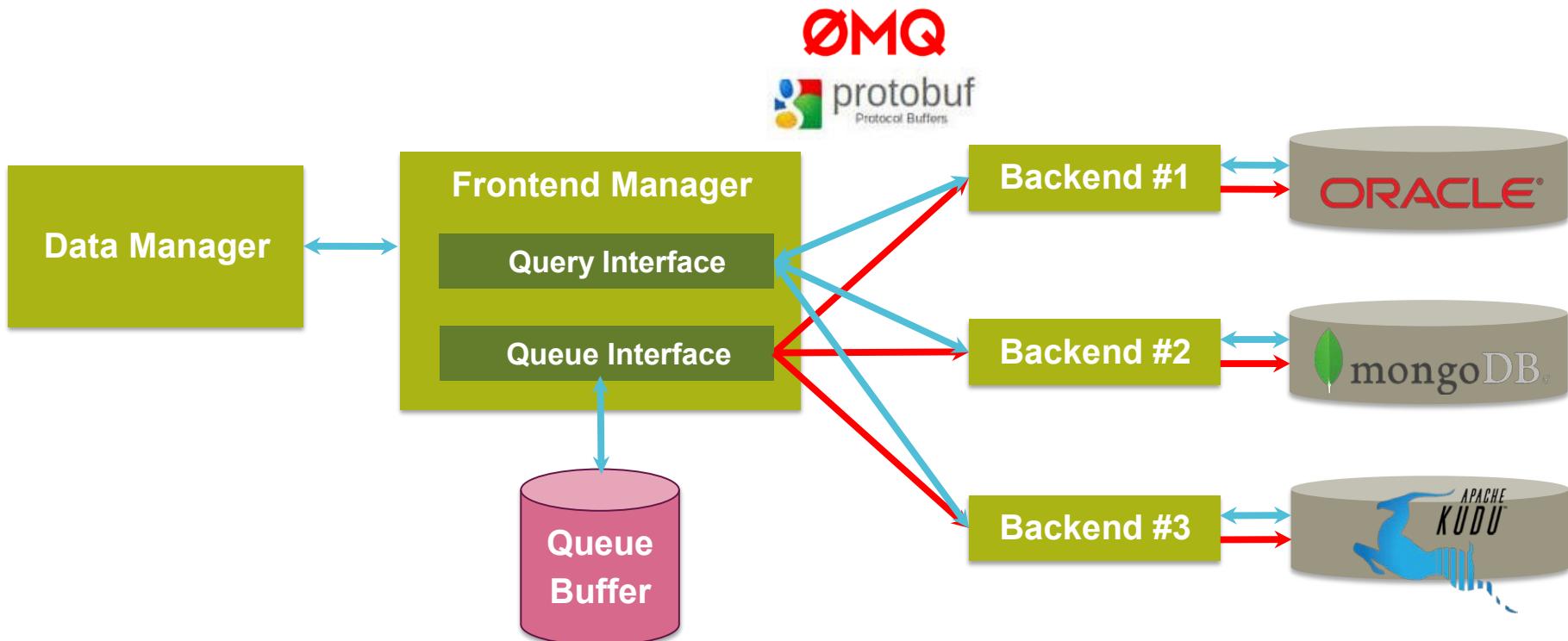


### NoSQL Archiving

- Prototype with CERN
- Evaluation of DBs

### Security

- Security Guideline
- Threat and Risk Analysis
- IEC 62443



## Prototype together with CERN

- Write value changes
- Frontend buffering (if DB not available)
- Kudu backend (by CERN)
- Mongo DB backend (Java prototype)
- Oracle backend with RDB compatible DB schema
- Backend template for easy creation of new backend
- Basic historical event queries (DPEs, from, to)
- Windows and Linux

**Compared Databases:**

- MongoDB (NoSQL)
- MySQL (Relational)
- PostgreSQL (Relational)
- SQLite (Relational)
- ElasticSearch (NoSQL)
- InfluxDB (NoSQL)
- Cassandra (NoSQL)

**Criteria:**

- OS / licensing / support
- Popularity
- Integration (installation, API, access)
- Data handling (data model, segmentation,...)
- Scalability (footprint, redundancy, sharding,...)
- Performance (read, write, resources used)
- Maintainability (backup / restore, security, tools)



elastic

InfluxDB

# WinCC OA Protection Goals & Guideline

**etm**  
Professional Control

**Security Guideline**  
**SIMATIC**  
**WinCC Open Architecture**  
Version 3.15

Preamble  
Targets  
Guideline  
References  
Definitions  
Strategic  
Guidelines  
Implementation  
Security  
Security  
Glossary

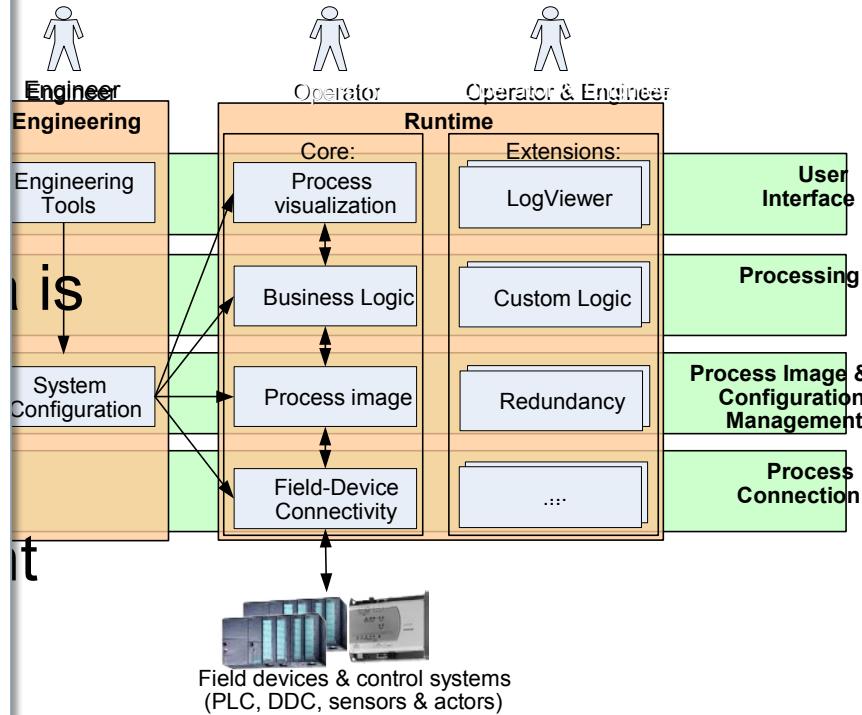
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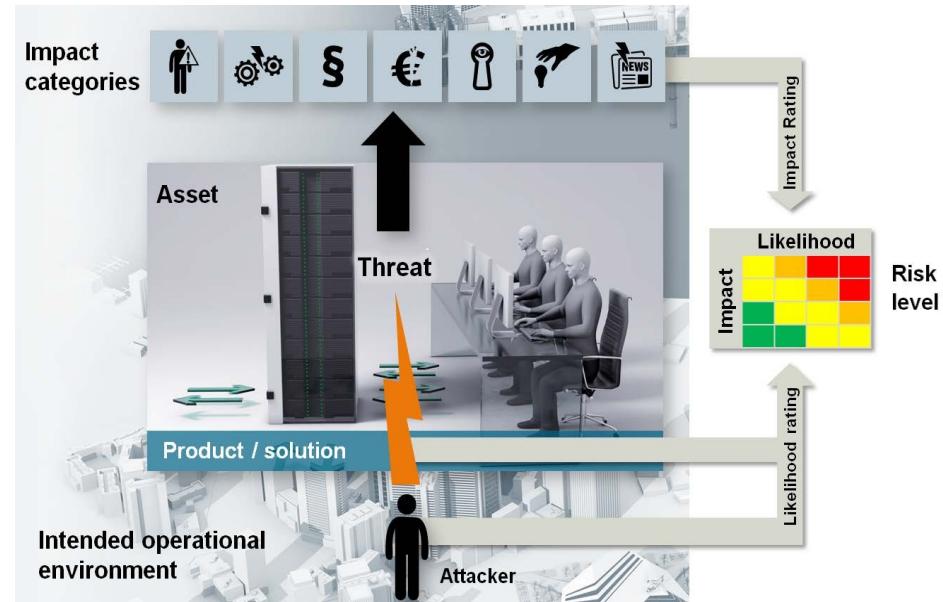
03/2017

WinCC Open Architecture Security Guideline



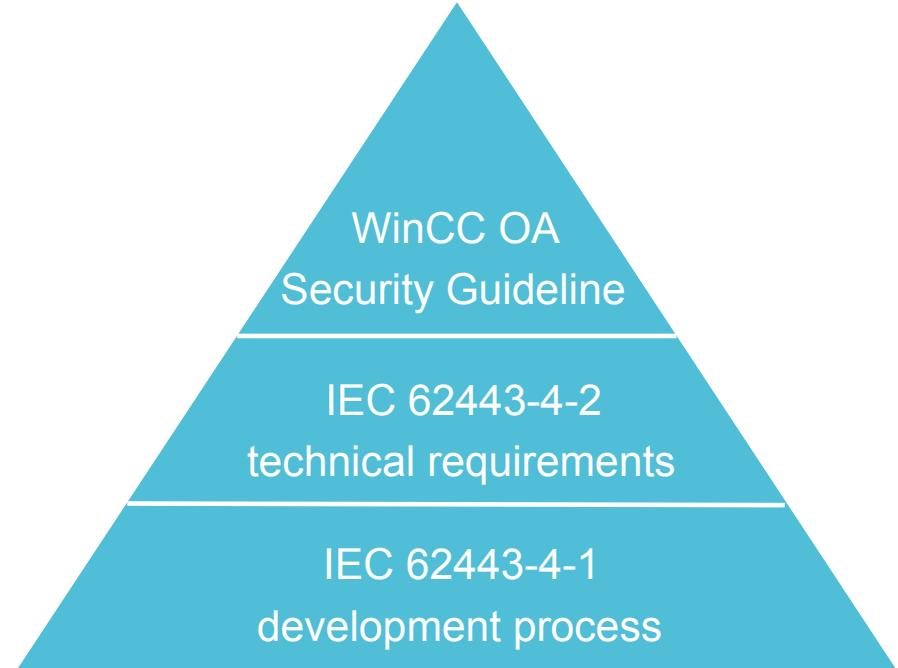
## Threat & Risk Analysis (TRA)

- Technical review of WinCC OA developments by Siemens security experts
- Discussion of weaknesses, risks and counter measures
- Follow up on tasks of previous TRAs
- Since 2013 for every WinCC OA Version
- Penetration tests



## IEC 62443 ongoing plans for WinCC OA

- Siemens-internal assessment of development process vs. IEC 62443-4-1
- **IEC 62443-4-1** certification is targeted
  
- Evaluation of product gaps regarding **IEC 62443-4-2**
- Concepts how to close those gaps
- Effort estimations and planning for the next years / WinCC OA versions
- **IEC 62443-4-2** certification is targeted



**Further certification possible by system integrator and asset owner**

# News about SIMATIC WinCC Open Architecture



**Lukas SCHOPP**

Head of Product Management WinCC OA

## Wishes from V3.15 update trainings

Modern trend

Multiple gestures

User interface

Enhanced OOP & CTRL++

SmartSCADA  
enhancements

Business logic

Other databases

OPC UA certification

Driver & Core

S7Plus Alarming &  
Importer

Longer release  
cycles

Roadmap & Delivery

Features not only in  
new versions

More bug fixes

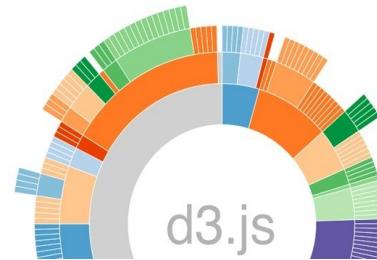
Continuous  
delivery

Official release

Use on mobile devices

Reuse of multiple  
JS libraries

Connect JS with  
WinCC OA



d3.js  
Data-Driven Documents



## Trend 2.0

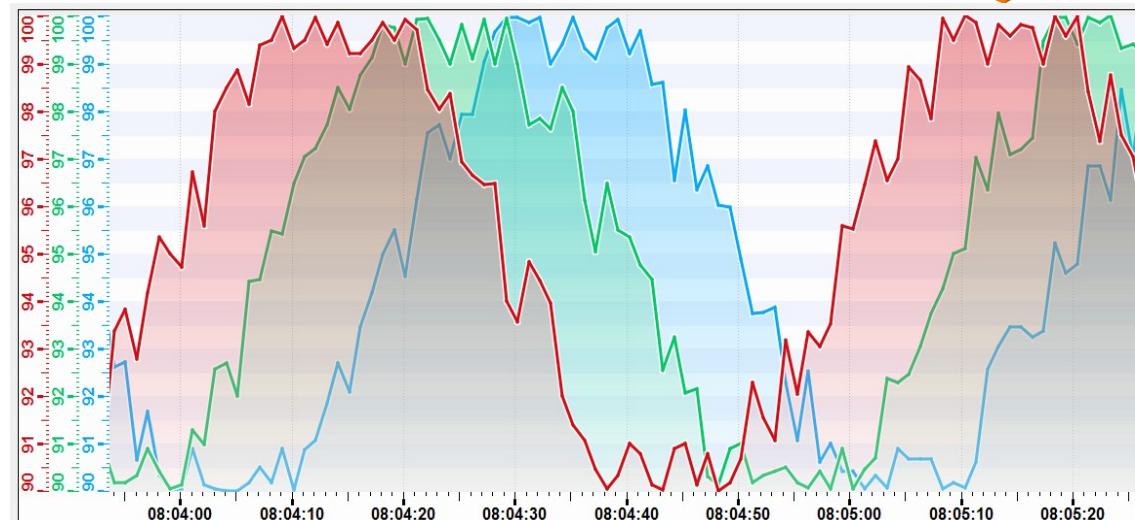
Preselection Trend

Customize ruler popup

Event curves

Custom markers

... and more



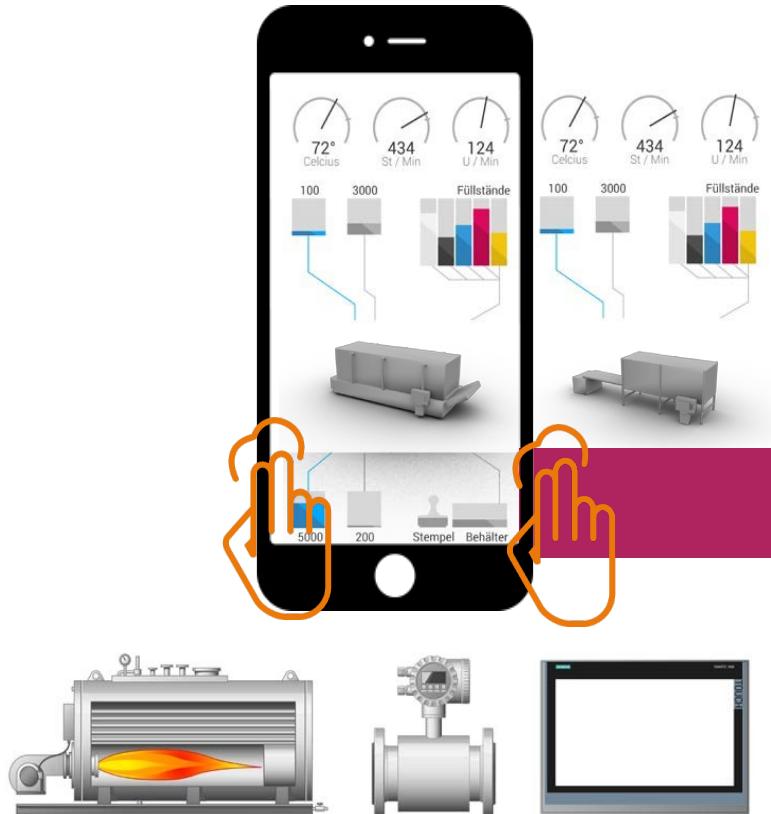
## Other user interface enhancements

Global gestures

Panel flipper

Chart EWO

Siemens  
Industry Library



Program alarms

System alarms

Full text alarms

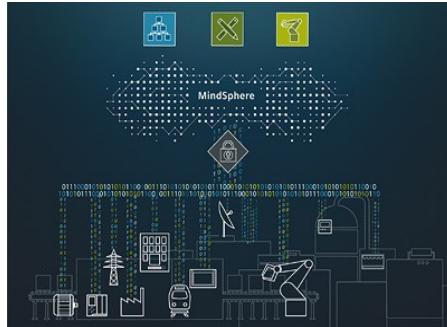
Simple TIA Importer



MindSphere Connector

MQTT client

SIMATIC IOT2000  
support



Security updates

Server side  
authentication

## Wishes from V3.15 update trainings

Modern trend



Multiple gestures



User interface

Enhanced OOP & CTRL++

Evaluation

SmartSCADA  
enhancements

Feedback

Business logic

Other databases

Research

OPC UA certification



Driver & Core

S7Plus Alarming &  
Importer

Longer release  
cycles

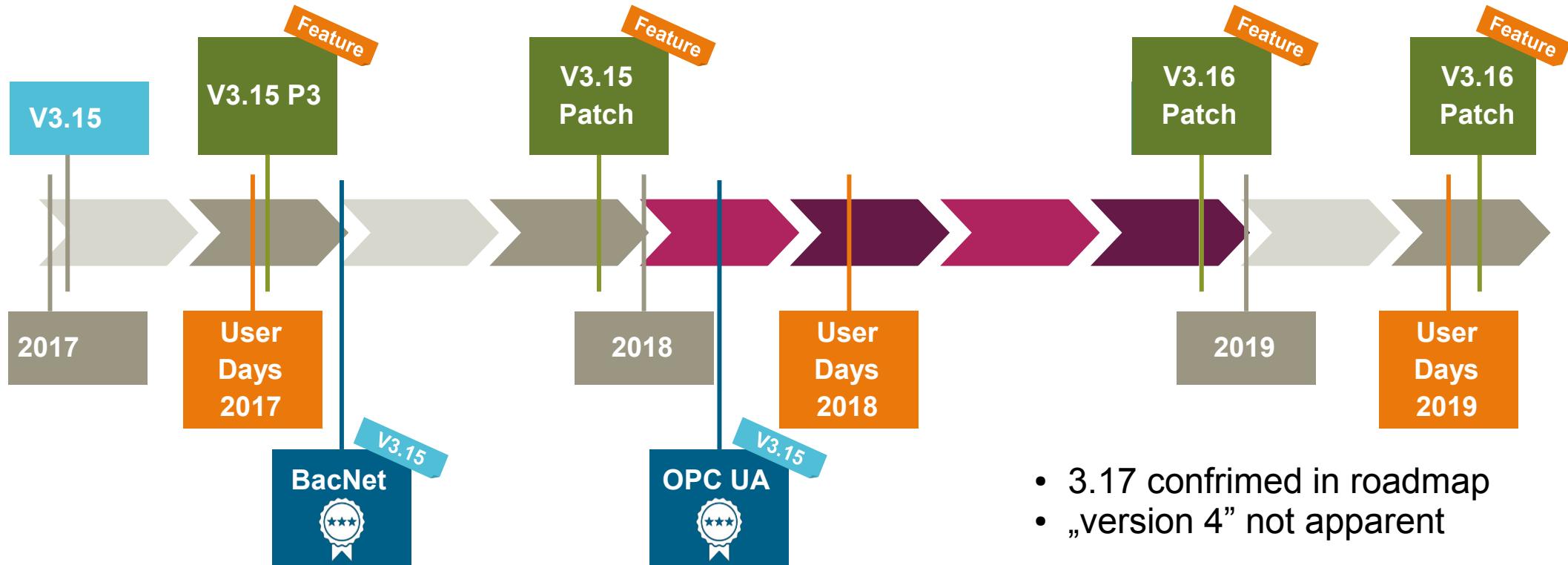
Roadmap & Delivery

Features not only in  
new versions

More bug fixes

Continuous  
delivery

# Roadmap



# Roadmap & early feature delivery

Release OOP

JavaScript BETA

V3.15 P3

Available  
End of May 2017

Trend 2.0

S7 Plus Alarming &  
Importer

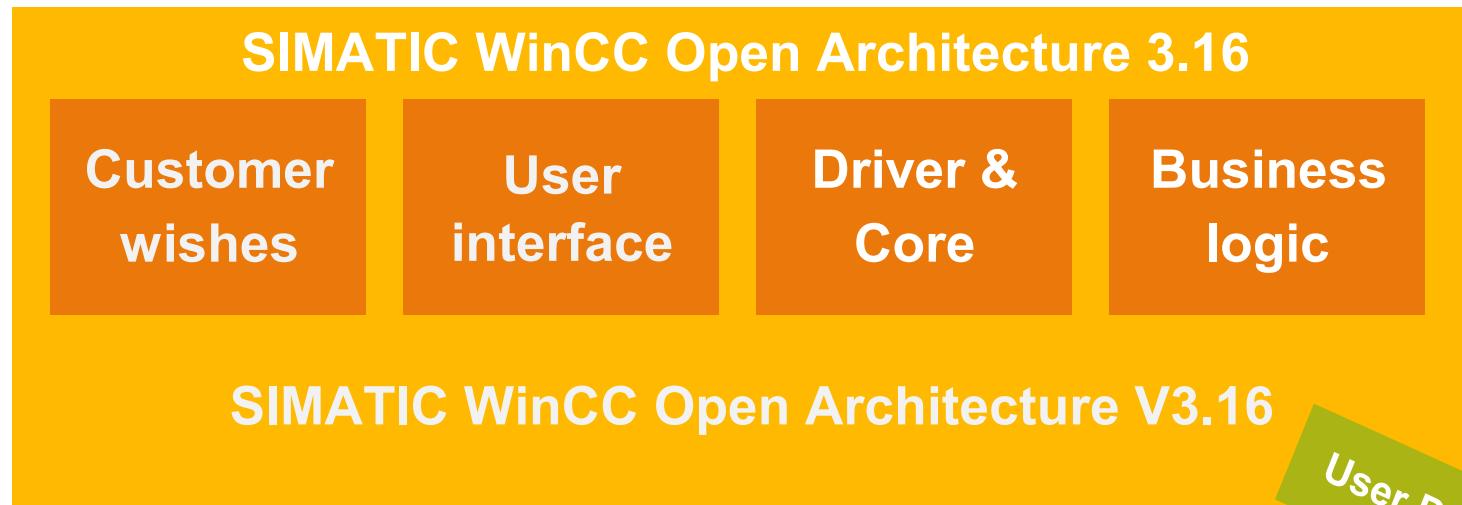
Release JavaScript

...

V3.15 Patch

Available  
SPS IPC Drives 2017

# Roadmap



User Days 2018

