

**Embedded
Online
Conference**



www.embeddedonlineconference.com

Enabling Factory Automation

NXP's Industrial Automation
Solution Offering

Mubeen Abbas

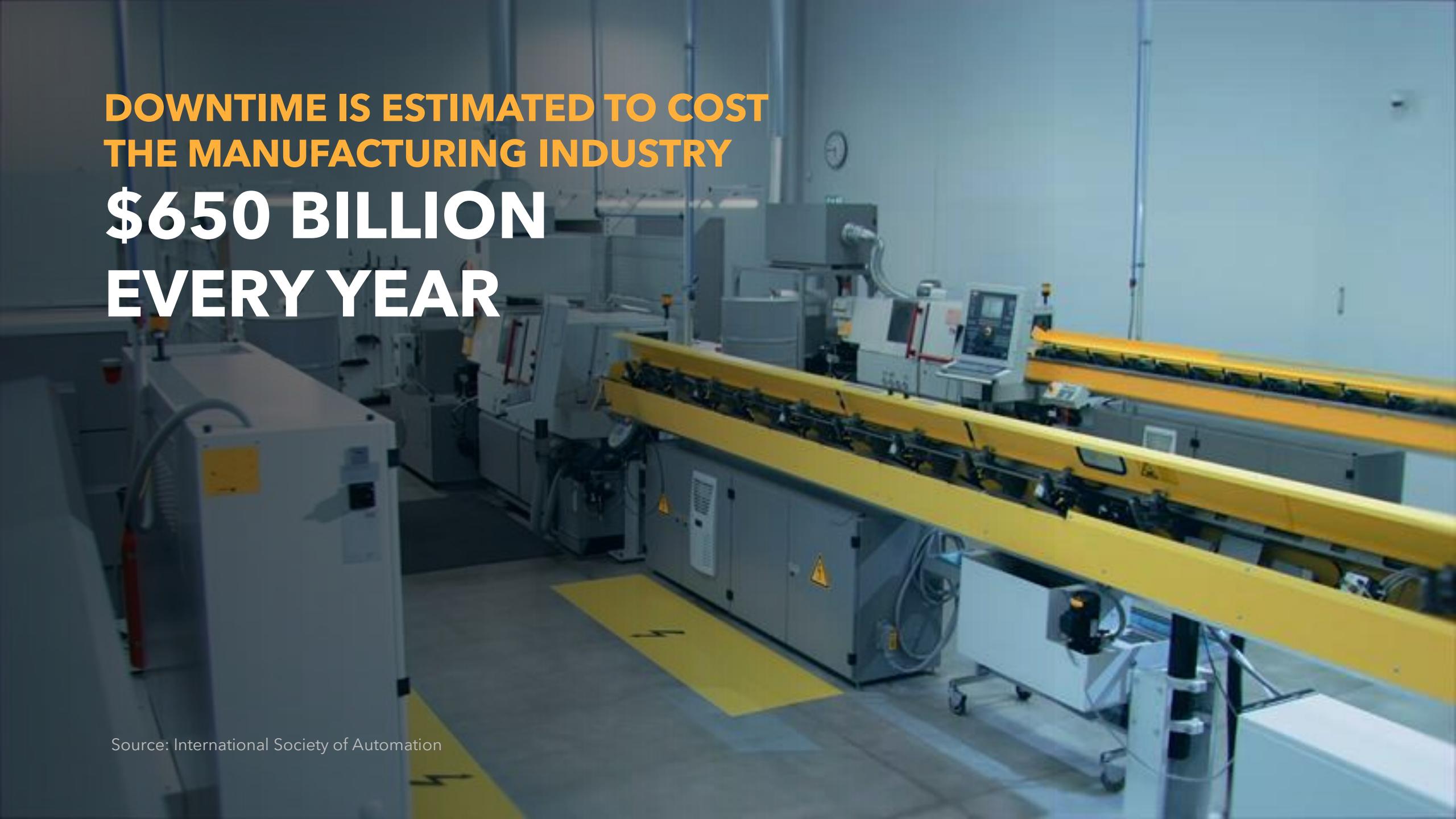
Business Development Lead EMEA Industrial



CONTENTS

- Market Trends & Drivers
- Application Overview
 - Industrial Networking
 - PLC & Remote I/O
 - Drives & Motion Control
 - Industrial HMI
- Reference Design

**DOWNTIME IS ESTIMATED TO COST
THE MANUFACTURING INDUSTRY
\$650 BILLION
EVERY YEAR**



Source: International Society of Automation

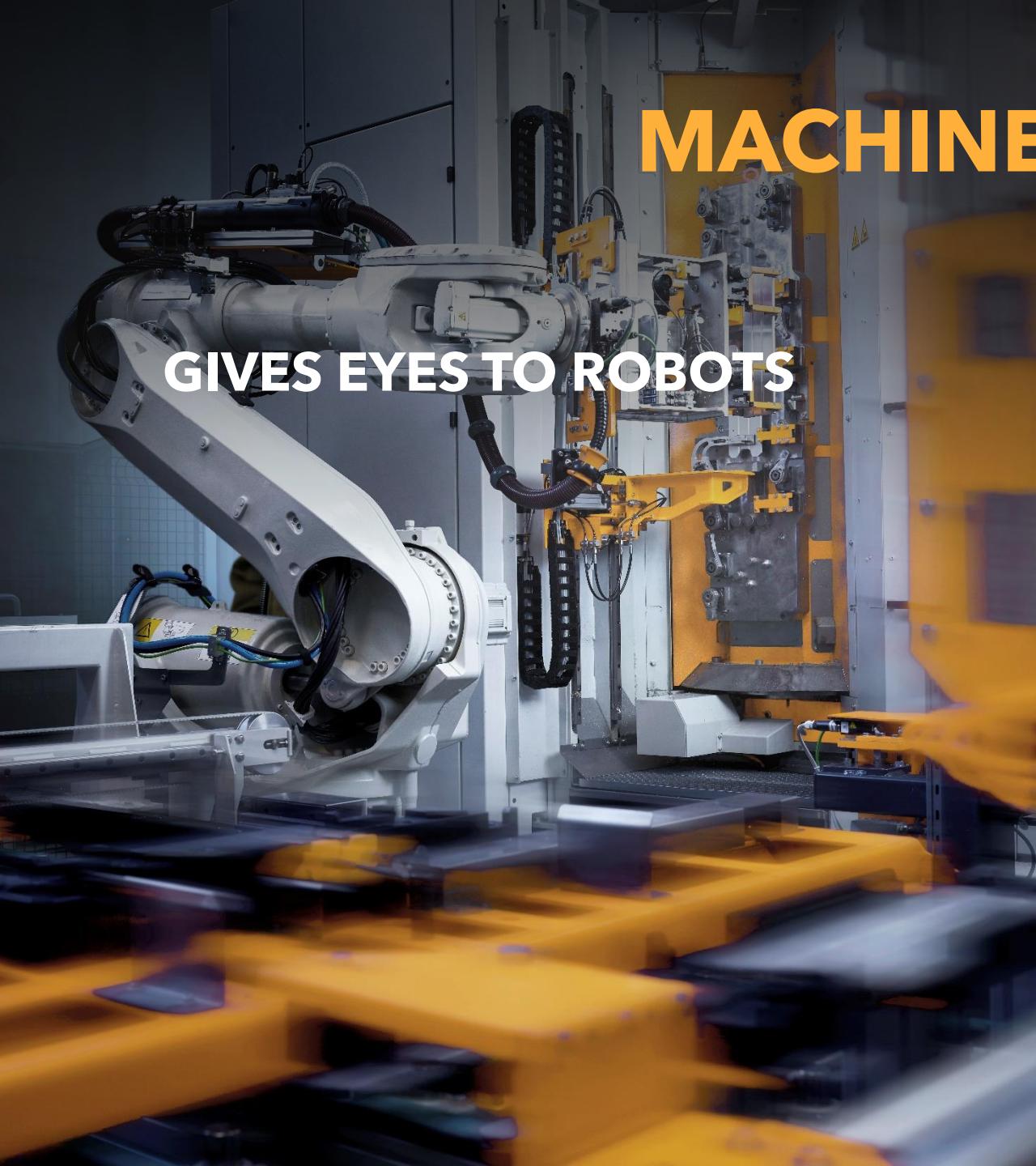
A photograph of two industrial workers, a man and a woman, wearing white hard hats and yellow high-visibility jackets with reflective stripes. They are standing in a dark, industrial setting, possibly a factory or warehouse, with blurred lights and structures in the background. The woman is holding a laptop open, and they both appear to be looking at the screen and discussing the data. The lighting is dramatic, with strong highlights on their faces and jackets.

**MAXIMIZE
OUTPUT WITH
REAL-TIME DATA**

**FEWER ERRORS
MORE VISIBILITY
GREATER EFFICIENCIES**

MACHINE VISION

GIVES EYES TO ROBOTS



VISUAL INSPECTIONS FAR BEYOND THE HUMAN EYE



SOPHISTICATED THREATS OUTPACING SECURITY OF EQUIPMENT

Manufacturing was the most attacked sector last year, accounting for **23% of reports** of ransomware



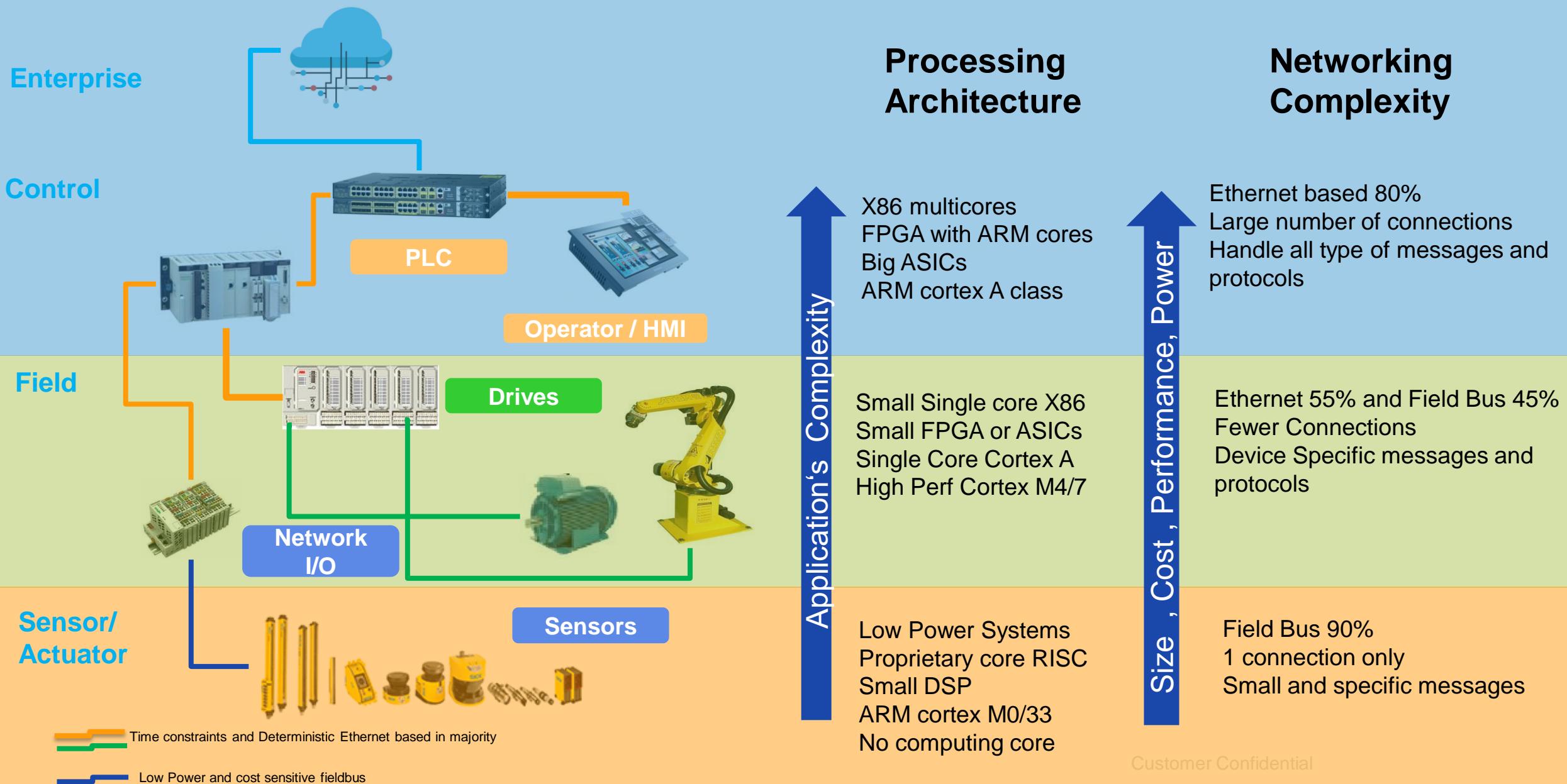
Application Overview



SECURE CONNECTIONS
FOR A SMARTER WORLD



NXP SUPPORTS KEY INDUSTRIAL AUTOMATION NEEDS





Sub Vertical & Technologies Focus

Sub Verticals

Drives



Motor Control, Motion Control, Robotics

Industrial Networking



TSN, Real Time Ethernet, Fieldbus, SPE

HMI / Vision



High End, Low End

Industrial Controls



PLC, Sensors, Encoders, I/O

Factory &
Building
Automation

Key Technologies



AI/ML

Machine Vision, NPU, e-IQ, Tools



Functional Safety

Tools, Safety Libraries, Certificates



Security

Secure Element, Crypto Engine



Connectivity

UWB, Bluetooth, 5G, WiFi

MARKET DRIVERS & NXP POSITIONING

| | Market Drivers | NXP Positioning |
|-------------------------|--|---|
| Motion Control & Drives | <ul style="list-style-type: none"> Key traditional driver: increased efficiency in power conversion TSN: Lower latency esp. in high end motion control and robotic Functional Safety SPE (10BaseT1S/L): Longer distances at a low power (and PoDL) AI/ML: Predictive maintenance, Anomaly detection, Motor health monitoring to reduce down-times i.e., lowering maintenance costs | <ul style="list-style-type: none"> Leveraging knowledge on motor control Portfolio - Strong future with RT1180, LPC553x and MCX family TSN - Not fully standardized but adoption starting now. Strong NXP focus. Functional Safety is a part of our enablement starting today! AI/ML – Strong hold with enabled products and tools like elQ |
| Industrial Networking | <ul style="list-style-type: none"> TSN switches – Real time data processing Security – Protection of the Network (secure OTA updates, secure provisioning etc.) SPE (10BaseT1S/L): Longer distances at a lower cost Precision Sensing | <ul style="list-style-type: none"> LS portfolio – high end applications RT1180/i.MX943 EdgeLock brings strong security focus – SE051 AFE precise measurements with a lower BOM |
| HMI / Vision | <ul style="list-style-type: none"> Multiplatform UI (Multiple device access) - Webservers to expose data Containerized UI – Independent of the rest of the system AI/ML Enabled vision applications | <ul style="list-style-type: none"> Very strong portfolio – GPUs/Display interfaces Strong SW partners Right enablement available AI/ML – Strong hold with enabled products and tools like elQ |

NXP HERO PRODUCTS FOR INDUSTRIAL AUTOMATION

| | MCU | RT | MPU | Network Communication | Analog | Security |
|------------------------------------|--|------------------|---|---|---|----------|
| Motion Control & Drives | LPC553x MCX N S32K1, S32K3 | RT1180 RT10xx | i.MX8M Plus | CAN: TJA146x TJA115x Ethernet: TJA1103 SJA1105 | PF09 | SE051 |
| PLC & Remote I/Os | MCX N (Low end PLCs) LPC552x (I/O slice) | RT1180 RT10xx | i.MX93 (Remote I/Os) | CAN: TJA146x CAN XL Ethernet: TJA1103x TJA1120 | NAFE11388 PF09 | SE051 |
| Industrial Networking | | RT1180 | i.MX8M Plus | Ethernet: TJA1103x TJA1120 SJA1105x SJA1110 | PF09 | |
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Drives & Motion Control



SECURE CONNECTIONS
FOR A SMARTER WORLD





AC DRIVE

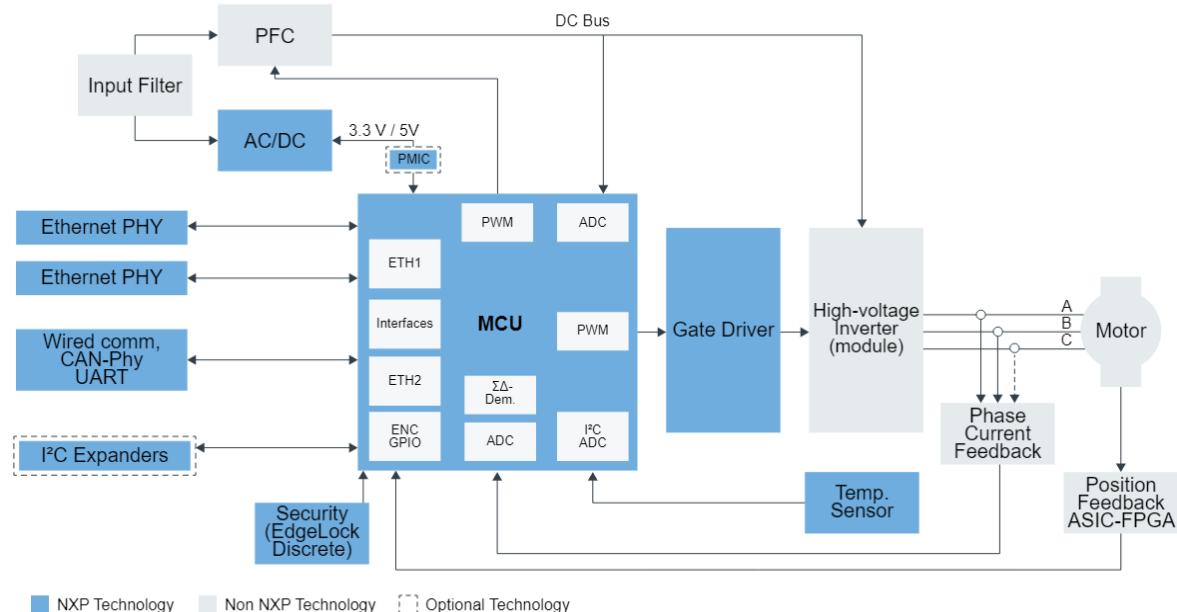
- Also known as:
 - Variable Frequency Drive (VFD)
 - Variable Speed Drive (VSD)
 - Inverter Drive
- Motor controller normally focused on controlling speed and torque
- Motor types normally supported: ACIM, BLDC, PMSM
- Common end-user applications:
 - Pumps
 - Cranes
 - Extruders
 - Etc.

SERVO DRIVE

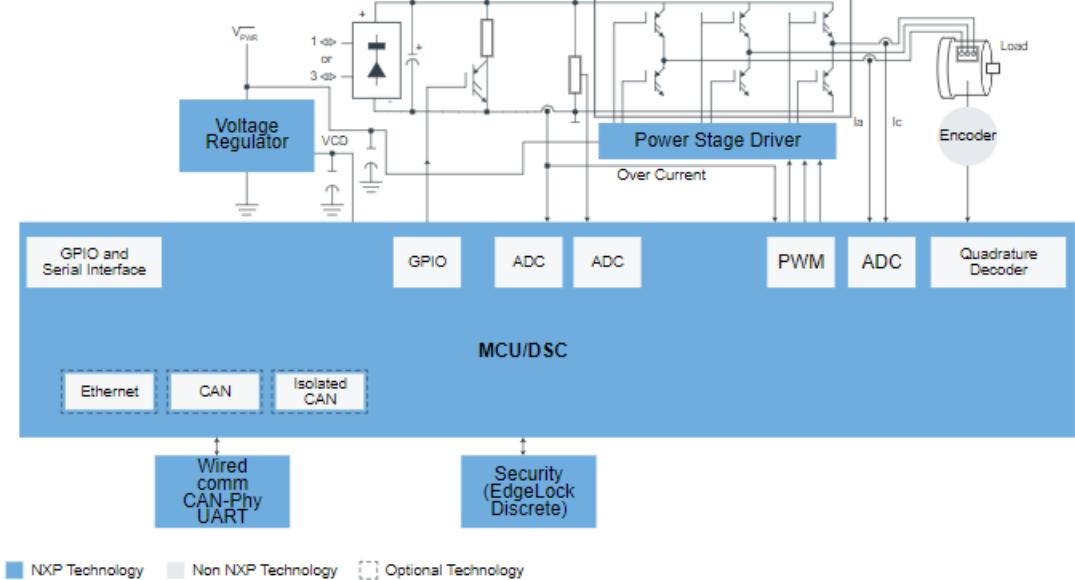
- Also known as:
 - Servo controller
 - Servo amplifier
- Motor controller normally focused on controlling precise position/speed and torque
- Motor types normally supported: BLDC, PMSM, Stepper
- Common end user applications:
 - CNC (Computer numerical control)
 - Robots
 - Multi-axis industrial machinery
 - Etc.

MOTOR DRIVE BLOCK DIAGRAMS

SERVO DRIVE



AC & VF DRIVE



■ NXP Technology ■ Non NXP Technology □ Optional Technology

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Motor Control

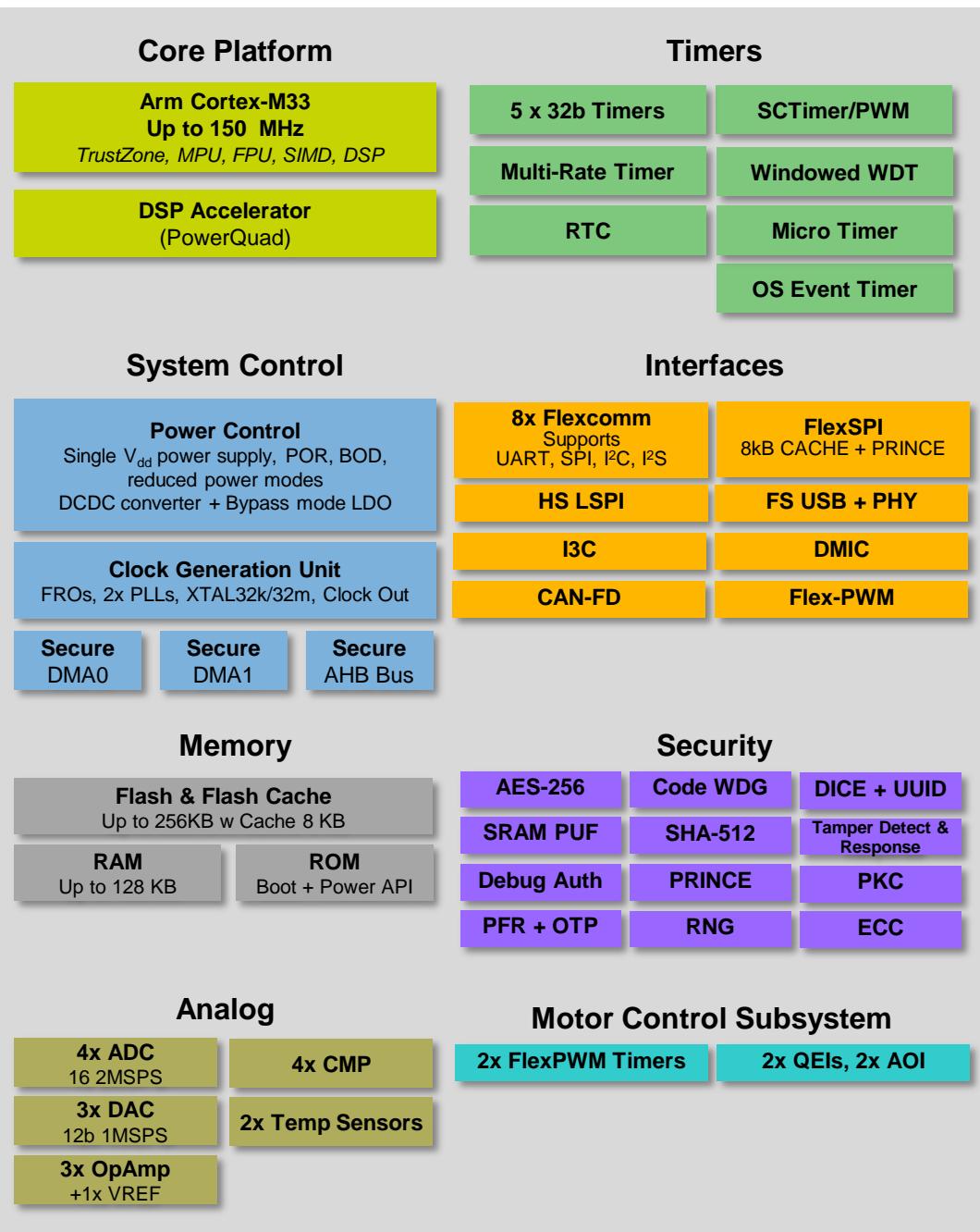


Security Root of Trust

LPC553x/S3x MCUs bring new levels of analog integration and high system reliability to the LPC5500 Series

An Arm® Cortex®-M33 MCU family

- High-efficient 40-nm flash technology with 112kB Parity + 16kB ECC RAM
- Over 600 Core Mark (4./MHz running in Flash with Cache) and active power as low as 57 uA/MHz
- Enhanced safety and security with TrustZone-M
- System Integration with DSP acceleration –Cordic engine providing >3.5X improvement for Motor Control Applications
- High-precision & fast ADCs, instrumentation class OpAmp with PGA supporting 64x and DAC
- Motor Control PWM and Quad Encoder/Decoder
- Comprehensive enablement with MCUXpresso Ecosystem



LPC553X / LPC55S3X BLOCK DIAGRAM

Core Platform

- Up to 150MHz Cortex-M33
 - TrustZone, MPU, FPU, SIMD, DSP
- DSP Accelerator (PowerQUAD, w CP intf)
- Secure Multilayer Bus Matrix

Memory

- Up to 256KB FLASH bank
 - 8kB Low Power Cache
- Up to 128KB RAM
 - 112KB with parity check
 - 16KB ECC RAM
- ROM

Timers

- 5 x 32b Timers
- SCTimer/PWM
- Multi-Rate Timer
- Windowed Watchdog Timer
- RTC with Calendar function
- Micro Timer
- OS Event Timer

Analog

- 4x 16b ADC (Single ended) up to 23 ch
 - 2M sps 16bit
 - 3.3M sps 12bit
 - Up to 8 Differential/ 16 Single Ended channels
- Temperature Sensor
- 3x Analog Comparator
- 3x 12b 1Msps DAC
- 3x OpAmp

Packages

- HVQFN48, HLQFP64, HLQFP100
 - VFBGA98 and CSP upon request

Advanced Security

- AES-256, SHA-2, RNG
- ECC-256 (ECDSA, ECDH)
- PKC (Math accelerator)
- SRAM PUF for Key Generation support
- PRINCE real-time Encrypt/Decrypt for SPI flash
- Debug authentication
- Protected Flash Region (PFR)
- DICE and UID
- Code Watchdog IP (CodeWDG)
- Anti-tampering and Glitch Detector

Interfaces

- USB Full-speed (H/D), Crystal-less
- 1 x High-Speed SPI up to 50MHz (HS SPI)
- 8 x Flexcomms each supports SPI, I²C, UART, I²S
 - I²S Pin-sharing
- External SPI -FlexSPI Interface support XIP
 - Octal/Quad Flash
 - with 8kCache
 - PRINCE to encrypt & decrypt on the fly
- 1x CAN-FD
- 1x I²C
- 1x DMIC 2 ch
- 2x FlexPWM with 4 sub-modules, providing 12 PWM outputs
- 2x Quadrature Encoder/Decoder (QEI)

Other

- Buck DC-DC
- Operating voltage: 1.8 to 3.6V
- Two Main IO supplies (VDDIO_1: 1.8 V to 3.6 V, VDDIO_2: 1.08 v to 3.6 V).
- Temperature range: -40 to 105 °C

MCX N SERIES OVERVIEW

Performance

150 MHz Arm Cortex-M33

HW Accelerators for DSP and CORDIC Functions (PowerQuad)

HW Accelerator for Neural Network (NPU)

Advanced Security

ARM PSA 2

FIPS140-3 CAVP

Secure Boot

High-Performance Crypto Engine

On-The-Fly Memory Encryption & Decryption

Tamper Detection

Rich Features (not in all subfamilies)

Up to 2MB Flash ([256kB can be used as Data Flash](#))

Up to 512kB SRAM ([480K configurable ECC, 32K fixed ECC](#))

Ethernet, USB FS / HS, CAN FD , I3C

High Speed 16bit ADC and 12 &14b DAC

Operation Amplifiers, Comparators and Vrefs

Audio interface - SAI

HMI -Touch sensing, Digital microphone (DMIC)

Low Power

40nm Process

Optimized for both active power & leakage power

Low Power

<45uA/MHz

<4uA w 256kB retained

150 MHz M33

with TrustZone, FPU, SIMD

+ Accelerators

Math & DSP

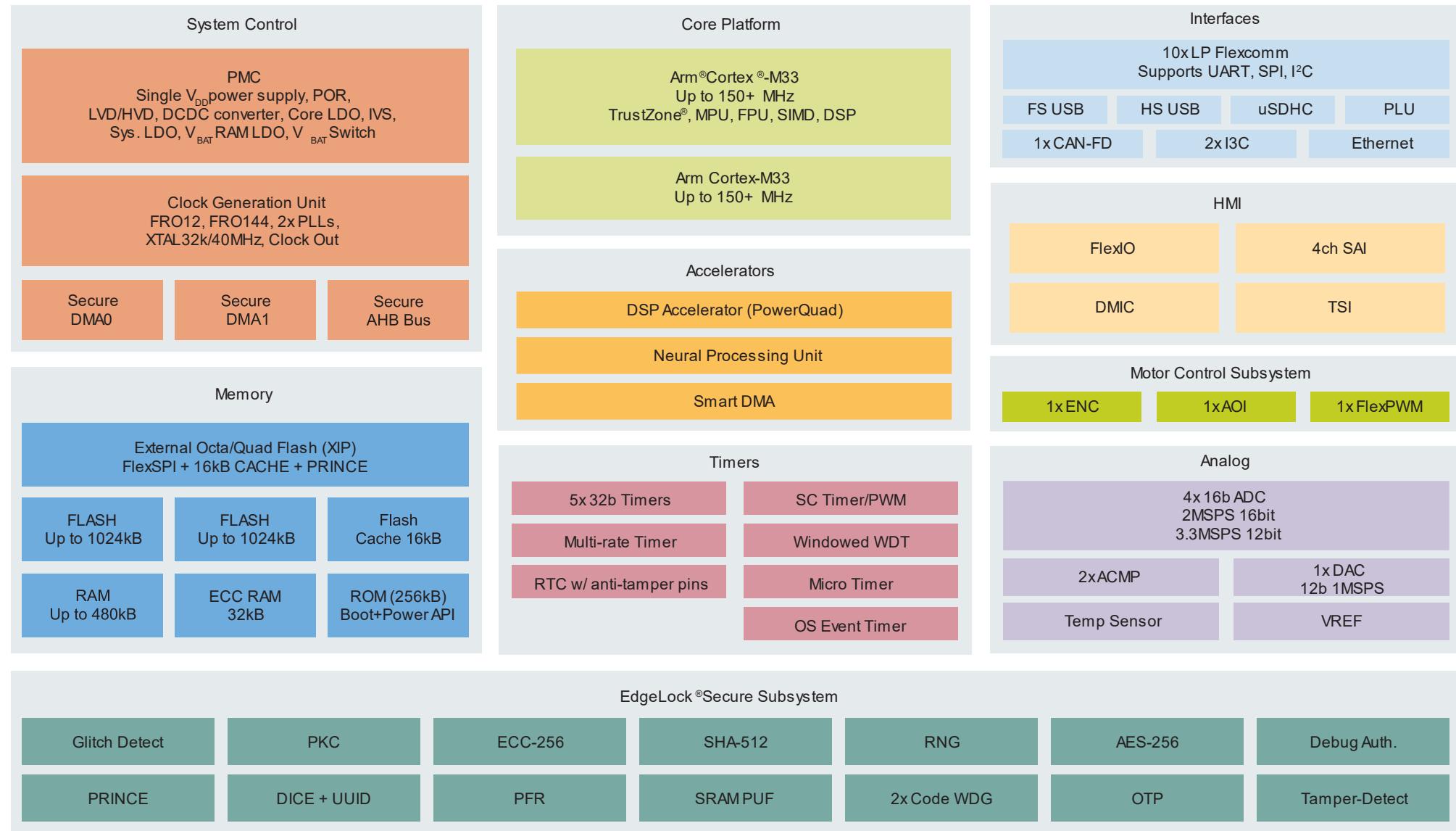
Mixed Signal Peripherals

- OpAmp & Vref, DAC
- 4x 16b ADC @ 2MSPS
- USB HS, FS, CAN FD , Ethernet
- 10 LP Flexcomm, DMIC, TSI, SAI

Safe, Robust & Secure

- Selectable ECC on SRAM with self-injection module
- Secure Subsystem for Root of Trust Keys

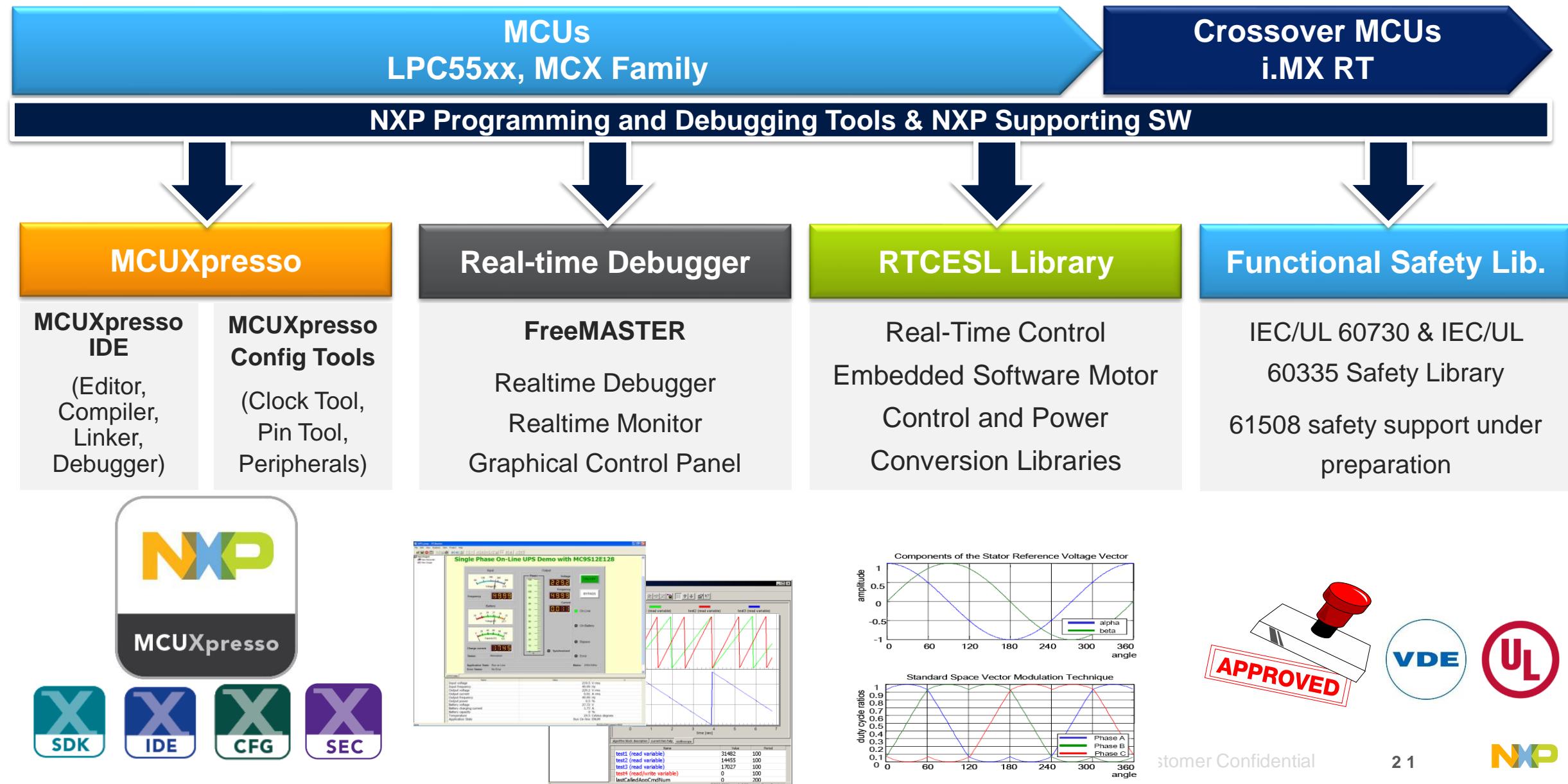
MCX N54X BLOCK DIAGRAM





MOTOR CONTROL SOFTWARE AND TOOLS

NXP PROGRAMMING AND DEBUGGING TOOLS ACROSS NXP MCUs AND CROSSOVER PROCESSORS PLATFORMS

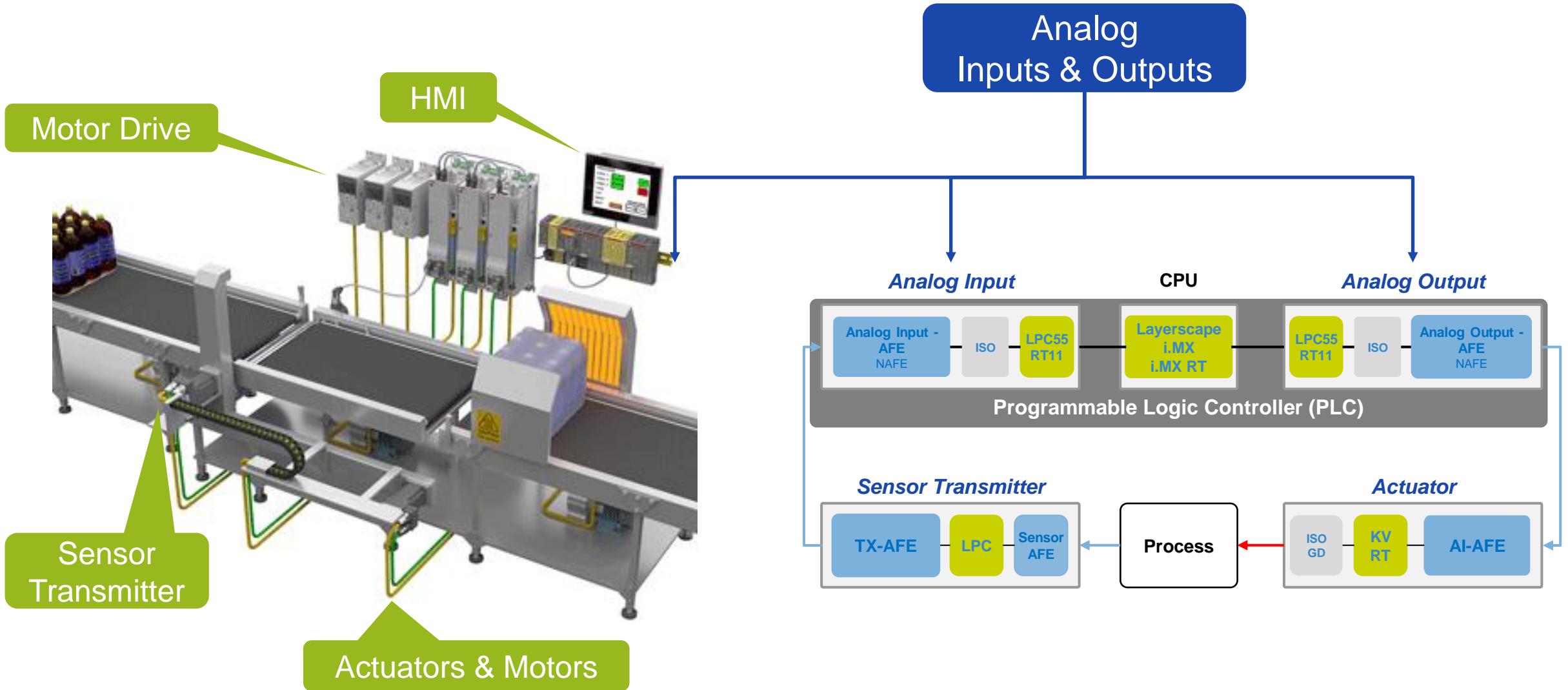




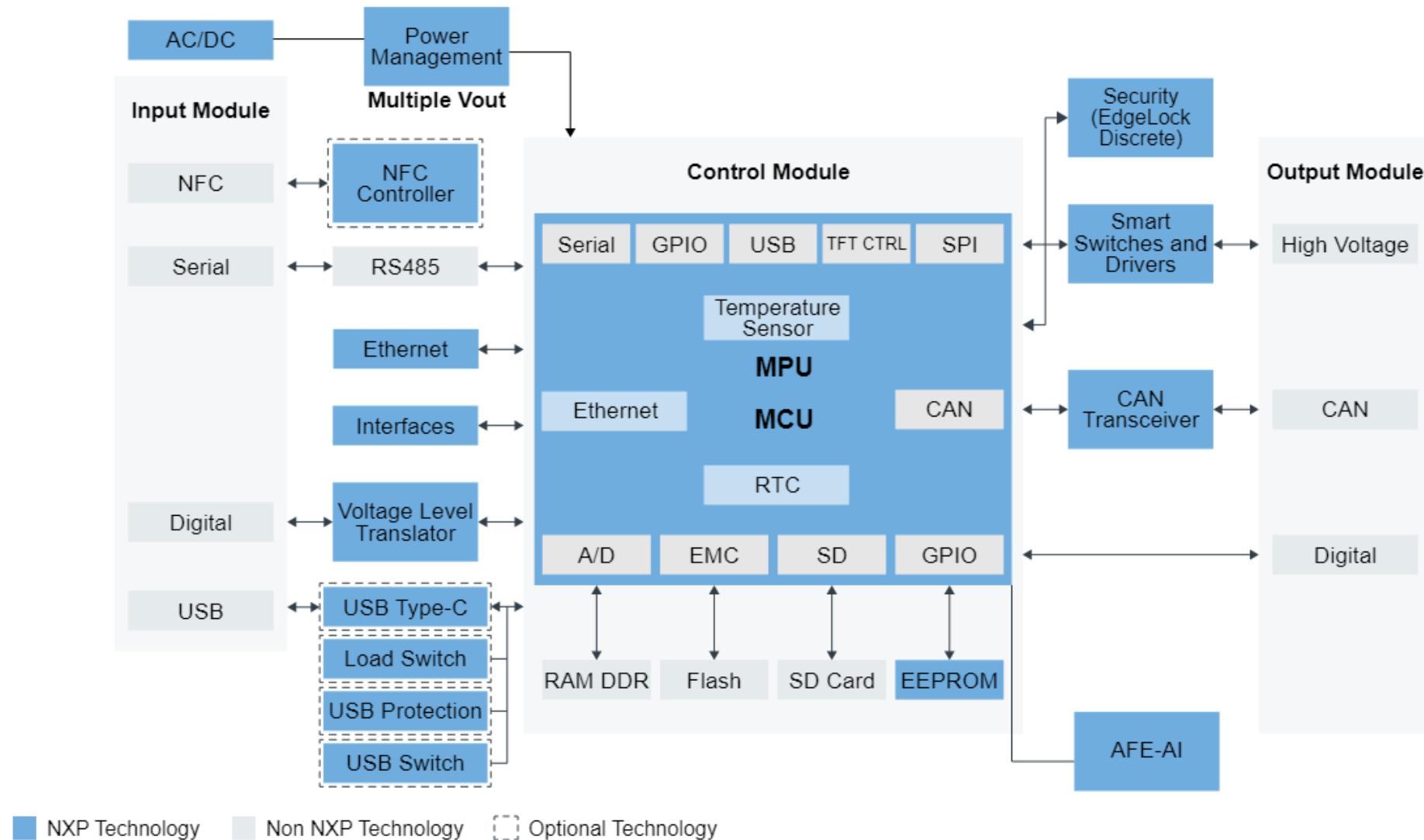
PLC & Remote I/O

NXP IS UNIQUELY POSITIONED TO OFFER A SYSTEM SOLUTION

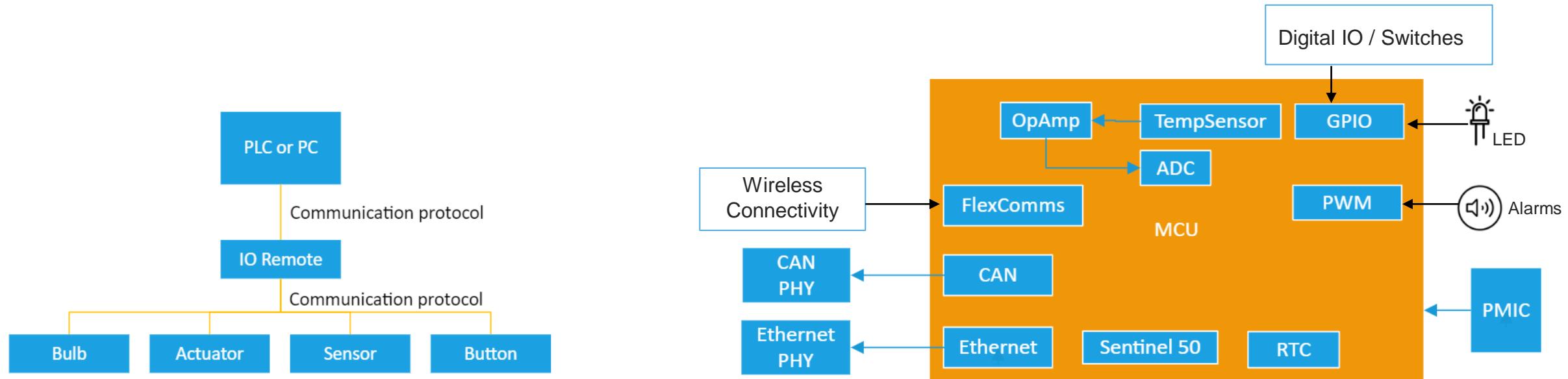
HIGH PRECISION ANALOG WITH EXTENSIVE PROCESSING CAPABILITIES ENABLING SMART FACTORY



PROGRAMMABLE LOGIC CONTROLLER BLOCK DIAGRAM



REMOTE I/O BLOCK DIAGRAM



NXP HERO PRODUCTS FOR INDUSTRIAL AUTOMATION

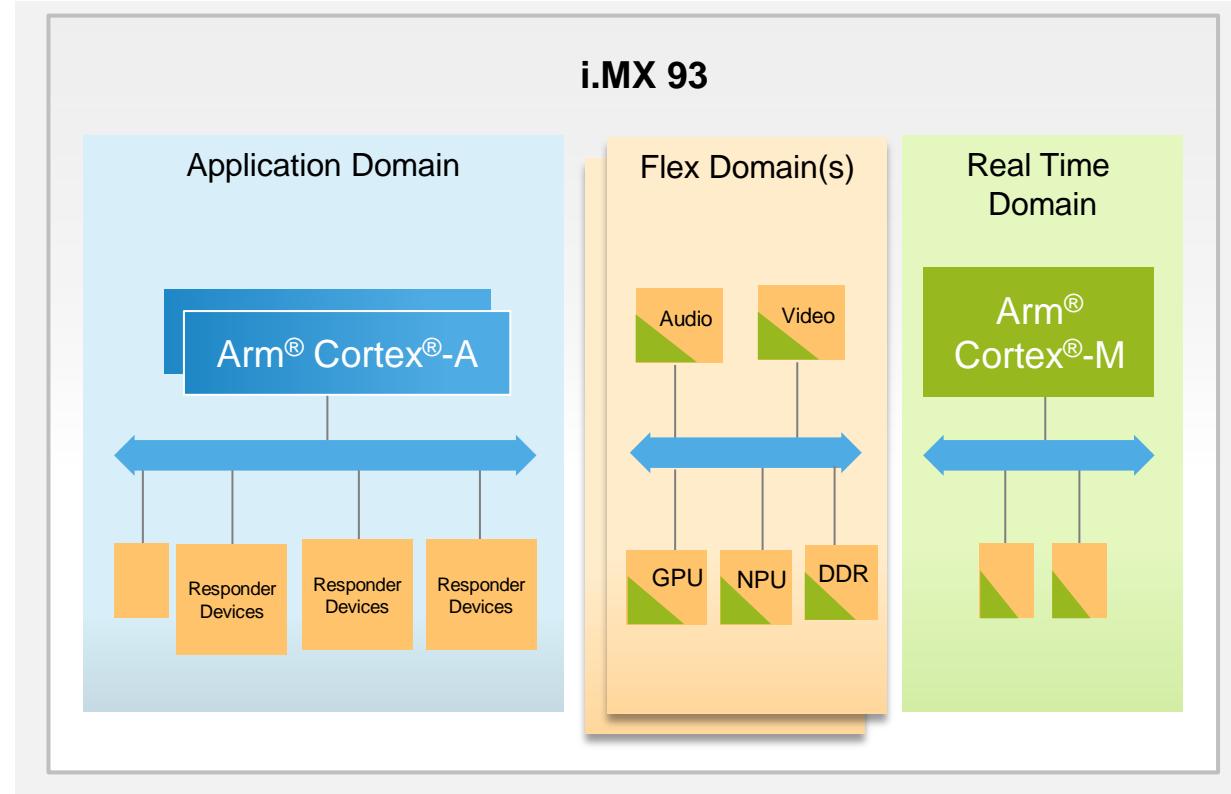
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BUILT-IN MCU: LEVERAGING MPU AND MCU IN ONE DEVICE

Arm Cortex-A

- High Processing Performance
- Rich O/S support
- NEON Acceleration
- High Bandwidth
- MMU

Performance
Peripherals



Arm Cortex-M

- Real Time Performance
- Right Sized Processing
- Extreme Low Power Modes

Low Power
Peripherals

HETEROGENEOUS DOMAIN COMPUTING (HDC)

Shared Topology Split Power Domains... Split Buses...Secure IPC

i.MX 93 FEATURES

| Product | i.MX 931/932 | i.MX 933/935 |
|-------------------------|---|---|
| Main CPU | 1x/2x A55 1.5GHz Arm v8.2-A 64kB L2 + 256kB L3 cache (w/ ECC) | 1x/ 2x A55 1.7GHz Arm v8.2-A 64kB L2 + 256kB L3 cache (w/ ECC) |
| MCU | 1x M33, 250MHz Arm v8-M 16kB+16kB cache (w/ ECC) 256kB TCM/OCRAM (w/ECC) | 1x M33, 250MHz Arm v8-M 16kB+16kB cache (w/ ECC) 256kB TCM/OCRAM (w/ECC) |
| DDR | 2.4GT/s x16 LPDDR4X Inline ECC | 3.7GT/s x16 LPDDR4X Inline ECC |
| GPU | PXP Engine: Blending/Composition, Rotation, Resize, Color Space Conversion | |
| Security | Secure Enclave with Microsoft Azure Sphere™ compliance (optional) | |
| AI/ML | | Arm Ethos U65 micro-NPU |
| SRAM | 512kB (w/ECC) | Up to 640kB (w/ ECC) |
| Camera | 8-bit parallel YUV/RGB | 1080p60 MIPI CSI (2-lane) or 8-bit parallel YUV/RGB 1080p60 MIPI DSI (4-lane) or 720p60 LVDS (4-lane) or 18-bit parallel RGB |
| Display I/F | 18-bit parallel RGB | 18-bit parallel RGB |
| Connectivity | SDIO, USB2 | SDIO, USB2 |
| Audio | 3x I2S TDM (32-bit @ 768KHz), SPDIF Tx/Rx, 8 channel PDM mic input MQS output (sigma-delta modulator) | 7x I2S TDM (32-bit @ 768KHz), SPDIF Tx/Rx, 8 channel PDM mic input MQS output (sigma-delta modulator) |
| Expansion I/O | 1x USB 2.0, 8x UART/USART/Profibus, 8x I2C, 8x SPI, 2x I3C, 1x 8-ch, 12-bit ADC, 2x 32-pin FlexIO | 2x USB 2.0 , 8x UART/USART/Profibus, 8x I2C, 8x SPI, 2x I3C, 1x 8-ch, 12-bit ADC, 2x 32-pin FlexIO |
| Network, Storage | 1x GbE, 2x CAN-FD, 3x SD/eMMC, Octal SPI FLASH | 2x GbE (1x TSN) , 2x CAN-FD, 3x SD/eMMC, Octal SPI FLASH |
| Package | 9x9mm, 0.5mm de-pop | 11x11mm , 0.5mm de-populated array 14x14mm , 0.65mm de-pop for automotive segment TBC |

ANALOG FRONT END: FLEXIBLE HIGH PRECISION ANALOG MEASUREMENTS

COMPONENTS TO ENABLE RECONFIGURABILITY AND PREDICTIVE MAINTENANCE



SOFTWARE CONFIGURABLE

Voltage, current, or temperature measurement modes - up to 8 software-configurable input channels

HIGH ACCURACY

System accuracy improvement
Designed for perfectly repeatable results

FAST DATA ACQUISITION

Faster data acquisition

SELF-CALIBRATED

Eliminate need for factory calibration

ROBUST

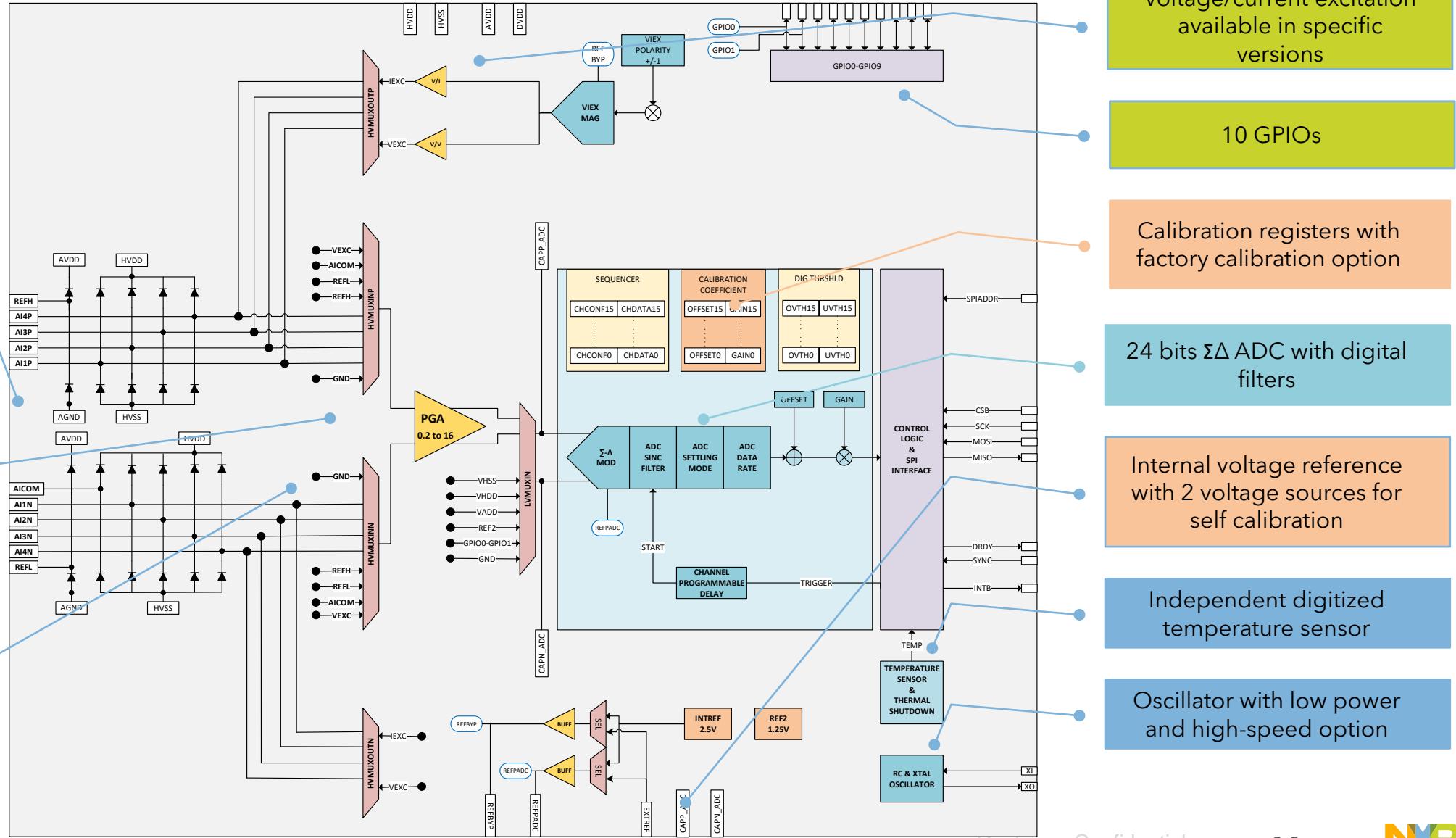
Protects against high voltage faults due to wiring mistakes
Built-in self-testing designed to predict faults and avoid catastrophic failure

NAFE SERIES: WHAT'S INSIDE

8 High-voltage protected inputs and software configurable

0.2x to 16x Low-noise PGA

Two HV, low leakage MUX with diagnostic signals inputs



Voltage/current excitation available in specific versions

10 GPIOs

Calibration registers with factory calibration option

24 bits ΣΔ ADC with digital filters

Internal voltage reference with 2 voltage sources for self calibration

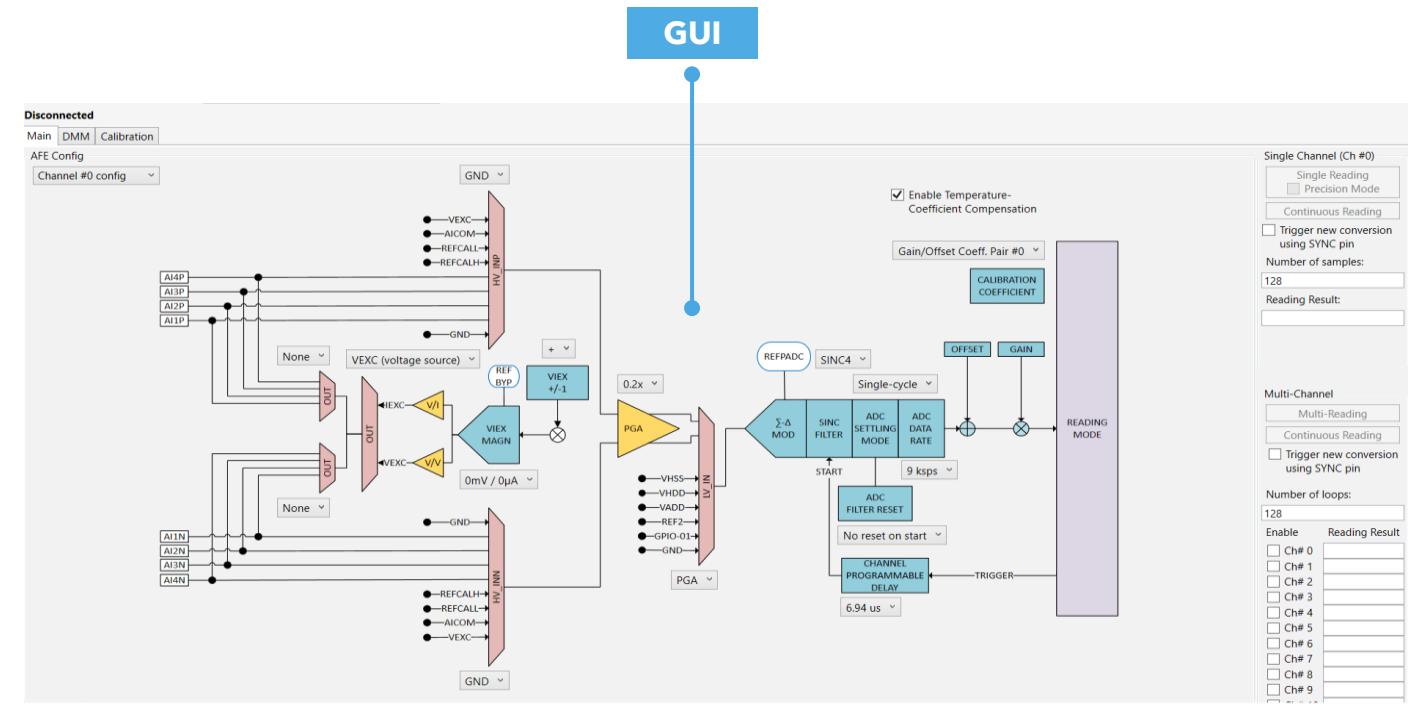
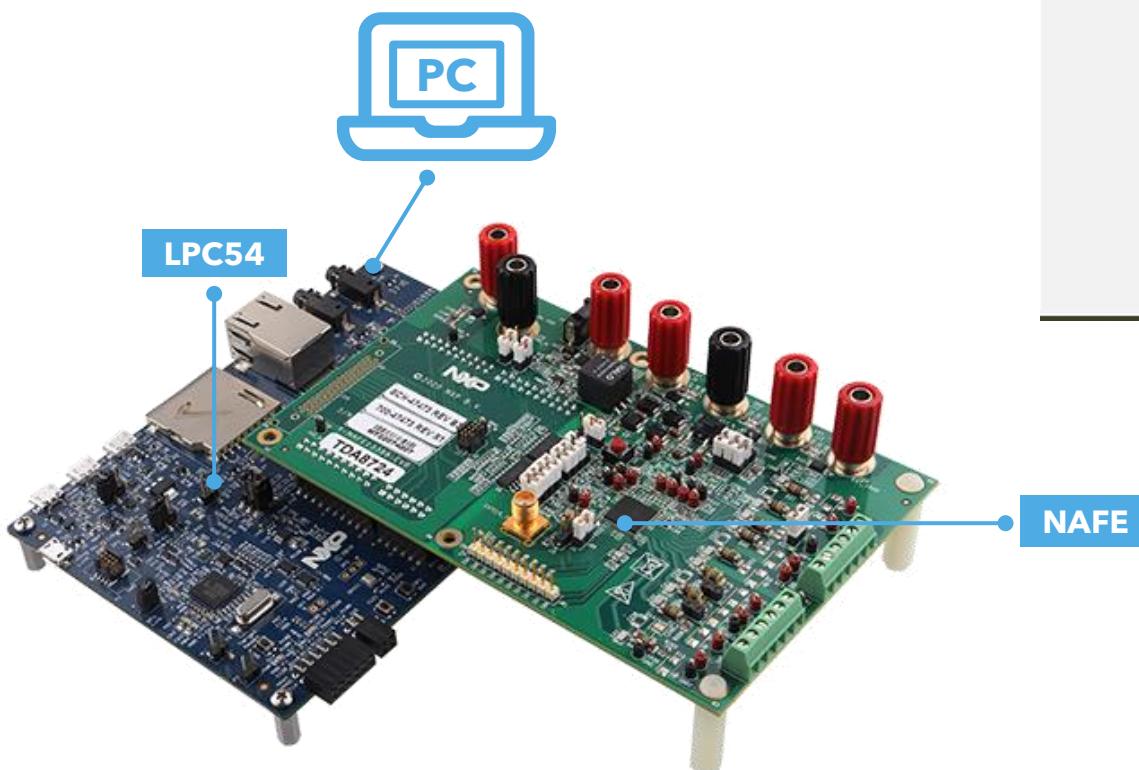
Independent digitized temperature sensor

Oscillator with low power and high-speed option

EASY-TO-USE SYSTEM EVALUATION KIT

NAFE11388-EVB

- NAFE11388 / NAFE71388 + LPC54
- AFE SW drivers
- Available Mid of March 2023



NAFE11388-EVB
(NAFE Board + USB cable + wall power adaptor + LPC54 board)

Industrial Networking

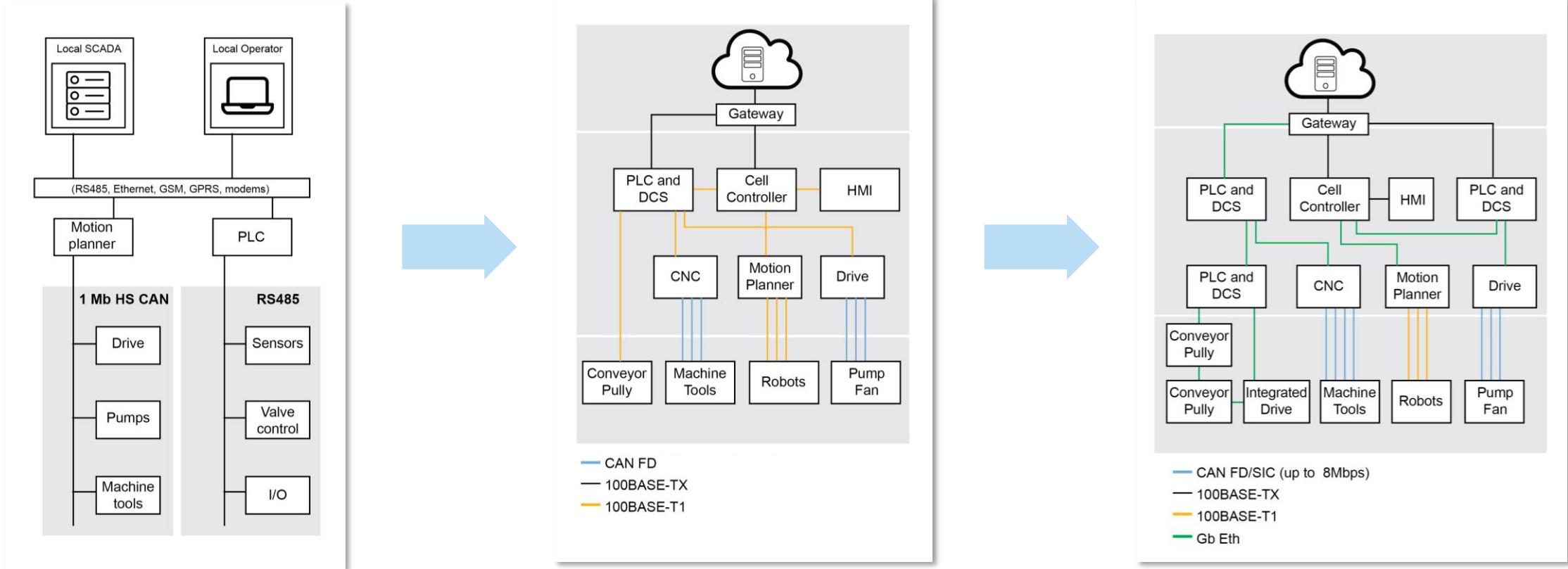
TSN is Future



SECURE CONNECTIONS
FOR A SMARTER WORLD



INDUSTRIAL AUTOMATION: EVOLUTION AND NEW CONNECTIVITY CHALLENGES



Classic

- Machine 2 Machine communication
- For 40+ years serial standard have spread over
- Low data rate and bandwidth

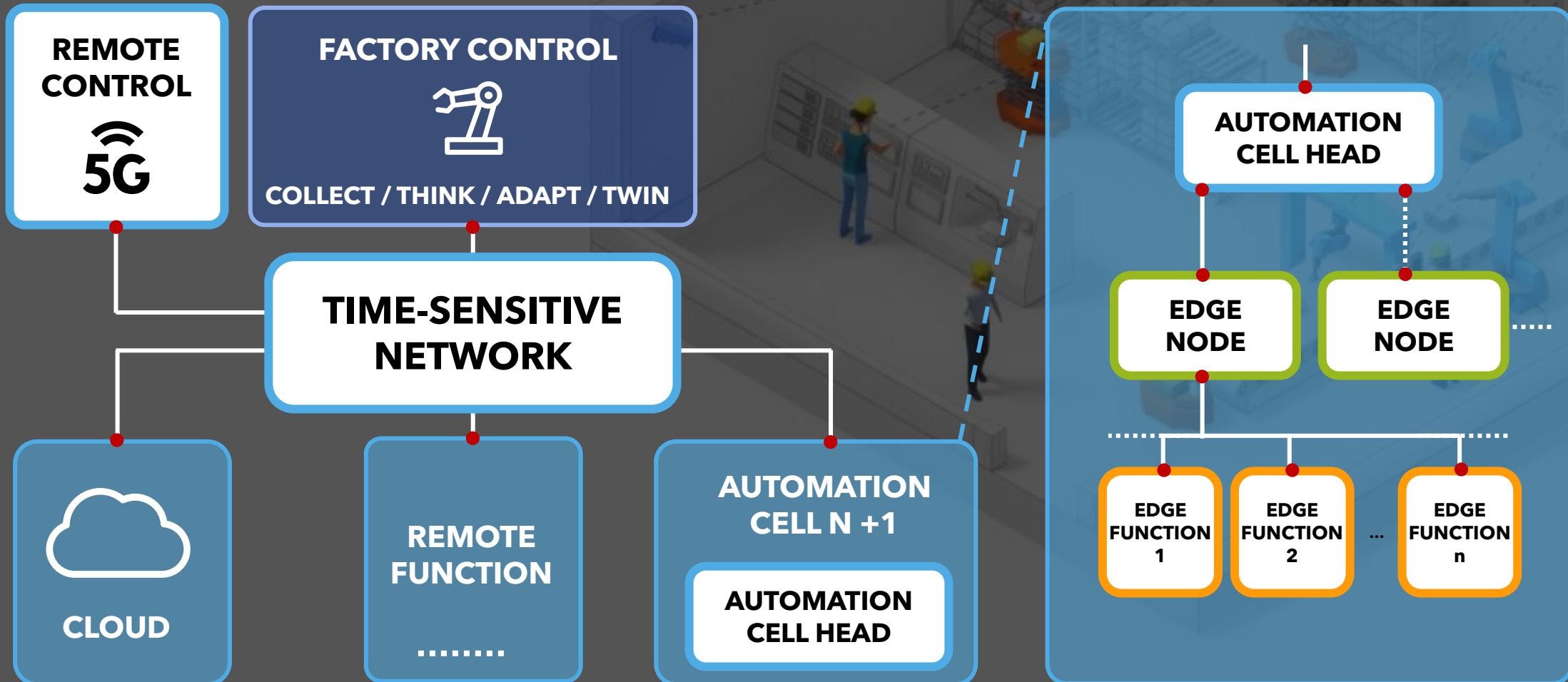
Yesterday: Industrial IoT

- Industrial IoT with real-time Ethernet protocols
- Higher data rate and bandwidth
- Real time control on selected peripherals

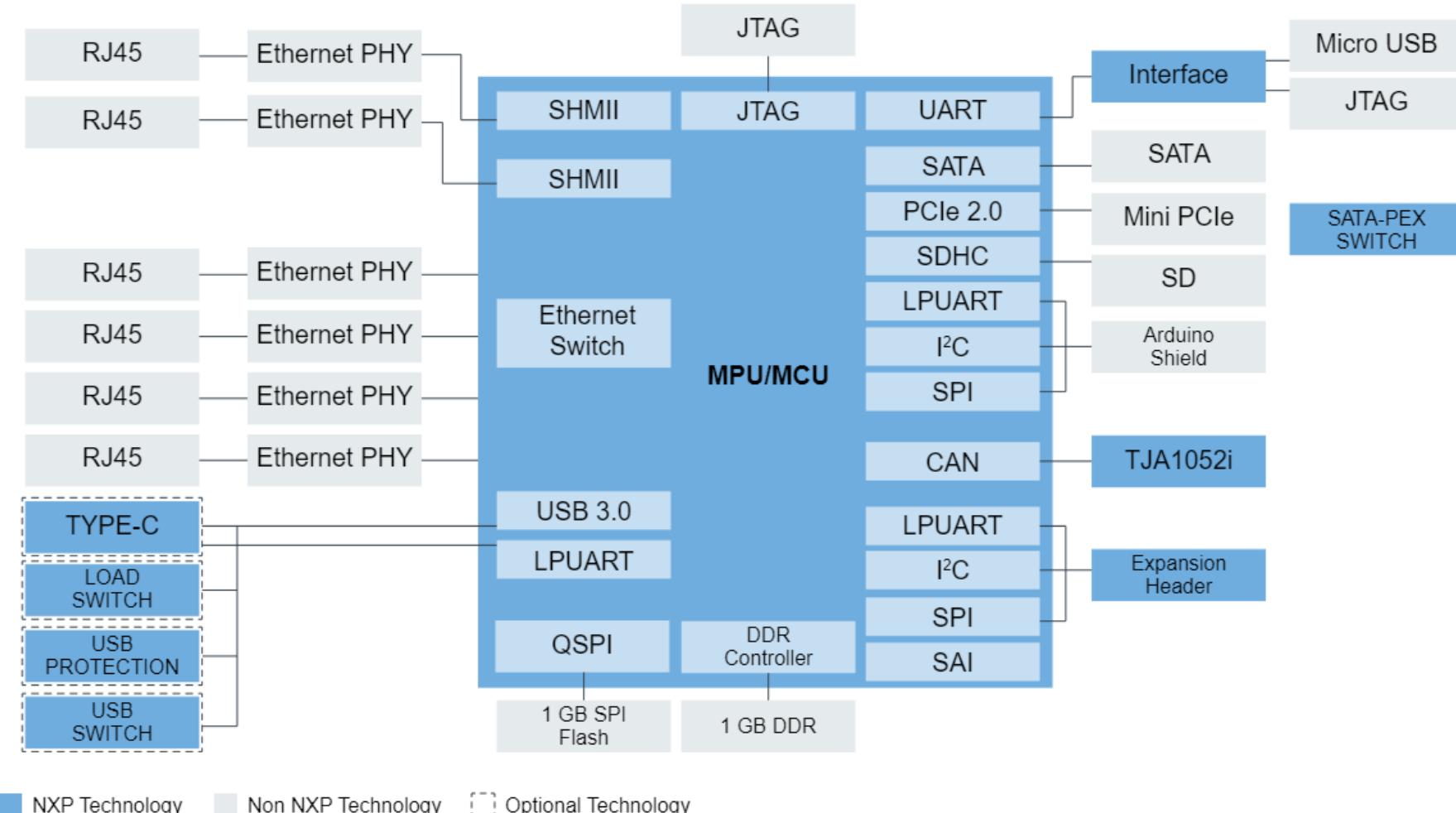
And Today: Industry 4.0

- Converged TSN with Real time Ethernet protocols
- Evolution toward unified IP
- Target to support full ethernet communication from edge to end point

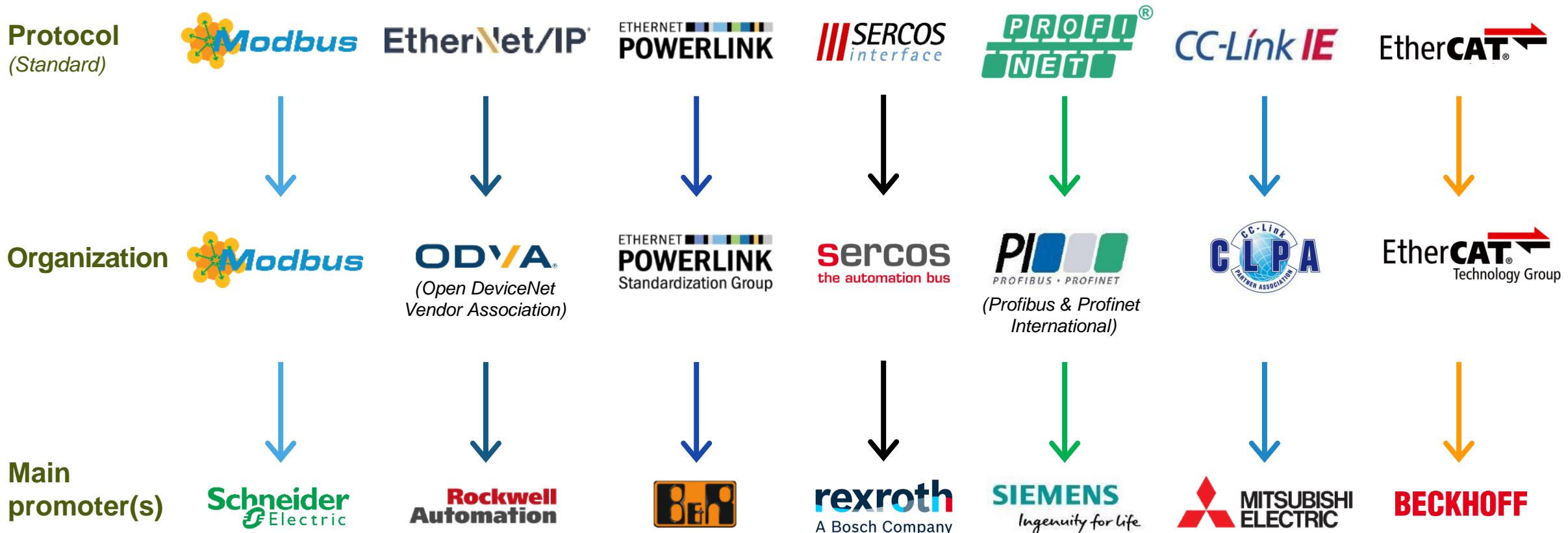
TSN ENABLES UNIFIED NETWORK AND DISTRIBUTED INTELLIGENCE



INDUSTRIAL AUTOMATION NETWORK, THE PATH TO “REAL-TIME”

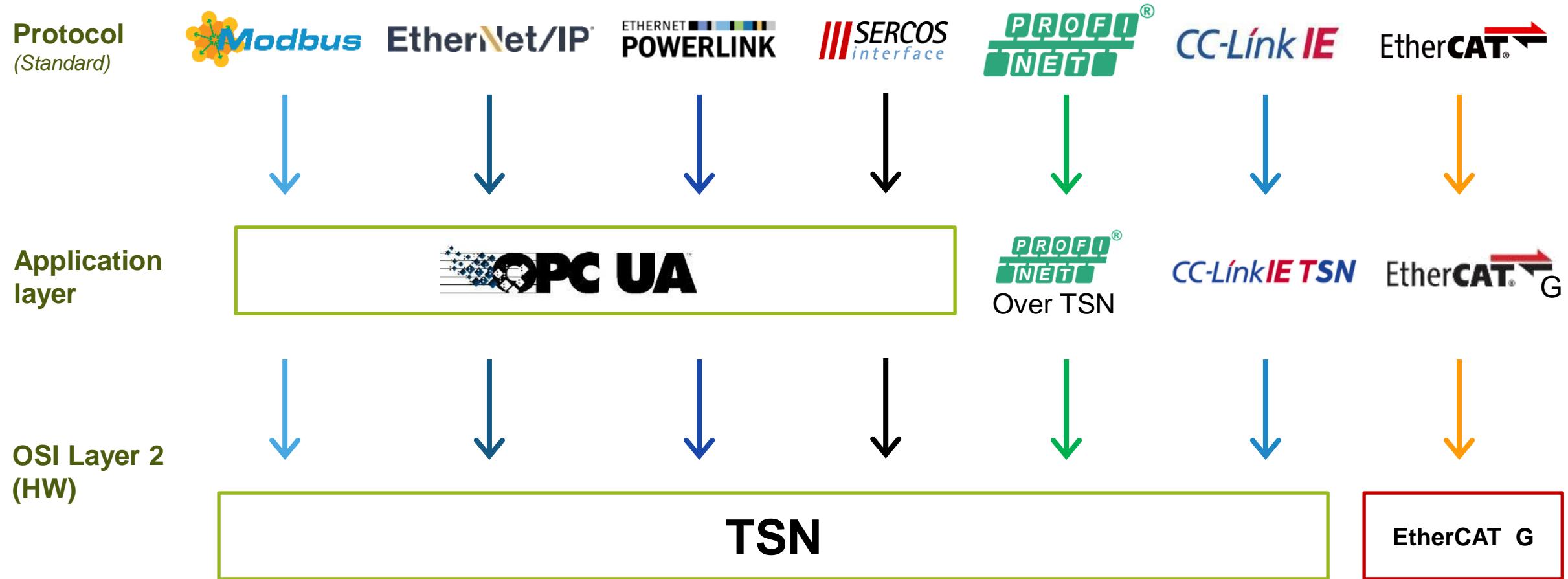


MAIN INDUSTRIAL ETHERNET PROTOCOLS WHO'S WHO



Many other Ethernet protocols exist, e.g. RTEX (Panasonic), Mechatrolink (Yaskawa), Varan (Sigmatek),...

MAIN INDUSTRIAL ETHERNET PROTOCOLS EVOLUTION



TSN aims to propose a unified HW for OSI Layer2

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i.MX RT1180 CROSSOVER MCUS

REAL-TIME INDUSTRIAL EDGE SOLUTION

- ✓ **Multi-protocol Networking**
- ✓ **Advanced Security**
- ✓ **Designed for Efficiency**

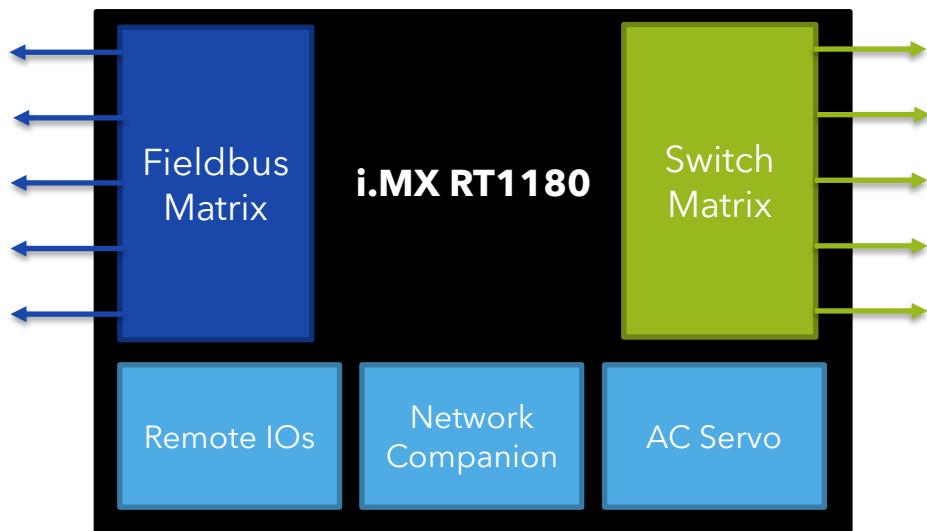


Industrial IoT

- Factory automation
- Compact motion control
- Industrial Gateway, Network Companion
- AC / Servo Drives
- Remote I/O
- IO-Link Master

i.MX RT1180 CROSSOVER MCU

- Dual core with Arm Cortex-M7 at up to 800MHz and Arm Cortex-M33 at up to 240MHz
- Enabling IEC 62443 system-level compliance, and IEC 60802 industrial profile support
- Enhanced drive capability
- Secure, compact and low power



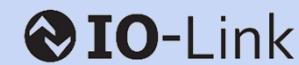
INDUSTRIAL COMMUNICATION ENGINE

- Complete support of industry's latest TSN standards
- Designed for simplicity, flexibility and performance

Time Sensitive networks



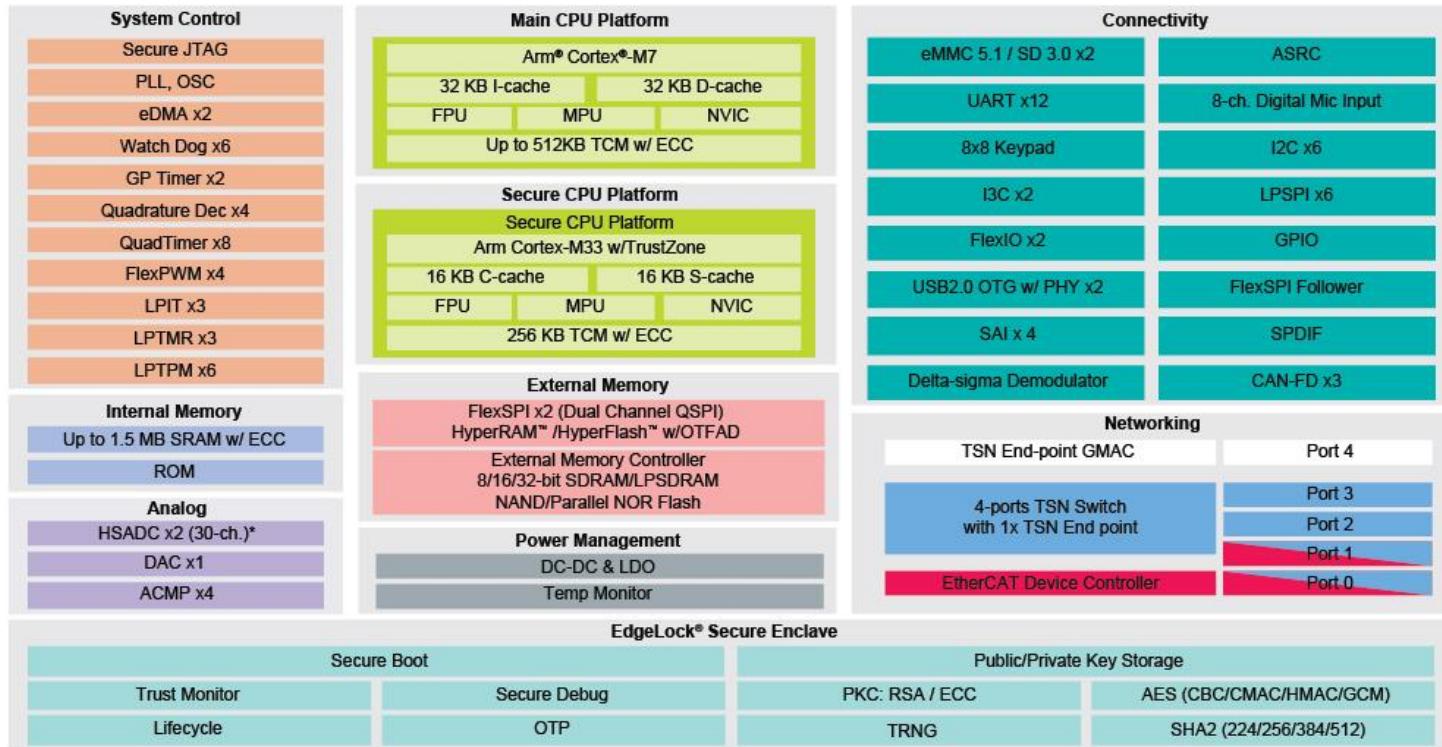
Serial Fieldbus



Industrial Real-time Networks



i.MX RT1180 BLOCK DIAGRAM



*up to 2x simultaneous conversion per ADC
Configuration depends on package selection

Key Features

- Arm® Cortex-M7 @ 800MHz, 32KB/32KB L1 Cache, 512KB TCM
- Arm® Cortex-M33 @ 240MHz, 16KB/16KB L1 Cache, 256KB TCM, Arm TrustZone
- 1.5MB on-chip SRAM (including TCM for CPU core) + ECC
- Advanced and flexible Ethernet:
 - 1x independent 1Gbps TSN MAC
 - Up to 5-Port (4 + 1) TSN Switch with 1Gbps TSN MAC
 - OPC UA Frame Summation HW acceleration
 - EtherCAT Device Controller (2 ports)
- 8/16/32-bit SDRAM/LPDRAM controller up to 200MHz
- 8/16-bit Parallel NOR FLASH / NAND FLASH / PSRAM
- 2x QSPI NOR FLASH / HyperRAM / HyperFLASH Interface
- 2x eMMC 5.1/SD 3.0/SDIO Port
- 2x USB 2.0 OTG, HS/FS, Device or Host with PHY
- 2x 16-bit ADC (up to 4 simultaneous conversion; 2x per ADC).
- 1x 12-bit DAC
- 4x Analog comparator, 12ch Delta-sigma demodulator
- Full PMU Integration, DCDC+LDOs
- EdgeLock Secure Enclave: Secure Boot, TRNG, RSA4096, Tamper Detection, Key Storage

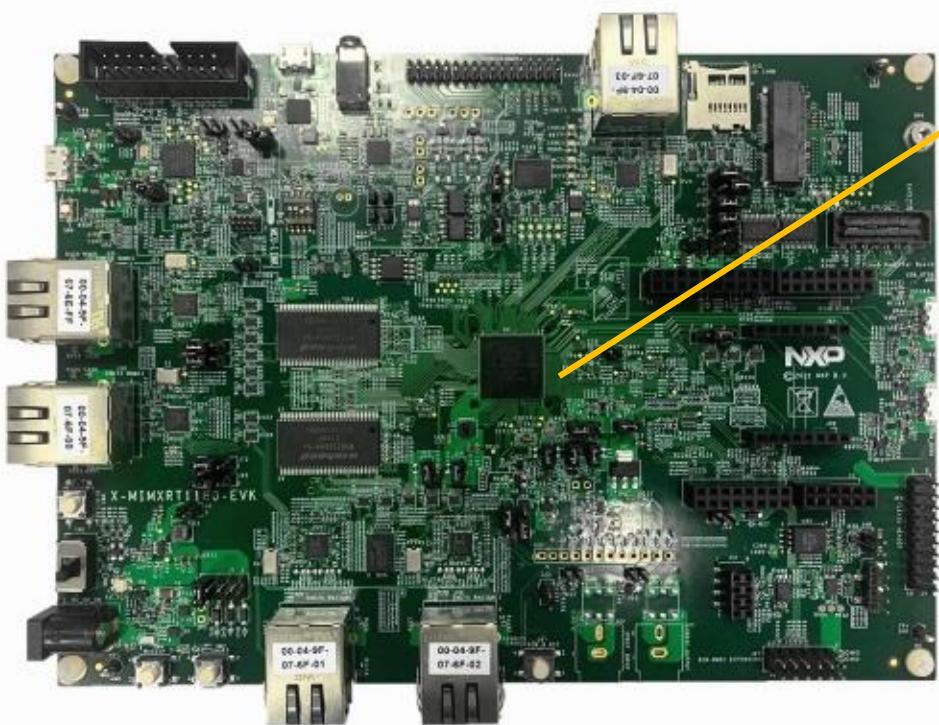
Specifications:

- Process: SEC 28FD-SOI
- Core Voltage: 1.0V
- IO Voltage : 1.8V ; 3.3V
- Packages:
 - MAPBGA289, 14x14mm, 0.8mm pitch,
 - MAPBGA144 10x10mm 0.8mm pitch

Enablement

- MCUXpresso Suite of Software and Tools
- FreeRTOS, Zephyr, Azure RTOS

i.MX RT1180 EVALUATION KIT (RT1180-EVK)



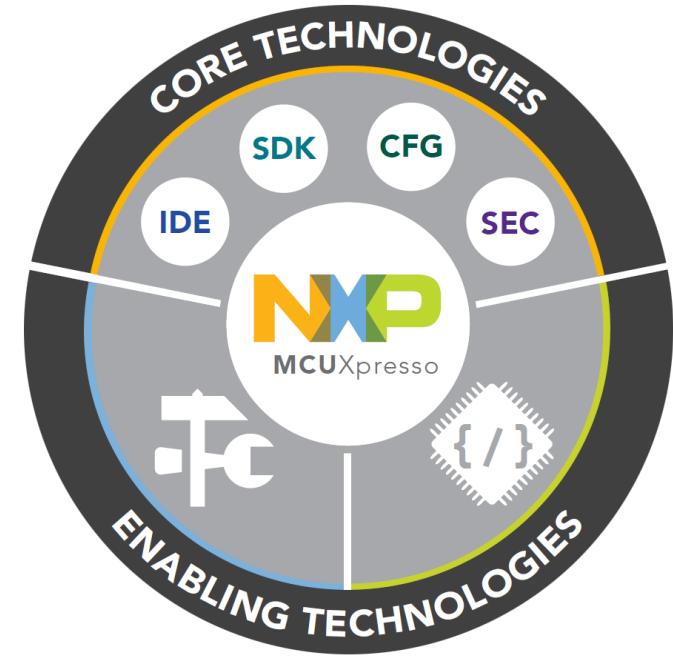
Dual-Core Superset

PIMXRT1189CVM8A
(Proto)
MIMXRT1189CVM8A

(Production)
BGA289

Additional Board Highlights

- Up to 5 ethernet ports
- 2x MII/RMII
- 3x RGMII
- Up to 512MB on-board (2x 256MB @200MHz)
- 8MB HyperRAM (@166MHz)
- 64MB Octo NOR Flash (@200MHz)
- FTDI USB to UART



| Deliverable | Availability |
|---|------------------------------|
| Preliminary Data Sheet | April-2022 |
| RT1180-EVK, MCUXpresso SDK (EAR)*, Preliminary Reference Manual | July-2022 (Alpha Program) |
| TSN Stack EAR (MCUXpresso) | Late Q3 / Q4-2022 |
| EtherCAT Stack EAR (Beckhoff ETG) | Late Q3 / Q4-2022 |
| OPC UA EAR | Late Q3 / Q4-2022 |

* Initial release supported by IAR/ARMGCC

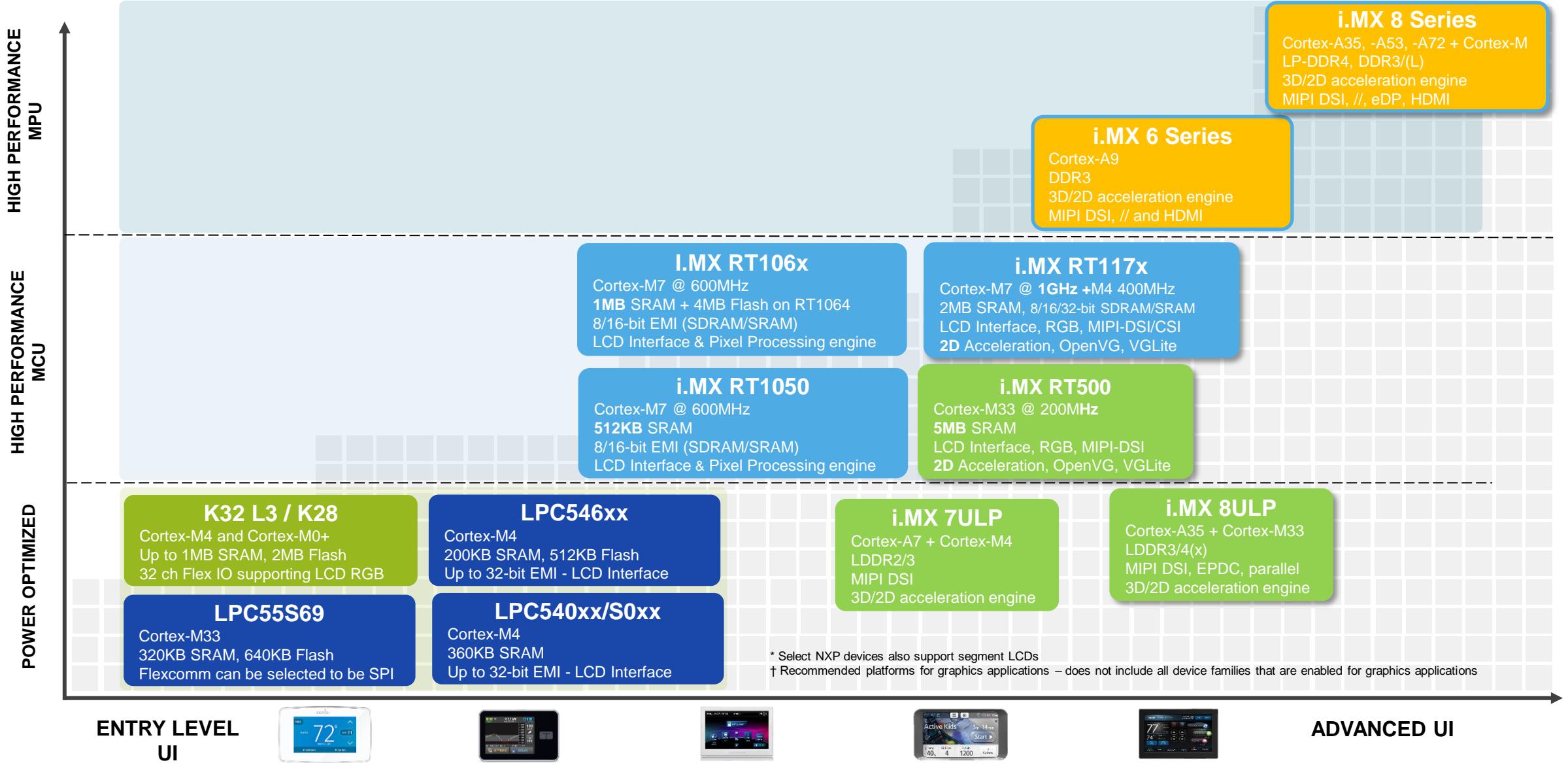
HMI



SECURE CONNECTIONS
FOR A SMARTER WORLD



NXP MCUS AND MPUS OPTIMIZED FOR GRAPHICAL INTERFACES



RECOMMENDED GRAPHICS SOFTWARE SOLUTIONS

High Performance MCU
Mainstream MCU
Power Optimized MCU

NXP emWin



Embedded Wizard



CRANK SOFTWARE



Qt

LittlevGL



Entry Level UI



Advanced UI

NXP HERO PRODUCTS FOR INDUSTRIAL AUTOMATION

| | MCU | RT | MPU | Network Communication | Analog | Security |
|-------------------------|--|------------------|---|---|---|----------|
| Motion Control & Drives | LPC553x MCX N S32K1, S32K3 | RT1180 RT10xx | i.MX8M Plus | CAN: TJA146x TJA115x Ethernet: TJA1103 SJA1105 | PF09 | SE051 |
| PLC & Remote I/Os | MCX N (Low end PLCs) LPC552x (I/O slice) | RT1180 RT10xx | i.MX93 (Remote I/Os) | CAN: TJA146x CAN XL Ethernet: TJA1103x TJA1120 | NAFE11388 PF09 | SE051 |
| Industrial Networking | | RT1180 | i.MX8M Plus | Ethernet: TJA1103x TJA1120 SJA1105x SJA1110 | PF09 | |
| Industrial HMI & Vision | | RT1170 | i.MX93 (Low end) 8MPlus (Mid Range) 8M Mini (Mid Range) | Ethernet: TJA1103 TJA1120 SJA1105 | PCA9450 A/B/C PCA9460 PCA9451 PF09 | SE051 |

i.MX Industrial Drive Platform



SECURE CONNECTIONS
FOR A SMARTER WORLD



USE CASES LIST - SECOND SW RELEASE

Hardened version of first SW release, in order to be compliant with ISA/IEC 62443-4 standards



Multi-axis motor control

Single, Dual, Triple or Quad motor control using Field oriented control (FOC) algorithm to command servo motors (PMSM motor with incremental encoder).



TSN connectivity

Deterministic Ethernet communication, implementing IEEE 802.1AS and IEEE 802.1Qbv standards. It supports Real-time and Best-effort traffic over the same wire.



Fault detection

Detection and registration of abnormal behavior of the development platform, covering events of motor control, security and board's temperature.



Data Logging

Encrypted and time stamped registration of user interactions, faults, operation and communication events.



Secure user interaction

User access policy enforcement. It protects local interaction of platform in maintenance activities (e.g. local start/stop motors, SD card access, among others).



Cyber-resilience

Approach that allows to always recover to a trusted state without human intervention after a remote attack (key elements: Authenticated Watchdog Timer (AWDT), Secure Boot Loader and Recovery service).



Remote monitoring

Remote access (local network or cloud) for trusted users allowing the monitoring of internal data over a secure communication channel.



ISA/IEC 62443-4 Compliant

The development platform, together with a physical enclosure concept and its 2nd SW release are developed to be compliant with ISA/IEC 62443-4 part 1 and part 2 (industrial cybersecurity standards).

ARCHITECTURE - BLOCK DIAGRAM

i.MX RT Industrial Drive Development Platform

NXP products

Crossover MCU

- [i.MX RT1176](#)

Secure Element

- [SE05x](#)

(WiFi Module)

- M.2 connector for [NXP WiFi](#) module*

PMIC

- [PF5020](#)

NFC Reader

- [PN7462](#)

CAN Transceiver

- [TJA1462A](#)
- [TJA1152A](#)

Analog Front End

- NAFE13388

Gate Driver

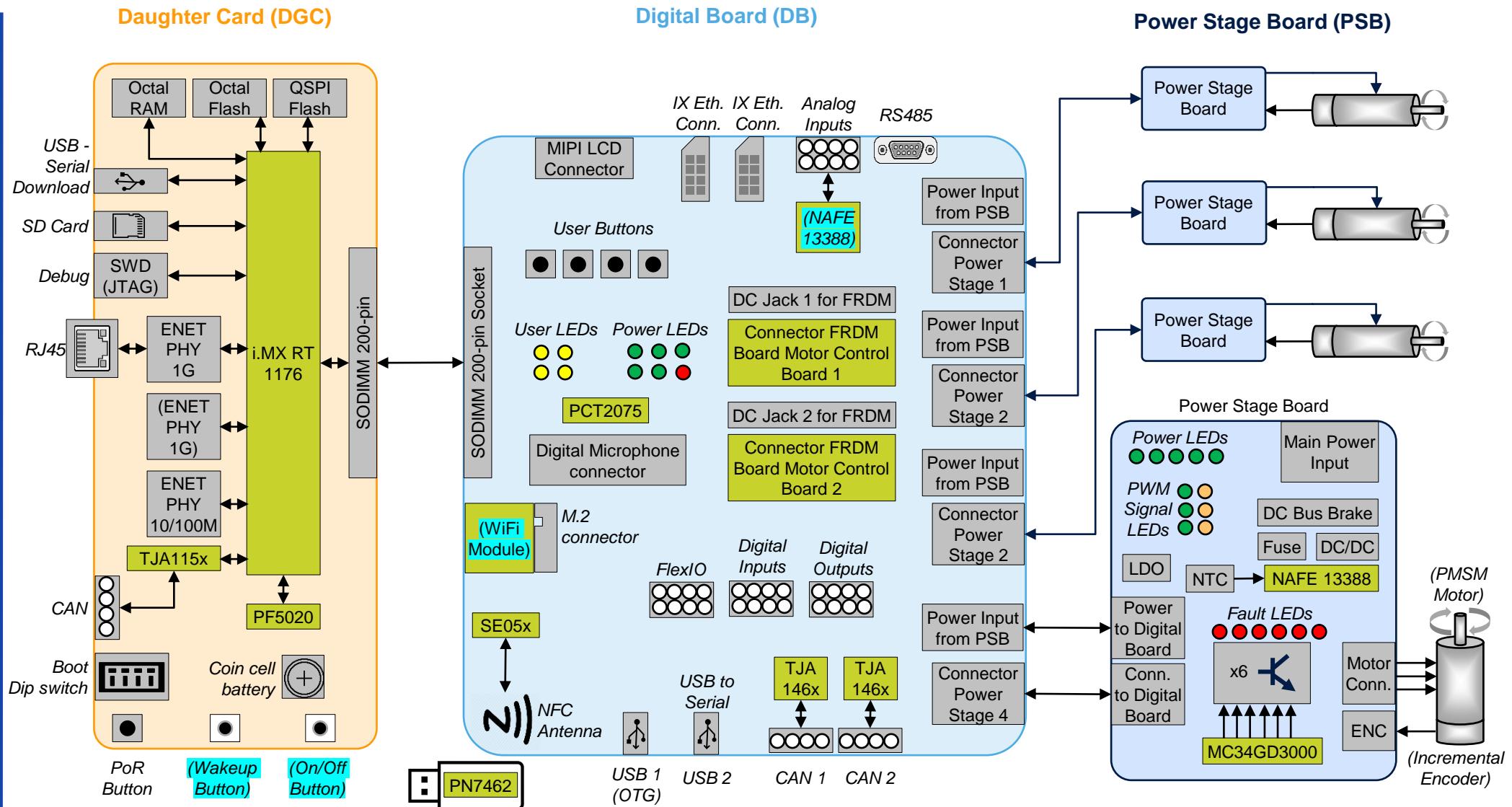
- [MC34GD3000](#)

(FRDM Board)

- Connector for [FRDM-MC-LVPM](#)

Digital Temp. sensor

- [PCT2075](#)



*search for WiFi module supported by i.MX RT117x SDK.

Customer Confidential

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NXP



TECHNOLOGY SHOWROOM

JOURNEYS BY DESIRED ENGAGEMENT

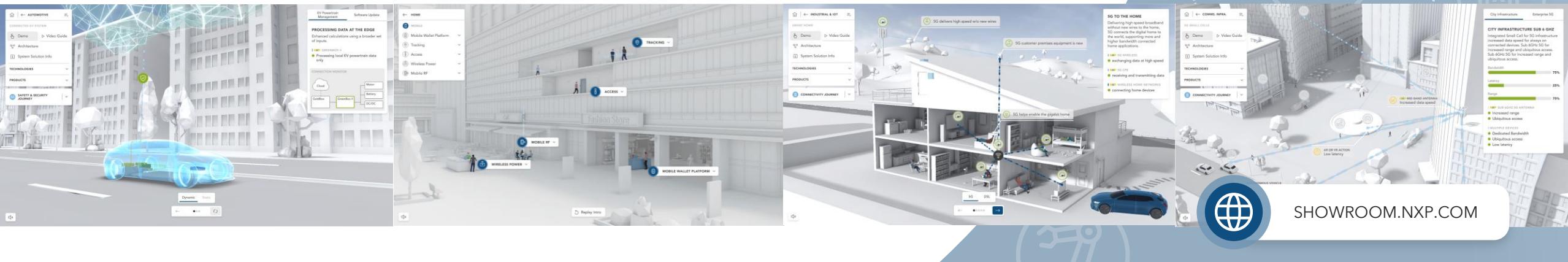
Self-guided tour
Live-streaming at set times
Guided tours

JOURNEYS BY DESIRED FOCUS

Edge & AI/ML
Safety & Security
Connectivity
Analog

40+ VIRTUAL DEMOS

Focus on system solutions
Set up along NXP verticals



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