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Welcome to workshop

**Run MPU-like applications
on a real-time cost-effective
bootflash MCU**

Good morning!

We will start at 9 am CET

Team Introduction





Purpose of the workshop

- Explore the capabilities of the powerful **STM32H7R/S bootflash MCU** and learn how to leverage the STM32Cube ecosystem for developing applications that utilize external memory
- Delve into the advanced **security features**, focusing on **hardware-based on-the-fly encryption/decryption** to protect code and data in external memory and **debug authentication** techniques to safely debug and manage field returns
- Showcase the **advanced graphical capabilities** of the device, emphasizing the new **Neochrome 2.5D GPU's** ability to create sophisticated graphical effects while offloading the CPU



Agenda

- Introduction (5 mins)
- STM32H7R/S series introduction (30 mins)
- 1st hands-on session: Project with STM32H7R/S bootflash MCU and OSPI interface, exploring new STM32CubeMX features for external memory development (45 mins)
- Coffee break (10 mins)
- 2nd hands-on session: Building a basic example with TouchGFX Designer and demonstrating NeoChrom GPU performance benefits (30 mins)
- 3rd hands-on session: Using Memory Cipher Engine (MCE) for on-the-fly encryption/decryption to protect code and data in external memory (20 mins)
- 4th hands-on session: Using Debug Authentication to demonstrate the possibility to re-open the previously closed device for debug using the proper authentication method (20 mins)
- Closing remarks and Q&A (~20 mins)

How to replicate the workshop?

Tools Prerequisites

- Hardware tools:

- NUCLEO-H7S3L8: Can be ordered for free thanks to a voucher that you will receive in post event email from us.
- STM32H7S78-DK: In case you want to replicate the TouchGFX hands-on session.
- USB-C cable



- Software tools:

- STM32CubeMX 6.11.1
- STM32CubeIDE 1.15.1
- STM32CubeH7RS 1.0.0
- STM32CubeProgrammer 2.16.0
- TouchGFX Designer 4.24.0



- Github repository:

Remote workshop Rules

- Before the Q&A **please make sure to be muted** (we'll mute all in beginning).
- **Use CHAT window** of the Teams meeting to ask questions or highlight a problem during all the chapters and hands-on exercises.
 - Please mention slide number in case the question is related to specific slide.
 - Questions will be answered by facilitators in written form inside the CHAT window directly in real time.
 - Specific questions will be read by the facilitator at the end of each chapter and answered in spoken way by all the facilitators.
- Don't hesitate to ask a question anytime.
- In case of more complex issues private CHAT session can be started.
- If needed to share screen or have dedicated audio exchange, we will enable it at hands-on session check points or during the break.

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