

STM32
Trust



life.augmented

The Microcontroller Journey: From Basic Security to ARM PSA L3 and SESIP3

ST MCD Security Marketing

14-apr-22 / Bruno Mussard

Introduction

We are creators and makers of technology



One of the world's largest semiconductor companies



48,000 employees of which
8,400 in R&D



\$12.8 B revenues
in 2021



Over **80** sales & marketing
offices serving over **200,000**
customers across the globe



13 manufacturing sites



Signatory of the United Nations Global Compact (UNGC)
Member of the Responsible Business Alliance (RBA)

The STM32 Offer

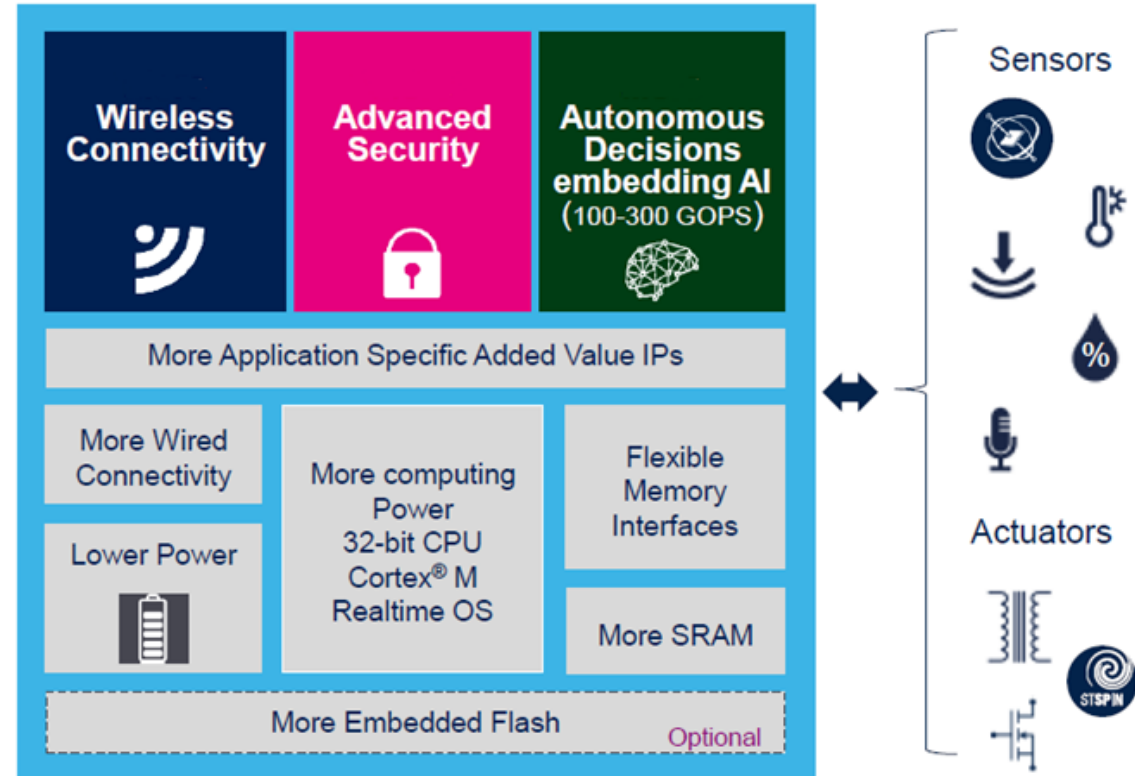
Market growth drivers

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

ST strategy : #1 WW Supplier GP MCUs

- Capitalize on STM32 WW leadership and huge customer base to deploy the broadest 32bit microcontrollers portfolio & ecosystem addressing the embedding processing market mega trends
- Verticals dedicated solutions:
 - Graphics
 - Motor Control
 - Digital Power
 - Audio

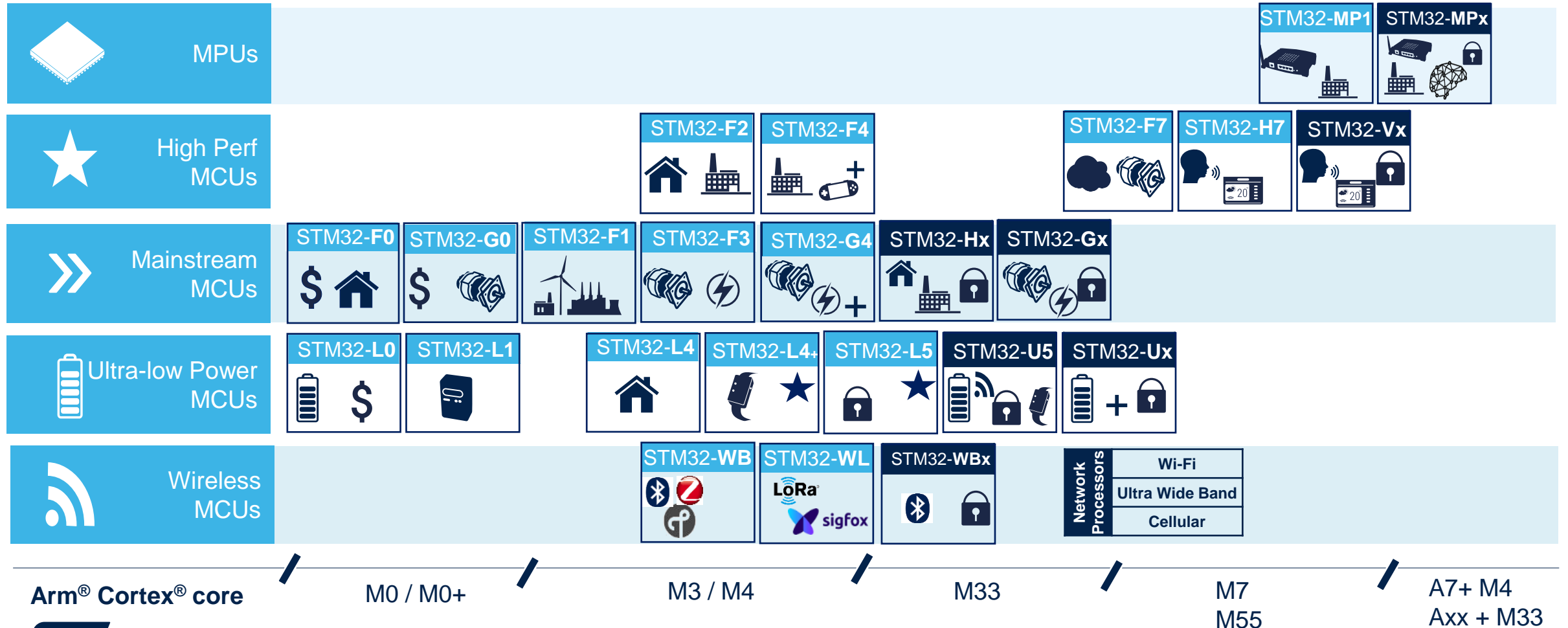
STM32 MCU





A Broad Product Portfolio

A Leader in Arm® Cortex®-M 32-bit General Purpose MCU



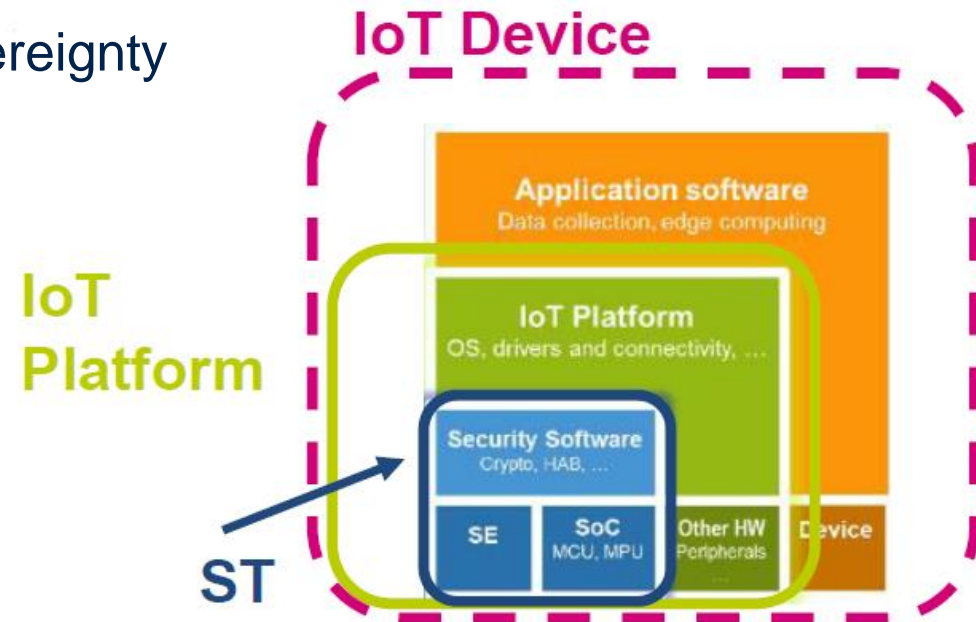
IoT Security & STM32Trust

A challenge for WW security certification:

- ▶ Much progress but offer still fragmented
- ▶ Driven by Private Sector & Public Sector
- ▶ Alignment at stake: WW recognition vs National sovereignty

ST challenges:

- ▶ Define the best approach for certified foundations
- ▶ Explain re-use, composition & mapping for OEMs



Security for IoT Devices

Customer expectations

- ▶ Customer Survey in 2021: Security matters for 70% of them
- ▶ Platform security as the cornerstone to connected device security
 - ▶ A standardized approach with explicit Security Functions & “Security Guarantees”
 - ▶ Easy coverage of OEM level certification schemes



- ▶ Security components as enablers for OEM Application & Services
 - ▶ Seamless and secure provisioning & connection to the cloud
 - ▶ Sensitive assets protection (keys, ID) at boot & runtime

How to address customer demand for security ?

The STM32Trust Framework

What

A high-level Security Framework

Why

Protect customer assets

How

Fulfill Security Functions

To reach

IoT Security Assurance Levels



From STM32Trust to IoT Security

► STM32Trust meeting 2 IoT certification schemes:



Security Evaluation Standard for IoT Platforms (SESIP)

A security evaluation framework for silicon-based platform



ARM® Platform Security Assurance (PSA)

A security framework around ARM ecosystem

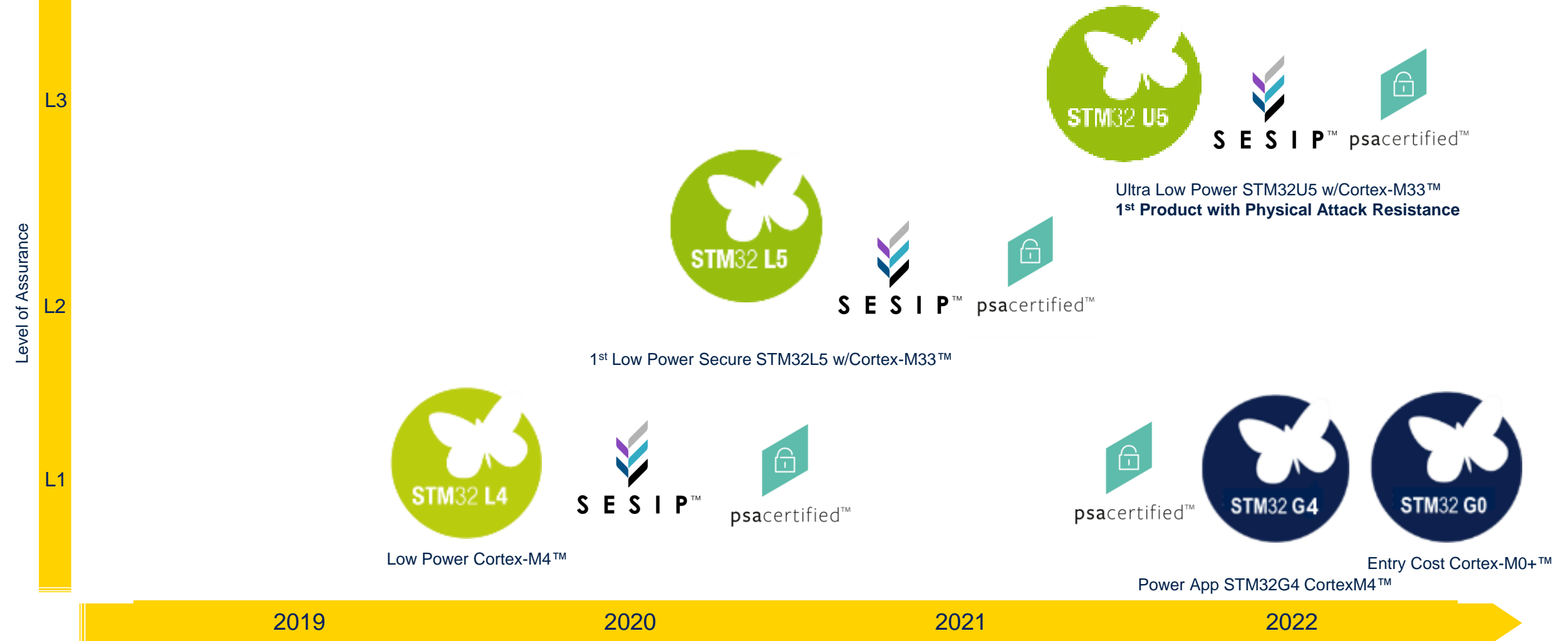
The SESIP value

- ▶ The de-facto standard for MCUs
 - ▶ Derived from CC but w/o the heaviness
 - ▶ Flexible and accessible evaluation framework
 - ▶ “Kill 2 birds with one stone” approach at L3
 - ▶ Endorsed by the industry key players & GlobalPlatform
- ▶ Meet OEMs expectations
 - ▶ Re-use & composition
 - ▶ Ease the IoT certification process
 - ▶ Reduce IoT fragmentation. Mapping with ETSI TS 303 645, IEC 62443, IoXt...



The STM32 Journey: From Basic Security to L3

STM32 Journey



Lesson Learned From Basic to L3

► Security Awareness

- Security from the ground up for new product development
- Affecting HW, FW, MW and Ecosystem development @ST



► Expertise → Better understanding of major security pitfalls

- Boot process & Lifecycle
- Security-impacting IPs development: Crypto, physical isolation...
- Crypto operations handling: key protection...

Security Assurance Roadmap

► ST Security Objectives:

- A standardized security evaluation Strategy: **Robustness is essential**
- Security as a baseline for any new product:
 - Robustness for Boot & OEM code protections → would need dedicated certify scope
 - ARM PSA L1 & SESIP1
- Target ARM PSA L3 & SESIP3 on new secure products



What matters to ST for SESIP

- ▶ A valuable security evaluation framework
- ▶ Extension to OEM schemes recognition of SESIP
- ▶ Extension to entry-level products covered by SESIP3 / JIL >21
- ▶ Work on a Marketing message
 - ▶ Promote the approach to ST regions & local sales
 - ▶ Promote the approach to customers



Q&A

For further support in creating a PowerPoint presentation, including graphic assets, formatting tools and additional information on the ST brand **you can visit the ST Brand Portal** <https://brandportal.st.com>

