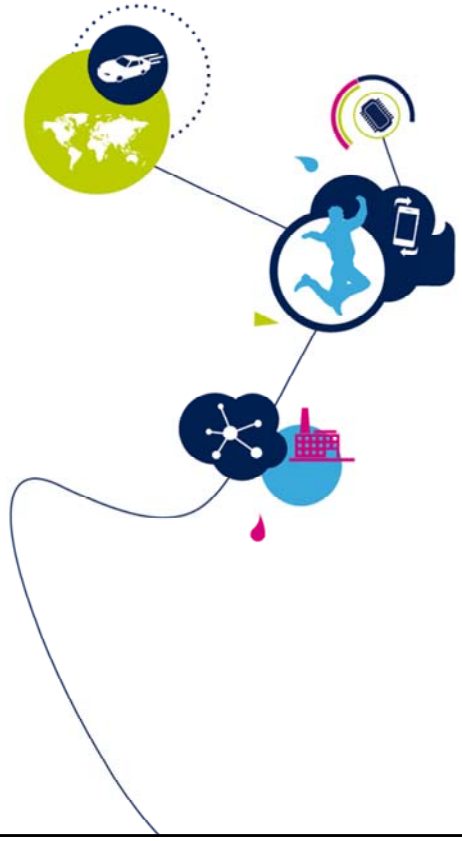
STM32G4 - Welcome

Welcome session
Revision 1.0



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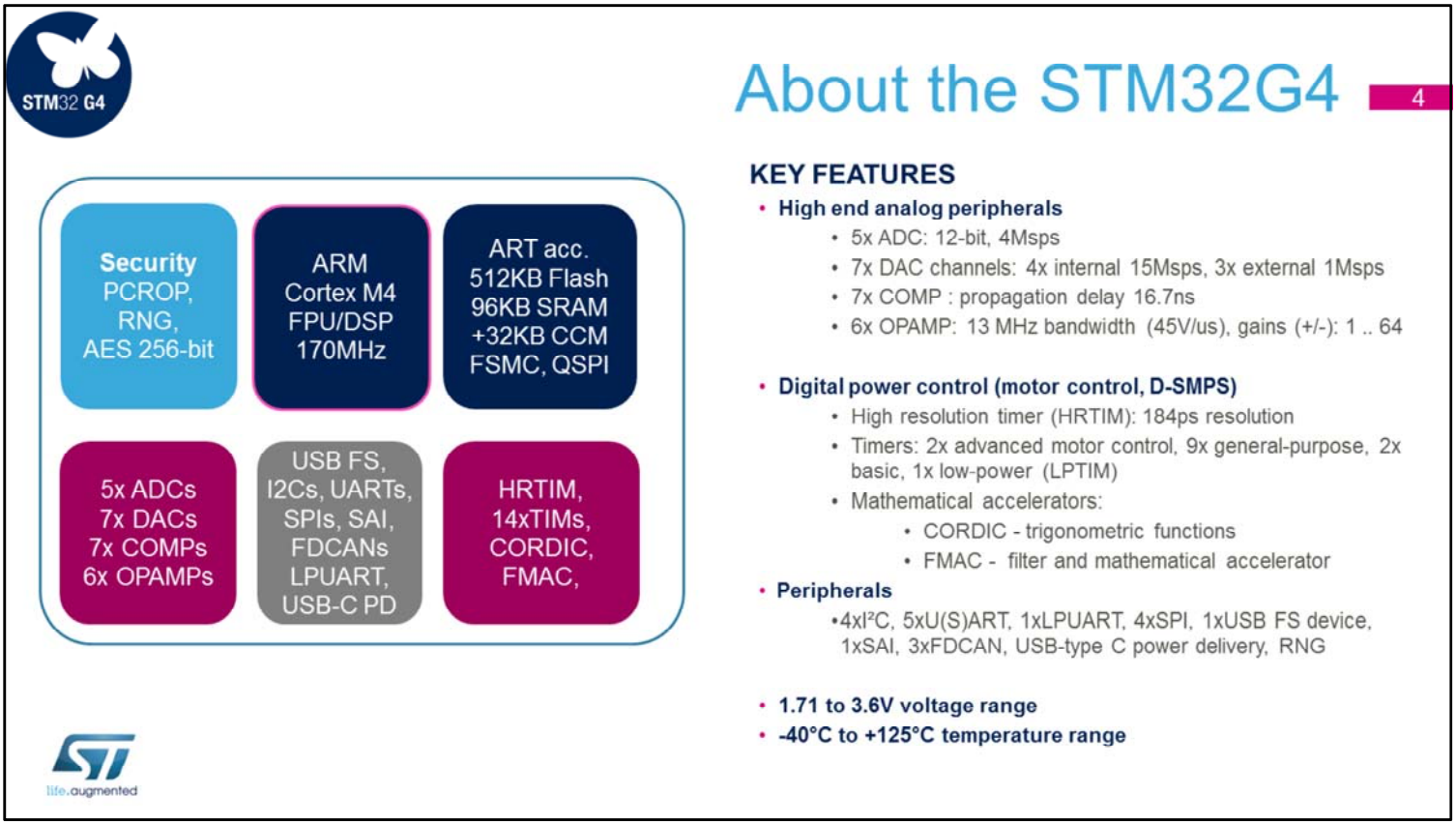
Hello, and welcome to this STM32G4 training session.

This session is organized to provide you with the most important information to ensure that you can develop your application as easily as possible. You will find a technical description of all the STM32G4 modules including peripherals and development tools organized into specific sections: system, memory, security, analog, peripherals, watchdog and timers and ecosystem.
You can browse each section separately and learn about each module in the order of your choice and at your convenience.
This session also allows you to search directly for a keyword and you will have a direct access to the sections covering this information.

Now, let’s take a closer look at the STM32G4 new series of general purpose microcontrollers.



The STM32G4 microcontroller is a new series of general purpose MCUs with a rich built-in analog peripherals set and mathematical accelerators.
It is an evolution of the STM32F3 series extended with improved analog peripherals and new digital peripherals to support motor control applications, digital SMPS control applications, lighting applications and many other applications. Additional low-power functions improve the overall power efficiency in battery operated applications.

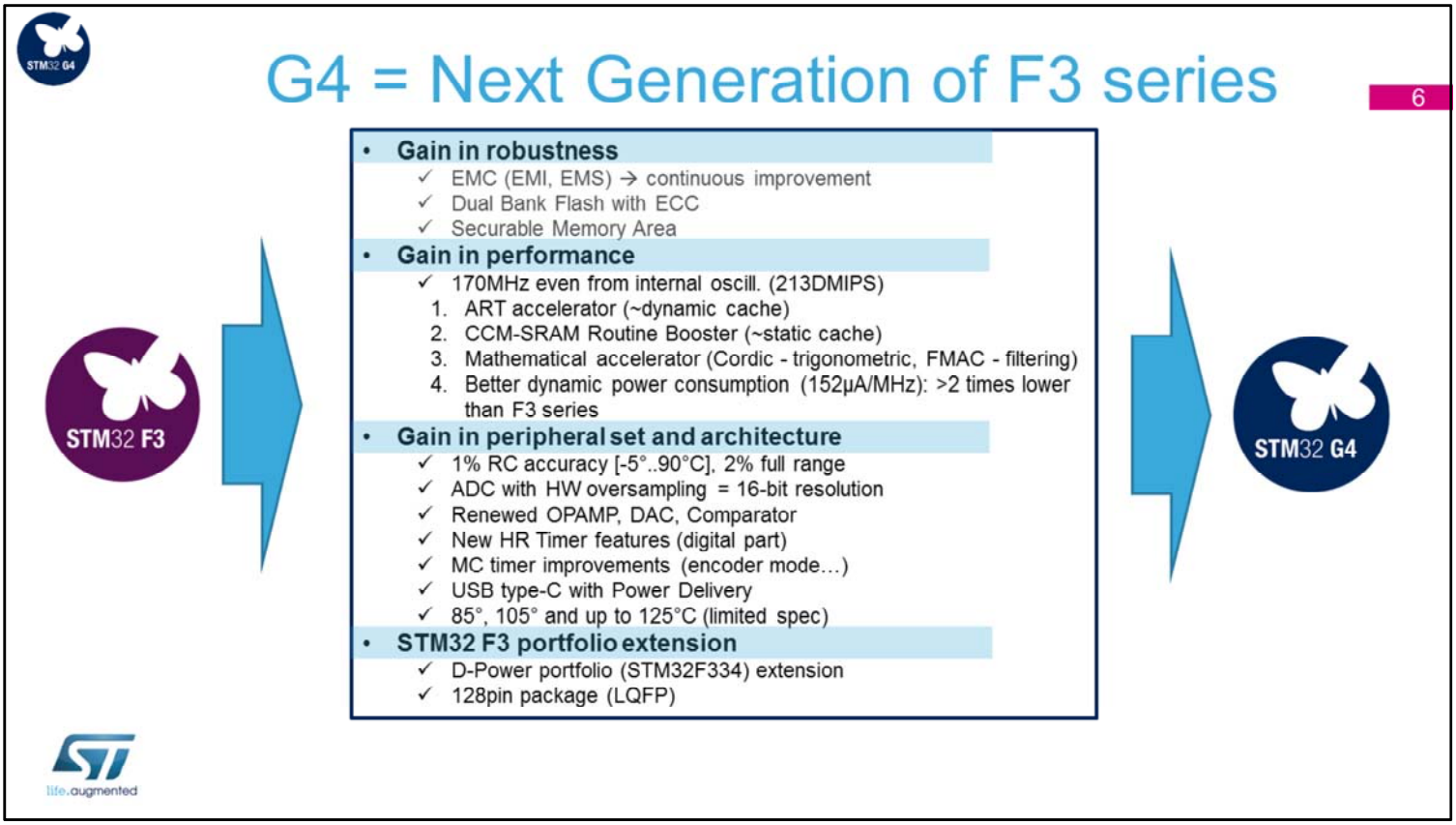
The STM32G4 microcontroller embeds high end analog peripherals in conjunction with an advanced set of timers to support digital motor control and digital switched mode power supplies. Mathematical performance is boosted by hardware mathematical accelerators. Cordic is an accelerator for trigonometric functions used in motor control applications. FMAC is a digital filter and mathematical accelerator used for filtering in DSMPS applications and

motor control applications.
The core is based on a Cortex-M4 architecture running at 170MHz. The internal CCM RAM memory (core coupled memory) is a RAM memory for timing critical code storage. CCM RAM is directly connected to CPU to maximize execution speed without any wait state and with low latency.

Why STM32 G4 ?

- G4 series will serve all applications where advanced and/or rich analog peripheral set is required.
- Differentiated applications for STM32
  - Motor Control (E-bike, Home Appliance, Air Conditioning)
  - Instrumentation & Measurement
  - High-End Lighting and Welding
  - PFC (Power factor correction)
  - D-SMPS (Digital Switch Mode Power Supply)
  - Building automation
  - Factory Automation (entry level)
  - Control applications …

Thanks to its rich set of features, the STM32G4 can support a wide range of use cases from motor control for home appliances, drones, electric bikes, lighting to healthcare, from home monitoring to industrial control and any other IOT devices.



STM32G4 series is a follower of the STM32F3 family. Analog improvements are related to the number of embedded analog peripherals including their higher analog performances. Regarding the digital improvements, the STM32G4 microcontroller is faster than the STM32F3 and includes new hardware accelerators – like ART, Cordic, FMAC and embeds improved digital peripherals. This evolution is also present in all communication digital peripherals. USB type C power delivery peripheral is a new feature for USB power control. STM32G4 series has extended temperature range up to 125°C. Thanks to a new design technology, the STM32G4 dynamic consumption is less than half of the STM32F3 series consumption.

Enjoy!

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Now let’s get started with the training. Do not hesitate to follow the events and news about this product on our website at www.st.com/stm32g4.
Enjoy!