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2022

SIMATIC
WinCC Open Architecture

siemens.com/wincc-open-architecture

WinCC OA
Open platform

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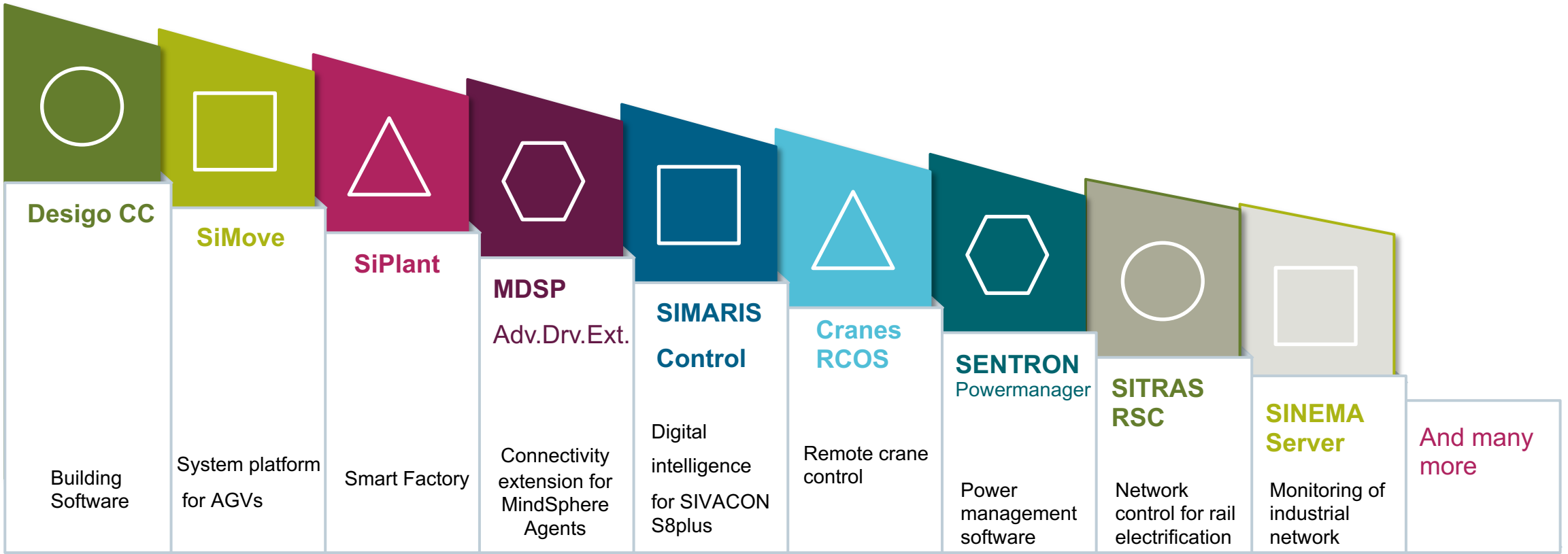

WinCC OA
Openness / Multi Platform / Scalability

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Openness

- +30 years of experience, +300 partners working on 50 countries and +12.000 projects

Natively multiplatform

- Supported **Operating Systems (OS)**:
  - Servers: Microsoft 11, CB, LTSC, Server 2022, Linux RedHat 9, Oracle® Linux 9, Debian 11, SIMATIC Industrial OS 3.2.3, Docker 20.10.14, VMWare 7.0.3g
  - Clients: Microsoft, Linux, *Android, iOS,* Web (Edge, IE, Firefox, Chrome)

No version update required

- Supports projects with servers and clients implemented with **different** OS and/or product versions

Scalability

- The same product can be used on small systems as well as huge systems (for example, from an **IIOT** to a high-performance **multi-core** server)
- From 500 Data Points (Tags) up to unlimited (biggest reference **+40 million),** +30 references with more than 1 million Tags.
- Distributed architectures up to **2.048** Servers in one project
- Historian capable of storing 1 million records per second. It supports ***Influx, ORACLE, PostgreSQL, MS SQL Server*** and **Custom DBs**.
- Using the default Influx data base license **does not limit** the number of historical alarms and/or trends

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High availability

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Avoid downtime

- Online project design: no need to stop and start the system due to changes / extensions
- No waiting for the compilation of the project
- Redundancy - less influence if hardware fails
- Provides database and real-time project data redundancy (plus store & forward)

Reduce repair time

- Disaster Recovery: possibility to configure a mirror control center kilometers away from the main one
- Online Backup - Ensure accurate system backups are available in the event of total system failure

Distribution

- Supports installations in virtualized environment
- Supports cloud-based installations (MS Azure, Amazon, Aruba, etc.)
- Projects distributed in WAN (Wide Area Network)

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Reliability

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Projects quality

- ***Object-oriented*** programming
- ***Online and multiple*** development environment (possibility to encrypt the source code)
- Integration of source code management (versioning of projects e.g.: CVS, SVN, GIT)
- Development environment can be ***published in the application*** in real time (modifying it with the tool itself, it does not require programming or API)
- Tools for code testing and debugging

System quality

- System self-monitoring
- System diagnostic tools

R&D Quality

- Product certified according to ***ISO9000*** - Developed based on a quality management system
- Certified to ***IEC 61508*** - Quality system prevents systematic errors
- Tested and certified modules for additional functionalities (playback, maintenance, video, KPI, etc.)

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Security & Safety

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Certifications

- TUV approved that WinCC OA functions, software development processes and supporting documents comply with the ***IEC 61508 SIL3***
- WinCC OA meets the Category C and Class 3 requirements of ***IEC 62138*** (Nuclear Power Plants - Safety Important Instrumentation and Control Systems)
- Complies with ***IEC 62443*** **Cybersecurity** to be used in infrastructures defined as critical

Industrial security concept

- Maintaining control over operations and processes has the highest priority in automation.
- The "WinCC OA Safety Guide":
  - Ensures that only authenticated users perform authorized (permitted) operations on authenticated devices based on their assigned usage roles.
  - Recommends the use of currently available security mechanisms for this purpose.
  - Facilitates cooperation and interaction between organizations' network administrators (IT administrators) and automation networks.

WinCC OA References

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Mobility

- Metros: New York (***15M*** de Tags), Istanbul, Sidney, Hong Kong, Munich, Vienna, Valencia, Barcelona, Madrid, Sevilla, Málaga, Bilbao…
- Trains: Hamburg, Dresden, Bergen, AFF (Florida), Maramraj (Tukey), ÖBB (Austrian Federal Railways)
- RZD (Russian Railways), SBB (Railway Switzerland)

Industrial / Logistic / Retail

- Navantia: shipyard Integration between PLM (Product Lifecycle Management) and field data.
- Voestalpine globally leading steel and technology group
- bonÁrea: 600 centers between supermarkets, gas stations, slaughterhouses and restaurants.
- Sartorius: biotech machines manufacturer

R&D

- CERN: the largest machine created by humanity, a total of **43M** Tags, consumes 1.3 Tera watt/h. The product is used by 250 centers ***760*** researchers from 30 countries
- ITER: Nuclear fusion reactor prototype, the world's largest innovation participated por China, EU, India, Japan, Korea, Russia, USA (iter.org)

Utilities

- HERA: main distributor of water, gas and electricity in Italy, ***10.600*** remote plants connected with a DRS control centers
- Canal de Isabel II: The main water manager in Spain (project in progress)
- Gazprom, CLH, Transneft (largest Oil Pipeline Network in Russia (80,000 km)), : Hydrocarbons distribution and storage