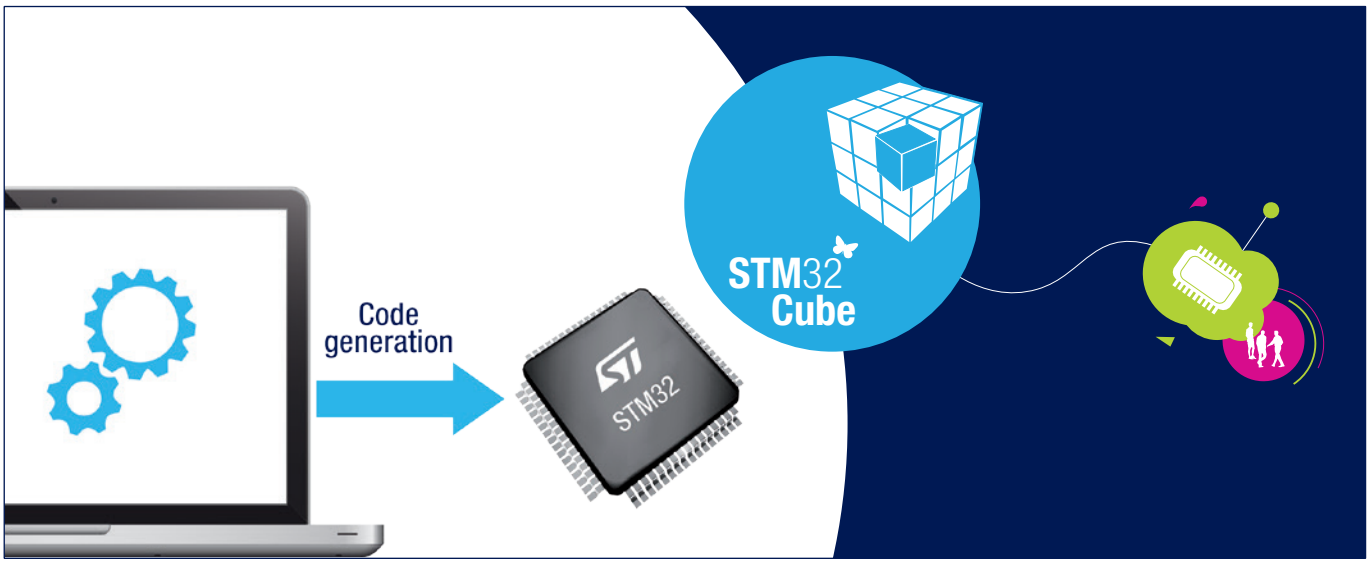
STM32Cube eases STM32 development



ST provides a comprehensive software offer, significantly reducing development effort, time and cost

The STM32Cube is a comprehensive software solution, combining embedded software bricks with the power of a PC-based software development tool, STM32CubeMX.

Embedded software not only covers all STM32 microcontrollers with highly portable low-level drivers, but comes with a collection of middleware components such as RTOS, USB, TCP/IP, touch sensing, file system or graphics.

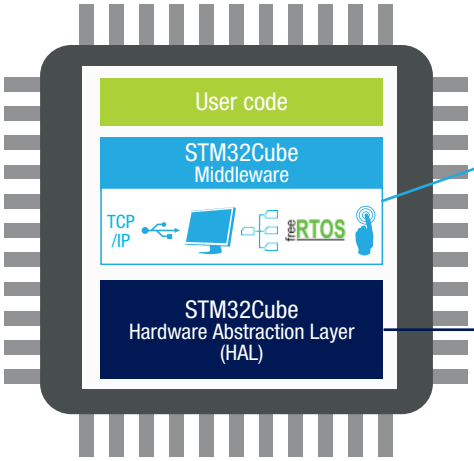
STM32CubeMX helps the user configure the STM32 MCU (pinout, clock system, peripherals) and the software stacks. It can also help evaluate different power consumption scenarios thanks to its power consumption calculator.

The STM32Cube embedded software libraries and STM32CubeMX code generator/configurator can be used independently of each other, but their full potential is reached when they are used together; once the MCU is configured, the user can generate initialization C code based on his choices!

FEATURES

- STM32CubeMX tool
  - Intuitive microcontroller selection
  - Graphical configuration (pinout solver, clock tree, peripherals and middleware settings, power consumption calculator)
  - C code generation covering initialization code for most standard toolchains
  - Standalone or as Eclipse plug-in
- STM32Cube embedded software libraries
  - Consistent and complete offer
  - Maximized portability between all STM32 series
  - Hundreds of examples
  - High quality HAL using CodeSonar® static analysis tool
  - Middleware such as USB, TCP/IP, Touch sensing, RTOS, FAT, …
  - User-friendly license terms

STM32CUBE EMBEDDED SOFTWARE: A LAYERED AND COMPLETE OFFER



- 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

While maintaining consistency of offer and APIs, STM32Cube embedded software is bundled by STM32 series; all the necessary software for one STM32 series in a single delivery.

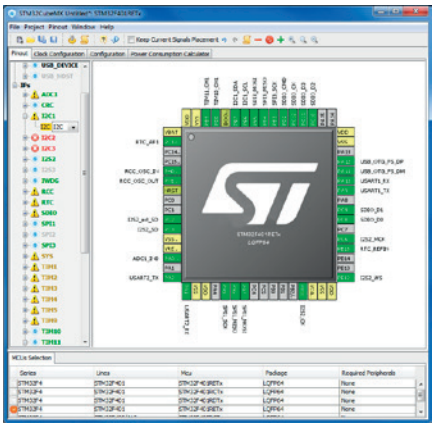
Middleware offer varies depending on the features available in the selected STM32 MCU.

The HAL is production-ready and has been developed in compliance with the MISRA-C guidelines and the ISO/TS 16949 standard for automotive quality system management. On top of that, ST's specific validation processes add a more exacting qualification, thus ensuring that firmware developers can safely deploy ST's embedded low-level drivers and middleware APIs in the release version of their firmware.

STM32CUBEMX – A SOFTWARE DEVELOPMENT TOOL FOR CONFIGURATION AND INITIALIZATION CODE GENERATION

STM32CubeMX is a graphical tool that helps configure any STM32 microcontroller, and generates the corresponding peripheral initialization C-code through a step-by-step process:

- Selection of STM32 microcontroller and embedded software
- Configuration of each of the required embedded software bricks through:
  - a pinout-conflict solver
  - a clock-tree setting helper
  - a power-consumption calculator
  - a utility program for configuring drivers and middleware
- Generation of initialization C code based on the selected configuration



In addition, STM32CubeMX can automatically download the latest version of the required STM32Cube Embedded software package, thus ensuring that the user stays up to date.