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ST Sensors & Embedded Tech

Embedded & Connectivity Technologies

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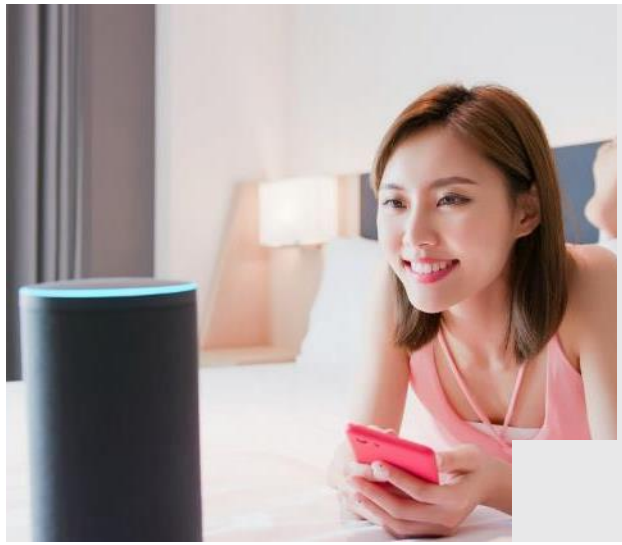
Where you find ST embedded products

Making **homes & cities** smarter, for better living, higher security, and to get more from available resources

Enabling the evolution of **industry** towards smarter, safer and more efficient factories and workplaces

Making **driving** safer, greener and more connected



Making everyday **things** smarter, connected and more aware of their surroundings

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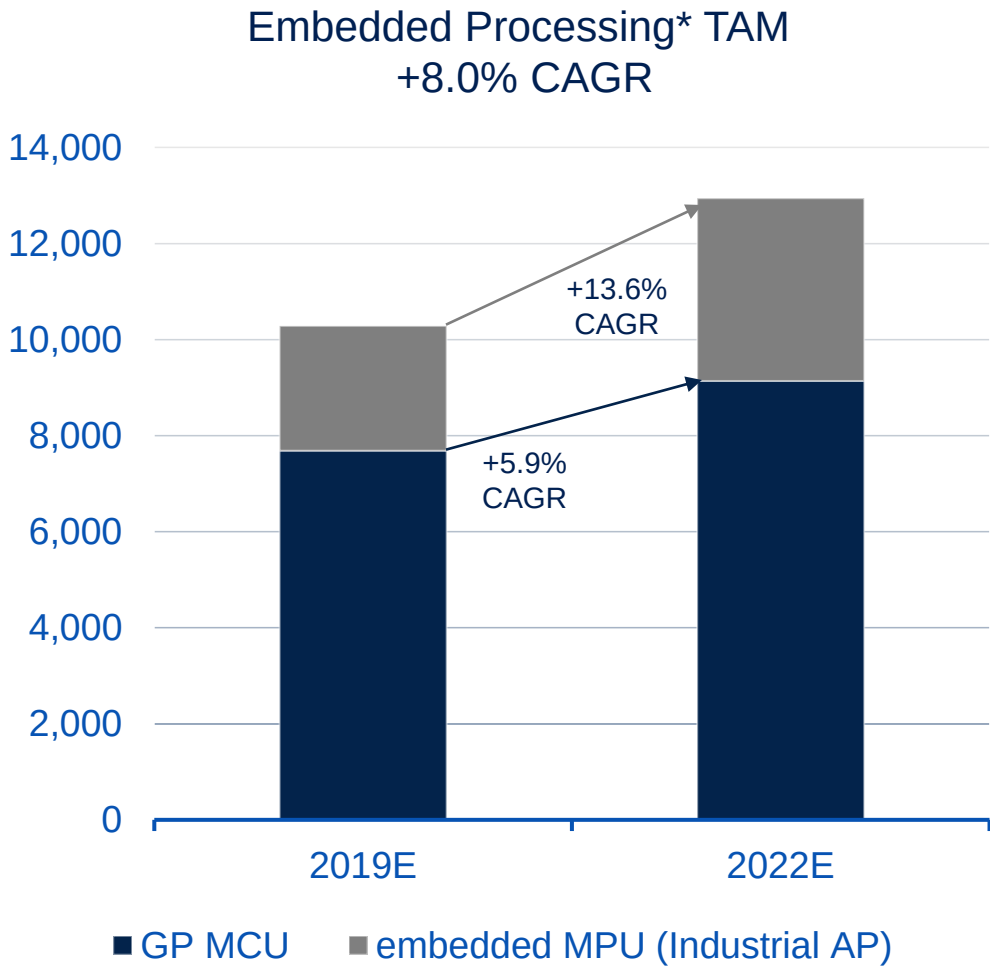
Embedded Processing Market Trend



* Excluding Automotive MCUs
Source: WSTS August 2019

Growth Driver Industrial

- The brain of a large variety of applications
- IoT pervasion accelerated by 5G deployment
- Artificial Intelligence disruption at the edge
- New applications enabled by secure IoT

- Industrial Robotics / Factory Automation
- Medical Diagnostic and imaging
- Drones
- Point of Sales

- Appliances
- Wellness & fitness
- Additive manufacturing
- Portable Point of Sales
- Industrial & Power tools
- Smart Metering
- Personal healthcare
- Smart Farming

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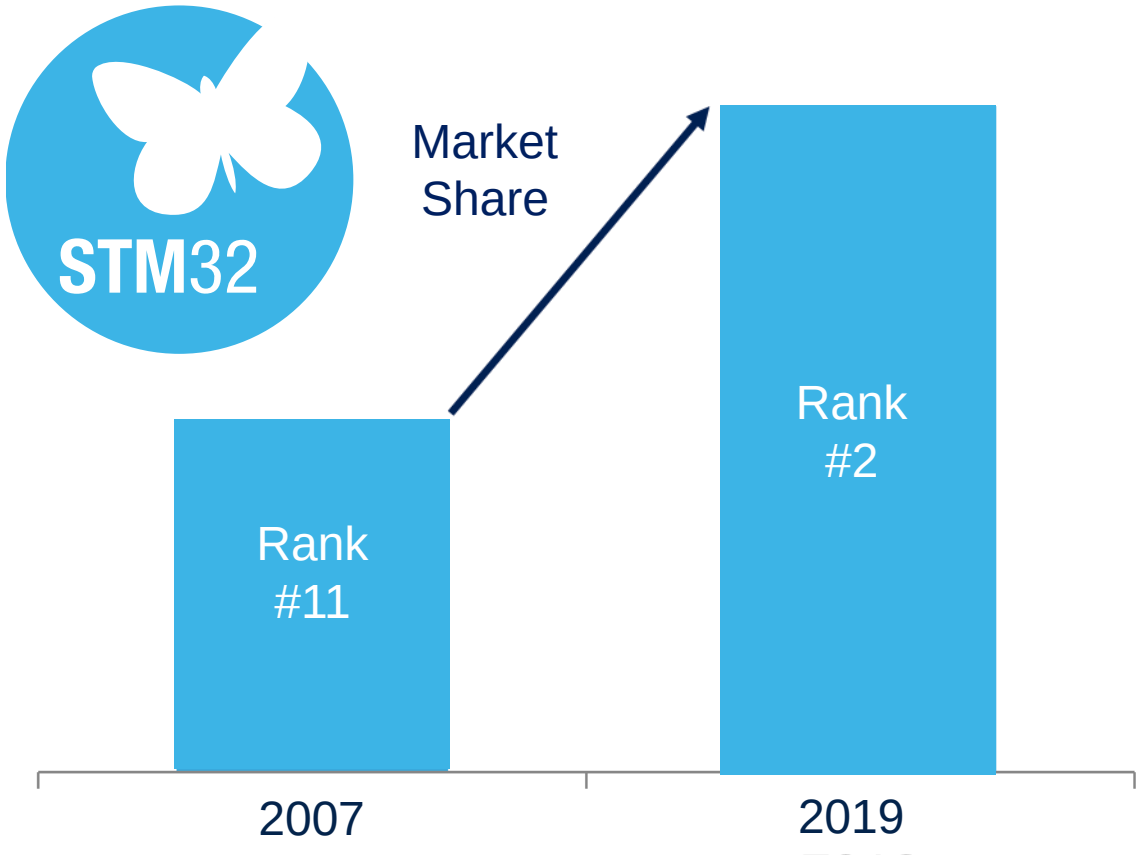
ST & Embedded Processing

ST Embedded Processing Ranking



STM32 Microcontroller family

- Based on single or dual ARM Cortex M core
- Broadest global portfolio
- > 1600 products available
- Serving more than 60,000 customers worldwide
- More than 4 Billion units shipped from 2007
- Complete, robust & coherent ecosystem

STM32MP Microprocessor family

- 1st product launched 1Q19
- Multi-core Arm Cortex-A cores
- Very high performance
- Differentiated ecosystem

* Source: Omdia CLT March 9th, 2020

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STM32 Product Family

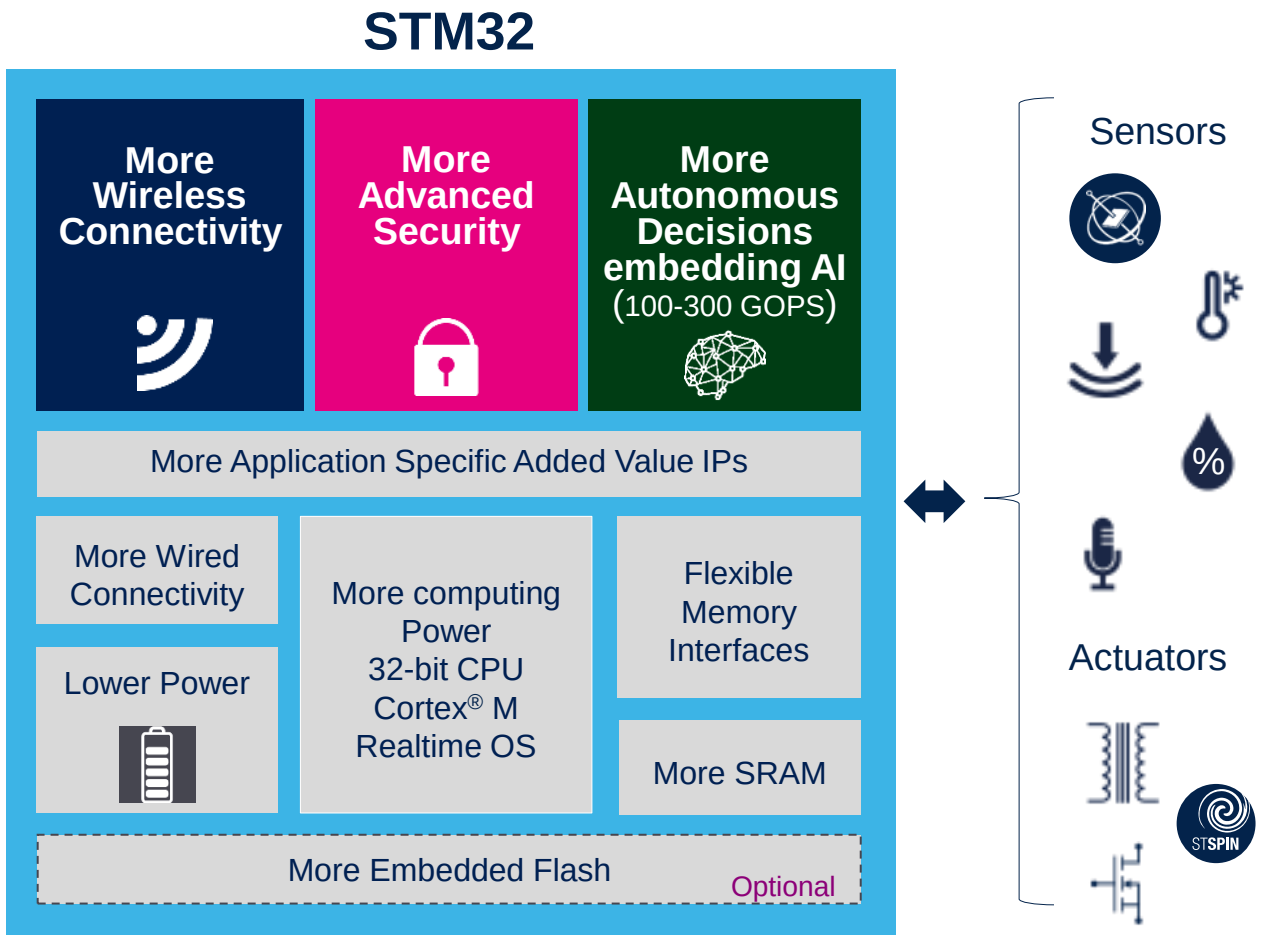
Strengthening Embedded Processing

Market growth drivers

- MCUs embedding wireless connectivity capability well adapted to the targeted applications
- Advanced security
- AI capabilities
- Robust & Comprehensive Ecosystem to accelerate applications/system developments

Focused verticals & technologies

- STM32 products supporting system solutions and continuous expansion
- Graphics
- Connectivity
- Security
- Wireless
- Motor Control
- Digital Power
- Audio



Advanced Non-Volatile Memory…

Expanded Ecosystems

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STM32 Product Expansion

Strengthening Embedded Processing

- More Performance
- Enrich portfolio
- More connectivity
- More safety
- More security
- Ecosystem

2019	
High performance	**STM32MP1**
High performance	**STM32H7 Dual Core**
Mainstream	**2x STM32G4**
Wireless	**2x STM32WB**
Security	**STM32L5**
STM32 Cube.AI	**STM32L4+** **STM32G0** **STM32H7** Access

2020	
High performance	**STM32MP1 800MHz**
High performance	**STM32H7 Value Line**
Wireless	**STM32WL**
Safety	**Safety SW Packages**
STM32 Trust	**Security Certifications**
STM32 Cube	**STM32CubeMonitor** **TouchGFX** **GitHub**

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STM32 ecosystem overview

Software

STM32 Cube

STM32 CubeMX

STM32 CubeProgrammer

STM32 CubeIDE

STM32 CubeMonitor

Hardware

STM32 Nucleo	Discovery kits	Evaluation boards
Flexible prototyping	Key feature prototyping	Full feature evaluation

Customer support

FAE - Worldwide Customer Support

community.st.com

MOOC

Partner Program

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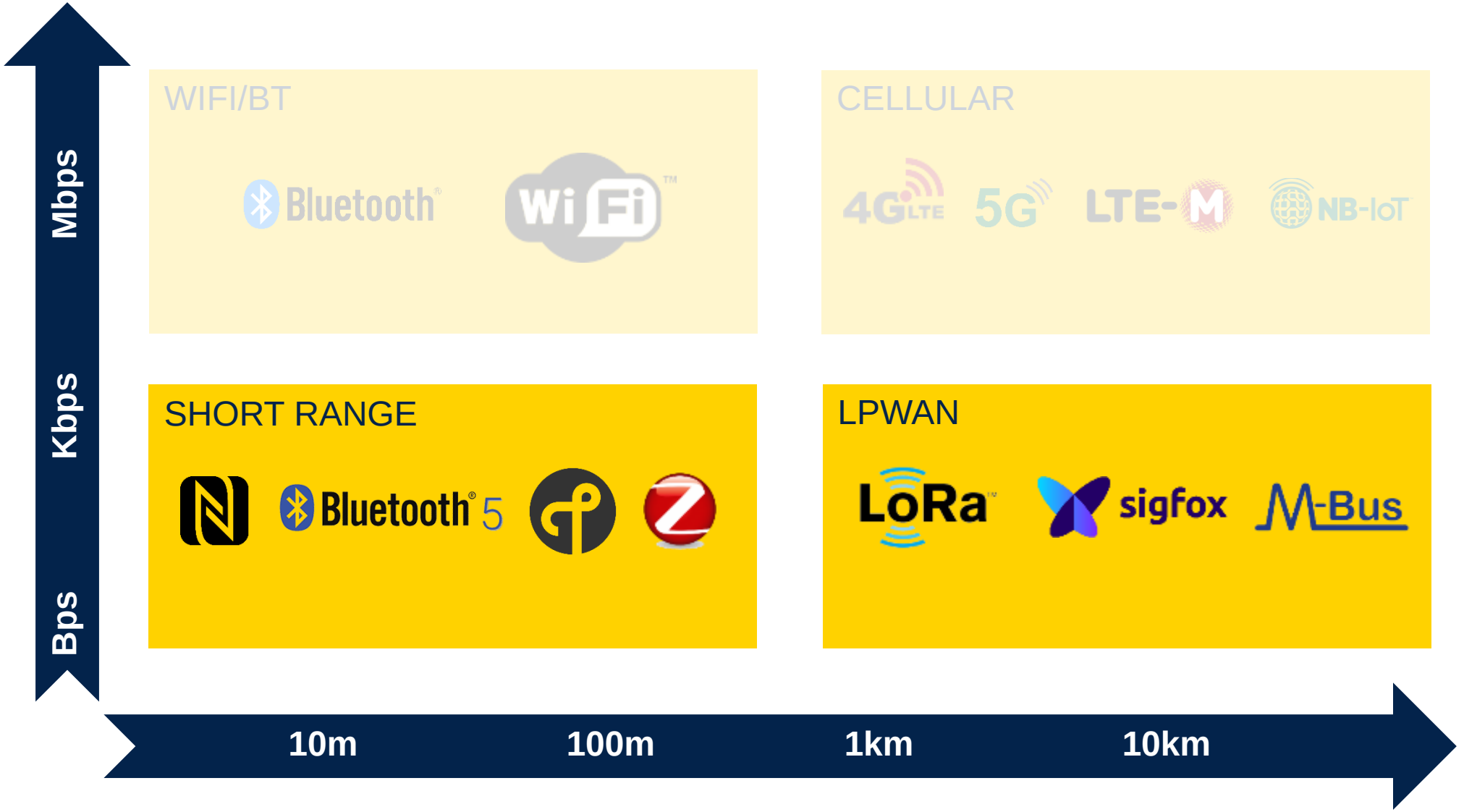
new

wiki.st.com/stm32mpu

wiki.st.com/stm32mcu

github.com/STMicroelectronics

Communication Technologies - Overview



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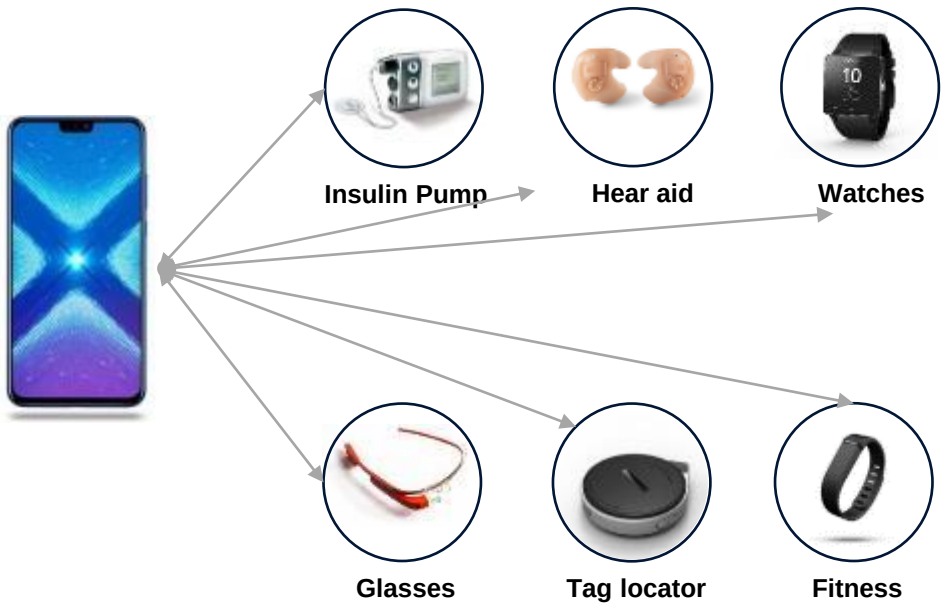
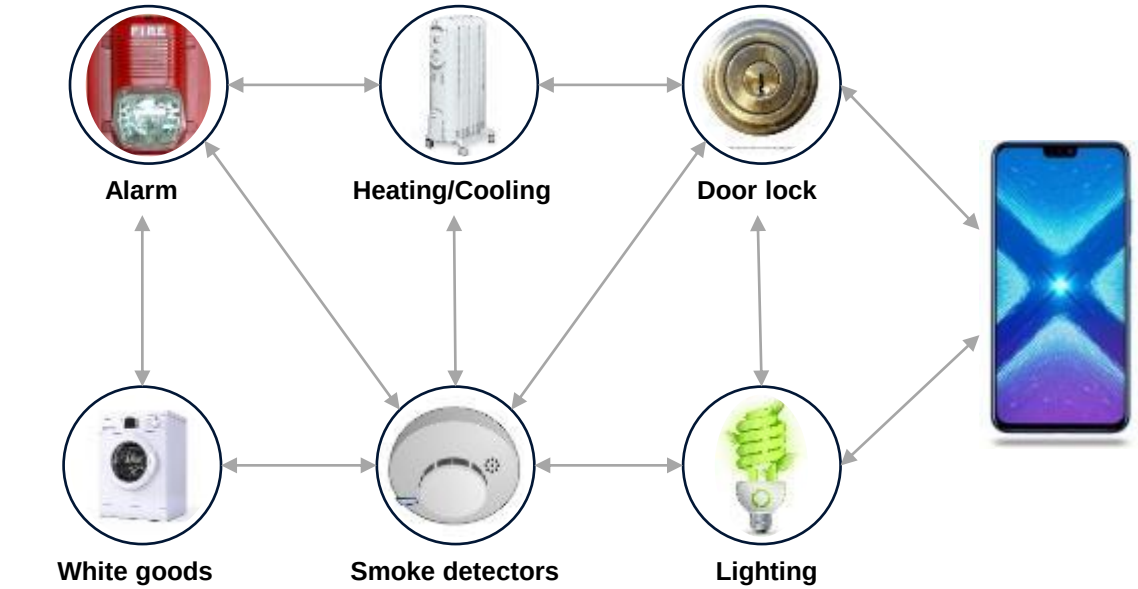
Typical objects in the 2.4 GHz space …





Bluetooth / ANT (TBC)
Point-to-point communication with smartphones and other wireless devices
Battery powered devices

Mesh BLE / Zigbee / Thread …
Home automation with Mesh network need

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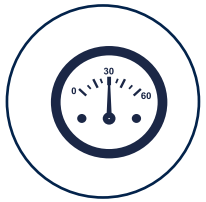
LPWAN technology selection

Uses cases will help to identify the most appropriated technology

Agriculture

Low value object tracking


Smart Metering

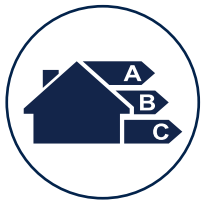
Smart grid

Smart watch

Lighting

Utilities Maintenance

Smart parking



Smart Building

High value object tracking

Connected Cars

Data rate < 100 kbps (*or more)

Data rate > 100 kbps

Unlicensed

sigfox LoRa M-Bus wireless WEIGHTLESS DigiMesh®

Licensed

LTE-M NB-IoT 5G

Solutions for NFC / RFID Tags and Readers

ST25

Simply
More Connected

Embedded and Connectivity Technologies

STM32

More **Computing Power**

- Powerful Cortex MCU & MPU
- Rich user interface
- Industrial specific Peripherals

More **Artificial Intelligence**

- Artificial Intelligence **at the edge**
- Real time response, data privacy
- Predictive maintenance

More **Connectivity**

- Industrial Ethernet
- NFC, BLE, Wi-Fi, UWB
- LPWAN, CAT-M/NB-IOT 4G to 5G

More **Security**

- Ensure system integrity
- Secure communication
- Authentication and privacy of data

SIL Ready

Support Design with Focus on ***Safety***

Broader & more dedicated ***Ecosystems***

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Sensors and Embedded Tech
Afternoon sessions

	Embedded and Connectivity Technologies	
	Time (ET)	Session Title
	2:00 PM	Welcome
Embedded	2:10 PM	Bringing AI to the Edge
	2:30 PM	Enhancing the User Experience with Graphics
	2:50 PM	Securing Connected Devices
Connectivity	3:10 PM	Get Connected! Explore Bluetooth, 802.15.4 and SubGHz System On Chip Solutions
	3:30 PM	Contact-Less Connectivity NFC is in your phone and your watch - Where else?
	3:50 PM	Closing Remarks

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