

STM32 32-bit MCU Family

Portfolio and Ecosystem overview – Q1/2016



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1.5 billion STM32 embedding your innovations

2

Press release [here](#)



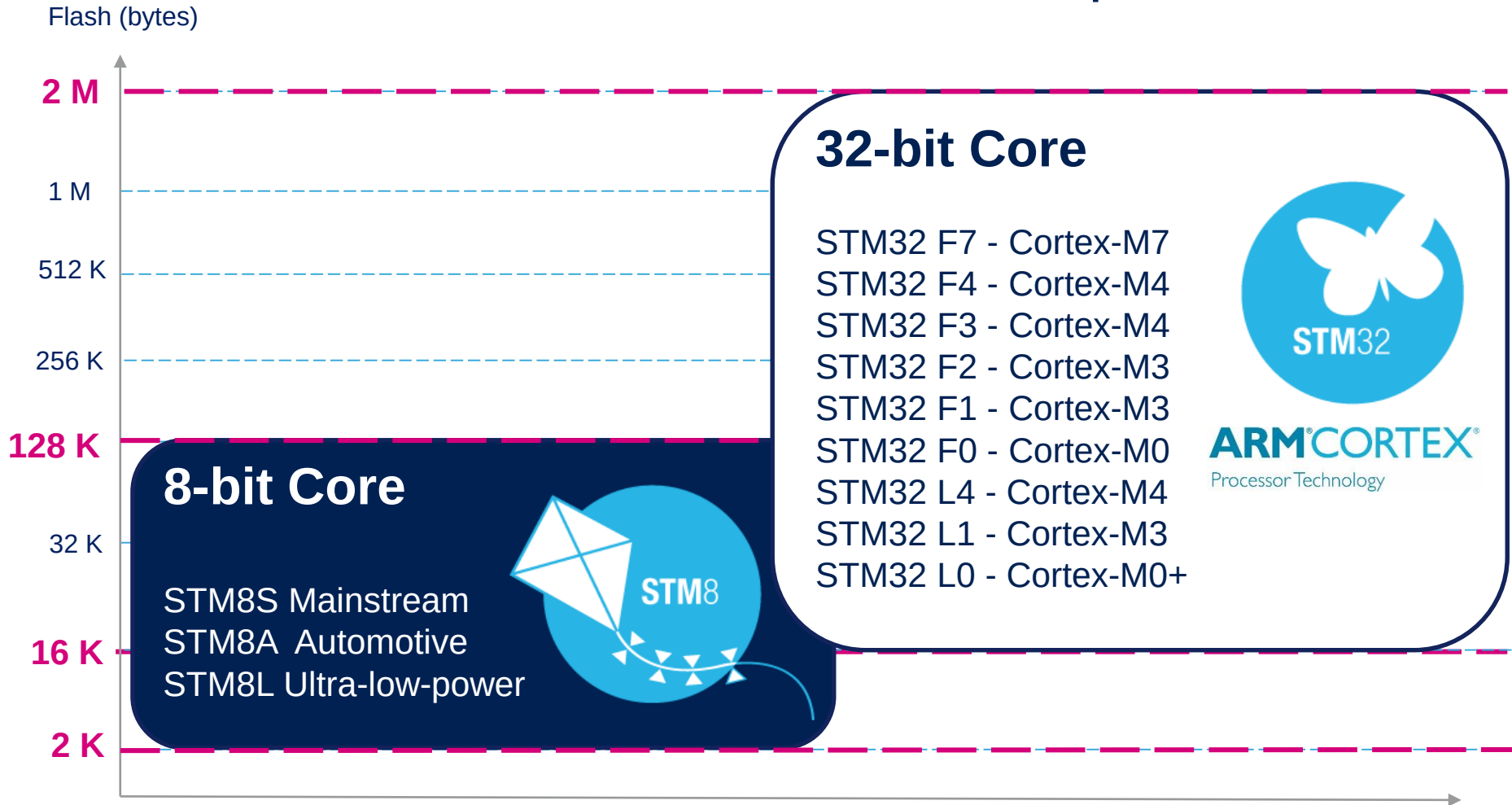
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MCUs portfolio

new families development focus

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ST has licensed all Cortex[®]-M cores

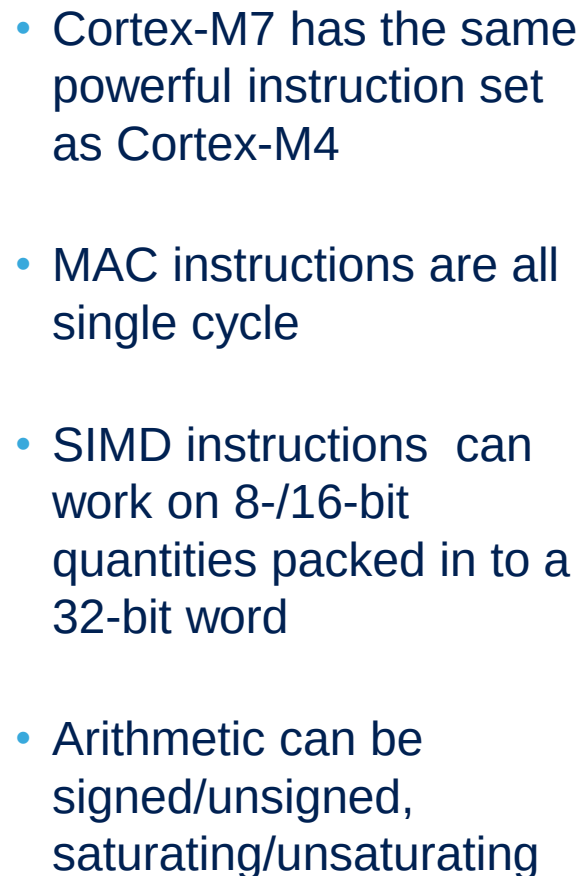
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- **Forget traditional 8/16/32-bit classifications and get**
 - Seamless architecture across all applications
 - Every product optimized for ultra-low power and ease of use



Binary and tool compatible

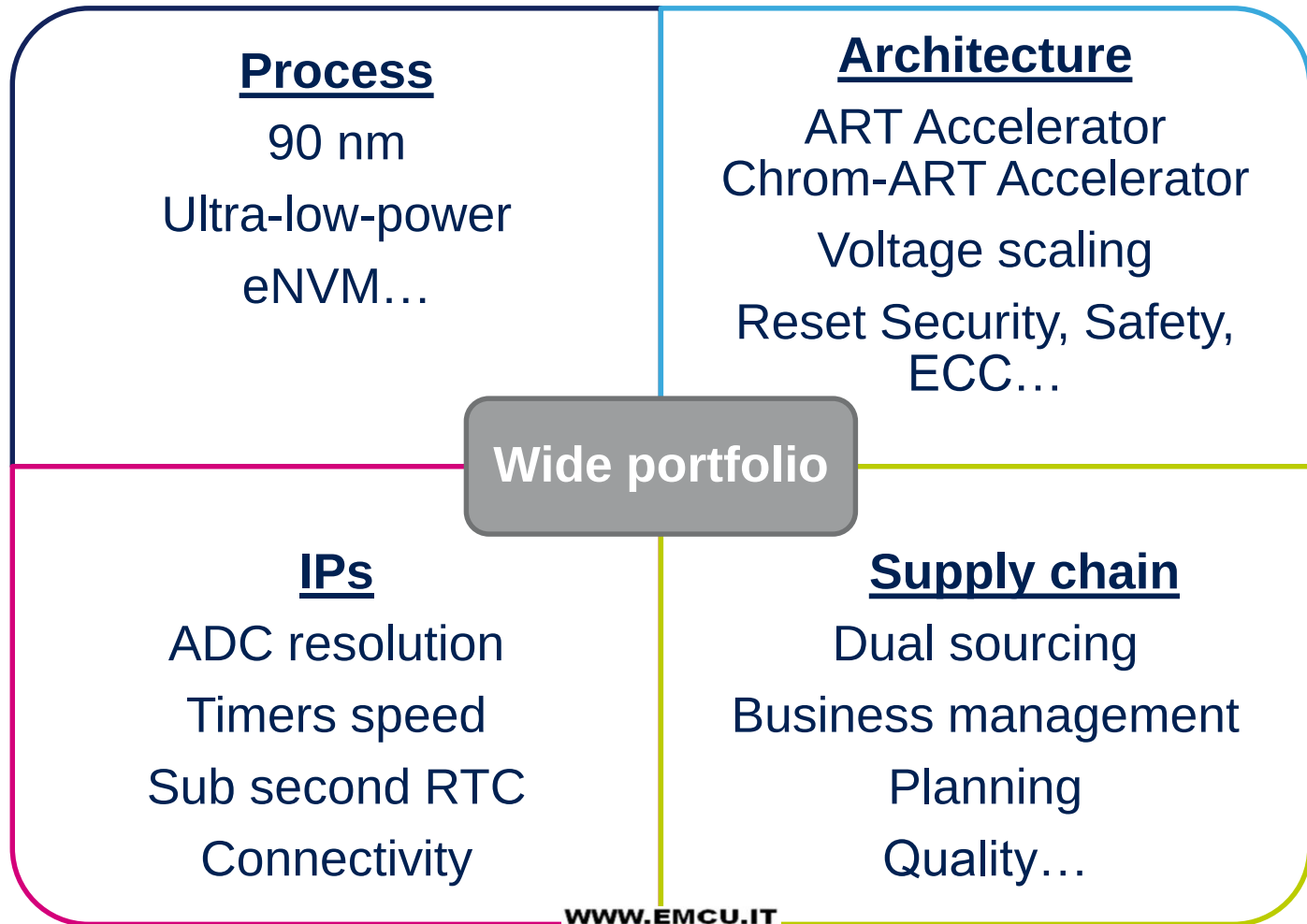




Differentiation factors with competition

Same core but.....

6



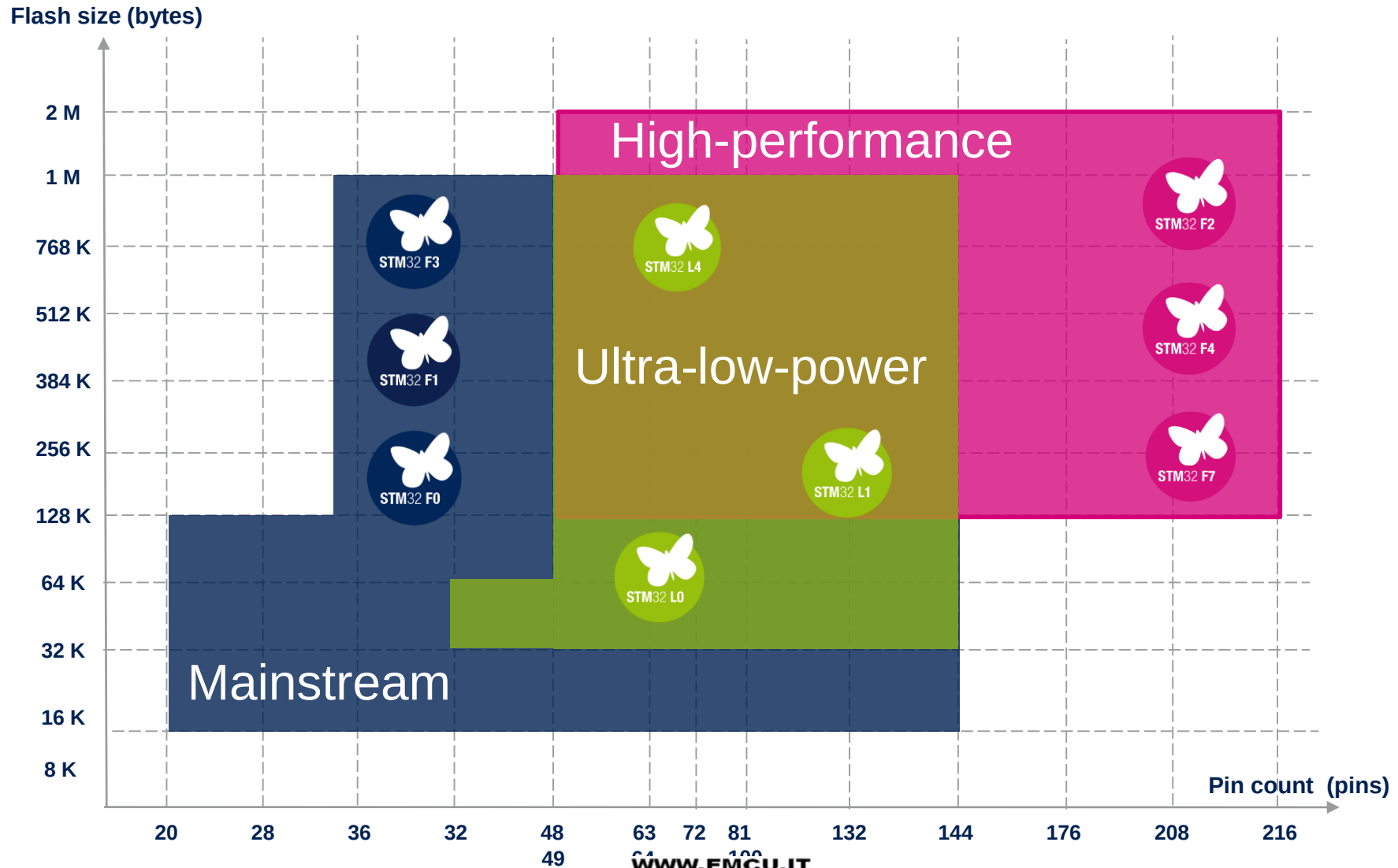
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STM32 today – platform effect

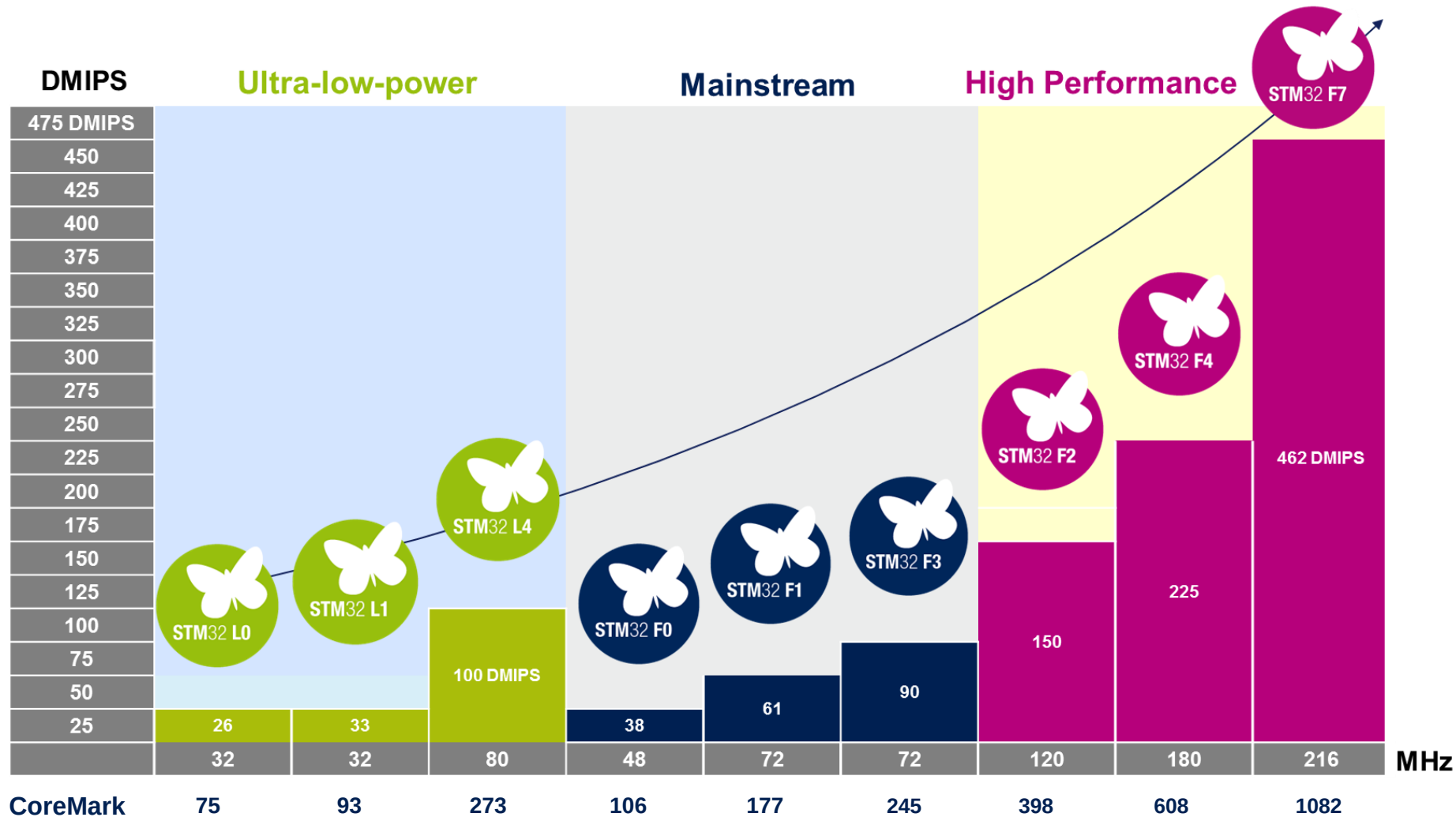
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Select your fit product inside a wide, compatible portfolio



Broadest 32-bit MCU product portfolio

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5 reasons to choose an STM32

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Real-time performance



STM32 Dynamic Efficiency™, ART Accelerator™, Chrom-ART Accelerator™, CCM-SRAM, L1-Cache, Multi-AHB bus matrix, Excellent real-time up to 200 MHz/ 428 DMIPS, Zero-wait state execution performance from Flash

Outstanding power efficiency



< 1 μA RTC in V_{BAT} mode, ultra-low dynamic power consumption 90 $\mu\text{A}/\text{MHz}$, with lowest dynamic consumption. 1.65 to 3.6 V V_{DD} , 0.45 μA Stop mode and 0.3 μA Standby mode

Superior and innovative peripherals



USB-OTG High speed, Ethernet, CAN, DFSDM, HR timer, LCD-TFT controller, SRAM interface, crypto/hash processor, true RNG*, PGA, 16-bit $\Sigma\Delta$ ADC and 12-bit ADC (up to 5 MSPS), external memory interface, CEC, SAI, BAM

Maximum integration



Reset circuitry, voltage regulator, internal RC oscillator, PLL, WLCSP packages

Extensive ecosystem



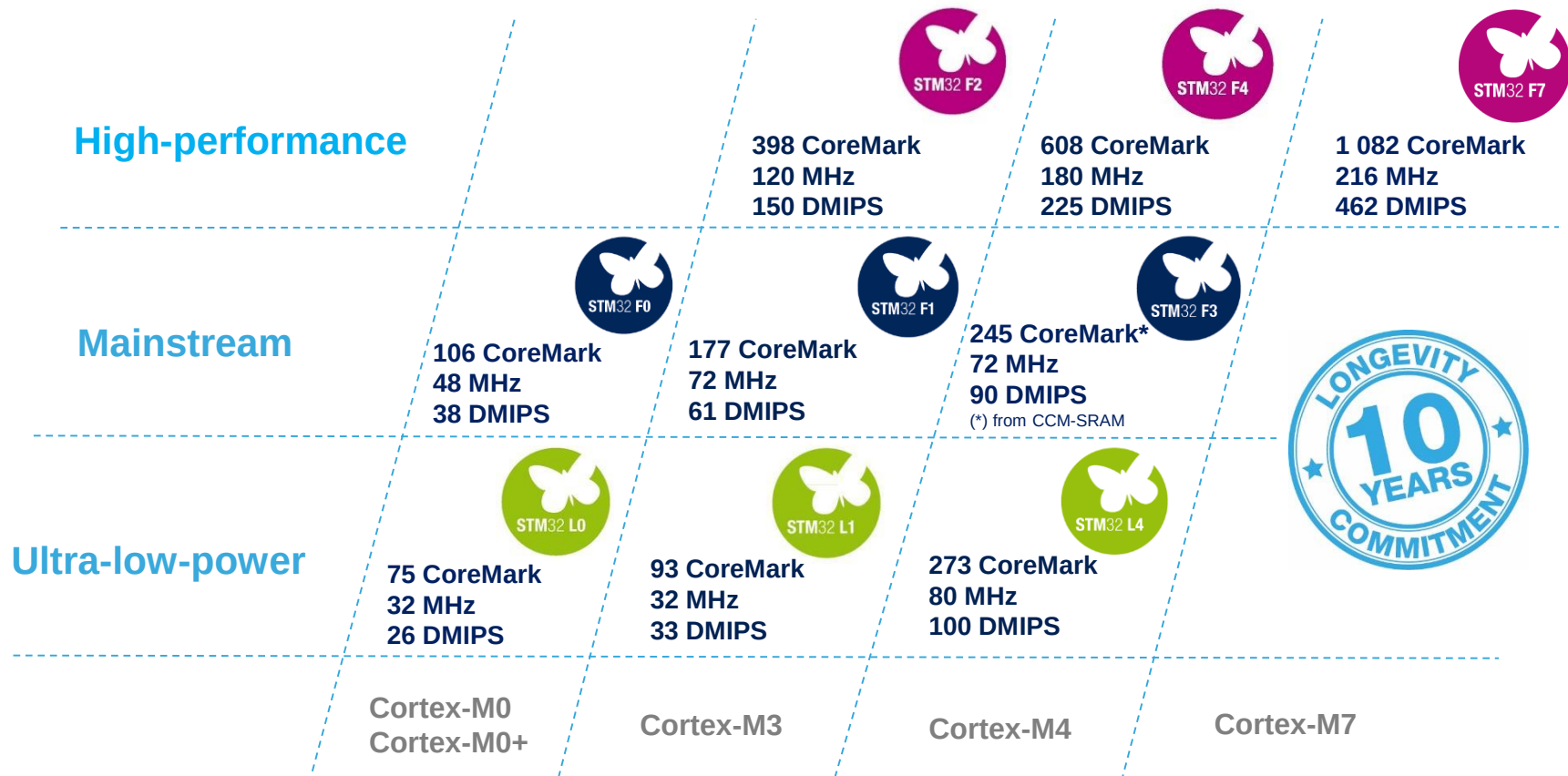
ARM + ST ecosystem (eval. boards, discovery kits, STM32 Nucleo evaluation board (mbed enabled), STM32Cube™ and software libraries, RTOS)

More than 600 compatible devices

Today - STM32 portfolio positioning

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More than 30 product lines



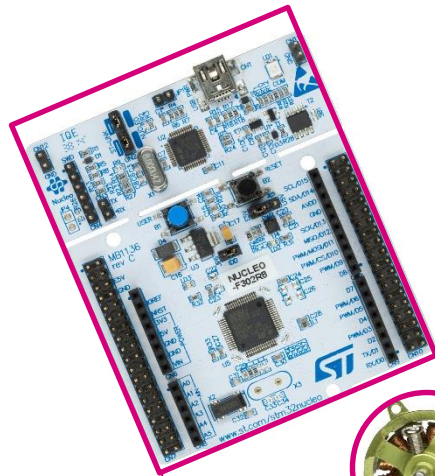
Motor Control Nucleo Pack

Plug and Spin

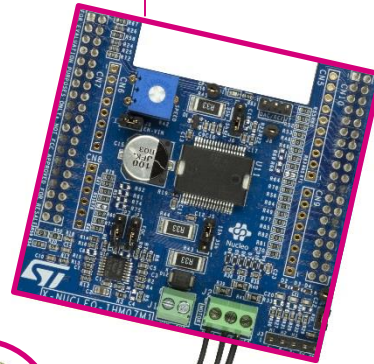
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with NUCLEO-F302R8 and X-NUCLEO-IHM07M1

HARDWARE



X-NUCLEO-IHM07M1
Three-phase brushless DC
motor driver expansion board
based on STSPIN L6230



BR2804-1700KV-1
Three-phase motor



NUCLEO-F302R8
STM32 Nucleo-64
development board
with STM32F302R8T6
MCU, supports
Arduino and ST morpho
connectivity



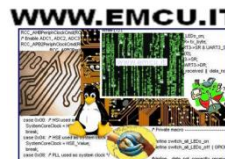
SOFTWARE



FREE

STM32 PMSM FOC SDK
motor control firmware
library (STSW-STM32100)
featuring motor control
algorithms with
customization and real-time
monitoring through PC tool.

www.st.com/stm32f3
www.st.com/stm32nucleo
www.st.com/x-nucleo



High-performance MCU for Smarter Things and Environments



1082 EEMBC® CoreMark®
2MB Flash + 512KB RAM



www.st.com/stm32f7

Press release [here](#)
NewsBite [here](#)

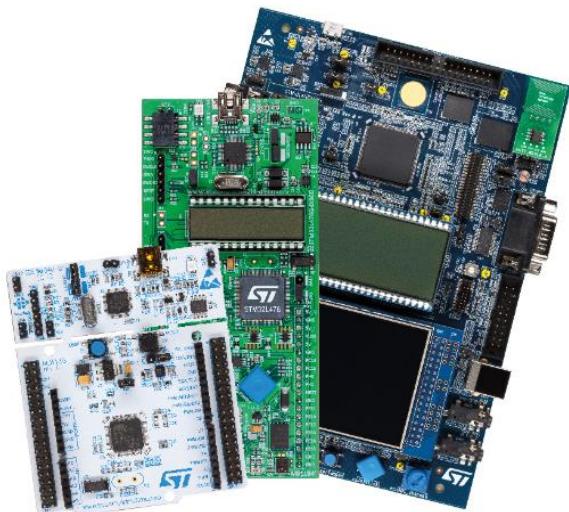
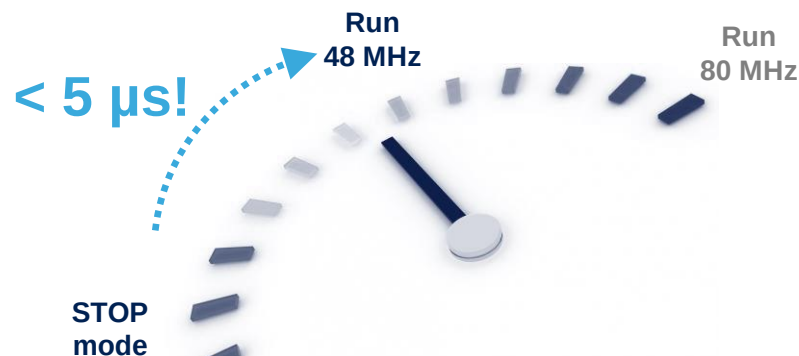
STM32L4 Excellence with ultra-low-power and performance

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Ecosystem available now with [Online training](#)

From 0 to 48 MHz speed in 5 μ s
(or less)

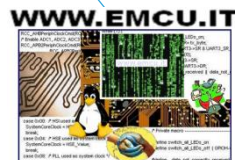
100 DMIPS / Cortex-M4 with FPU



And blows-up
performance
in ULP world

www.st.com/stm32l4

STM32 Ecosystem



Hardware Development Tools

15



STM32 Nucleo



Discovery kits



Evaluation boards



3rd parties

Typical use case

Flexible prototyping, Community

Prototyping, Creative demos

Full feature evaluation

Extension possibilities

+++

++

+++

Connectivity

Arduino™
ST Morpho

ST

ST

From full evaluation to open hardware

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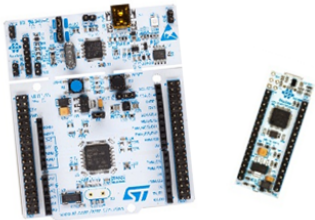
STM32 Nucleo ODE platform

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Hardware



STM32 Nucleo
development boards



Nucleo-64 Nucleo-32

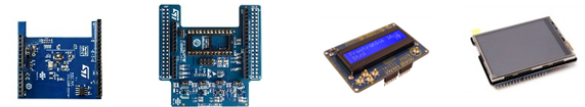
Software



STM32Cube
software library

Expansion

STM32 Nucleo expansion boards
from ST and third parties



STM32Cube expansion SW

Multiple IDE support



STM32 mezzanine module supports 96Boards CE cards

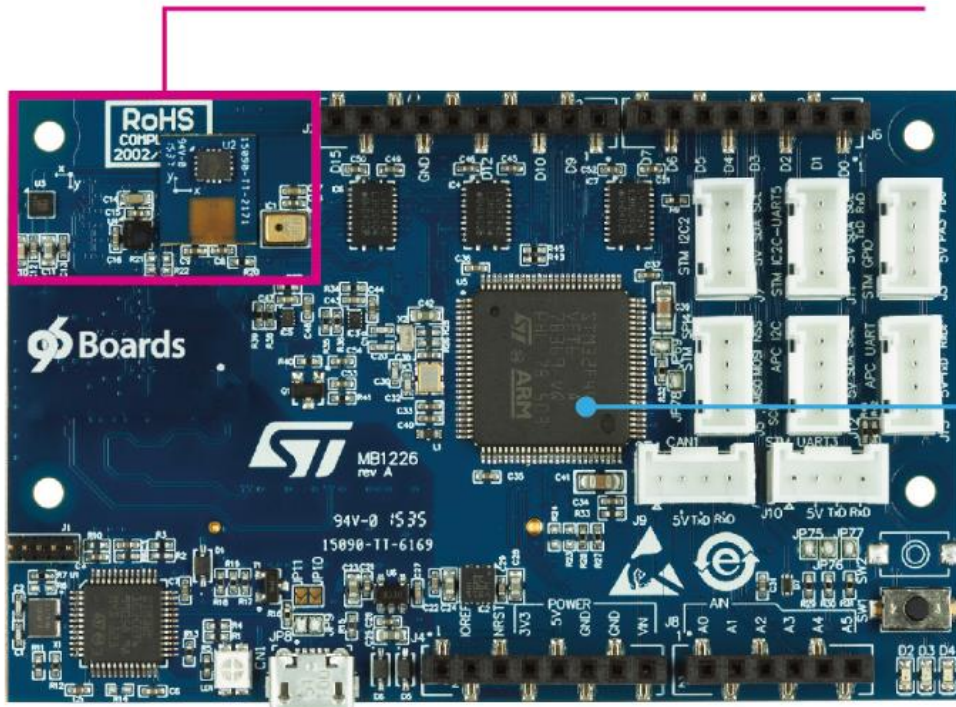
MEMS sensors



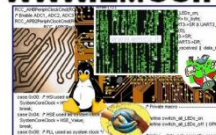
STM32F446

[More info here: B-F446E-96B01A](#)

Newsbite [here](#)



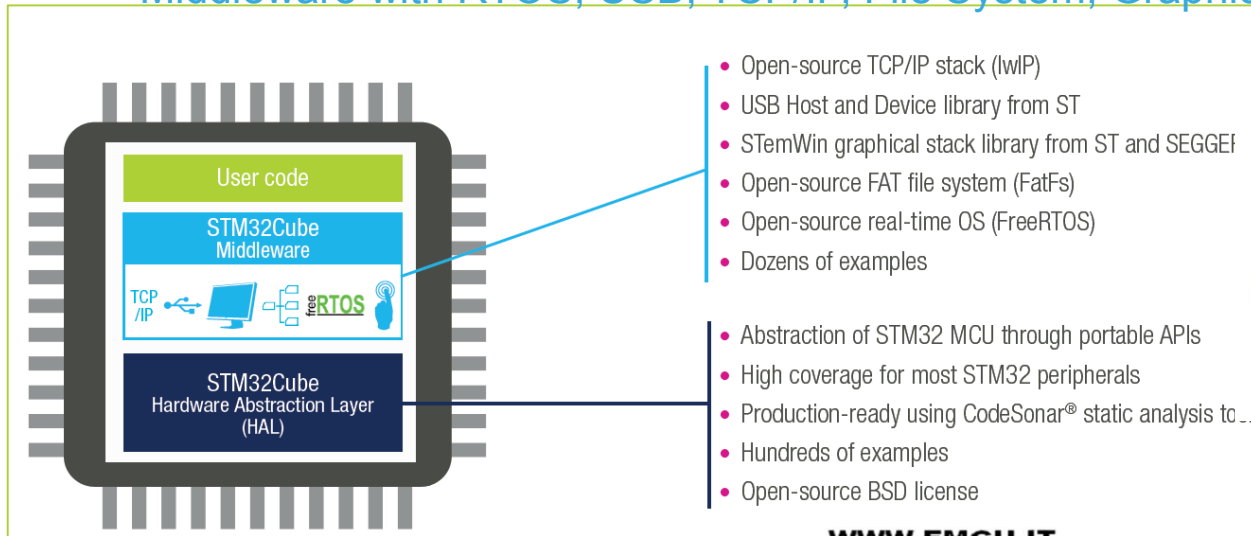
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Supporting all STM32 MCUs

High-quality process – qualified HAL firmware

- Get configuration code generated* from a tool with STM32Cube and focus on your added-value software !
 - 4 configuration wizards: pinout, clock, peripherals & middleware, power consumption
 - Portable Hardware Abstraction layer, from series to others
 - Middleware with RTOS, USB, TCP/IP, File System, Graphics , Touch sensing...

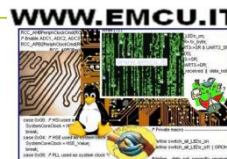


- Open-source TCP/IP stack (lwIP)
- USB Host and Device library from ST
- STemWin graphical stack library from ST and SEGGER
- Open-source FAT file system (FatFs)
- Open-source real-time OS (FreeRTOS)
- Dozens of examples

- Abstraction of STM32 MCU through portable APIs
- High coverage for most STM32 peripherals
- Production-ready using CodeSonar® static analysis tool
- Hundreds of examples
- Open-source BSD license



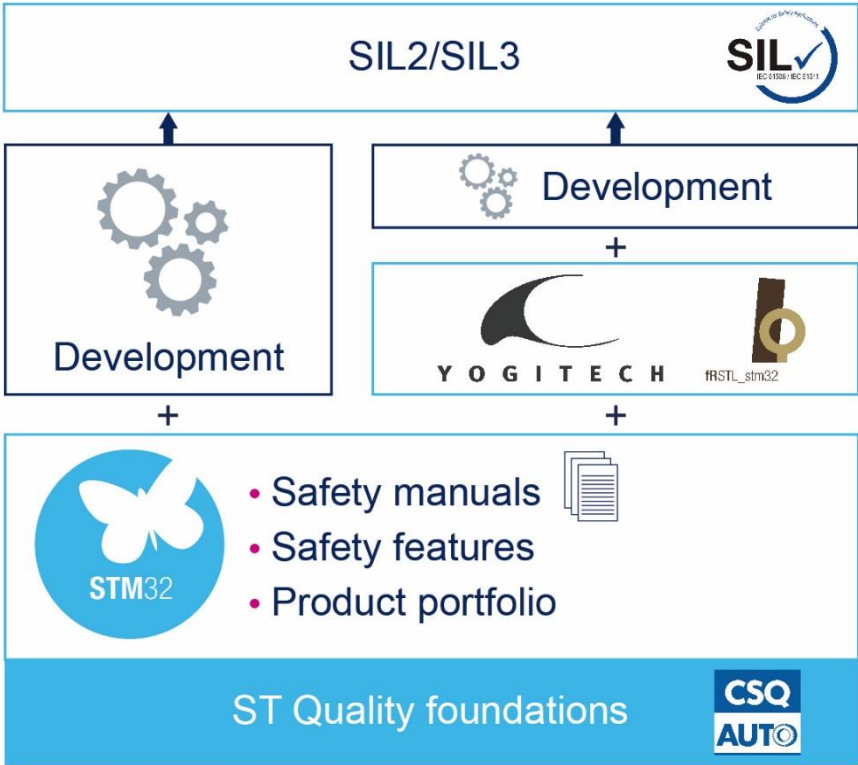
www.st.com/stm32cube



STM32-SafeSIL

Safety design package for STM32 MCUs

Dramatically reduce time and cost to build STM32 based systems certified to IEC 61508 Functional Safety Standard



Press release [here](#)



www.st.com/stm32safety

New ST MCU Finder Application

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- Quickly find the right ST MCU
- Easy access to technical materials
- Latest news from ST MCU world



www.st.com/stmcufinder

Download it !

Tell your colleagues and customers



MCD promo plan until Q1/2016

Legend:

Media type

PR: Press release

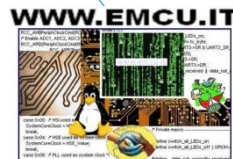
NB: NewsBite

En : Enews

Announcement type

S: Samples Announcement (MAT10 -> MAT20)

MM: Mass market announcement (MAT29 + HW and SW)



Legend:

PR : Press release

NB: NewsBite

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Announcement
(MAT10 -> MAT20)
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announcement (MAT29
+ HW and SW)

● TBC

■ New Silicium
launch to market

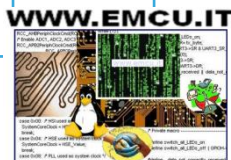
■ Announcement
planned

* STM32CubeMX (v4.12)

- En MCD WEEK4 (01/28): NUCLEO-F410RB; WLCSP STM32F0 package, STM32 Nucleo-144
- En MCD WEEK8 (12/23): STM8AF QFN32 package, STM32L0 ecosystem, Nucleo-144, STM32L4 extension)
- WEEK12 : L0 drip mail
- WEEK12 En MCD on STM8L152K8Y6TR and Safety-SIL on L0 series TBC

Q1/2016 Announcement

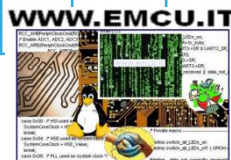
Q1		STM32				STM8		Hardware				Software					
		STM32F7 2MB (S)	STM32L0 8 to 192 KB (MM)	STM32L4x1 and x5 (MM) + STM32L4x2 and STM32L4x3 (S)	STM32F0 WLCSP package	2nd billion units shipment for all STM8	STM8L152K8Y6TR	NUCLEO-L031 K6 and NUCLEO-L011K4 (Nucleo-32) + NUCLEO-L073RZ (Nucleo-64) STM32L073Z-EVAL	STM32 Nucleo-144 (F3, F4 and F7) F2 not ready in-time (MM)	NUCLEO-F410RB	B-F446E-96B01A (SA)	USB solution shield on NUCLEO-F072 (64)	STM32CubeL0	Safety-SIL available on STM32L0 serie	ST-MCU-FINDER new release	STM32 Development under Linux now possible for free	STM32 USB-C and Power delivery Stack
January	W2										Jan 14 th NB						
	W3	Jan 21 st NB															
	W4				Jan 28 th En			Jan 28 th NB + Jan 28 th En	Jan 28 th En								
February	W6			Feb 11 th NB												Feb 9 th PR	
	W7		Feb 16 th NB				Feb 16 th NB					Feb 16 th NB					
	W8			Feb 23 rd En				Feb 23 rd En	Feb 23 rd En								
March	W10					Mar 8 th NB											
	W12						Mar 22 ⁿ d En							Mar 22 nd En			
	W13											Apr 1 st NB					Apr 1 st NB



- En MCD 10/27: STM32 Nucleo-32; STM8S103 in 105° C on UQFNFP package, STM32F469I-DISCO and STM8AL-64Kb
- En MCD 11/24: STM32F7 IAR socket board, P-NUCLEO-IHM001, STSW-STM32100

Q4/2015 Announcement

Q4/2015		STM32		STM8		Hardware					Software		Event	
		STM32F410 (MAT29) 64- to 128-Kbyte	STM32F469/479 MAT29	STM8S103 (extend to 125°C)	STM8AL 64K	NUCLEO-F410RB	STM32469I-EVAL and STM32479I-EVAL	STM32F469I-DISCO	STM3274G-SK/IAR	STM32 Nucleo 32 pins • F031K6, F042K6 and F303K8	P-NUCLEO-IHM001 and STSW-STM32100	STM32CubeF4 (v1.9.0)*	mbed3.0 program	Maker Faire ROME
Oct	W4 1			<u>Oct 18th</u> NB										
	W4 2									<u>Oct 15th</u> NB				<u>Oct-16th</u> PR
	W4 3		<u>Oct 22nd</u> NB				<u>Oct 22nd</u> NB					<u>Oct 22nd</u> NB		
	W4 4			Oct 27 th En	Oct 27 th En			Oct 27 th En		Oct 27 th En				
Nov	W4 6												<u>Nov 9th</u> PR	
	W4 8								Nov 24 th En		Nov 27 th En			
Dec	W4 9	<u>Dec 3rd</u> NB				<u>Dec 3rd</u> NB								



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Releasing your creativity with the new STM32

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