Factory Automation
Svibanj 2020.

© Siemens 2020
siemens.com/simatic
Klik na mikrofon
Razvojni alat, softver
WinCC Unified will expand over the next years in parallel. In the long-term, the HMI & SCADA Portfolio in TIA Portal will be based on WinCC Unified.
Increase of production data
The amount of data generated annually will increase by five times until 2025. (175 Zettabyte)

Increasing number of devices and systems to connect
Gartner IT forecasts that the number of IoT devices will reach 25 billion by 2021

Upcoming user interaction scenarios
Expected sales of virtual reality equipment by 2022: 26.7 million devices (0.8 million in 2018)
If you want to master this change you have to deal with…

These topics define the requirements for the HMI systems of the next decade.

Web Technology
Scalability  Manufacturing IT  Collaboration  Object orientation
SVG  Device independency  Openness  Plant Intelligence
Engineering Automation  One Engineering  Everywhere Access
On Premise  Data Backbone  HTML5  Usability
IT-Integration  Edge computing  Connectivity
Digitalization  Cloud Connectivity
WinCC Unified is fit for today’s HMI and SCADA applications, but also ready for future scenarios in the digitization context (e.g. Augmented Reality or Edge technologies).
We meet these requirements with the new WinCC Unified system!

Technology
- Native Web Technology HTML5, SVG, JavaScript
- Device independent
- Object oriented – HMI

Scalability
- One Engineering
- Unified Comfort Panels
- WinCC Unified PC
- Collaboration

WinCC Unified in TIA Portal

Everywhere
- On Premise
- Unified @Cloud
- Unified @Edge
- MindSphere Apps

Integration
- Basis for Digitalization
- Plant Intelligence
- Integration Platform for everything north of the PLC
- Openness
## WinCC Unified V16
### Plant Intelligence Options

<table>
<thead>
<tr>
<th>Plant Intelligence Options</th>
<th>Description</th>
<th>Unified Comfort Panels</th>
<th>Unified PC Runtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar¹</td>
<td>Calendar-based administration of events and schedules</td>
<td>[ ]</td>
<td>✓</td>
</tr>
<tr>
<td>Performance Insight¹</td>
<td>Visualization and analysis of asset performance with KPIs and time/state model</td>
<td>[ ]</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plant Intelligence Options</th>
<th>Description</th>
<th>Unified Comfort Panels</th>
<th>Unified PC Runtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Coordination¹</td>
<td>Coordination and synchronization of machines/units via recipe-controlled procedures</td>
<td>[ ]</td>
<td>✓</td>
</tr>
<tr>
<td>Sequence Execution¹</td>
<td>Flexible arrangement of automatic steps within the production process including manual interaction</td>
<td>[ ]</td>
<td>✓</td>
</tr>
</tbody>
</table>

¹ Technologischer Hierarchie is mandatory

Available ✔️  Available (limited) ✔️  In work ✗  Not available ✗
## PC-based systems – Integration – Plant Intelligence Options

<table>
<thead>
<tr>
<th>Plant Intelligence</th>
<th>WinCC RT Adv. V16</th>
<th>WinCC RT Prof. V16</th>
<th>Unified PC RT V16</th>
<th>WinCC V7.5 SP1</th>
<th>WinCC OA V3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Performance Calculation (OEE)</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sequence Execution(^1)</td>
<td>✗</td>
<td>✗</td>
<td>✓ Q2 2020</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Line Coordination</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

\(^1\) via special sales release

Available [✓]  Available (limited) [✓]  Not available [✗]  Work in process [✓]
# PC-based systems – Technology

<table>
<thead>
<tr>
<th>Technology</th>
<th>WinCC RT Adv. V16</th>
<th>WinCC RT Prof. V16</th>
<th>Unified PC RT V16</th>
<th>WinCC V7.5 SP1</th>
<th>WinCC OA V3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web (HTML5)</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Java Script</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>SVG Graphics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dynamic SVG Graphics</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Object oriented approach</th>
<th>WinCC RT Adv. V16</th>
<th>WinCC RT Prof. V16</th>
<th>Unified PC RT V16</th>
<th>WinCC V7.5 SP1</th>
<th>WinCC OA V3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object oriented approach</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

Available ✔  Available (limited) ✔️  Not available ✗  Work in process ☐
# PC-based systems – Scalability Single Station → SCADA system

<table>
<thead>
<tr>
<th>Scalable SCADA Functionality</th>
<th>WinCC RT Adv. V16</th>
<th>WinCC RT Prof. V16</th>
<th>Unified PC RT V16</th>
<th>WinCC V7.5 SP1</th>
<th>WinCC OA V3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server/Client</td>
<td>Max. 16k PowerTags</td>
<td>1 Server max. 256k PowerTags</td>
<td>1 Server max. 600,000 PowerTags</td>
<td>Max. 18 Srv max. 256k PowerTags</td>
<td>Max. 2,048 Srv Unlimited PowerTags</td>
</tr>
<tr>
<td>Native Clients</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clients (Zero Inst.)</td>
<td></td>
<td></td>
<td>System tested up to max. 150</td>
<td>WebUX Max. 100</td>
<td>ULC UX</td>
</tr>
<tr>
<td>File-based Logging</td>
<td>CSV/RDB SQLite</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Databased Logging</td>
<td>Via odbc</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Logging Tags</td>
<td>Incl. at option „Logging“</td>
<td>optional up to max. 80,000</td>
<td>optional up to max. tags</td>
<td>optional up to 80,000</td>
<td>All included</td>
</tr>
</tbody>
</table>

- Available
- Available (limited)
- Not available
- Work in process
## PC-based systems – Everywhere

<table>
<thead>
<tr>
<th>Feature</th>
<th>WinCC RT Adv. V16</th>
<th>WinCC RT Prof. V16</th>
<th>Unified PC RT V16</th>
<th>WinCC V7.5 SP1</th>
<th>WinCC OA V3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Premises</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Prepared for Cloud</td>
<td>✗</td>
<td>✗ (Private)</td>
<td>C (Private)</td>
<td>✗</td>
<td>✗ (Private/Public)</td>
</tr>
<tr>
<td>Prepared for Edge</td>
<td>✗</td>
<td>✗ (Industrial Edge)</td>
<td>C</td>
<td>✗ (IOT Suite)</td>
<td>✗</td>
</tr>
<tr>
<td>Augmented Reality</td>
<td>✗</td>
<td>✗ (Work in process)</td>
<td>C</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

- ✔ Available
- ✗ Not available
- C Work in process
- ✤ Available (limited)

---

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WinCC Unified V16 – User Interface Scalable for all devices

Homogeneous design, usability and functionality for Panel and PC systems

- Identical User Interface for Panel- & PC-Systems
- Zero installation client (PC Systems) based on native web technology
- **Homogenous engineering** of consistent visualizations, independent from technology e.g., Unified Comfort Panel or web-browser
WinCC Unified V16 – User Interface
Scalable for all devices

Scalable Vector Graphics (SVG) for all resolutions without loss of quality
- Animate (dynamic) SVG files according to the process state
- Ready to use industry library with static and dynamic SVGs
WinCC Unified - Videos

WinCC Unified first program: https://www.youtube.com/watch?v=IspDMFQbNo8

String handling: https://www.youtube.com/watch?v=fKEaattACCU

Export logged tags: https://www.youtube.com/watch?v=jTmL5F4D42E

Connect a OPC UA Client to the Unified Server: https://www.youtube.com/watch?v=6KTJfKBCjVs

Secure download, secure connection, encrypted transfer: https://www.youtube.com/watch?v=atm4vnO1E6c

Kolekcija: https://www.youtube.com/results?search_query=%23DerHecht

Unified Comfort panel: https://www.youtube.com/watch?v=XKPsa9Qdc4
SIMATIC Energy Suite
Proactive load management in the production
- Easy and integrated – technical slides

siemens.com/energysuite
TIA Portal V16
SIMATIC Energy Management

Management level
- SIMATIC Energy Manager
  Plant and company-wide energy analysis
- S7 EE-Monitor
  Standardized efficiency evaluation of machines
- SIMATIC Energy Suite
  Energy data acquisition and load management – simple and integrated

Production level
- Integrated energy measurement
  Directly in the field: For example with SIMATIC Energy Meter (ET 200SP)

Field level, e.g. drive motor
- Acquisition

MindSphere®
# SIMATIC Energy Suite Load Management – Load peaks reduction

## Calculation of the Capacity Charge

- Determination of the **highest average consumption** (in kW) during a period (usually 15 minutes) within a year
- **Multiplication** of this value by the contractually determined **price per kW** with the energy supplier company

<table>
<thead>
<tr>
<th>Time</th>
<th>Power consumption</th>
<th>X</th>
<th>Price per kW</th>
<th>Capacity Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**High costs** with only a **single** load peak

## Customer requirements

- **Reduction** of the capacity charge through the avoidance of load peaks and more even power distribution
- Production processes **must not be influenced**
- **Automatic regulation** of the system without external influence
- Response of the system to **feedback** of the production process

## Siemens offering – SIMATIC Energy Suite with load management

- **Direct integration** into the **production level** due to PLC-based solution ➔ No intervention of IT systems in the production level necessary
- Avoidance of load peaks through **integrated prediction algorithm**
- **Smooth load distribution** due to **independent switch** of consumers or activation of generators
- **Future-proof** due to a **modular function block concept** ➔ Simple extension of the number of actuators
- **Fast integration** into an existing **visualization** including all relevant data of the actuators and the entire system
- **Archiving** of every switching action and limit violation

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SIMATIC Energy Suite Load Management – Basic prerequisites

**Production process**
- Should not be influenced
- Base load

**Consumers**
- Can be **switched off**
- Variable power (e.g. chiller, heating, compressor, ...)

**Producer**
- Can be **switched on**
- Variable power (e.g. generators, ...)

**Acquisition of the infeed**
- Captures the **total consumption** of all actuators and production
- Measurement device **should** provide an **energy counter** in best case
- Alternatively a power value can also be provided

**Data processing and preparation**
- S7-1500 PLC
- SIMATIC Energy Suite must be available
- An **energy object** is generated of the acquired data of the device
- Archiving period of the energy object specifies the monitoring period of the load management

**Measurement value**
- Feedback of the actuator
- Control via relay or analog value
Load management software

- Continuously calculates the forecast of the energy demand at the end of the period
- Switches actuators on or off depending on available potential
- Actuators are switched according to configured priority
- The lower the priority (relevance for the production process), the more often the actuator is switched

<table>
<thead>
<tr>
<th>Priority</th>
<th>Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Generator</td>
</tr>
<tr>
<td>2</td>
<td>Heating</td>
</tr>
<tr>
<td>3</td>
<td>Compressor</td>
</tr>
<tr>
<td>4</td>
<td>Ventilation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forecast</th>
<th>Switching action</th>
<th>Energy demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>Heating on</td>
<td>⬆</td>
</tr>
<tr>
<td>&lt; Limit</td>
<td>Compressor &amp; ventilation on</td>
<td>⬇</td>
</tr>
<tr>
<td>&gt; Limit</td>
<td>Generator on</td>
<td>⬇</td>
</tr>
<tr>
<td>&gt; Limit</td>
<td>Heating &amp; compressor off</td>
<td>⬇</td>
</tr>
<tr>
<td>&lt; Limit</td>
<td>Compressor on</td>
<td>⬆</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td>⬆</td>
</tr>
</tbody>
</table>
SIMATIC Energy Suite load management –
Load management in the Energy Suite

Energy program for acquisition

Energy Suite

Visualization with SIMATIC HMI (only acquisition)

Visualization & Archiving with WinCC Professional

Acquisition
SIMATIC
SINAMICS
SIMOCODE
SENTRON

Actuators

Load management program
SIMATIC Energy Suite load management – Visualization example

https://www.youtube.com/watch?v=Qm2QwT6KBAA

Overview of the load management
- Presentation of the previous and current period using a triangle diagram
- Historical values of the infeed up to 7 days
- List of all actors including status and configuration possibility

Detail view per actuator
- All relevant information at a glance
- Subsequent configuration possible
- Operation of the manual mode
TIA Portal V16
Your gateway to automation in the Digital Enterprise

TIA Portal Cloud as 21-day free TRIAL

Feature / Function

Benefit

New

TIA Portal + SIMATIC Tools
• Step 7 Prof. / WinCC Adv. / Safety Adv.
• Startdrive Adv. / SINAMICS DCC
• S7-PLCSIM Adv. / Energy Suite / SiVARc
• Sinetplan / Proneta / SAT

Limitation of accounts: No limitation
Countries:
Germany, Austria, Italy, Sweden, Denmark,
Finland, Norway, Switzerland, United Kingdom,
Netherlands, Spain, France
NEW: USA, India, Belgium, Hungary, Portugal
In evaluation: Poland, South Africa, Czech Republic,
Argentina, Brazil, Canada, Japan, Mexico, Republic of Korea,
Singapore, Australia, Bulgaria, Croatia, Ireland, Taiwan

www.siemens.com/simulation-cloud


U promotivni paket uključene su TIA Portal floating licence:

- STEP 7 Professional V16
- WinCC Advanced V16 i WinCC Unified V16 (10K PT)
- STEP 7 Safety Advanced V16

Kataloški broj za naručivanje: 6ES7822-1AE06-0YS0

>> Narudžbe su moguće do 31.7.2020.
>> Kataloška cijena: 25 €

>> Isporuka isključivo putem standardnog Online Software Delivery (OSD) procesa.
## SIMATIC HMI Unified Comfort Panels – Highlights

<table>
<thead>
<tr>
<th>Great usability in a brilliant way</th>
<th>Size doesn’t matter</th>
<th>Need more? Add Apps!</th>
<th>The power to do more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitive Multitouch technology combined with bright colors and excellent readability</td>
<td>Same interfaces and functionality for all devices from 7” to 22”</td>
<td>Use Siemens Industrial Edge to extend standard functionality by edge apps</td>
<td>Realize larger applications thanks to increased system limits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security Integrated</th>
<th>Everything under control</th>
<th>Ready for the future as of today</th>
<th>Comfort DNA remains</th>
</tr>
</thead>
<tbody>
<tr>
<td>From access control and encrypted communication to security patches. Everything is inside</td>
<td>Full commissioning within TIA Portal. No IT-management necessary</td>
<td>Take full advantage of WinCC Unified with a Modern UI, openness and full scalability</td>
<td>Well known Comfort Panel features like automatic system backup remain</td>
</tr>
</tbody>
</table>
SIMATIC HMI Unified Comfort Panels – Standard- and Neutral design version

**Standard design**
Silver frame – With Siemens branding

**Neutral design**
Black frame – No branding
SIMATIC HMI Unified Comfort Panels – Multitouch from 7” to 22”
# SIMATIC HMI Unified Comfort Panels – Display Information

<table>
<thead>
<tr>
<th></th>
<th>MTP 700</th>
<th>MTP 1000</th>
<th>MTP 1200</th>
<th>MTP 1500</th>
<th>MTP 1900</th>
<th>MTP 2200</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resolution</strong></td>
<td>800x480</td>
<td>1280x800</td>
<td>1280x800</td>
<td>1366x768</td>
<td>1920x1080</td>
<td>1920x1080</td>
</tr>
<tr>
<td><strong>Diagonal</strong></td>
<td>7”</td>
<td>10.1”</td>
<td>12.1”</td>
<td>15.6”</td>
<td>18.5”</td>
<td>21.5”</td>
</tr>
<tr>
<td><strong>PPI</strong> (Points per Inch)</td>
<td>133</td>
<td>149</td>
<td>125</td>
<td>100</td>
<td>119</td>
<td>102</td>
</tr>
<tr>
<td><strong>Aspect ratio</strong></td>
<td>15:9</td>
<td>16:10</td>
<td>16:10</td>
<td>16:9</td>
<td>16:9</td>
<td>16:9</td>
</tr>
<tr>
<td><strong>Viewing angle</strong></td>
<td>160°</td>
<td>160°</td>
<td>176°</td>
<td>170°</td>
<td>178°</td>
<td>178°</td>
</tr>
<tr>
<td><strong>Brightness (cd)</strong></td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>350</td>
<td>250</td>
</tr>
<tr>
<td><strong>MTBF (hours)</strong></td>
<td>50.000</td>
<td>50.000</td>
<td>50.000</td>
<td>50.000</td>
<td>50.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

1 This data is not included in the technical data in the Siemens Industry Online Support, as the values may vary if a supplier changes.
## SIMATIC HMI Unified Comfort Panel
Increased system performance

<table>
<thead>
<tr>
<th></th>
<th>Comfort Panel 7 – 12”/15 – 22”</th>
<th>Unified Comfort Panel 7 – 12”/15 – 22”</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC-Connections</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Tags</td>
<td>2,048 / 4,096</td>
<td>8,000</td>
</tr>
<tr>
<td>Alarms</td>
<td>4,000 / 6,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Logs</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Logging Tags</td>
<td>2,048</td>
<td>5,000</td>
</tr>
<tr>
<td>Scripts</td>
<td>100 / 200</td>
<td>600</td>
</tr>
<tr>
<td>Text-/Graphic list</td>
<td>500</td>
<td>750</td>
</tr>
<tr>
<td>Screens</td>
<td>500 / 750</td>
<td>1,200</td>
</tr>
<tr>
<td>- Objects per screen</td>
<td>400 / 600</td>
<td>800 / 1,200</td>
</tr>
<tr>
<td>- Tags per screen</td>
<td>400</td>
<td>600 / 800</td>
</tr>
</tbody>
</table>

- Increased quantity structure from 7” to 22”
- Doubled quantity structure compared to Comfort Panel
- Differentiation only for tags and objects per screen
Support of commercial work gloves

- **UVEX tested gloves**:

<table>
<thead>
<tr>
<th>Glove model</th>
<th>Norm</th>
<th>Area of application</th>
<th>Properties</th>
<th>Standard touch application</th>
<th>Complex touch application (e.g. zoom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>uvex phynomic XS</td>
<td>EN 388: cut protection level 1</td>
<td>Fine and final assembly work</td>
<td>Breathable impregnation, Mechanical protection</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>uvex phynomic KG-W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uvex rubipor XS</td>
<td>EN 388: cut protection level 1</td>
<td>Fine and final assembly work</td>
<td>Breathable impregnation, Mechanical protection</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td>uvex profi ergo</td>
<td>EN 388: cut protection level 1</td>
<td>Oily applications</td>
<td>Partially coated, Impermeable to oils and water</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>uvex C100 foam</td>
<td>EN 388: cut protection levels 5 and 3 respectively</td>
<td>Handling sharp parts</td>
<td>Breathable, Cut protection</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>uvex C100 foam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uvex rubiflex S (blue)</td>
<td>EN 374</td>
<td>Work with chemicals, paints, etc.</td>
<td>Fully coated, Impermeable to chemicals, oils and water</td>
<td>☑️</td>
<td></td>
</tr>
<tr>
<td>uvex u-fit lite</td>
<td>EN 374</td>
<td>Laboratories, food processing and medicine</td>
<td>Disposable safety gloves</td>
<td>☑️</td>
<td></td>
</tr>
</tbody>
</table>
SIMATIC HMI Unified Comfort Panels
Connectivity

2 Port PROFINET Switch
1 IP address 100 Mbit

1 Port Ethernet
1 IP address 100 Mbit/1 Gbit

Serial
(422, 485) to support 3rd party PLCs

4x USB 3.0
Support of USB Hardware e.g., printer,

2x SD-Card
Data card for files, logs and customer data
System card for automatic backup

Reset Button
Set device to reset mode

1 Available after device release via CSP
SIMATIC HMI Unified Comfort Panel
Temporary not all services on all interfaces!

Integrated Switch
2 Ports
• S7/S7+ Communication
• MRP / HSYNC
• PN Basic Services (assign name, IP,..)
• Project Download via PN

Gigabit Interface
1 Ports
• Project download and Firmware Update via Ethernet
• Sm@rtServer (VNC) Access
• Web Browser
• Network Access
• Edge Management and Apps
• 3rd Party PLC¹ (e.g. Modbus RTU)

• If both communication services are required, two Ethernet wires must be used temporarily
• Will be changed with Update for WinCC Unified V16

¹ Available after device release via CSP
SIMATIC HMI Unified Comfort Panel
Completely new designed control panel

- New look for the Control Panel - optimized for touch devices
- User has only access to control panel UI – not operating system UI
Ready to use system applications

Work in documents, view instruction videos or get access to web-based systems with the preinstalled applications on every Unified Comfort Panel.

Preinstalled system applications

<table>
<thead>
<tr>
<th>Application</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browser</td>
<td>Google Chrome</td>
</tr>
<tr>
<td>Media Player</td>
<td>VLC Media Player</td>
</tr>
<tr>
<td>Office</td>
<td>Libre Office</td>
</tr>
<tr>
<td>PDF Viewer</td>
<td>Okular</td>
</tr>
</tbody>
</table>

SIMATIC HMI Unified Comfort Panels – Get work done!
SIMATIC HMI Unified Comfort Panel
Increased flexibility by openness

TIA Portal Openness
- Enables automated engineering for Panel and PC-Systems

Application Openness
- Preinstalled applications
- Siemens Industrial Edge to expand the standard functionality

Runtime Openness
- Local access to HMI Runtime Tags via OpenPipe
- Custom Web Controls for more flexibility

Hardware Openness
- More flexibility with ready to use USB hardware e.g., printer
SIMATIC HMI Unified Comfort Panels
Openness to add applications using Edge technology

Expand the standard functionality via Edge Apps

- Siemens or others can provide applications
- Access to WinCC Unified Online Tags using OpenPipe interface
- **Device Managed Edge**
  Apps can be managed directly on the device
- **Central Managed Edge**
  Apps can be managed centrally via Edge Management System

*Note:* Edge applications can be used on all Unified Comfort Panels.
MQTT App
Cloud Connection
MQTT is the most common protocol for the connection of automation equipment to cloud based systems like MindSphere.

SIMATIC Flow Creator
Data processing made easy
Define your data flow and create rules, KPIs or trigger actions, if threshold values are exceeded or a special event happens.

SIMATIC Notifier
Mobile Notification
Transform the Unified Comfort Panel into a messaging service. Manage and send mobile notifications directly to your Smartphone or Smartwatch.
Device-Managed Edge Licensing – Unified Comfort Panel

Demo, Test and Development
- Siemens Industrial Edge is part of every Unified Comfort Panel by default
- Simply activate the Edge functionality in the Control Panel
- No need for a separate software package

Productive Usage
- As soon as the device is in productive usage a certificate of license will be required for each Unified Comfort Panel
- No need for license transfer
- Version independent
SIMATIC HMI Unified Comfort Panel
System architecture
One Linux …

- Based on one of the best-known and most stable distributions → Debian 9
- Use of existing advantages such as freely available packages, simple update concept, etc.
- Large community (support and exchange of experiences)
- LTS version → Long-term availability
- Preemptive Patch → real-time capable
- Quick and easy installation
- Installation of additional components (e.g. Gnome Desktop-Environment) already prepared

cross-platform, ...

- SIMATIC IPCs (entire current Portfolio)
- Edge Devices (based on SIMATIC IPC)
- SIMATIC HMI Panels (new Generation)
- SIMATIC IOT Devices (new Generation)
- Hypervisor-based platforms, z. B.: Open Controller
SIMATIC HMI Template Suite –
The TIA Portal library for good HMI design

Ready to use screen templates for WinCC Unified and Unified Comfort Panels

Available for all common resolutions from 7” - 22”

Available free of charge in Industry Online Support

Download under entry ID 91174767
or from Industry Online Support via the following link:
## SIMATIC WinCC Unified System – Application Examples

<table>
<thead>
<tr>
<th>Type</th>
<th>German</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIA Portal Add-In Data 2 Unified</td>
<td>SIOS Download</td>
<td>SIOS Download</td>
</tr>
<tr>
<td>WinCC Unified Tag Simulator</td>
<td>SIOS Download</td>
<td>SIOS Download</td>
</tr>
<tr>
<td>WinCC Unified Demo projects</td>
<td>SIOS Download</td>
<td>SIOS Download</td>
</tr>
<tr>
<td>TIA Portal Library HMI Template Suite</td>
<td>SIOS Download</td>
<td>SIOS Download</td>
</tr>
<tr>
<td>Getting Started Edge @ Unified Comfort Panel</td>
<td>Soon</td>
<td>Soon</td>
</tr>
<tr>
<td>From Comfort to Unified Comfort Guideline</td>
<td>Soon</td>
<td>Soon</td>
</tr>
</tbody>
</table>
SIMATIC Industrial PC
## SIMATIC Industrial-PC Portfolio

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Embedded Industrial-PCs</strong></td>
<td>without fan</td>
<td>IPC1x7, Ultracompact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC2x7, Compact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC4x7, Powerful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC6x7, High Performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC8x7, Extensive expandability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC1047, High CPU and GPU Performance</td>
</tr>
<tr>
<td><strong>High-end Industrial-PCs</strong></td>
<td>High-end functionality</td>
<td>IPC5x7, Maximum Performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPC3x7, available from stock</td>
</tr>
</tbody>
</table>

### Rack PC
- IPC127E
- IPC227E
- IPC427E
- IPC647E
- IPC847E
- IPC1047

### Box PC
- IPC127E
- IPC227E
- IPC427E
- IPC647E
- IPC847E
- IPC1047

### Panel PC
- IPC127E
- IPC227E
- IPC427E
- IPC647E
- IPC847E
- IPC1047

### Long-term availability:
- 4 – 6 years
- plus 5 years repair and spare parts service

### Long-term availability:
- 2 – 3 years plus 3 years repair and spare parts service

---

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SIMATIC IPC127E
The ultra-compact industrial PC for your application

High-performance compact data processing with the most compact design
- Latest CPU technology of Intel Apollo Lake series
  2 or 4-core processors
- Comprehensive interface equipment
- Integrated 128 GB SSD
- Up to 3 LAN interfaces

Operating system
- Windows 10 Enterprise LTSSB 2016
- SIMATIC Industrial OS (Debian based Linux)

High system availability
- Maintenance-free, as there are no rotating parts (fan, HDD)
- Self-diagnosis thanks to local diagnostic software SIMATIC IPC DiagBase

High investment security
- Short delivery times due to warehouse variants
- Long-term availability: Service & support period from 8 - 10 years from market launch

High flexibility
- Flexible mounting in all vertical mounting positions
- Small space requirement
  (installation volume approx. 0.3 liters)

Adaptable to the machine
- Up to 55 ºC ambient temperature
- Dust protection due to closed housing
- LEDs for efficient self-diagnosis; optimization for headless operation
SIMATIC IPC327E/IPC377E
Industrial PC technology at an attractive price

Latest PC technology
with Intel Celeron Quad Core, up to 8GB RAM and mPCIe/mSATA for easy expandability

Proven standards
with USB 3.0, display port, 6 serial ports and more for easy integration into existing systems

SIMATIC quality
designed for 24/7 operation in industrial environments incl. standard run-in tests and certificates

Attractive price
with an excellent price-performance ratio for cost-efficient implementation of a wide range of applications

Available from stock
with reduced complexity in pre-configured variants for shorter delivery times

To operate AWS IoT Greegrass, the following operating systems are supported:
• Ubuntu 18.04.1 LTS
• SIMATIC Industrial OS V1.3
SIMATIC Rack PCs – High performance, functionality and expandability for versatile applications

**High-end**

**IPC1047**
Maximum CPU and GPU Performance

**IPC847**
Maximum expandability and long-term availability

**IPC647**
Highest compactness and long-term availability

**IPC547**
Latest technology and maximum performance

**IPC347**
High performance and optimized price

**Industrial**

**Functionality / Performance**

**On stock - short delivery times**
**Build-to-order - maximum configuration freedom**

**SIMATIC Quality – 24/7 continuous operation in industrial applications**
Long-term available, Windows-based industrial tablet PC with many interfaces and integrated functions

Mobile Devices in Production
Strong growth of mobile devices in manufacturing (+5.1% last year)

Specific Functions
At least 70% of all Industrial Tablet users need special functions

Windows in Production
Some have tried to switch to iOS / Android and return to Windows.

Paperless Factory
No more printed documents in production.

High performance
Demanding applications now mobile.

Industry Core Requirements
High ruggedness, long product availability for use in industrial environments.
Zanimljivi linkovi

- Digital Training with Highlights of TIA Portal V16

- TIA Portal Tutorial Centar

- Automation Tasks in 10 minutes
  https://cache.industry.siemens.com/dl/dl-media/570/109767570/att_986452/v1/109476605_Automation_Tasks_web/start.htm#!/de

- Basic Process Library

- HMI Option +

- HMI design Template
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Heinzelova 70a  
10000 Zagreb, Hrvatska  

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.  

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SIMATIC WinCC Unified – Promotion Packages

WinCC Unified PC (1k) RT
- WinCC Unified PC (1k) RT
- Parameter Control (PC)
- Logging Tags (100)
- Report Execution

6AV2155-2ES01-6AL0

WinCC Unified PC (10k) RT
- WinCC Unified PC (10k) RT
- Parameter Control (PC)
- Logging Tags (1000)
- Report Execution

6AV2155-2FS01-6AL0

WinCC Unified PC (50k) RT
- WinCC Unified PC (50k) RT
- Parameter Control (PC)
- Logging Tags (1000)
- Report Execution
- Database Option
- Client Operate (1)

6AV2155-1GS01-6AL0

Packages only available via Online Software Delivery (OSD)

Available until 31/12/2020

~ 30% discount
SIMATIC WinCC Unified – Promotion Packages Plant Intelligence Options

WinCC Unified
Plant Intelligence
Optionen

• Calendar Option (Basis)
• Performance Insight Option (Basis)
• Logging Tags (100)

6AV2155-0XP01-6AL0

Packages only available via Online Software Delivery (OSD)

Available until 31/12/2020

~ 30% discount
## SIMATIC WinCC Unified V16 Engineering – Ordering information

<table>
<thead>
<tr>
<th>WinCC Unified Engineering</th>
<th>Package (DVD)</th>
<th>Online Software Delivery (OSD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCC Unified Comfort ES</td>
<td>6AV2151-0XB01-6AA5</td>
<td>6AV2151-0XB01-6LA5</td>
</tr>
<tr>
<td>WinCC Unified PC (10k) ES</td>
<td>6AV2153-2FB01-6AA5</td>
<td>6AV2153-2FB01-6LA5</td>
</tr>
<tr>
<td>WinCC Unified PC (100k) ES</td>
<td>6AV2153-2GB01-6AA5</td>
<td>6AV2153-2GB01-6LA5</td>
</tr>
<tr>
<td>WinCC Unified PC (Max) ES</td>
<td>6AV2153-0XB01-6AA5</td>
<td>6AV2153-0XB01-6LA5</td>
</tr>
<tr>
<td>WinCC Unified PC (1k) ES Trial</td>
<td>6AV2153-2EB01-6AA7</td>
<td>Download via SIOS</td>
</tr>
</tbody>
</table>

The complete list for WinCC Unified (Engineering and Runtime) can be found in the product announcement here

## WinCC Unified V16 – IPC Packages

<table>
<thead>
<tr>
<th>Package</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WinCC Unified V16 PC RT 150, Package</td>
<td>6AV2155-3DB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 500, Package</td>
<td>6AV2155-1EB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 1k, Package</td>
<td>6AV2155-2EB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 2.5k, Package</td>
<td>6AV2155-2MB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 5k, Package</td>
<td>6AV2155-1FB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 10k, Package</td>
<td>6AV2155-2FB01-6AA0</td>
</tr>
<tr>
<td>WinCC Unified V16 PC RT 50k, Package</td>
<td>6AV2155-1GB01-6AA0</td>
</tr>
</tbody>
</table>

## SIMATIC HMI Unified Comfort Panels – Ordering information

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Display Size</th>
<th>MLFB Standard Design</th>
<th>MLFB Neutral Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTP700 Unified Comfort</td>
<td>7.0”</td>
<td>6AV2128-3GB06-0AX0</td>
<td>6AV2128-3GB36-0AX0</td>
</tr>
<tr>
<td>MTP1000 Unified Comfort</td>
<td>10.1”</td>
<td>6AV2128-3KB06-0AX0</td>
<td>6AV2128-3KB36-0AX0</td>
</tr>
<tr>
<td>MTP1200 Unified Comfort</td>
<td>12.1”</td>
<td>6AV2128-3MB06-0AX0</td>
<td>6AV2128-3MB36-0AX0</td>
</tr>
<tr>
<td>MTP1500 Unified Comfort</td>
<td>15.6”</td>
<td>6AV2128-3QB06-0AX0</td>
<td>6AV2128-3QB36-0AX0</td>
</tr>
<tr>
<td>MTP1900 Unified Comfort</td>
<td>18.5”</td>
<td>6AV2128-3UB06-0AX0</td>
<td>6AV2128-3UB36-0AX0</td>
</tr>
<tr>
<td>MTP2200 Unified Comfort</td>
<td>21.5”</td>
<td>6AV2128-3XB06-0AX0</td>
<td>6AV2128-3XB36-0AX0</td>
</tr>
</tbody>
</table>

License for Device Managed Edge: 6AV2170-2BA00-0AA0
## Mounting Frames – Ordering information

<table>
<thead>
<tr>
<th>Name</th>
<th>Mounting compatibility</th>
<th>MLFB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting Frame Set 15” Touch</td>
<td>from TP1500 to MTP15000</td>
<td>6AV6881-6QD41-1AA0</td>
</tr>
<tr>
<td>Mounting Frame Set 19” Touch</td>
<td>from TP1900 to MTP1900</td>
<td>6AV6881-6UD41-1AA0</td>
</tr>
<tr>
<td>Mounting Frame Set 22” Touch</td>
<td>from TP2200 to MTP2200</td>
<td>6AV6881-6VD41-1AA0</td>
</tr>
</tbody>
</table>

Available Q2/2020
## SIMATIC HMI Unified Comfort Panels – Starter Kits

<table>
<thead>
<tr>
<th>Device Name</th>
<th>MLFB</th>
<th>List price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTP700 Unified Comfort Starter Kit</td>
<td>6AV2128-3GB06-0AP0</td>
<td>1400 €</td>
</tr>
<tr>
<td>MTP1000 Unified Comfort Starter Kit</td>
<td>6AV2128-3KB06-0AP0</td>
<td>2150 €</td>
</tr>
<tr>
<td>MTP1200 Unified Comfort Starter Kit</td>
<td>6AV2128-3MB06-0AP0</td>
<td>2800 €</td>
</tr>
<tr>
<td>MTP1500 Unified Comfort Starter Kit</td>
<td>6AV2128-3QB06-0AP0</td>
<td>3350 €</td>
</tr>
<tr>
<td>MTP1900 Unified Comfort Starter Kit</td>
<td>6AV2128-3UB06-0AP0</td>
<td>4000 €</td>
</tr>
<tr>
<td>MTP2200 Unified Comfort Starter Kit</td>
<td>6AV2128-3XB06-0AP0</td>
<td>4650 €</td>
</tr>
</tbody>
</table>