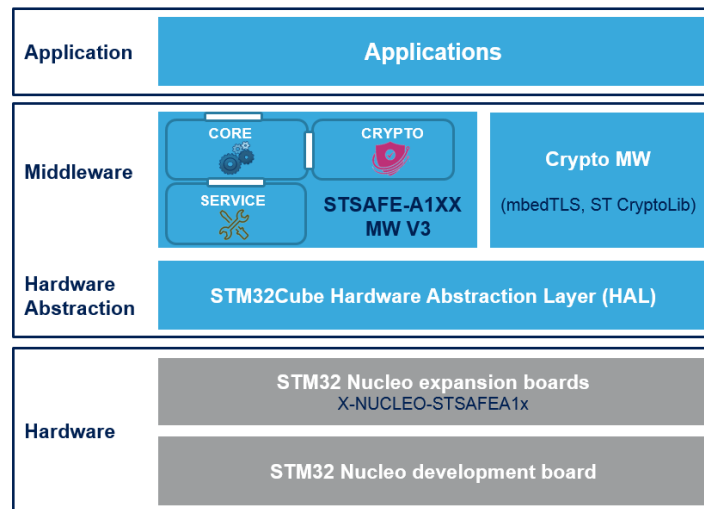# STSAFE-A1xx Middleware Software Data Brief

Features

- Complete middleware library with a new re-designed architecture in order to improve robustness and security, and improve reliability, scalability, maintainability.
- CORE module to simplify integration in customer application.
- CRYPTO module to isolate all the crypto operations increasing the security level and reducing the attack surface.
- SERVICE module to increase the hardware abstraction and the platform independence.
- Memory optimization configuration to get the best from the available host MCU memory.
- Crypto and Service Interfaces for easy customization at application level.
- New STM32 BSP 2.6.1 compliancy for better integration across ST software packages.
- MISRA-C 2012 compliancy.
- Easy portability across different MCU families, thanks to STM32Cube.
- Free, user-friendly license terms.

Description

The STSAFE-A1xx Middleware is a software component providing a complete set of APIs to access the STSAFE-A100 or STSAFE-A110 device features form a host microcontroller.

The middleware is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. It is also MCU agnostic for additional portability across different MCUs.

The STSAFE-A100 and STSAFE-A110 are a highly secure solution that acts as a secure element providing authentication and data management services to a local or remote host. It consists of a full turnkey solution with a secure operation system. It can be integrated in IoT devices, consumer electronics devices, consumables and accessories as well as smart-home, smart-city and industrial applications.

What is STM32Cube?

STMCube^{TM} initiative was originated by STMicroelectronics to ease developers' life by reducing development efforts, time and cost. STM32Cube covers STM32 portfolio.
STM32Cube Version 1.x includes:

- The STM32CubeMX, a graphical software configuration tool that allows to generate C initialization code using graphical wizards.
- A comprehensive embedded software platform, delivered per series (such as STM32CubeF4 for STM32F4 series)
    - The STM32Cube HAL, an STM32 abstraction layer embedded software, ensuring maximized portability across STM32 portfolio
    - A consistent set of middleware components such as RTOS, USB, TCP/IP, Graphics
    - All embedded software utilities coming with a full set of examples.

How does this software complement STM32Cube?

The proposed software is hardware independent but provide a SERVICE interface template based on the STM32CubeHAL, the hardware abstraction layer for the STM32 microcontroller. The SERVICE interface can be customized at application level in order to adapt the middleware to the supported MCUs and platforms. The package supports the new BSP 2.6.1 IO Bus drivers that can be easily ported on different platforms.

A CRYPTO interface template is provided for mbedTLS and ST Cryptographic Library (X-CUBE-CRYPTOLIB) allowing the user application to select the desired crypto library and related features needed by the STSAFE middleware (SHA, AES, etc.).