Secure Your Edge Devices with PSOC™ Edge Protect Software

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Arm Knowledge Lab:
Three short and compact sessions

Day 1

Secure by Design – From Threats to Trusted Devices

Day 2

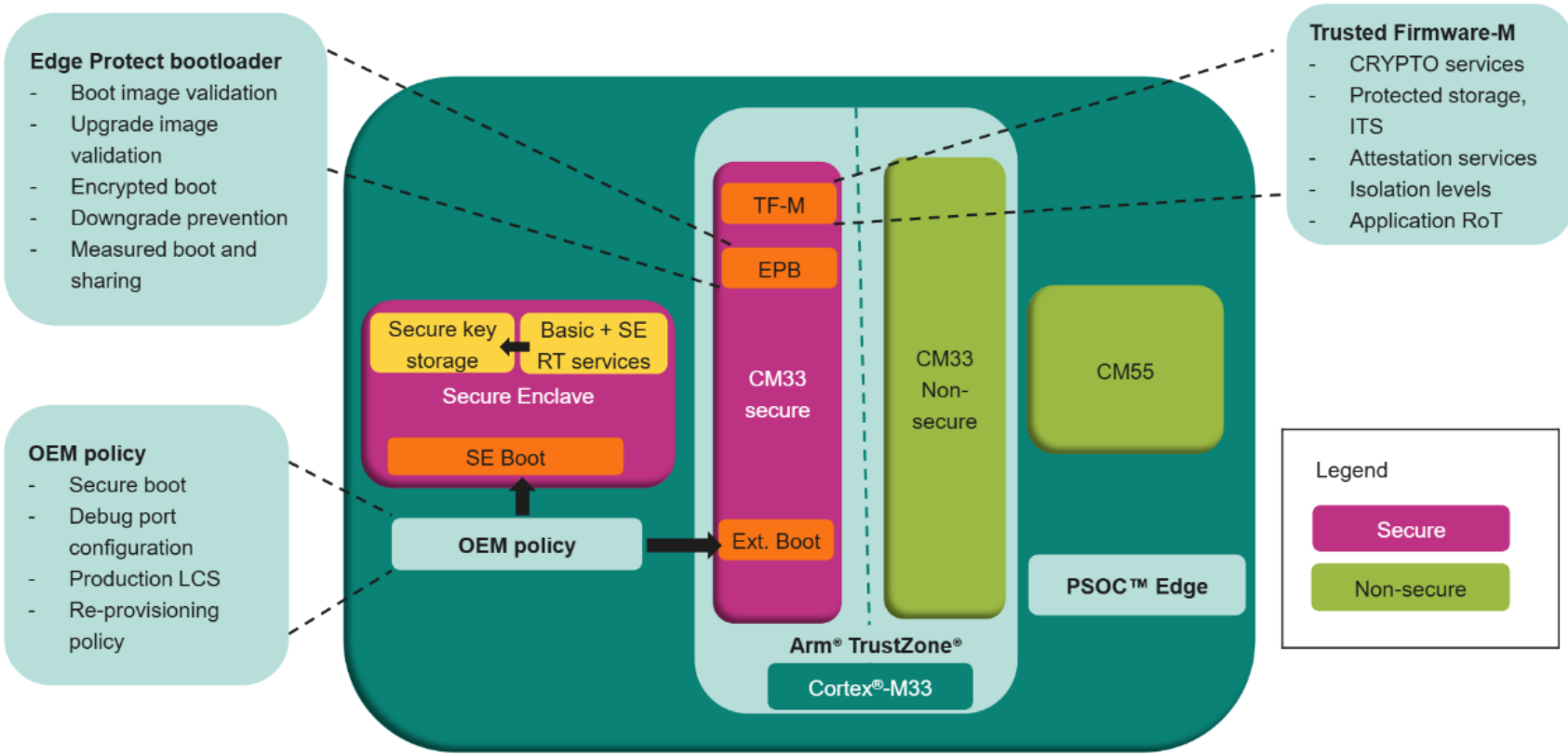
AI at the Edge – Building Smarter Embedded Systems

Day 3

Safety-Critical Systems – Engineering Reliability

Find more presentations from our Arm Knowledge Lab:
https://www2.hitex.com/arm-knowledge-lab-2026-download

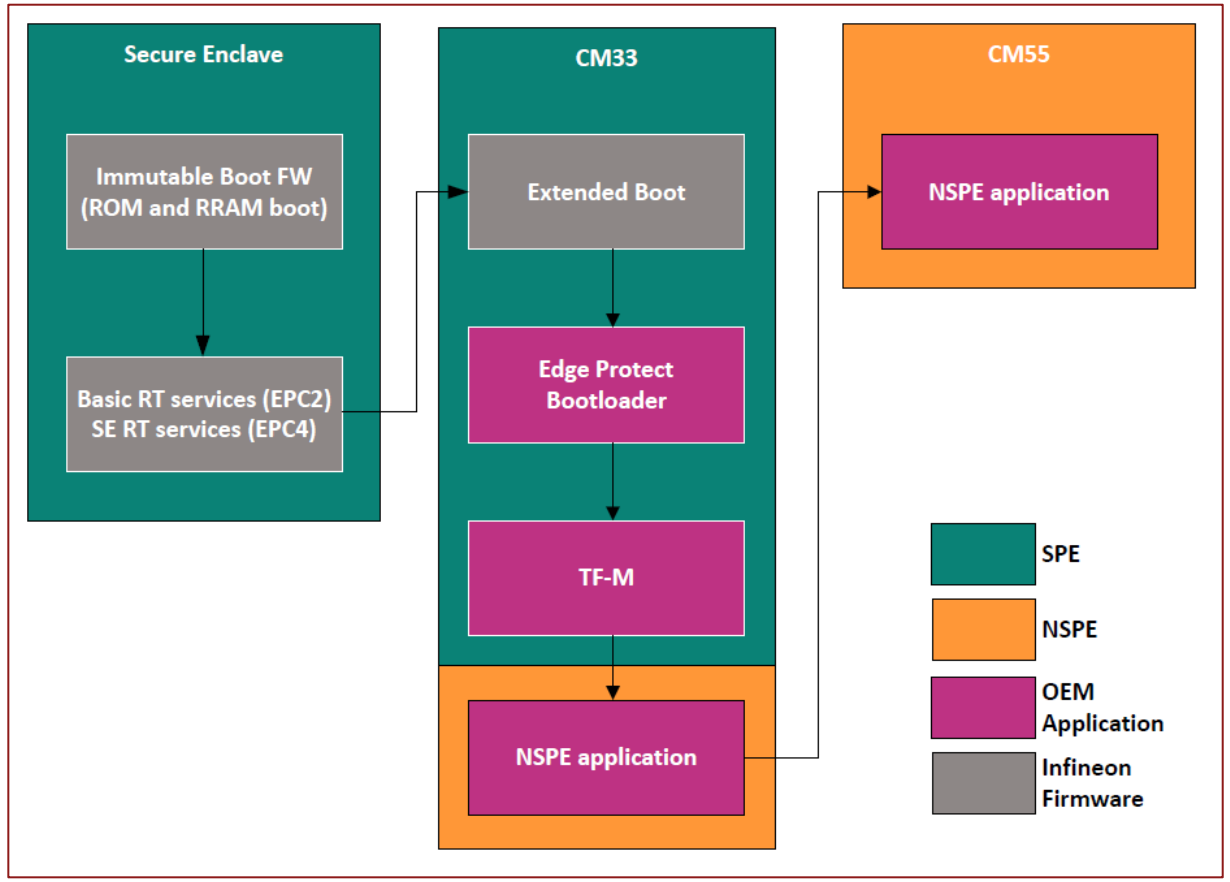
PSOC Security Architecture



- Infineon Edge Protect
  - Tools
  - Firmware
  - Examples

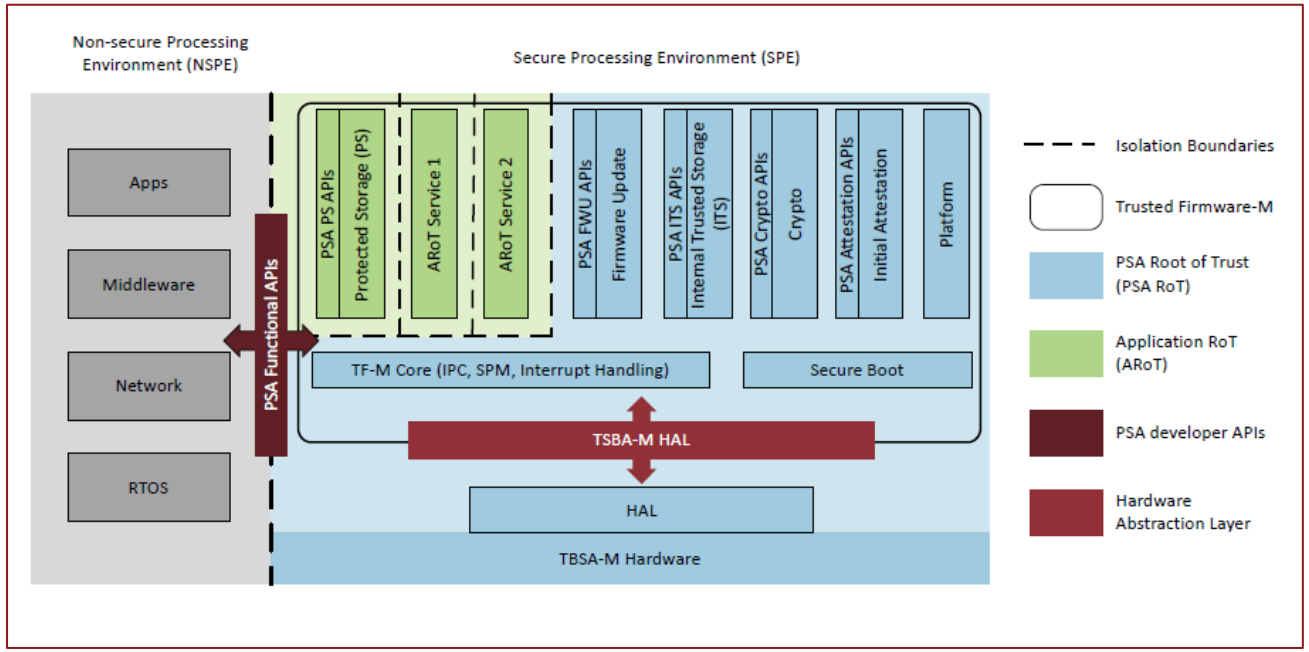
For complete device security

Boot Sequence



- Secure Enclave
  - Starts Cortex-M33 and Extended Bootloader
- Cortex-M33
  - Extended boot validates one image
  - Edge Protect Bootloader
- Edge protect bootloader
  - Validates remaining images
    - Cortex-M33 SPE
    - Cortex-M33 NSPE
    - Cortex-M55
  - Starts Cortex-M33 NSPE application
    - Which in turn starts
  - Starts Cortex-M55 NSPE application

PSA Trusted Firmware



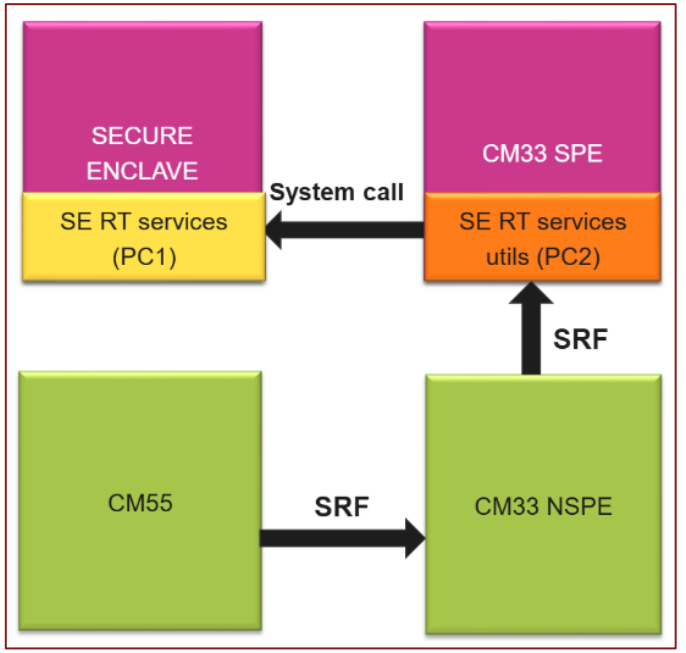
Runs on Cortex-M33 in Secure processing Environment SPE

- Provides Security Services to the NSPE
  - Cryptography
  - Secure Storage
  - Attestation
  - Keystore
- Integrated with Crypto Accelerator

Secure Enclave Run Time Services

Edge Protect Category (EPC) 4 devices provide an additional set of services called secure enclave runtime services

- (SE RT_Services), which include
  - CRYPTO service
  - Key management service
  - Protection service
  - Attestation service
  - System management service
- SE RT services utilities library is a set of utility code that
- provides an interface to SE RT services
  - SE RT services utilities can be accessed from the CM33 SPE application



Configuration tools

Modus Toolbox

- Compiler
- IDE
- Debugger

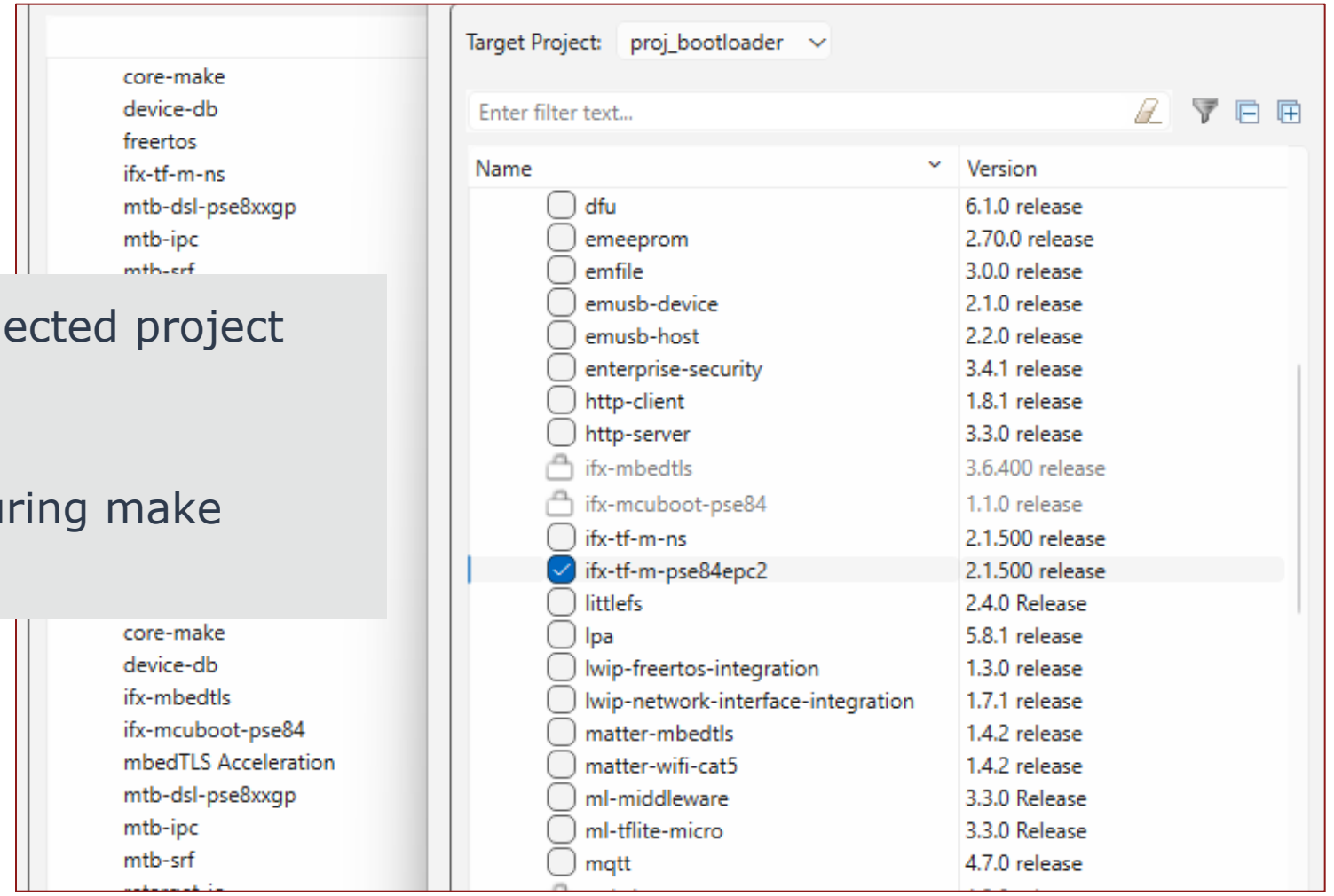
Configuration apps

- Device
- Security
- Machine Learning

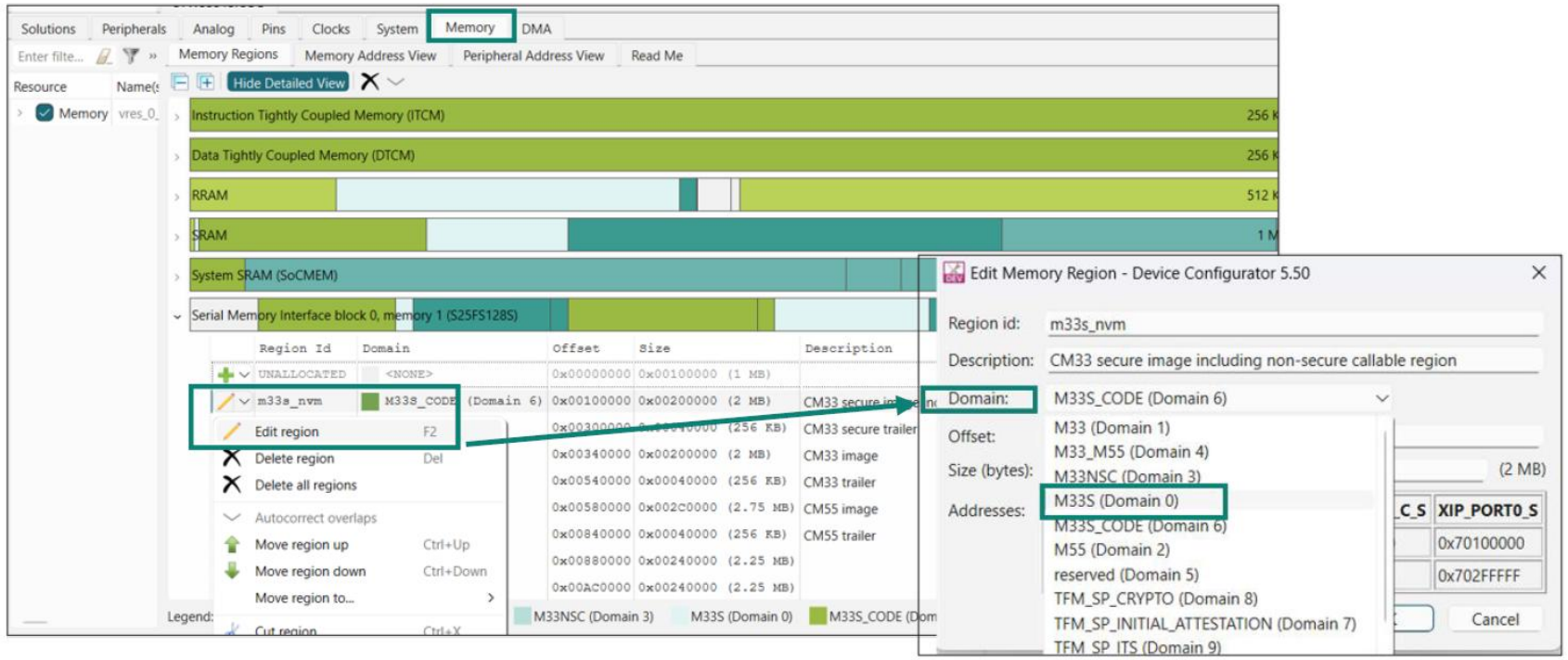
- Library manager (Software components)
- Edge protect Security Suite

Library Manager

- Add software components to selected project
- Adds URL to a github repo
- Downloads and builds source during make process



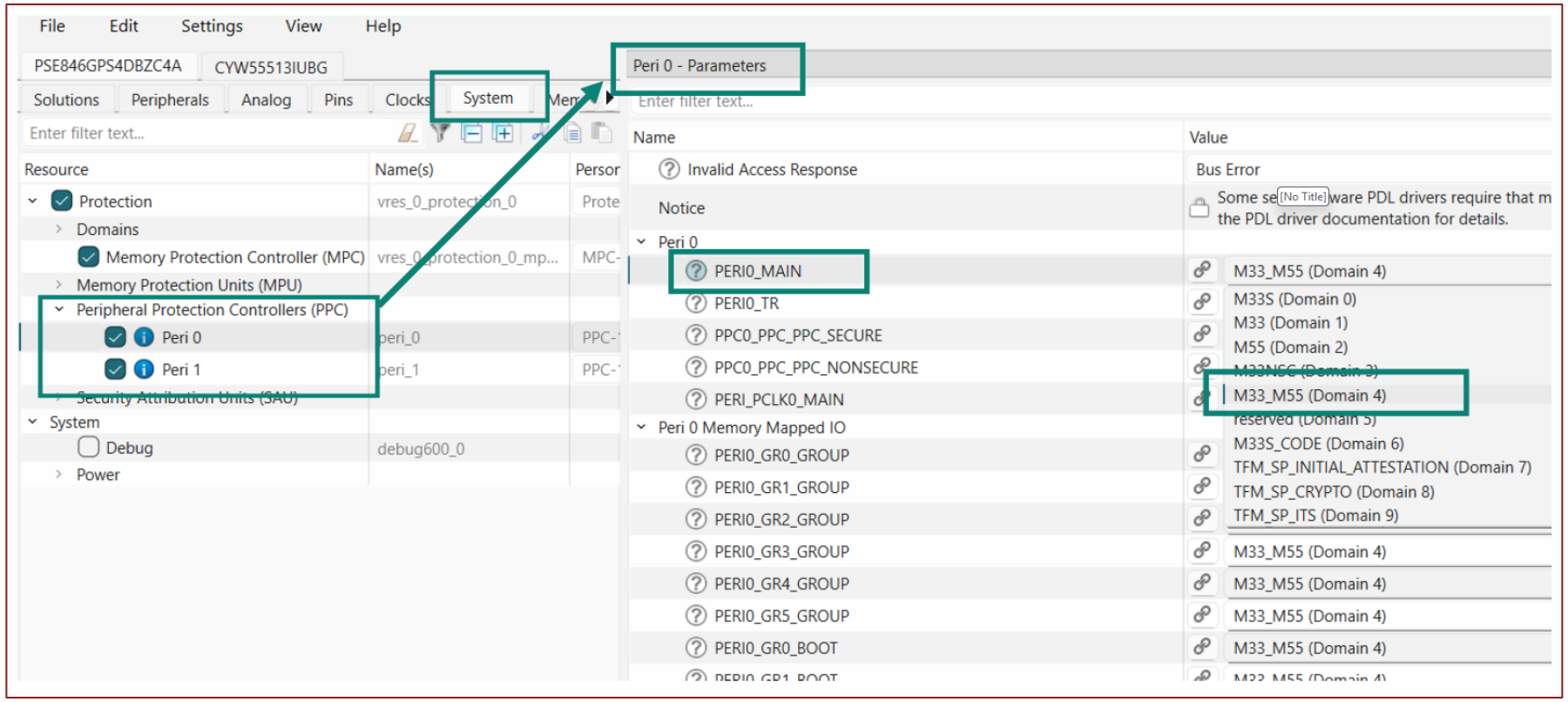
Device Configurator



Memory configuration

- Defines security domains
- Create memory regions and allocate them to a domain

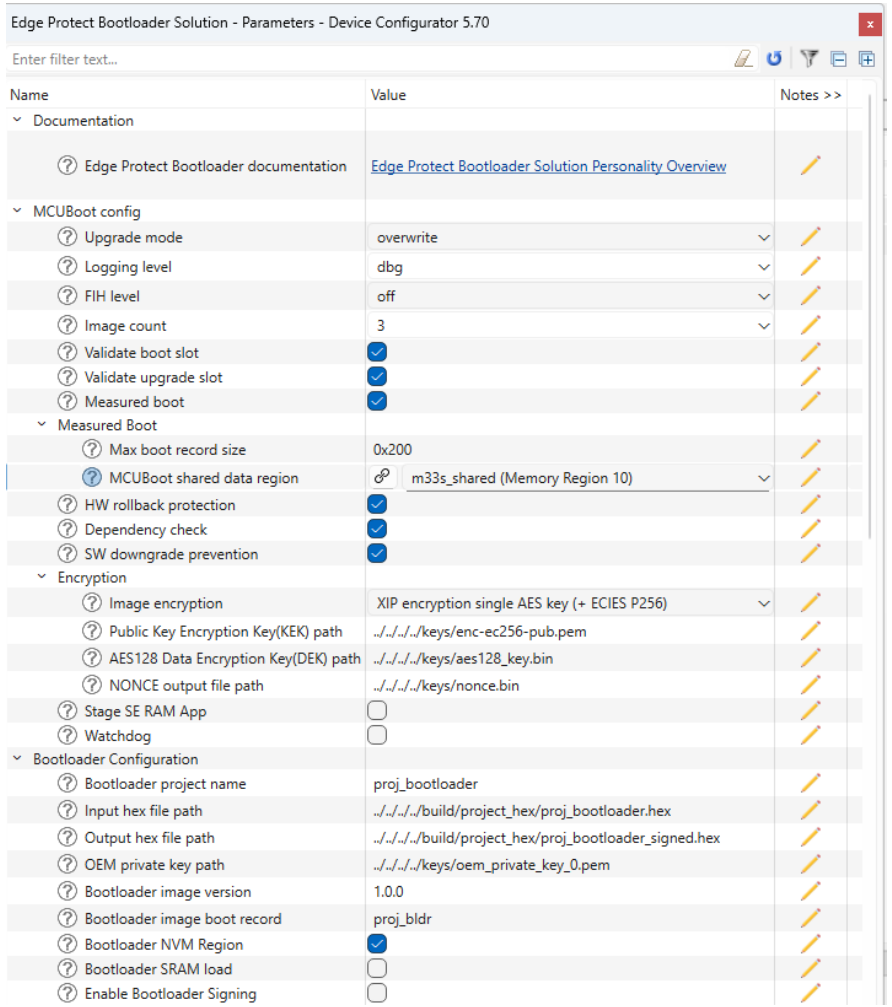
Peripheral Protection Units

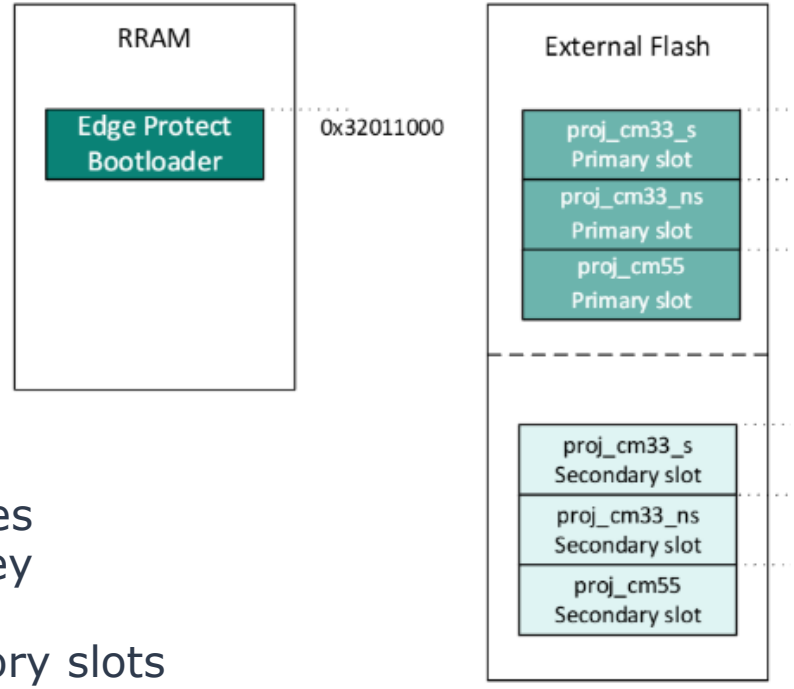


PPU allocates a peripheral to a Security Domain

- Peripheral register access

Edge Protect Bootloader (MCU boot)





Defines

- MCU Boot features
- Authentication key
- Encryption keys
- Secondary memory slots

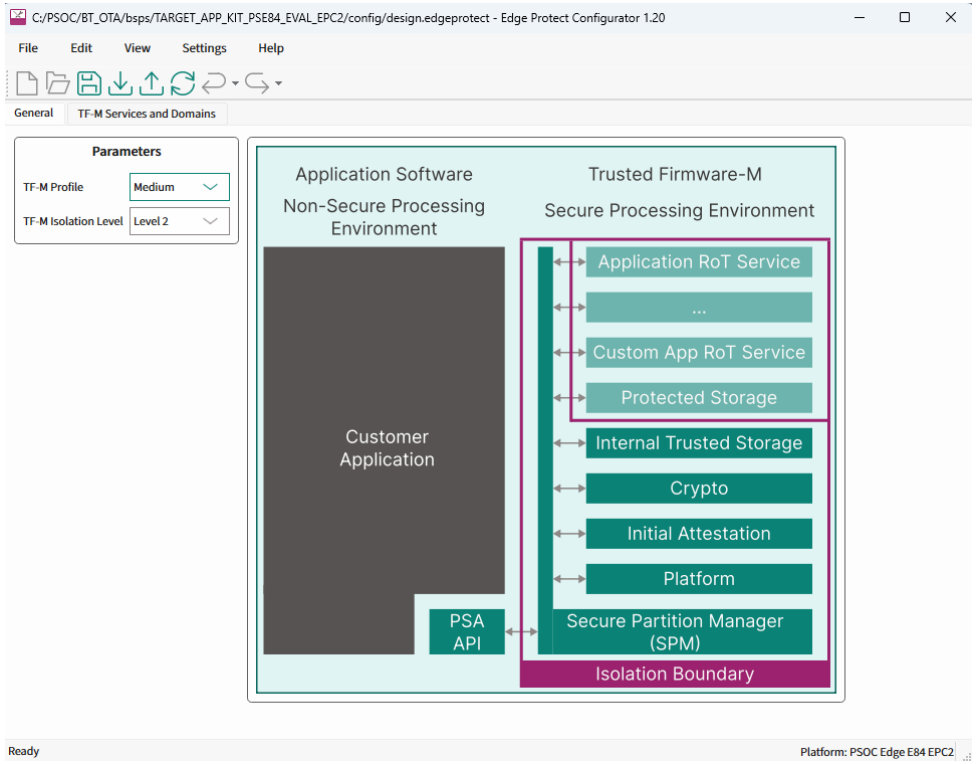
OTA Update Library

Support library and utilities for OTA Updates

- Examples for Bluetooth HTTP, MQTT and UART
  - Download Python scripts
- Supports Push and Pull models

Edge Protect Configurator

- Security Configuration
  - Configures
    - TrustZone SAU
    - Trusted Firmware
- Supports addition of custom SPE service



Edge Protect Tools

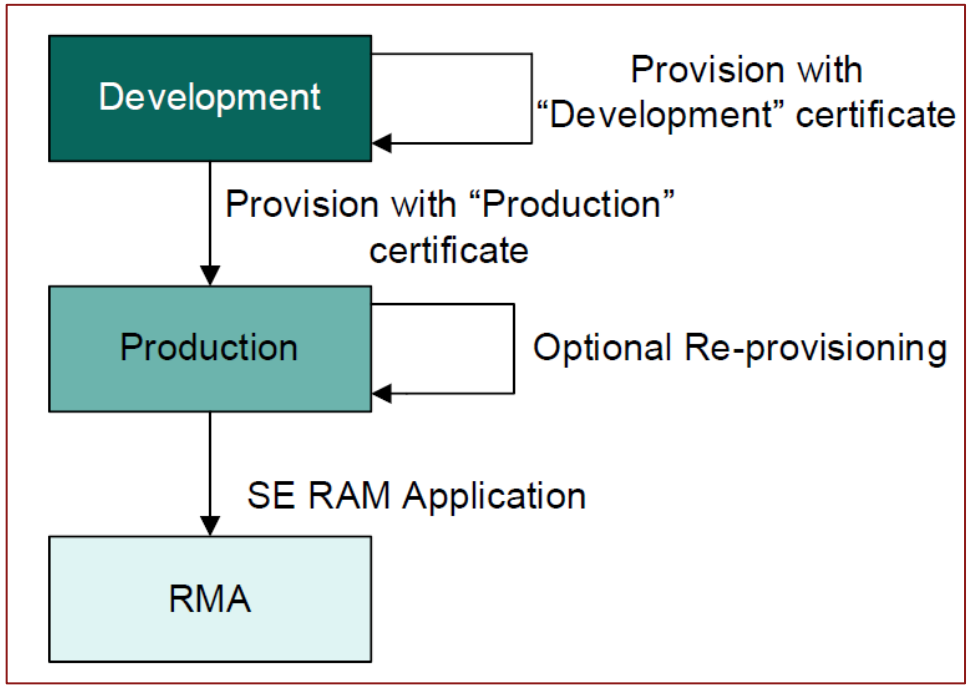
- ModusToolbox™ Edge Protect Security Suite
- Command Line Utility
- Capabilities
  - ROT Key generation
  - Image signing and encryption
  - Provisioning the device
  - Factory reset
  - Device integrity check

- Communicates with the target device over serial or SWD interfaces

Debug

- Authenticated Debug
  - Can grant different access levels
    - By processor
    - By security level
  - Invasive and non-invasive debug
  - Configured in the device policy file
- System Access port
  - Serial wire channel in addition to the debug channel
  - Allows you to modify policy file and recover the device

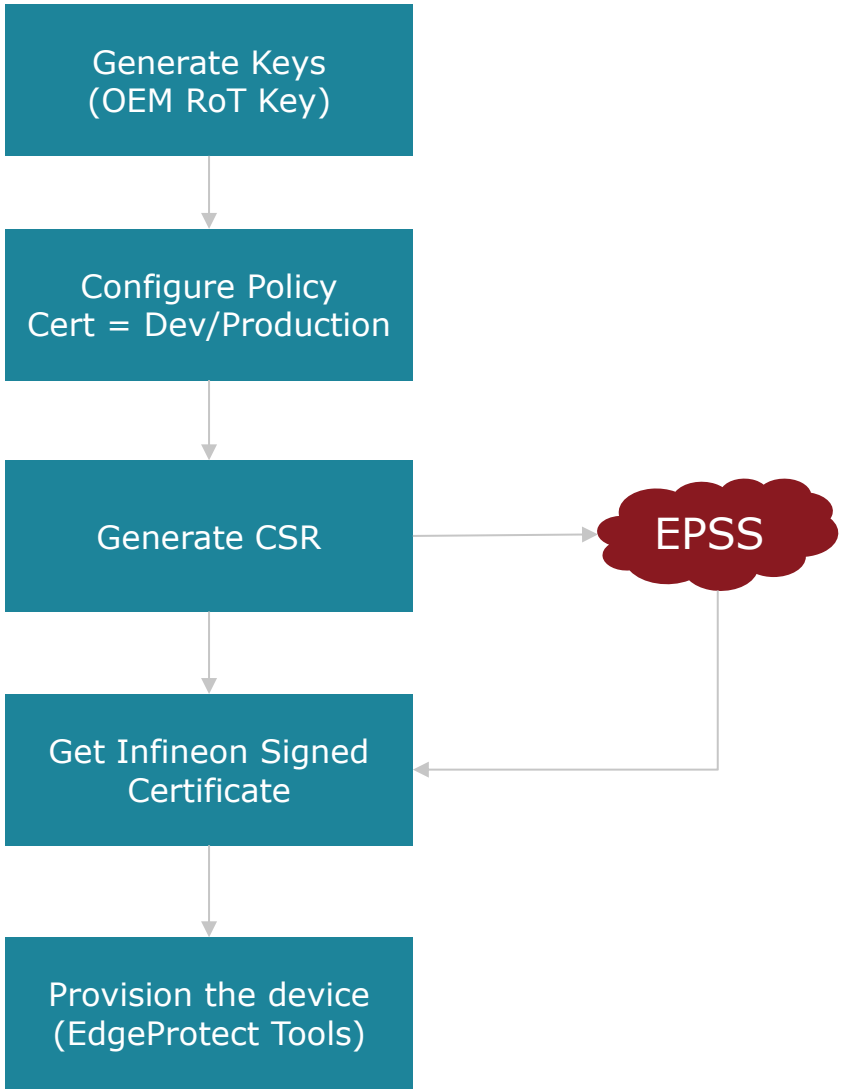
Device Lifecycle



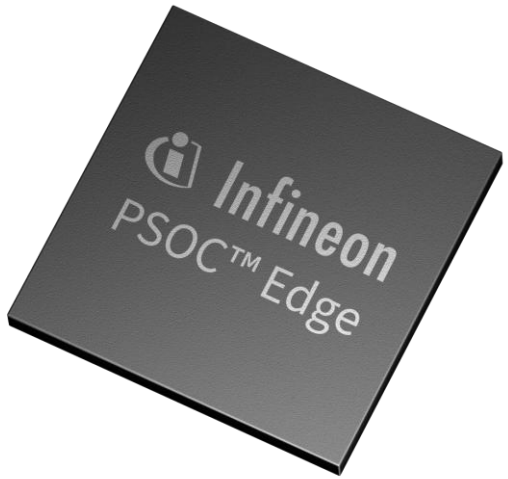
- Supports development and production phases
  - Device cannot be bricked while in development state
- Shifts ownership from Infineon to OEM
  - Provisions OEM certificates

Device Policy file

- Defines a set of config options
  - Life Cycle Status
  - Secure boot
  - OEM_ROT_KEY
  - Debug config
  - SMIF config
  - TRNG enable
- JSON Format File
- OEM Certificate
  - Signed using Edge Protect Signing Service EPSS (online service)



Conclusion



- Full Security Model in Modus Toolbox
- Integrated with Hardware accelerators
- Multi processor design allows you to concentrate on application code
- PSA certification
  - Level 3 and Level 4

Hitex offerings …

Ask alexander.hess@hitex.de – he looks forward to receiving your inquiries regarding Hitex offerings, including:

- Arm encryption libraries
- Security stack for Hardware Security Modules
- Support for your ISO 21434 Threat Analysis and Risk Assessment (TARA)
- Training courses for embedded systems with Arm
- SO-DIMM compute modules for PSOC™, TRAVEO™ and more for an easy entry into the Infineon MCs.

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