STM32MP1 Microprocessor

Continuing the STM32 Success Story

Press Presentation

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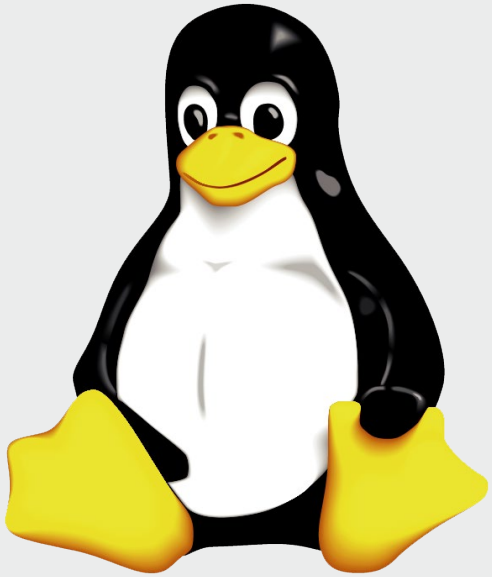
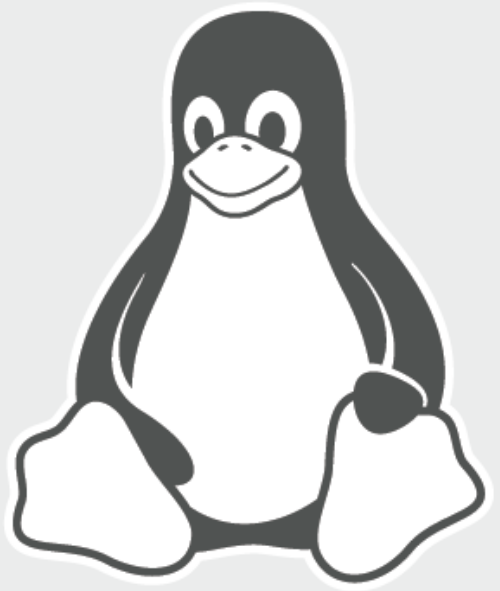
What Happens when STM32 meets Linux?

STM32 +  = ?

Linux

The STM32MP1 Microprocessor Happens!



OpenSTLinux
Distribution

Extending STM32 success and commitment with Microprocessors

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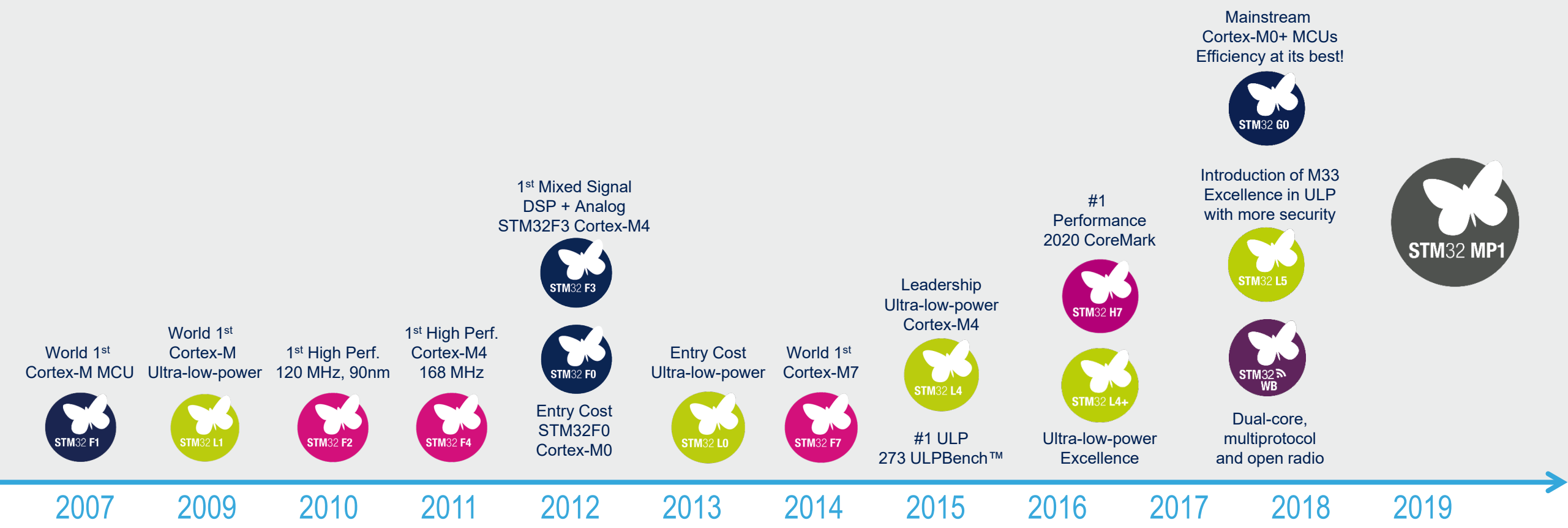
Continuing the STM32 Success Story

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



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STM32 Rolling Longevity Commitment

Longevity commitment is renewed every year

starting January 1st 2019

➔ Until 2029

• **STM32F1**	(launched in **2007**)	**22 years** of commitment
• **STM32L1**	(launched in **2009**)	**20 years** of commitment
• **STM32F2**	(launched in **2010**)	**19 years** of commitment
• **STM32F4**	(launched in **2011**)	**18 years** of commitment
• **STM32F0**	(launched in **2012**)	**17 years** of commitment
• **STM32F3**	(launched in **2012**)	**17 years** of commitment
• **STM32L0**	(launched in **2013**)	**16 years** of commitment
• **STM32F7**	(launched in **2014**)	**15 years** of commitment
• **STM32L4**	(launched in **2015**)	**14 years** of commitment
• **STM32L4+**	(launched in **2016**)	**13 years** of commitment
• **STM32H7**	(launched in **2016**)	**13 years** of commitment
• **STM32WB**	(launched in **2018**)	**11 years** of commitment
• **STM32G0**	(launched in **2018**)	**11 years** of commitment

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STM32MP1: A General Purpose MPU

Suitable for all Developer Types and Multiple Applications

Developer profile

MCU users new to MPU — MCU → MPU

Mixed MCU and MPU users — MCU + MPU

Pure MPU users — MPU

STM32 MP1

Possible applications

Industrial

Consumer

Health & Wellness

Home

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Supported by the STM32 Ecosystem

All the Tools for Successful MPU Development

Software

STM32 Cube

STM32 CubeMX

STM32 CubeProgrammer

Hardware

Discovery boards

Evaluation boards

Customer support

FAE - Worldwide Customer Support

community.st.com

life.augmented Partner Program

Flexible architecture for a wide range of applications

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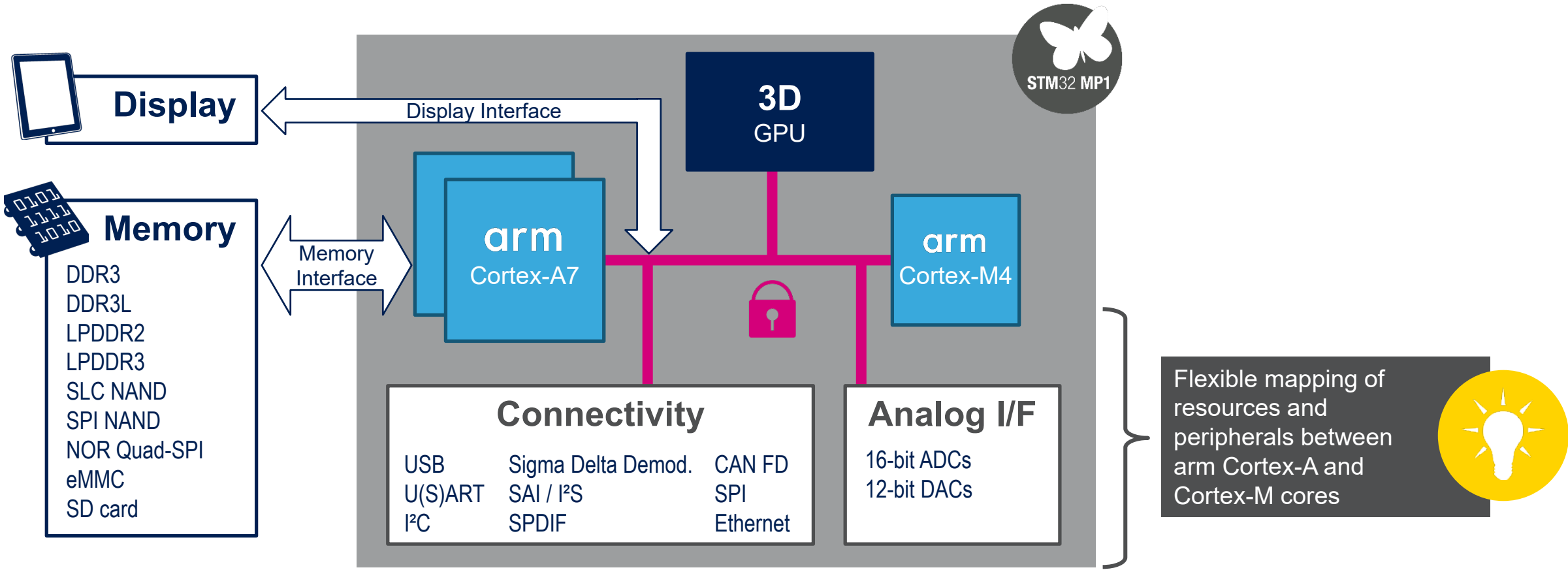
Rich Feature Set

Advanced & Flexible Architecture with 3D GPU



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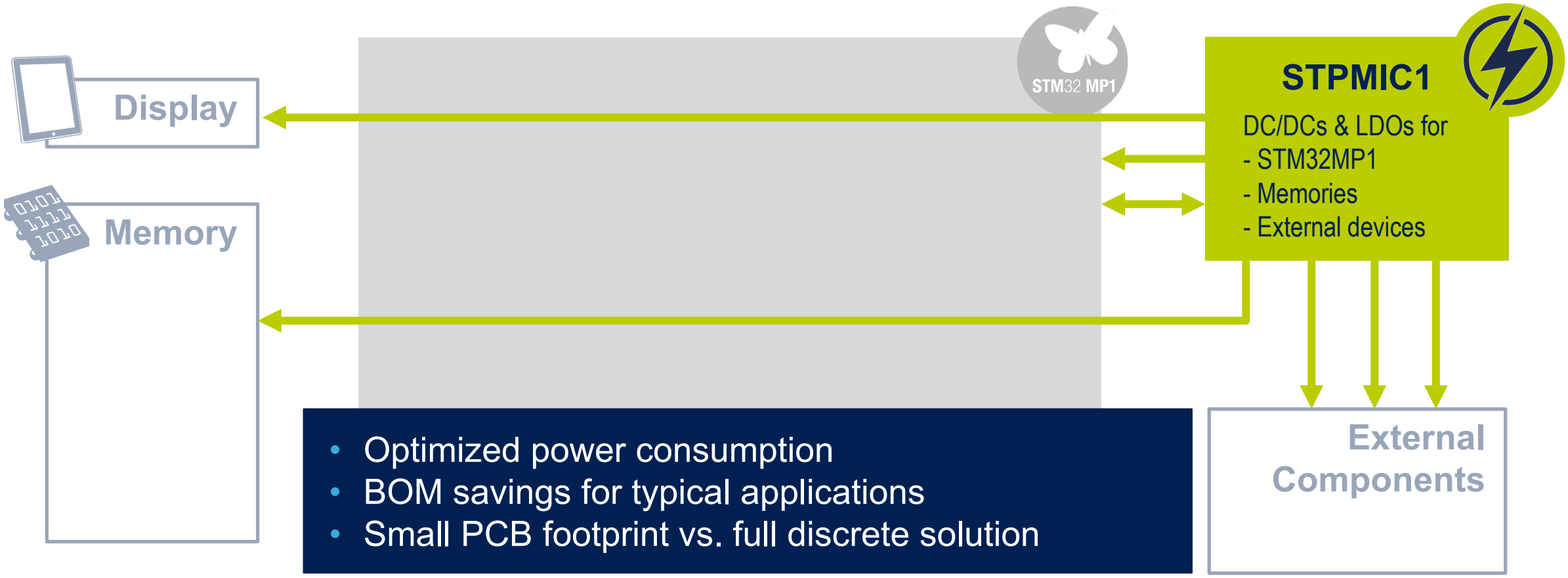
STPMIC1 Power Management IC

Simplify your design and optimize power consumption



- Optimized power consumption
- BOM savings for typical applications
- Small PCB footprint vs. full discrete solution

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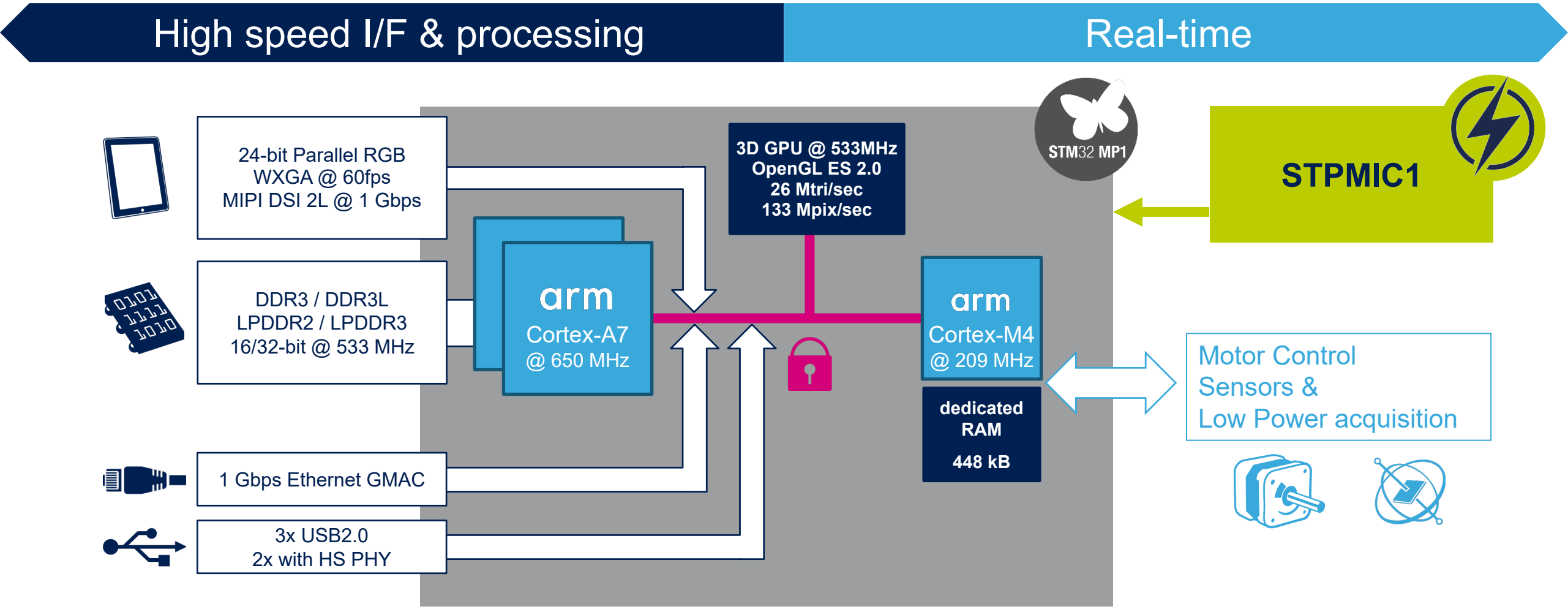
Arm Cortex-A + Cortex-M Architecture



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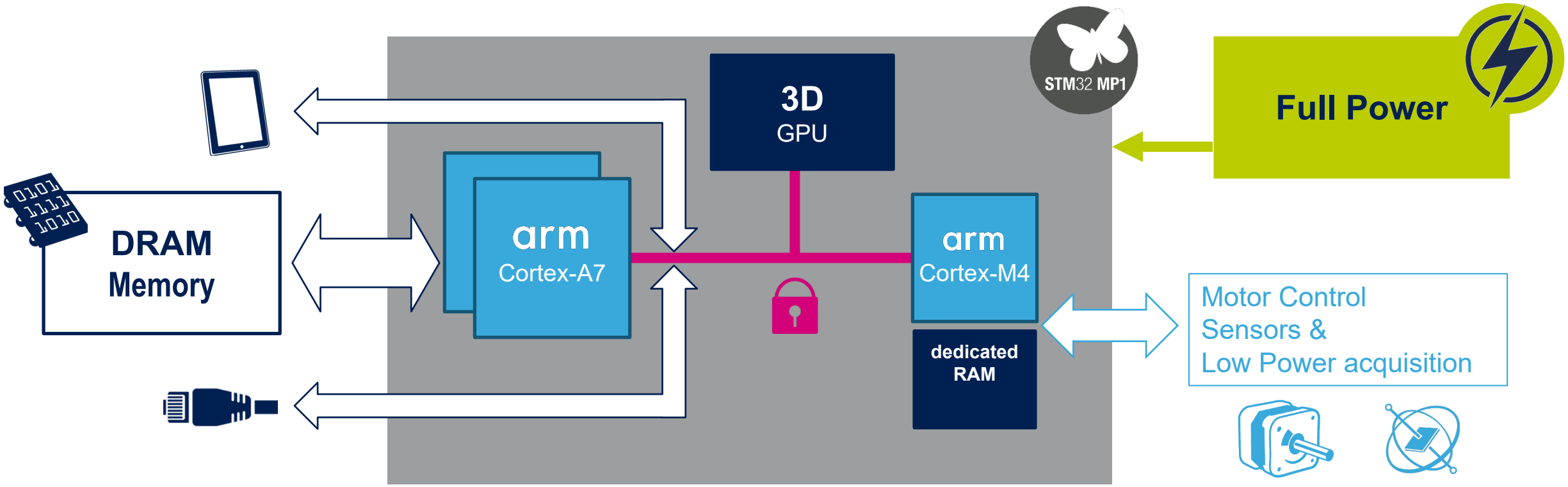
Flexible Architecture for Power Efficiency

Processing for HMI and communication + motor control & sensing



Graphic and Communication processing
2470 DMIPS on dual Cortex-A7 + 3D GPU

Motor Control, Sensors and Low Power acquisition
260 DMIPS on Cortex-M4

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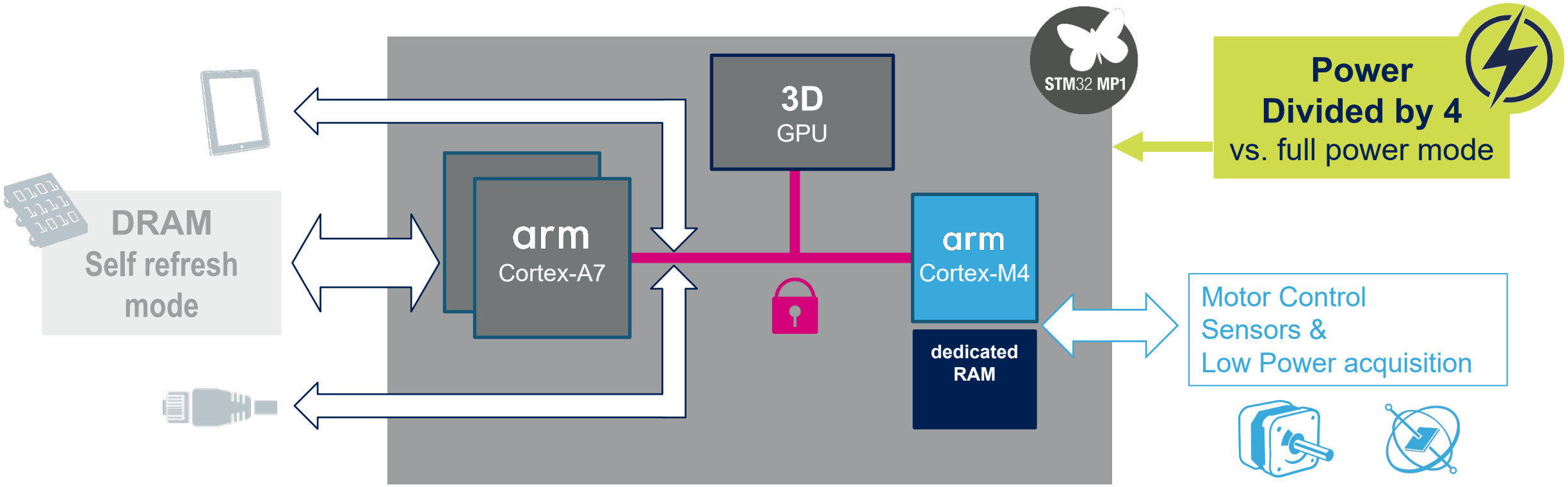
Flexible Architecture for Power Efficiency

Motor control & sensing



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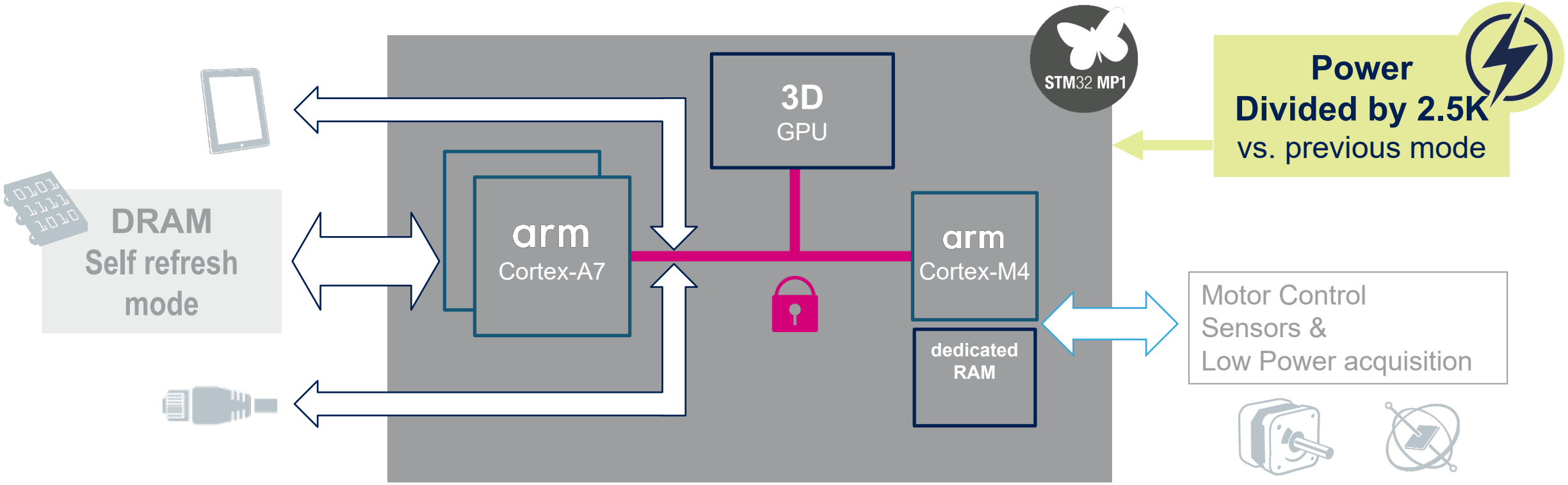
Flexible Architecture for Power Efficiency

Standby mode



Graphic and Communication processing
STANDBY MODE

Motor Control, Sensors and low power acquisition
STANDBY MODE

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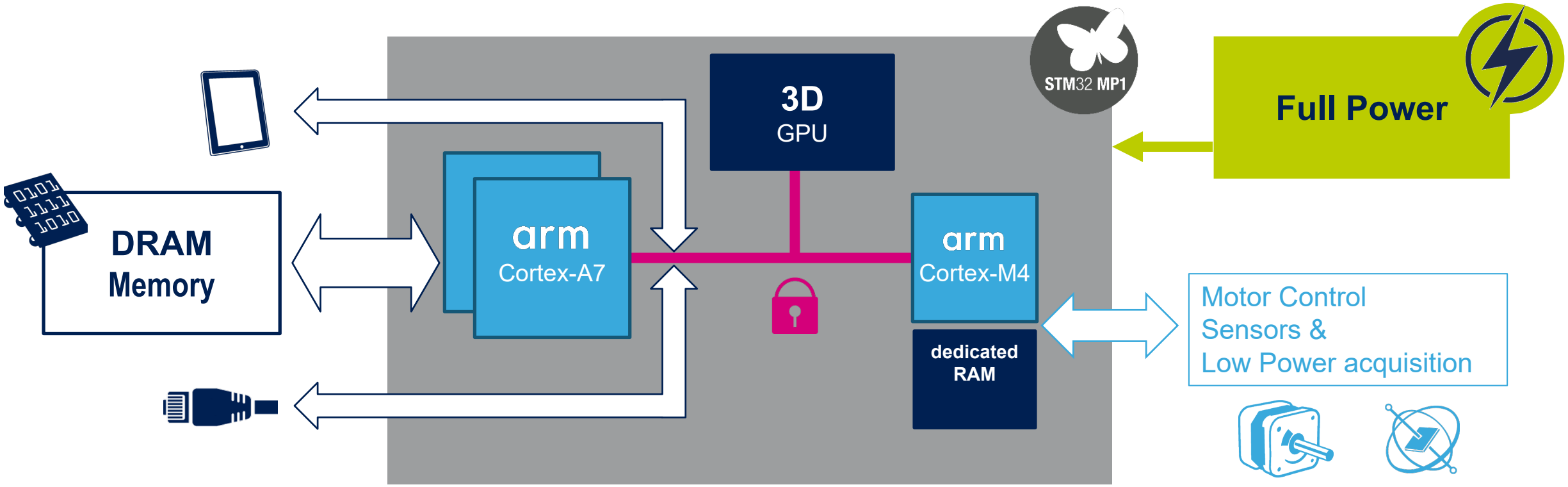
Flexible Architecture for Power Efficiency

Processing for HMI and communication + motor control & sensing



Back to full performance

~1 second to move back to Linux console

~3 seconds for 3D graphic application

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Accelerated development leveraging the STM32 Ecosystem

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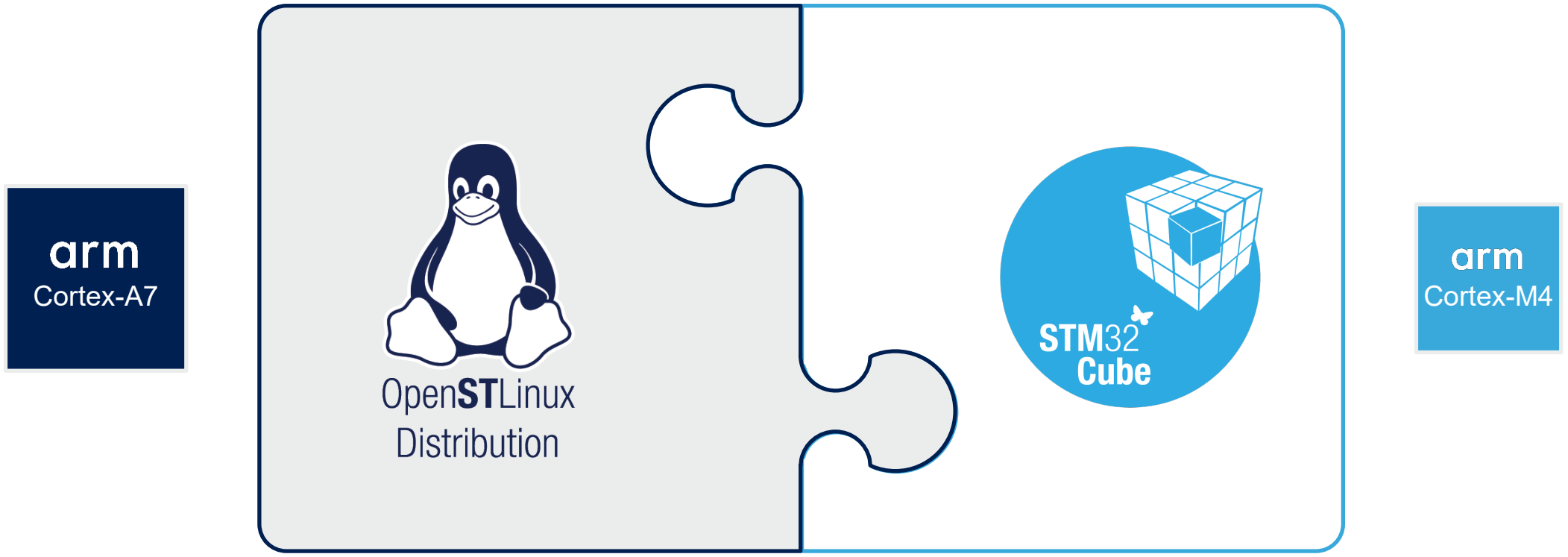
A Fully Integrated Design Suite

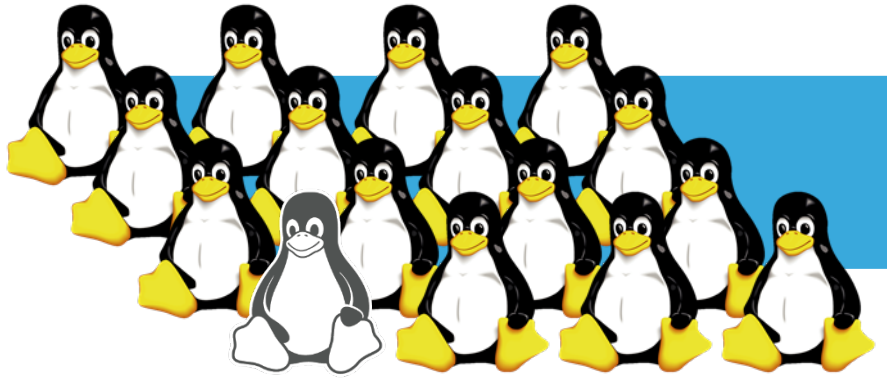
Leveraging the STM32Cube Environment



STM32MP1 Embedded Software Distribution

Simplify your Linux Development

Fully mainlined open source Linux distribution for Arm Cortex-A7



OpenSTLinux Distribution

STM32MP1 SoC drivers
already adopted by the Linux community

STM32MP1 supported in Linux 4.19 LTS

Fully compliant with open-source standards

THE LINUX FOUNDATION

yocto PROJECT

Linaro

Pre-integrated Secure OS

OP-TEE .org

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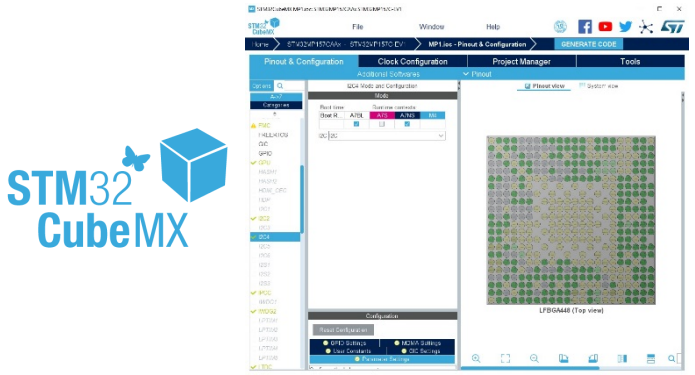
Benefit from Field-Proven RTOS Tools

Full re-use of STM32 MCU Cube firmware on Arm Cortex-M

- Several APIs to access peripherals
- Collection of Middleware components for Cortex-M
- Hundreds of Examples
- Production-ready Quality
- Business-friendly license terms

STM32MP1 Software Tools

Complete support of Arm Cortex-A + Cortex-M architecture



STM32CubeMX

STM32CubeMX enhanced for MPU

- Configure and generate Code
- DRAM interface tuning tool
- Device Tree generation

IDEs
Compile and Debug

Multi-Core Solutions

- Partners IDE
- Free IDE based on Eclipse
- Multi-core debugging

STM32 Programming Tool

STM32CubeProgrammer

- Flash, DRAM and/or system memory
- OTP programming
- Signing tool & Keys generation

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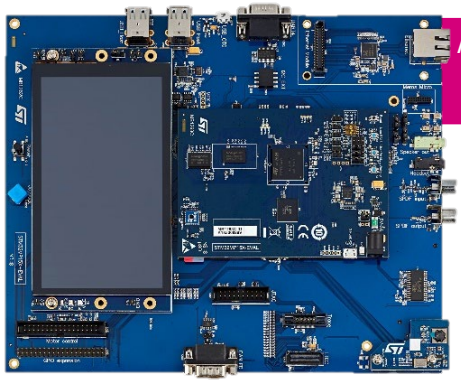
STM32MP1 Hardware Solutions

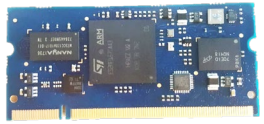
Speed-up evaluation, prototyping and design



Available at **$399**

Available at **$99**

Available at **$69**



Evaluation Board

Full feature STM32MP1 evaluation

- STM32MP157A-EV1
- STM32MP157C-EV1

Discovery Board

Flexible prototyping & demo

- STM32MP157A-DK1
- STM32MP157C-DK2
  + MIPI DSI WVGA display
  + Wi-Fi/BT combo module

Boards & SoM*s

3rd Parties Boards for prototyping and production

- Board Specification from Linaro (96boards.org)
- Commercial SoM w/ different forms

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*System on Module

Software, Training and Services

a Broad Ecosystem to Support Development

STM32 MPU wiki by

ST's wiki user guide
for beginners and experts
https://wiki.st.com/stm32mpu

Large selection of partners already engaged for:

- Graphics UI
- Security
- Training and services

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STM32MP1 Tailored for Multiple Applications

24 Sales Type in Production Now

STM32MP157

Dual Arm Cortex-A7 + Cortex-M4
3D GPU – DSI – CAN FD

STM32MP153

Dual Arm Cortex-A7 + Cortex-M4
CAN FD

STM32MP151

Arm Cortex-A7 + Cortex-M4

TFBGA257 10x10mm p0.5
4 layers PTH PCB

smallest package for dual Cortex-A GP MPU

TFBGA361 12x12mm p0.5
4 layers PTH + Laser via PCB

LFBGA354 16x16mm p0.8
4 layers PTH PCB

LFBGA448 18x18mm p0.8
6 layers PTH PCB

3 Product Lines — Optional Security — **4** Packages

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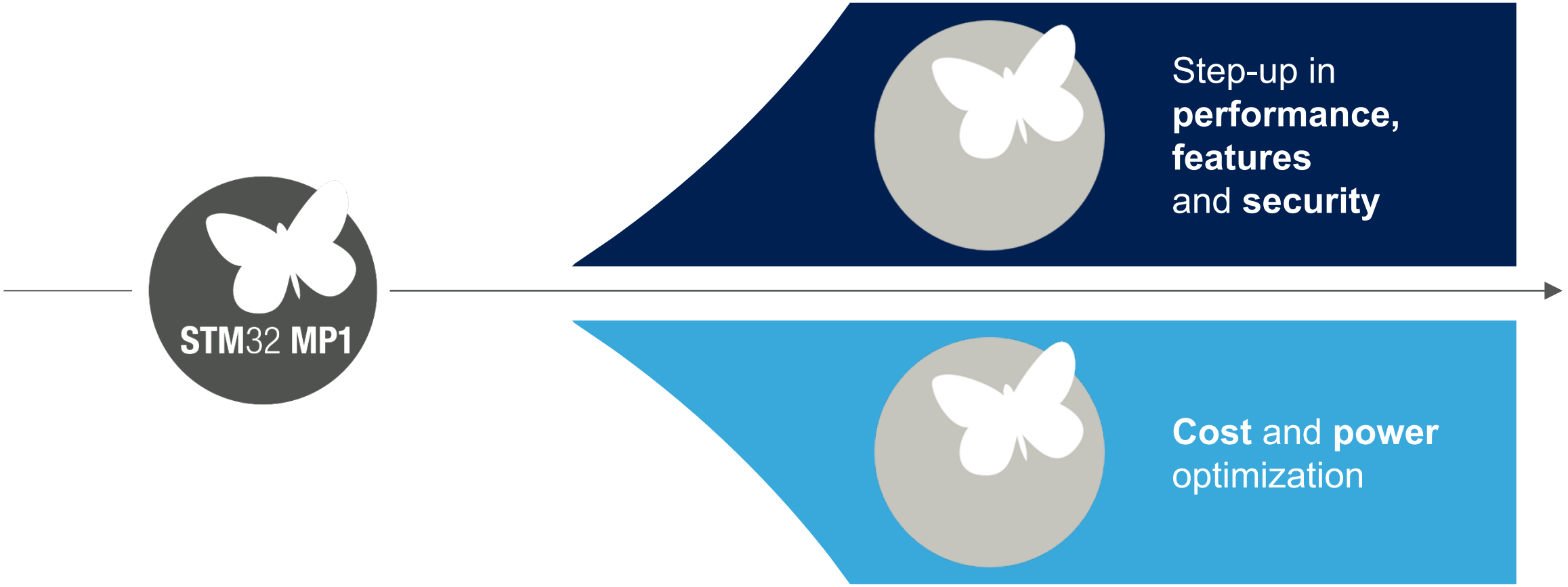
Building the Future

STM32 MPU Portfolio Expansion



STM32MP1 - Your New Companion

for Advanced Applications

STM32 MP1

Available NOW!

Extending STM32 success and commitment with **Microprocessors**

Flexible architecture for a wide range of applications

Accelerated development leveraging the **STM32 Ecosystem**

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Releasing Your Creativity

STM32 MP1

/STM32

@ST_World

community.st.com/stm32mpu

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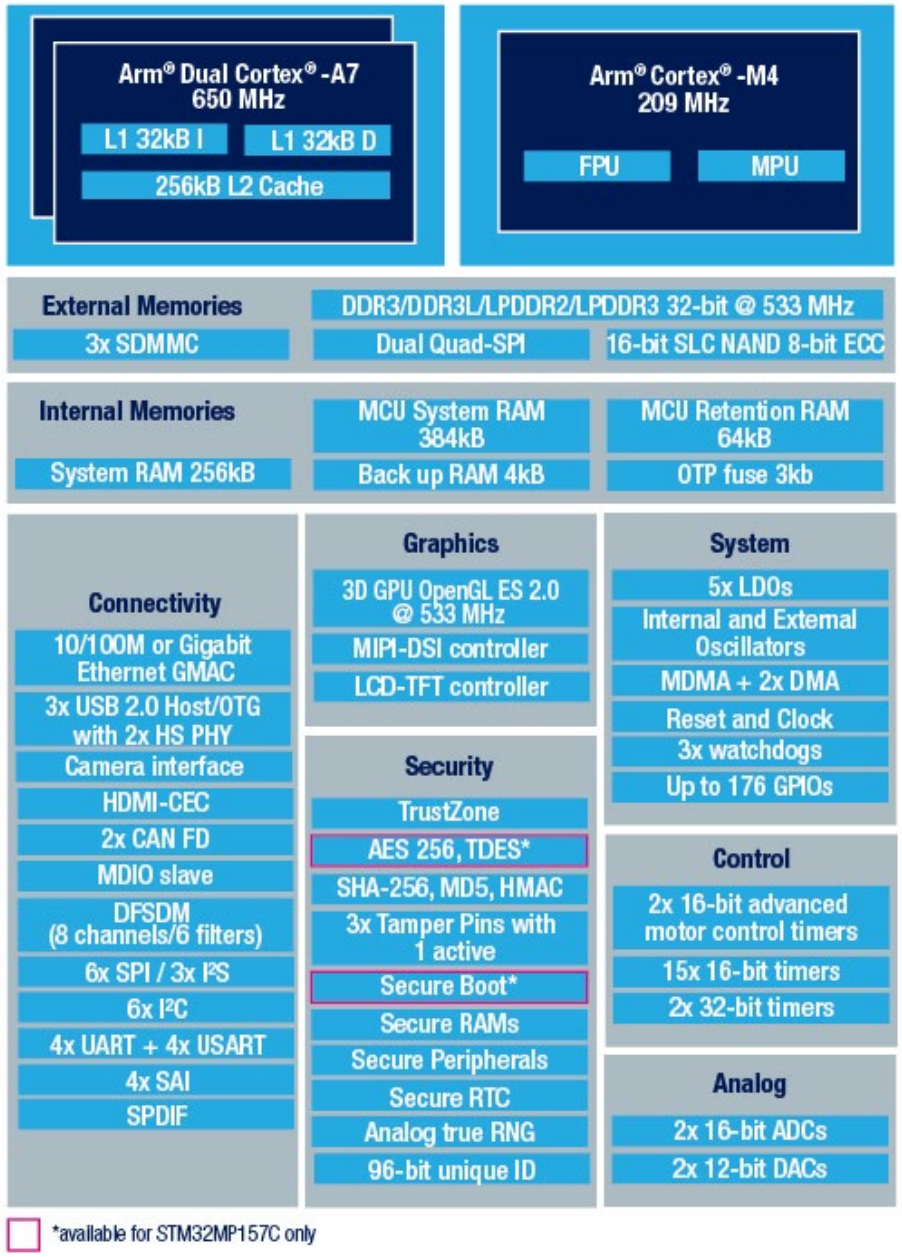
www.st.com/STM32MP1

STM32MP157

Block Diagram



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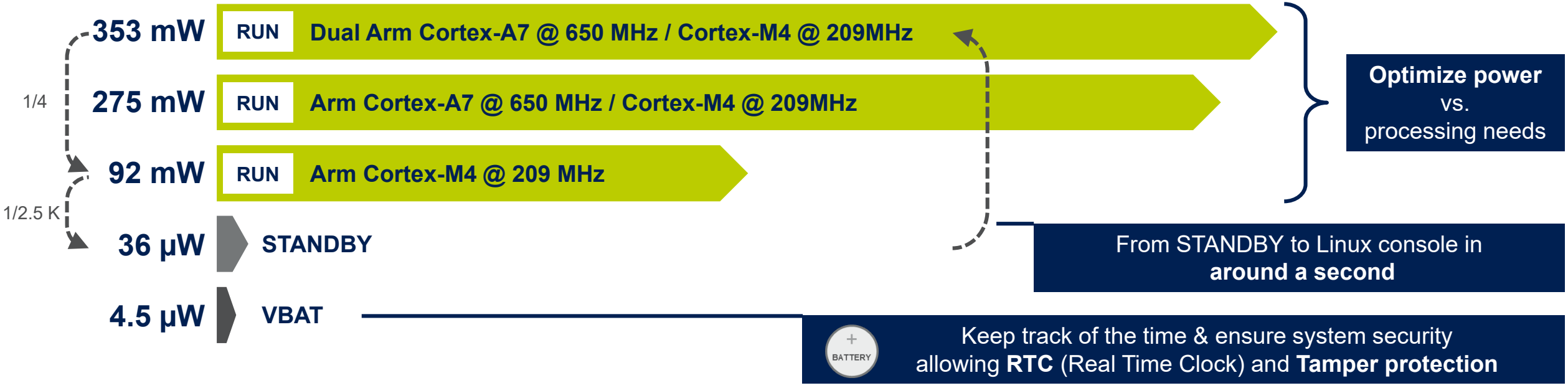
Flexible Architecture for Power Efficiency

Power figures



Typ @ VDDCORE = 1.2V, VDD = 3.3V @ 25 °C, Peripherals OFF

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