Welcome

Panorama y guía de selección

Interfaces Hombre Máquina

HMI´s

Antonio Gordillo IMA Marketing September 2020

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HMI Overview

HMI

Visu+ Touch Panel

HTML5 Web Panel

Specialty &
Industry Ready

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Operation & Monitoring with HMI

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HMI & Industrial PC - Differentiation

Static hardware & software combination – HMI

HMI = Hardware-Platform plus configuration software
→ „ready-to-use“ product

PC = Open and configurable PC-platform
→ custom solutions

Box PCs

Panel PCs

IP65 Panel PCs

Specialty & Industry ready IPCs

Configurable Hardware-Platforms

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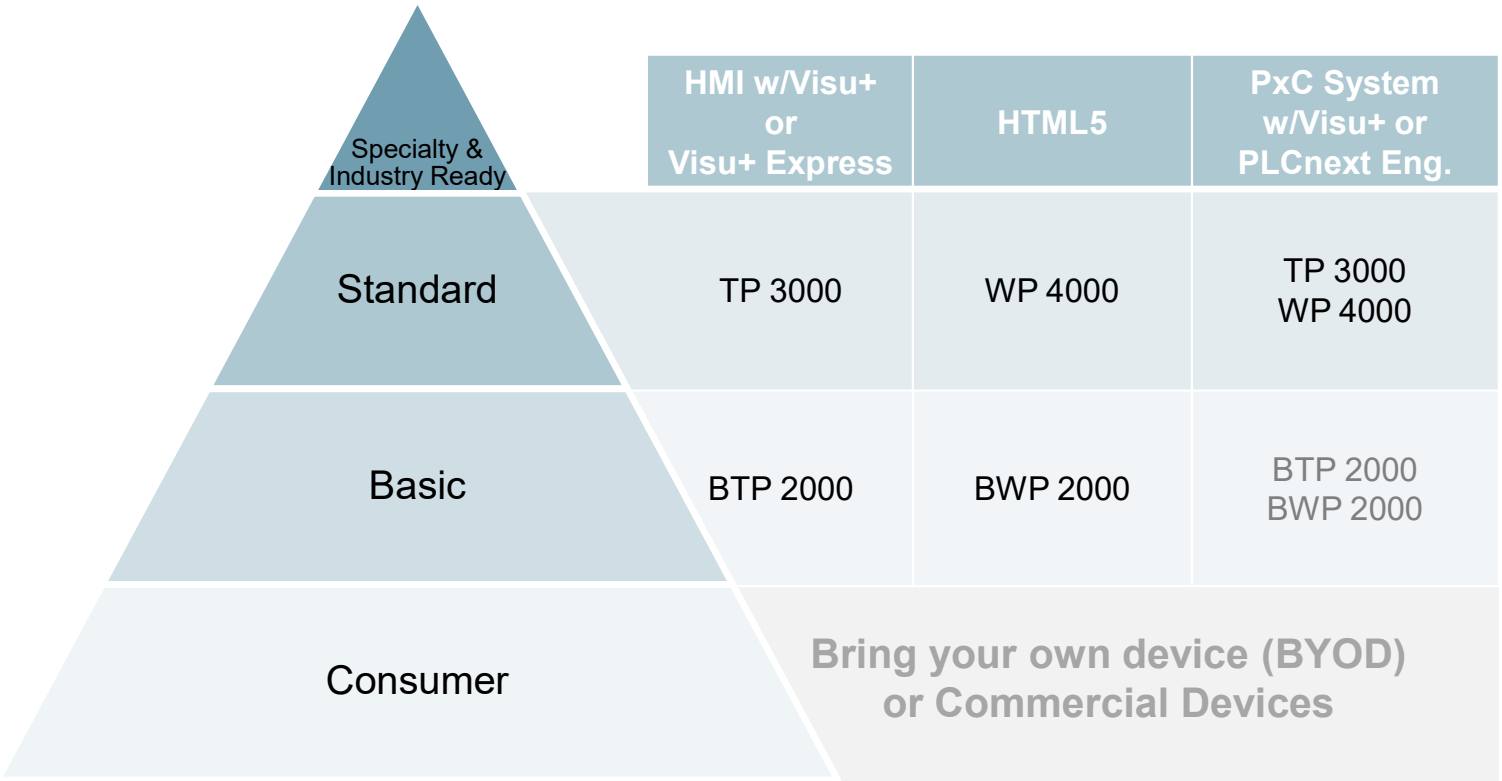
HMI Product Value Pyramid



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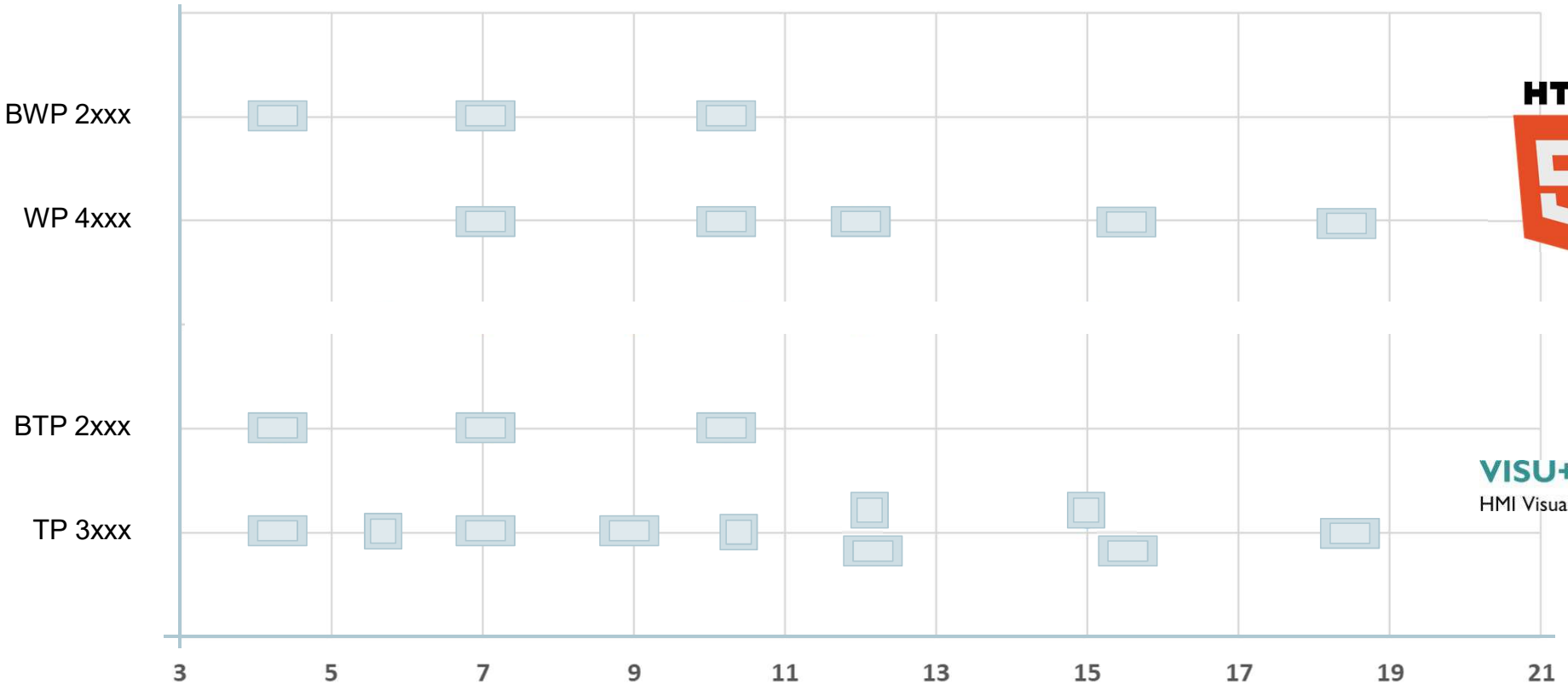
HMI product families and available screen sizes



HTML

VISU+ Express
HMI Visualization

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Runtime based visualization

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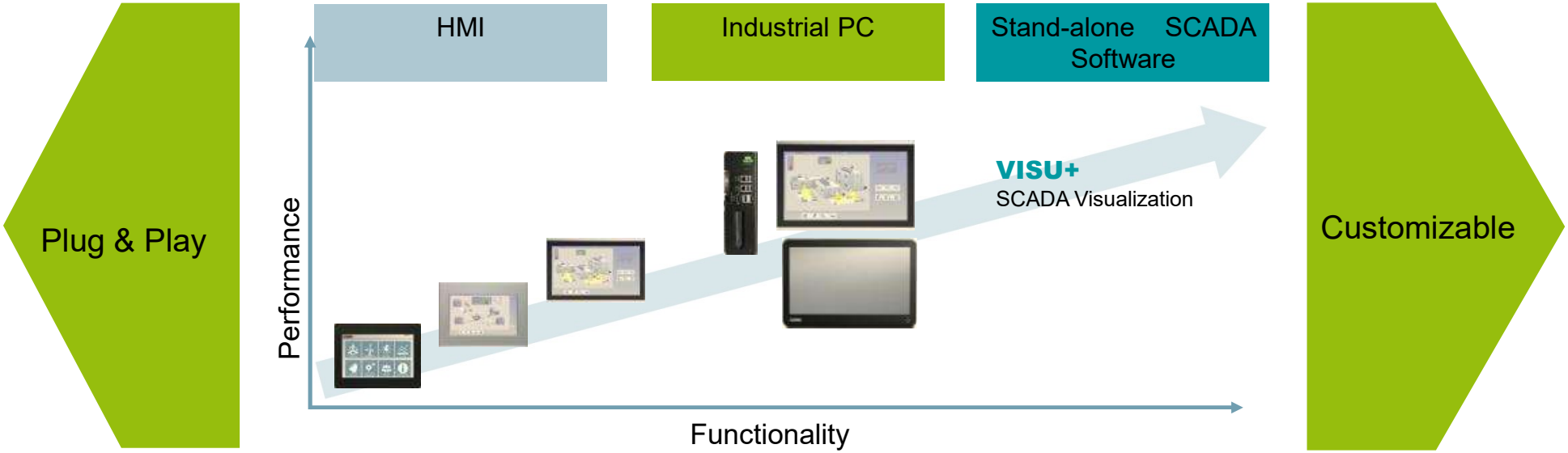
Operation and Monitoring with runtime based HMIs



Visu+ (Express) runtime installed on Embedded HMI Hardware Platform
→ Ready-To-Use HMI

Visu+ Express
Option for Industrial PCs
→ Ready-To-Use HMI

Visu+ SCADA
x86 software package for Customer Installation
→Flexible and Configurable

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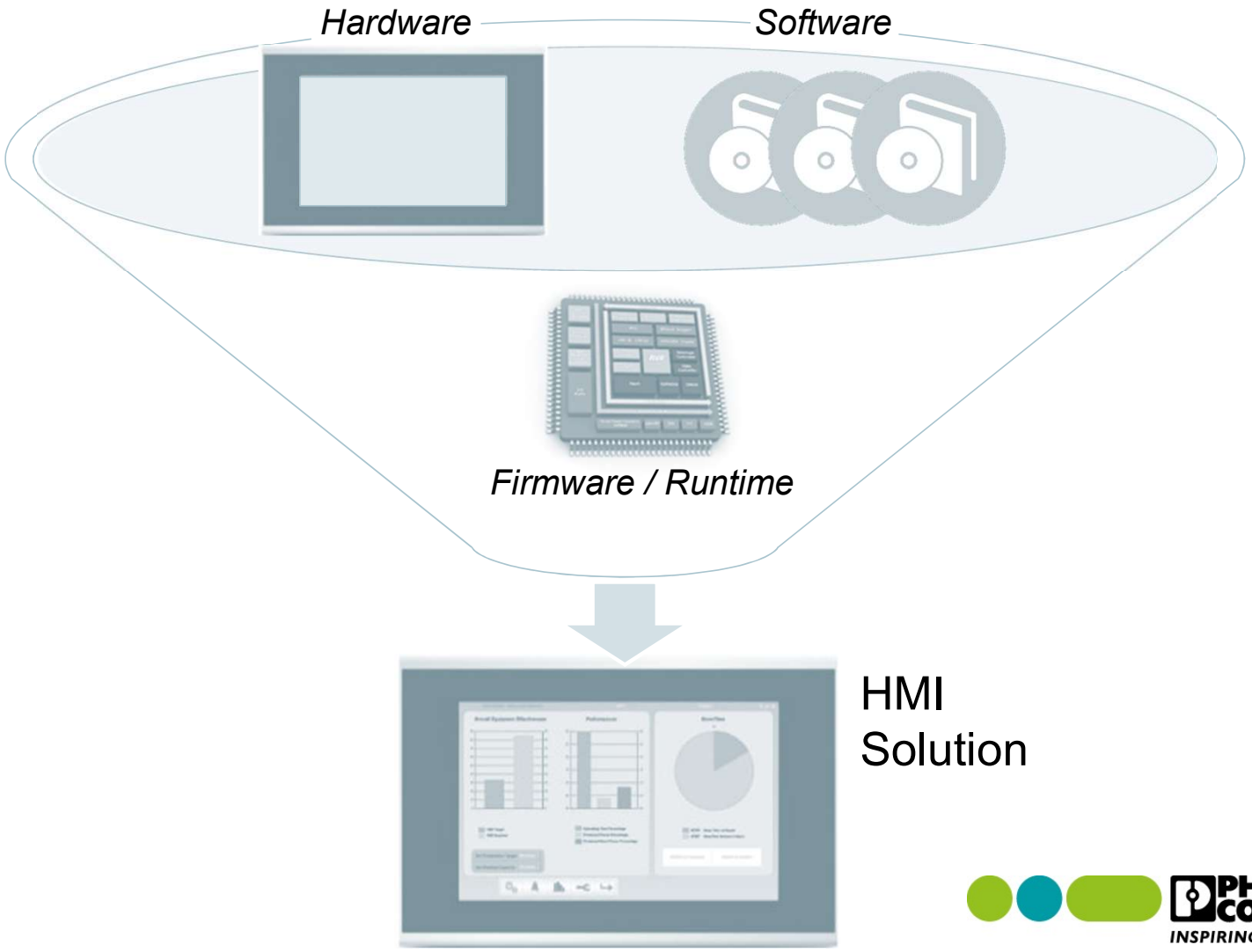

HMI
Solution

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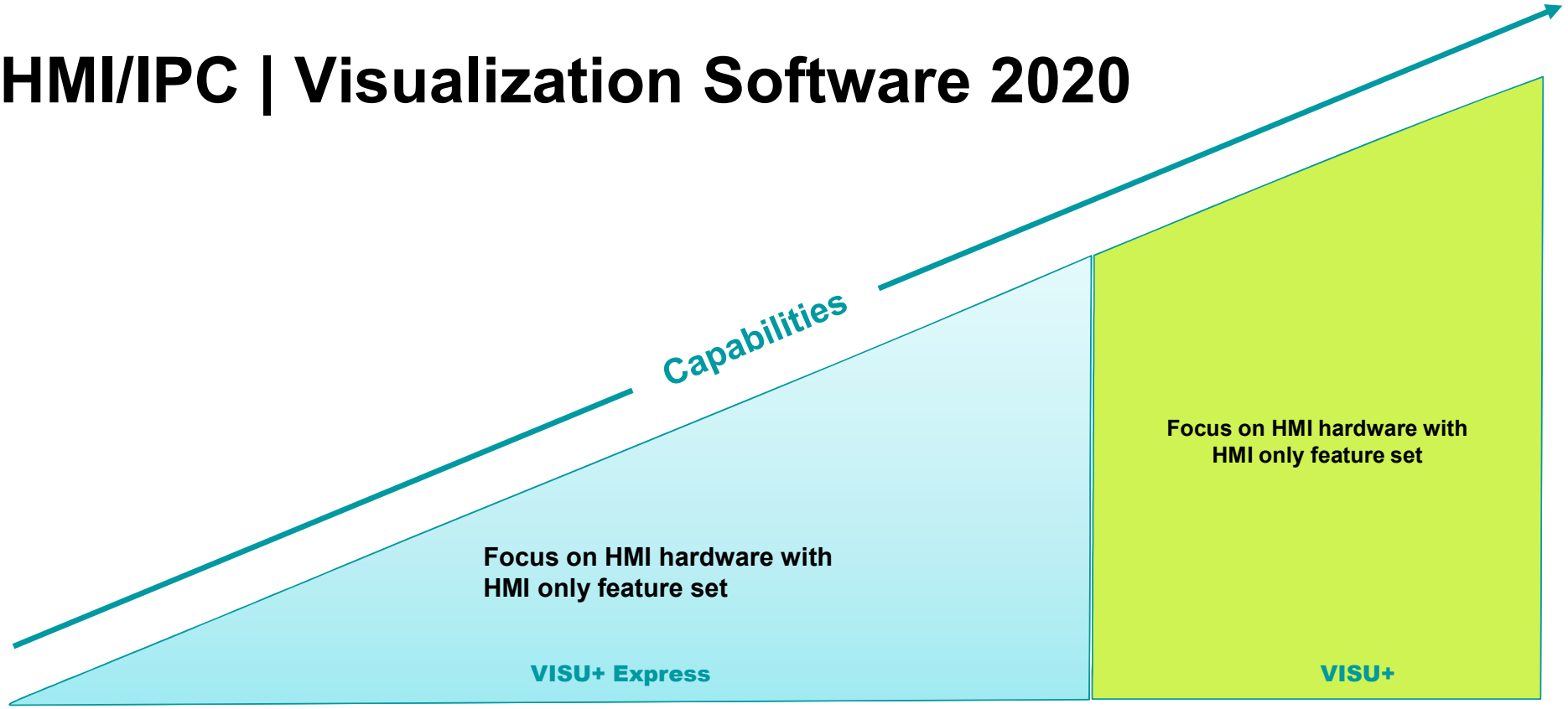
HMI/IPC | Visualization Software 2020



Phoenix Contact PLC ⟵ ⟶ Any PLC

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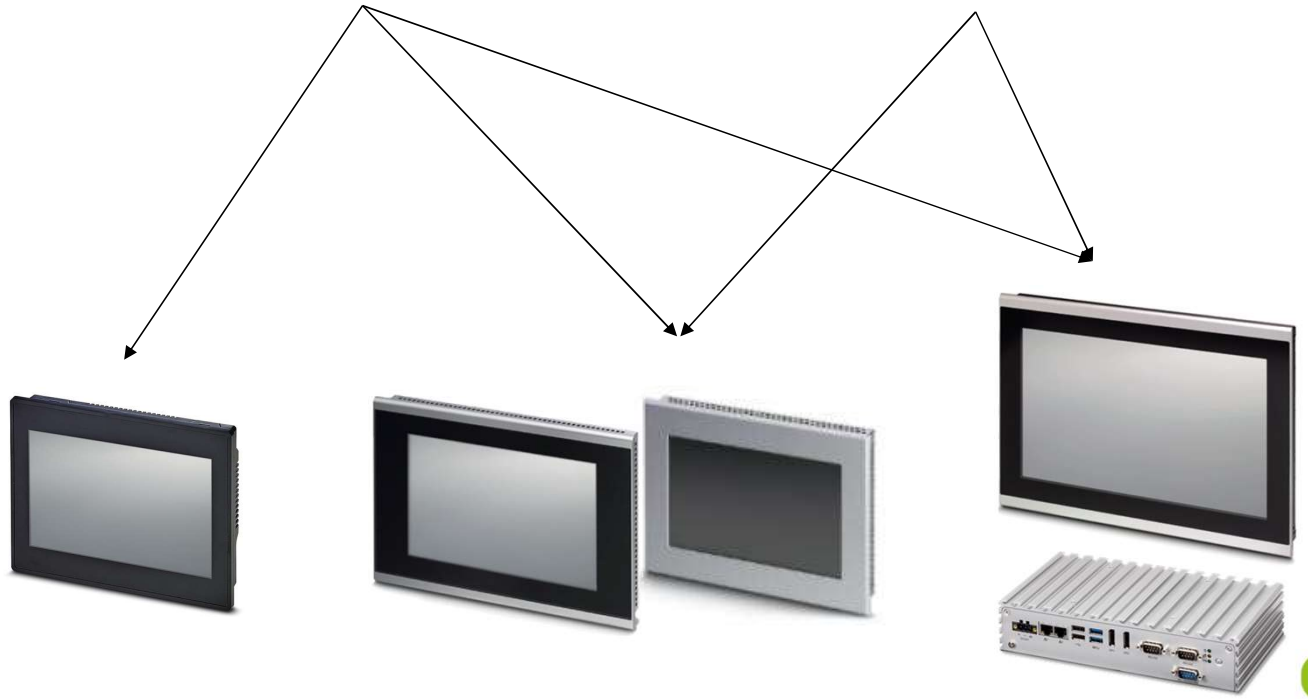
HMI/IPC | Visualization Software

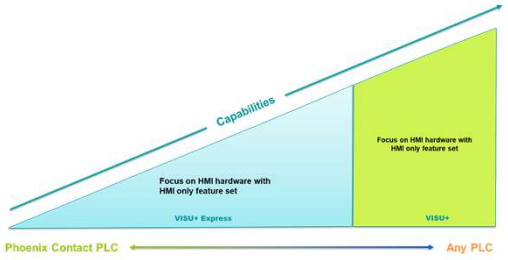
VISU+ *Express*
HMI Visualization

VISU+
SCADA Visualization



BENEFITS:

- Same engineering tool, same appearance and major functionality
- Scalability & reuse of projects and applications
- Hardware platform independence



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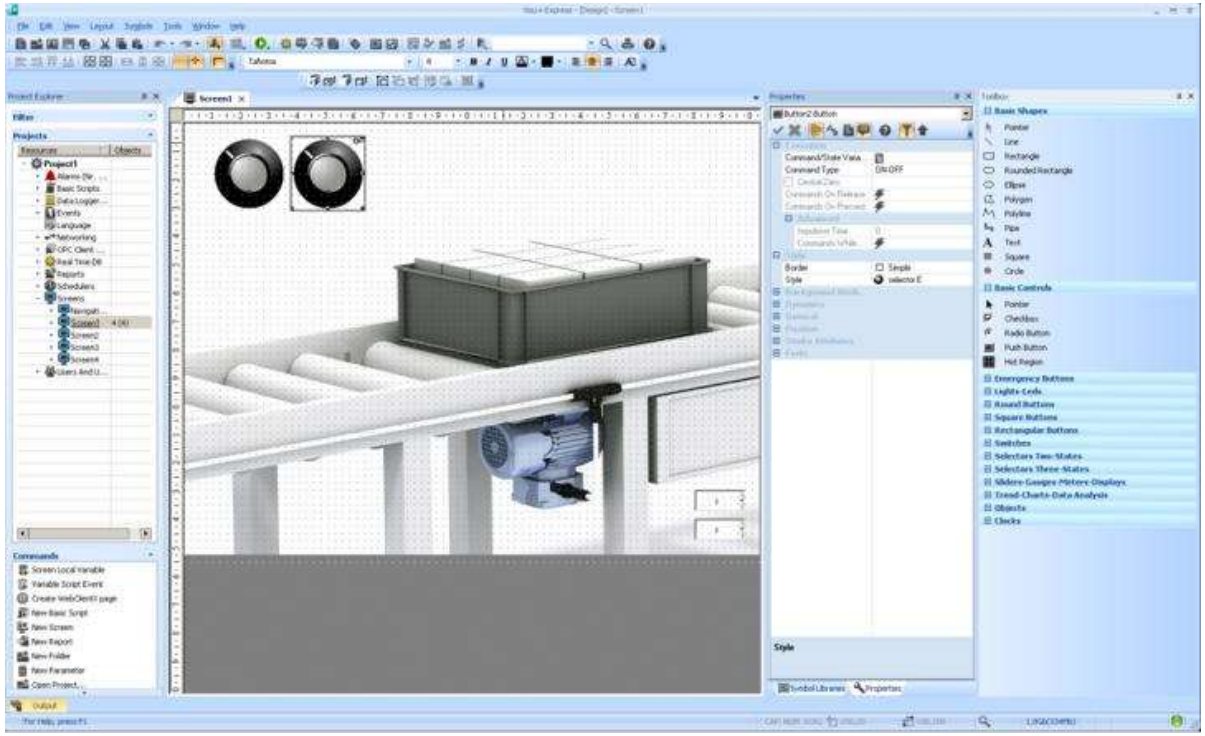
Design Software

VISU+ Express
HMI Visualization

- EXPRESS is FREE
  - Free download
  - Search for 2402774
- Scalable
  - Derived from SCADA package
  - High quality graphics
  - Simplified user interface
- Advanced
  - Alarming
  - Trending
  - Data Logging
  - Recipe Handling
  - Remote Screen Access
  - …



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VISU+ / VISU+ Express – communication drivers

Your connectivity options!

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OPC UA (Unified Architecture)

- Next generation OPC Technology with new communication architecture
- Integrated into Visu+ (Express), starting v. 2.52
- Response to evolving market conditions (e.g. IIoT / Industry 4.0)

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OPC UA – OPC DA - Comparison

OPC Classic	OPC UA
Windows platforms - based on COM/DCOM-Technology	**Cross-Platform compatibility** - communication based on SOA/web services
Complex configuration - DCOM for inter-process security	**Security by design** - usage of known standards, firewall friendly
Limited scalability - strong Windows dependencies	**Full scalability** - smallest OPC UA Server stack runs on a 64 KByte Microcontroller
Limited data model – insufficient to address requirements of todays connected devices	**Flexible Address Space** – flexible concept based on objects
N/A	**Application specific profiles** – e.g. PLCopen, MES, BACnet

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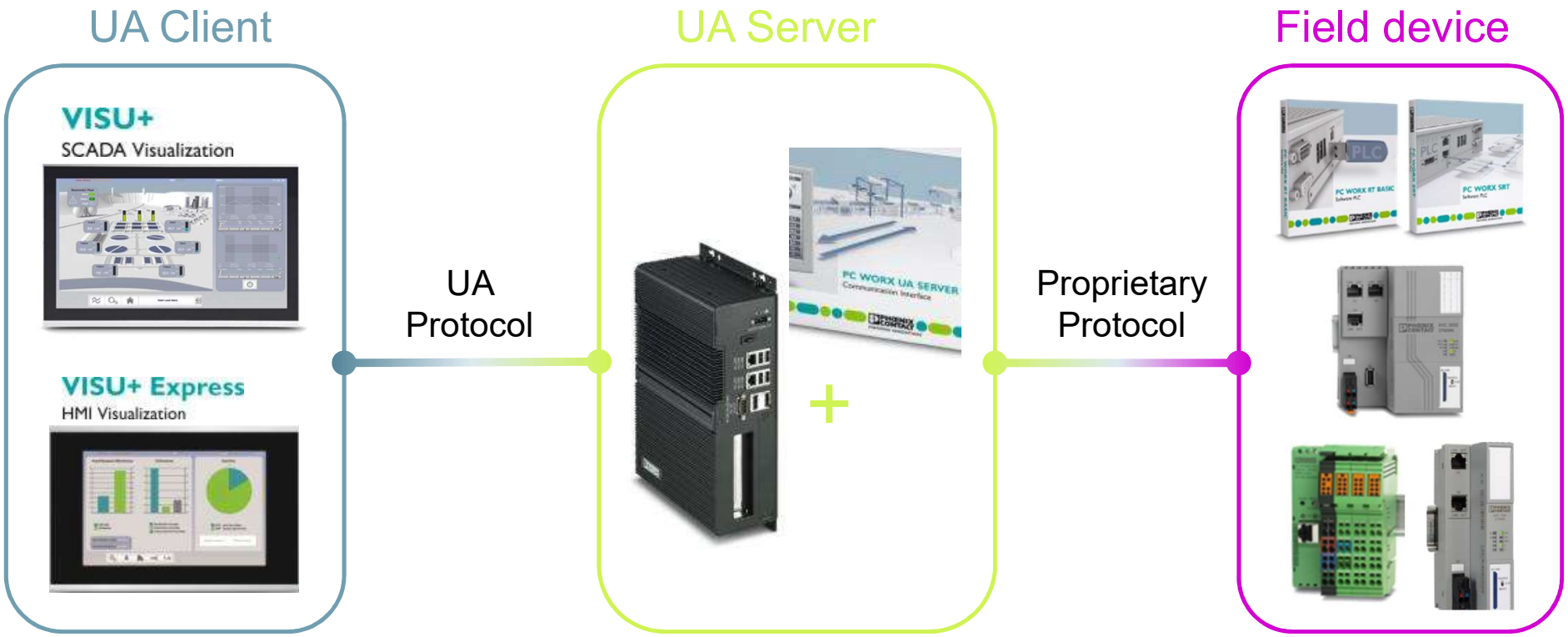
OPC UA – Communication example



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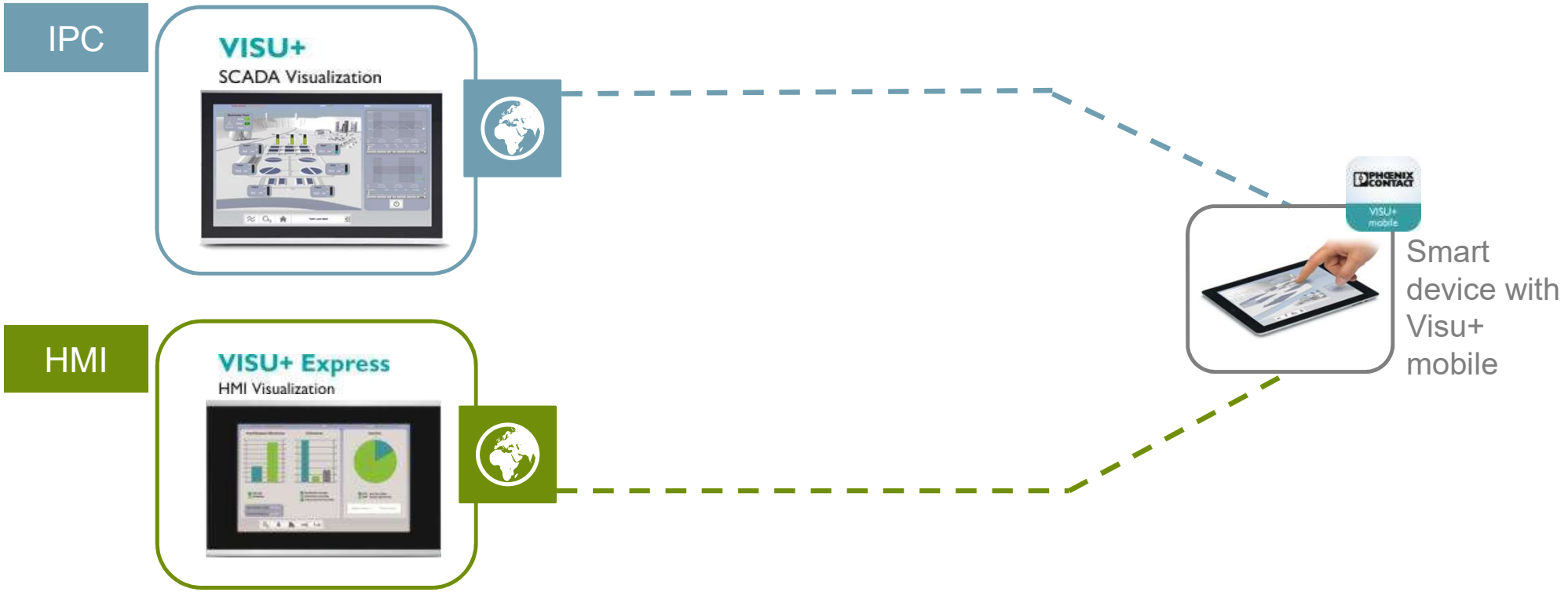
Remote data access with WebClient



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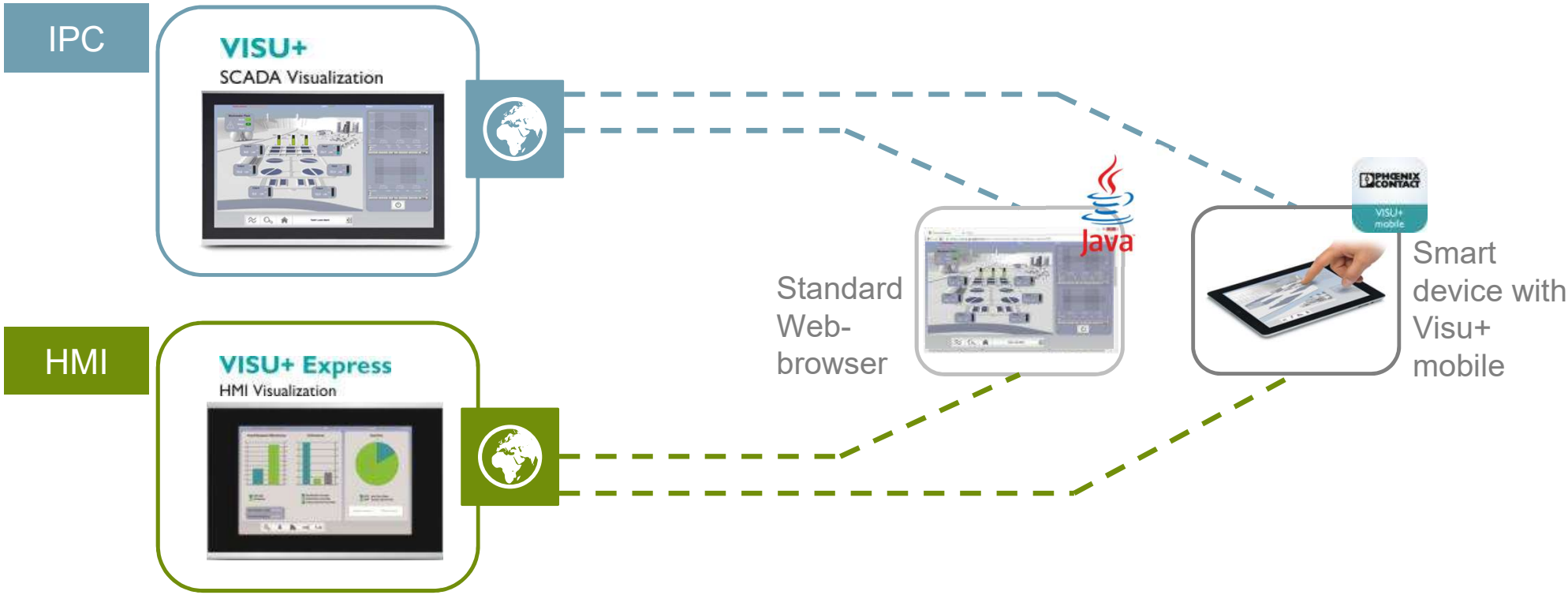
Remote data access with WebClient and HTML5



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Basic HMI – BTP 2000

- Screen sizes 4.3“, 7“, 10.2“
- ARM9 i.MX28, 454MHz processor
- Resistive single touch

- Visu+ / Visu+ Express
- 0…50°C operating temperature
- Ethernet, RS-232 & RS-485 interfaces
- Plastic housing

Basic performance needs

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Powerful Standard HMI – TP 3000

Screen sizes from 4“ to 15“

Powerful Arm® Cortex® A8
1 GHz processor

Resistive single touch

Visu+/Visu+ Express

0…50°C operating temperature

Metal housing

High Quality Touch Panels

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Standard HMI Panel with Capacitive Touch - TP 3000 PCAP

- Screen sizes from 7“ to 18.5“
- Powerful Arm® Cortex® A8 1 GHz processor
- Capacitive multi touch

- Visu+/Visu+ Express
- 0…50°C operating temperature
- Metal housing in same look as VL2 Panel PCs

Attractive design

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Rugged HMI – TP 3000/WT

Rugged design
Extended temperature range and IP67 protection class rated

Sunlight readable

Wide operating temperature (-20/-30…70°C)
UV and IR protection

Enhanced protection
Protection against corrosives and termites

Scratch resistant
Glass front with resistive touch interface

Additional approvals
UL Class1 Div2 (HazLoc)

Built for the EXTREME

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Maritime HMI panel – TPM 3000

Alarming
Integrated buzzer and potential free contact

Fully dimmable LED backlight
With buttons on bezel

Certifications
Approved by all relevant maritime agencies

Flexible
Configurable with fieldbus & COM ports

Software options
Maritime touch panel with Visu+ or Microbrowser runtime

ABS · Bureau Veritas · DNV · RINA · Lloyd's Register · EN 60945

Full range of Marine approvals

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Web based visualization

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Web Panel Advantages

EASY - HMI that does not require any local software download.
Simply points to IP address of ANY web server

OPEN – No longer tied to a communication protocol.
No Profinet, Ethernet IP, MODBUS TCP, etc.

UNIVERSAL - Allows secure connection between ANY web server and the web panel regardless if they are “side-by-side” or “across the globe”

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- OPEN AUTOMATION SYSTEM

- Total Flexibility in Engineering
  - ✓ Virtually no limits to the graphical capabilities, and usability features that can be utilized
  - ✓ Future proof
- Open standard
  - ✓ Visualization is located on PLC
  - ✓ Facilitates Responsive Design
  - ✓ HMI Hardware is independent from Engineering Tool
  - ✓ Works with industrial HMI devices, Smart Phones, Tablets and PCs

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HMI product families

Two classes of products

- ***Standard – WP 4000***
  - Best in class hardware
  - Wide product choices

- ***Basic – BWP 2000***
  - Applications with basic performance needs
  - Price sensitive applications & markets

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Standard Web Panel – WP 4000

- Screen sizes 7“, 10.1“, 12.1“, 15.6“, 18.5“ PCAP Multi-Touch
- Resistive 7“ Single-Touch option

- HTML5 Browser QT
- All metal housing

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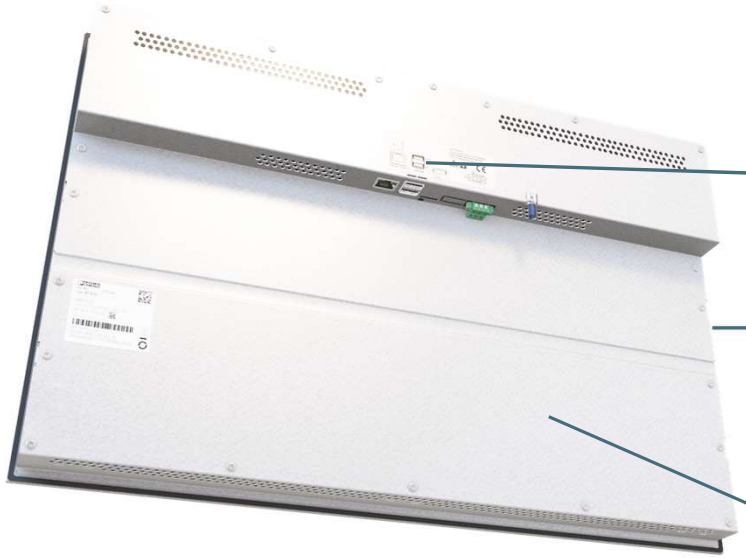
Standard Web Panel – WP 4000



1x Ethernet, 2x USB 2.0

Metal housing improves EMC

High-Performance CPU:
Arm® Cortex®-A53
(Quad-Core)

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Standard Web Panel – WP 4000

						
Description	**WP 4070-WVRS**	**WP 4070-WXPS**	**WP 4101-WXPS**	**WP 4120-WXPS**	**WP 4156-WHPS**	**WP 4185-WHPS**
Display size	17.78 cm (7“)		25.65 cm (10.1“)	30.73 cm (12.1“)	39.63 cm (15.6“)	47 cm (18.5“)
Touch technology	Analog resistive (Polyester)	Projected capacitive (PCAP)				
Physical dimensions	203 x 147 x 48	186 x 146 x 51	263 x 199 x 51	302 x 229 x 51	436 x 278 x 59	485 x 329 x 61
Weight	0.8 kg		1.3 kg	1.7 kg	4 kg	5.5 kg
Art.-Nr.	1148694	1148693	1148687	1148689	1148691	1148690

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Basic Web Panel – BWP 2000

- Screen sizes 4.3“, 7“, 10.2“
- 350 Cd/m² LED backlight
- Resistive single touch
- Arm Cortex A9, 1 GHz CPU

- HTML5 Browser Otter
- 0…50°C operating temperature
- Ethernet connectivity
- Plastic housing

Basic performance needs

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Comparison: WP 4000 vs. BWP 2000

WP 4000 	BWP 2000 
1. 6 display choices 2. Capacitive or 7“ Resistive touch 3. Can target 4 IP addresses 4. Higher screen resolution 5. Metal housing 6. Faster performance 7. Higher price	1. 3 display choices 2. Resistive touch 3. Can target 1 IP address 4. Standard screen resolution 5. Plastic housing 6. Basic performance 7. Lower price

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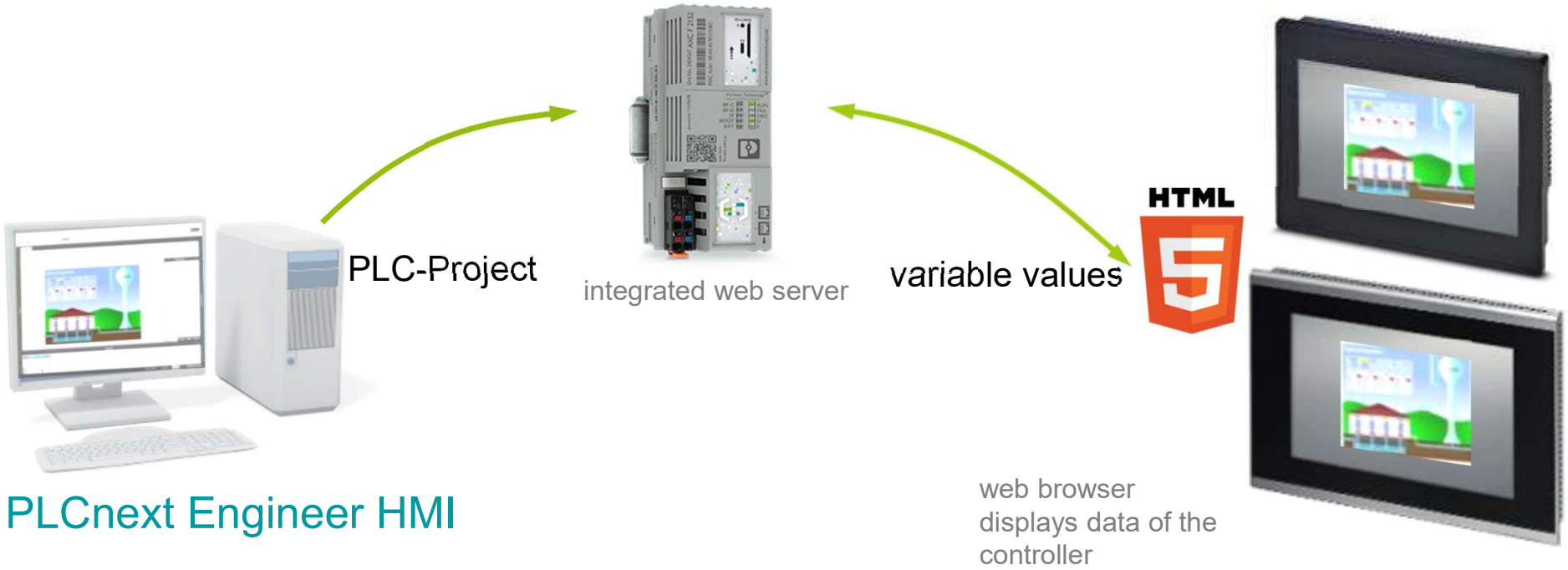
Application example:
PLC with integrated web server, using PLCnext Technology

Designed by PHOENIX CONTACT



PLCnext Engineer HMI

web browser displays data of the controller

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HMI Software products using HTML5

- Visu+ HTML5 web client
- PLCnext Engineer HMI
- WEBfactory i4
- PROCON-WEB
- Atvise
- Wonderware InTouch
- CODESYS
- QuickHMI
- …

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HMI Applications

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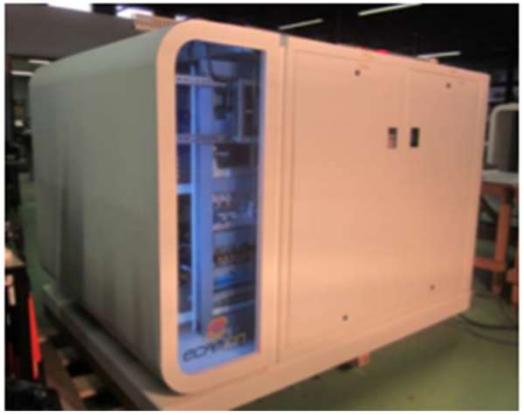
Automotive HMI

Examples



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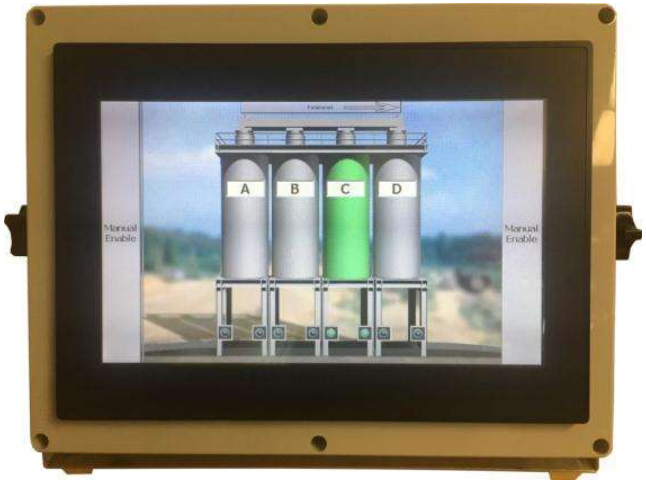
Infraestructure HMI

Infrastructure



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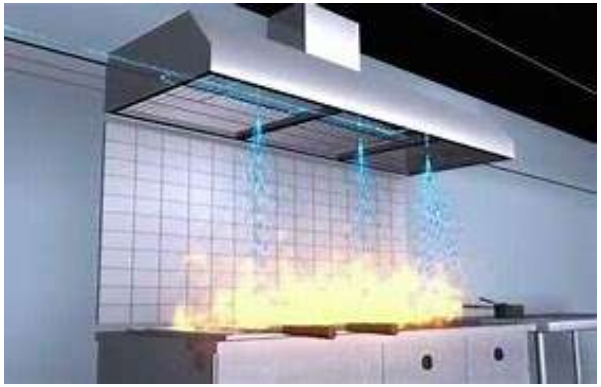
Building Automation

Infrastructure



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Infraestructure

Auxiliary Services on airfields

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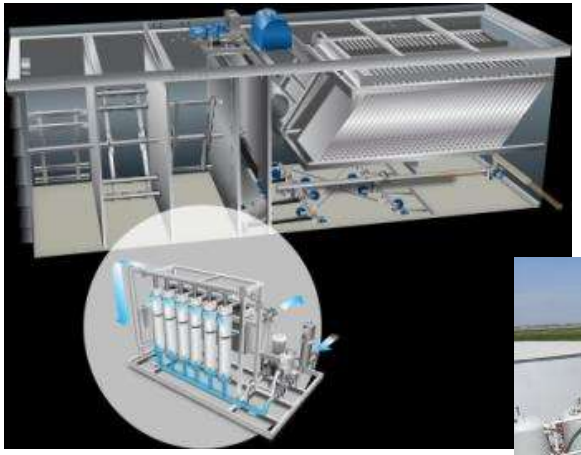
Infraestructure

Waste water Treatment



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Process

Oil & Gas

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Infraestructure

Shipbuilding

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Automotive

TierOne Automatic milling center

Thank you

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