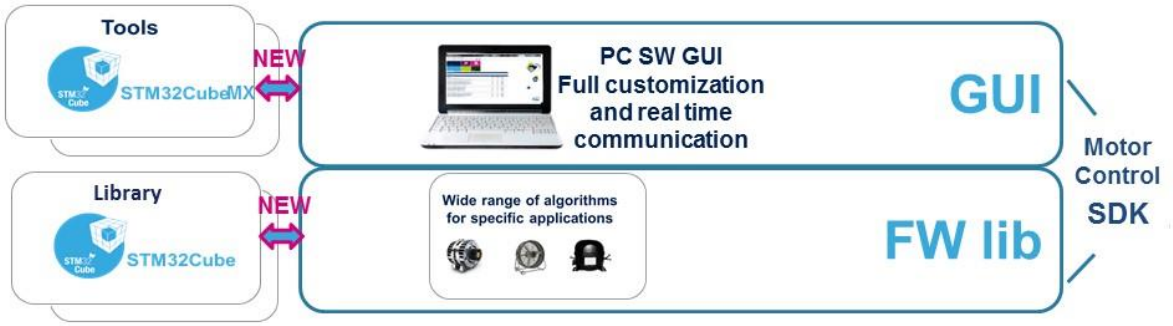
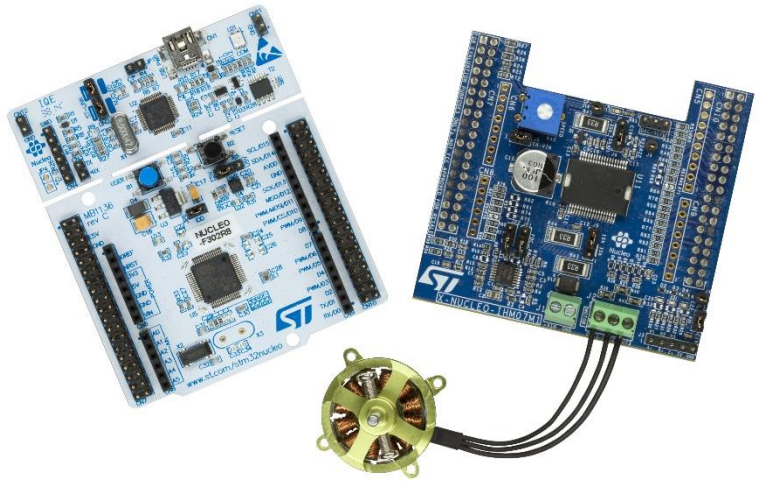
STM32 Motor Control

Full motor control ecosystem and SDK version 5.0





Full ecosystem for advanced FOC development of single and dual motor control applications

New SDK v5.0 provides improvements including support of STM32Cube

Easy to explore with hardware kits such as the P-NUCLEO-IHM001

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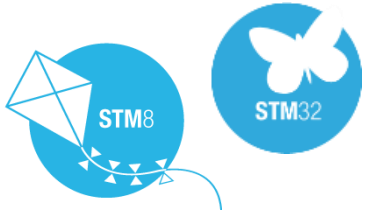
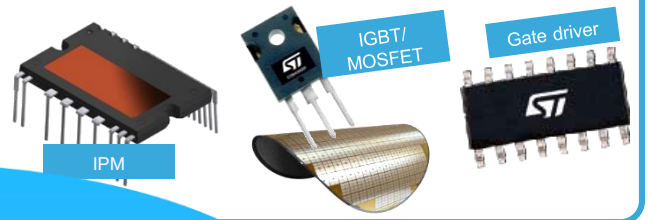
Motor Control Ecosystem

Complete motor control ecosystem

MCUs for Motor Control (8-32 bit)



Inverters IPM / discretes



Motor Control Ecosystem

ST MC Workbench

PC SW GUI
Full customization and real time communication

Hardware Boards

Software Development Kit (SDK)

FW library

wide range of features & algorithms (FOC – 6step)

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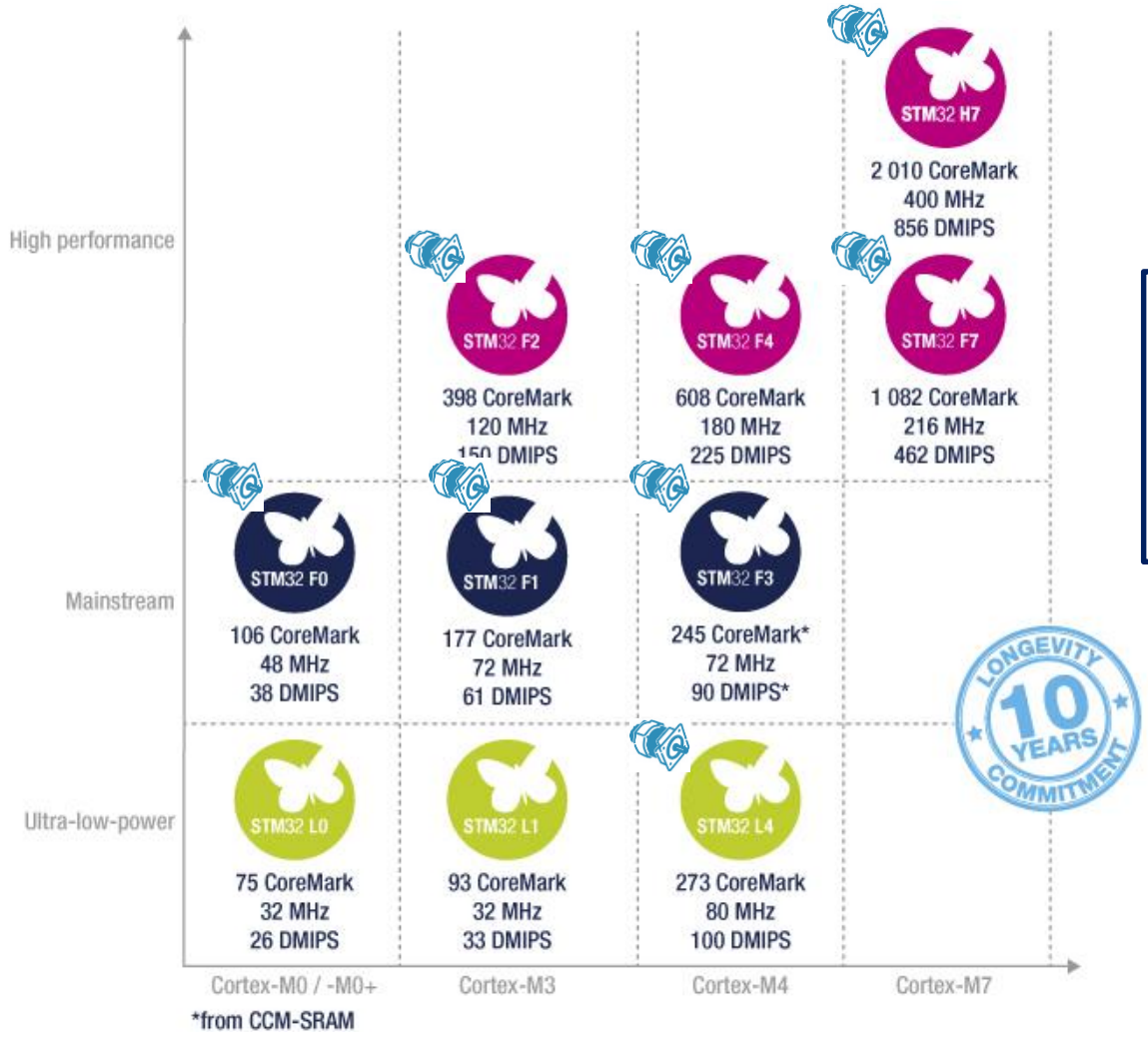
STM32 Portfolio

10 product series / More than 40 product lines



Includes advanced motor control timer

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STM32 Motor Control Kit

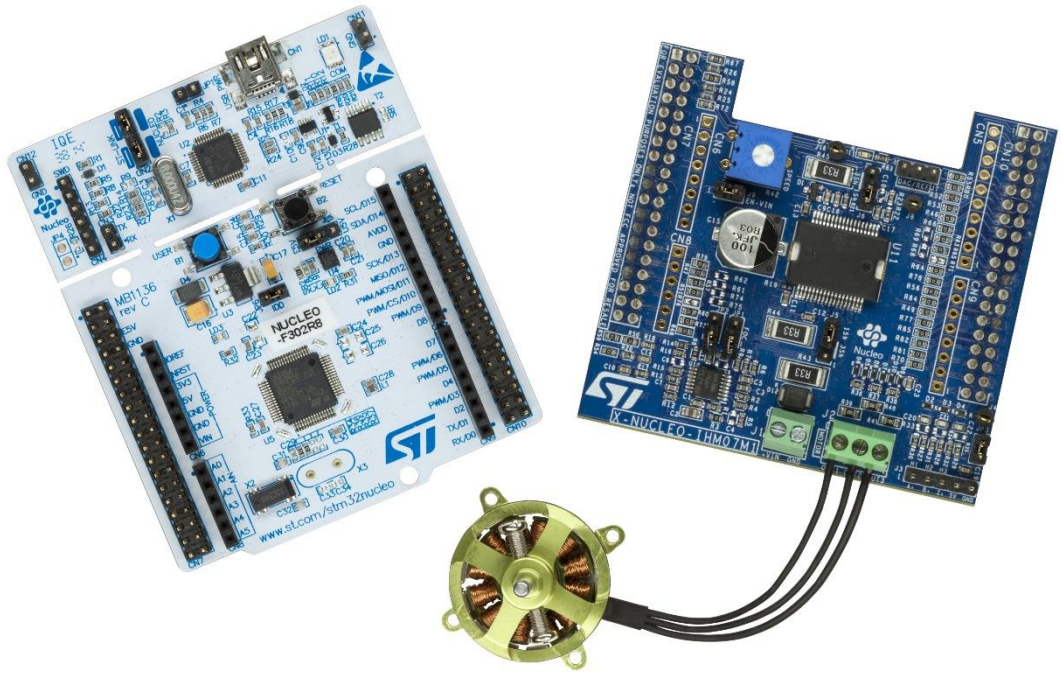
P-NUCLEO-IHM001 Nucleo Pack

NUCLEO-F302R8 MCU Control Board

- STM32F302R8T6
- 72MHz Cortex-M4
- 64KB Flash, LQFP64

X-NUCLEO-IHM07M1 Power Board

- L6230
- Voltage range: 8-48VDC
- Peak Current: 2.8A
- 3 shunt and 1 shunt configurable



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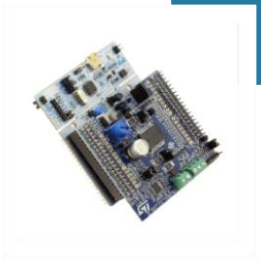
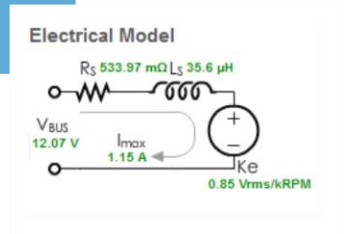
Motor Control Workflow

Motor Profiler and Workbench GUI

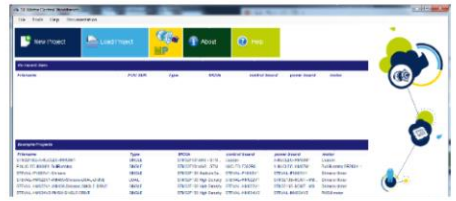
Set up the Hardware



Use motor specs or identify the motor using Motor Profiler



Finalize the project with Workbench



Send commands with serial communication

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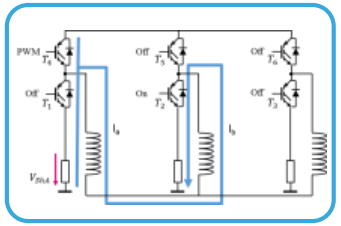
Motor Profiler

Measures motor parameters typically in less than 1 minute

Motor stopped

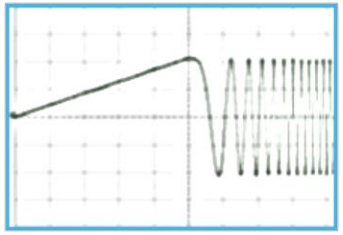
- Rs measurement
- Ls measurement
- Current regulators set-up



10 sec

Open loop

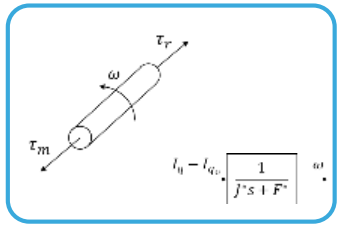
- Ke measurement
- Sensorless state observer set-up
- Switch over



5 sec

Closed loop

- Friction coefficient measurement
- Moment of inertia measurement
- Speed regulator set-up



45 sec

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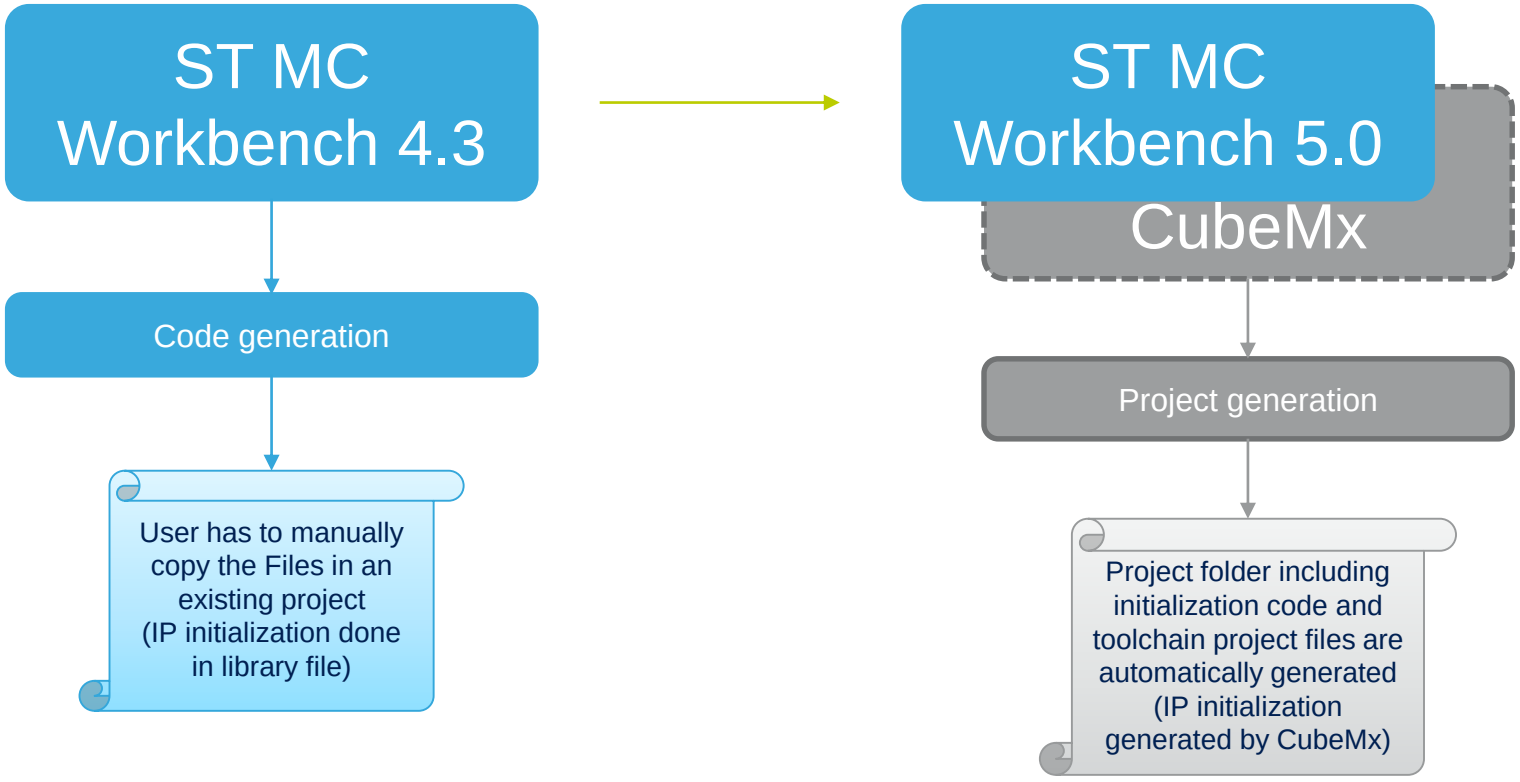
Workbench Now Supports STM32CubeMX

Update from Workbench v4.3 to v5.0



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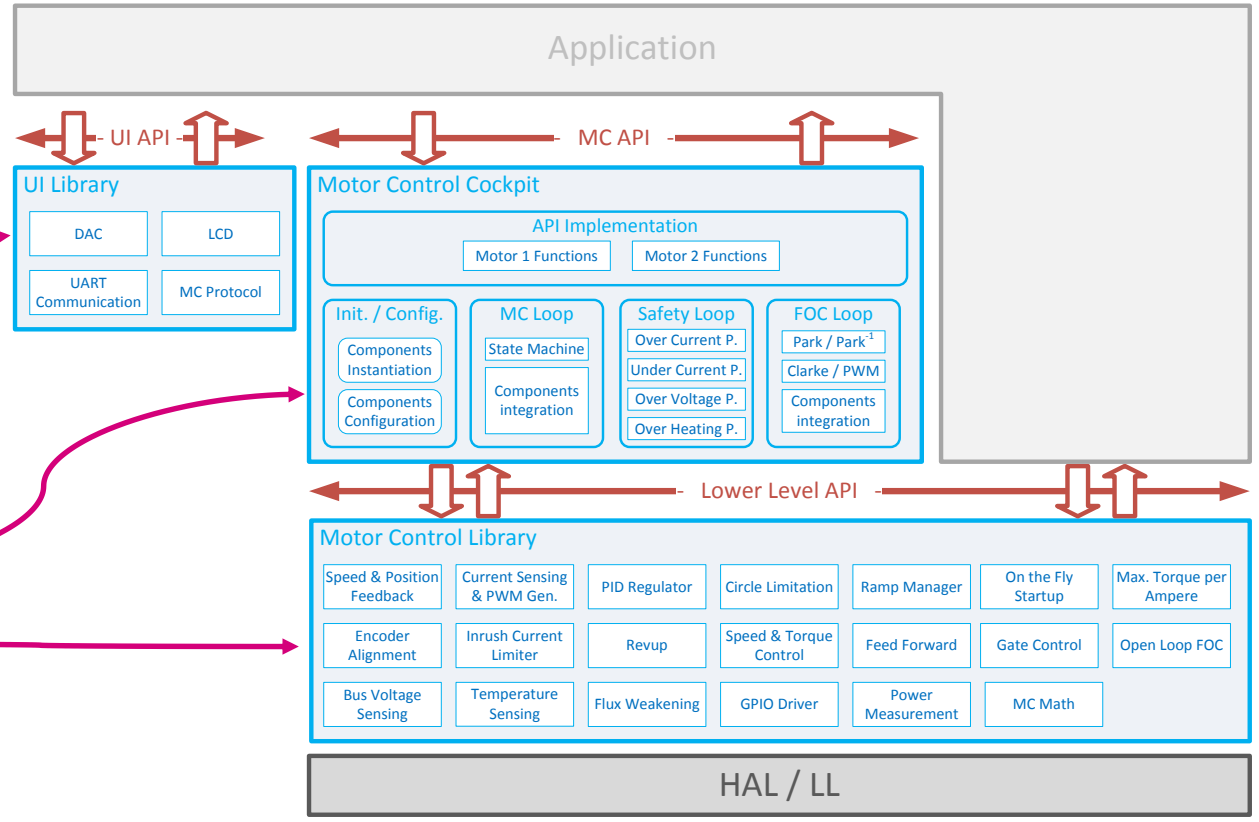
Workbench Now Supports

STM32Cube HAL/LL

Update from Workbench v4.3 to v5.0

The firmware is divided into 3 parts:

- User Interface Library
- Motor Cockpit
- Motor Control Library



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