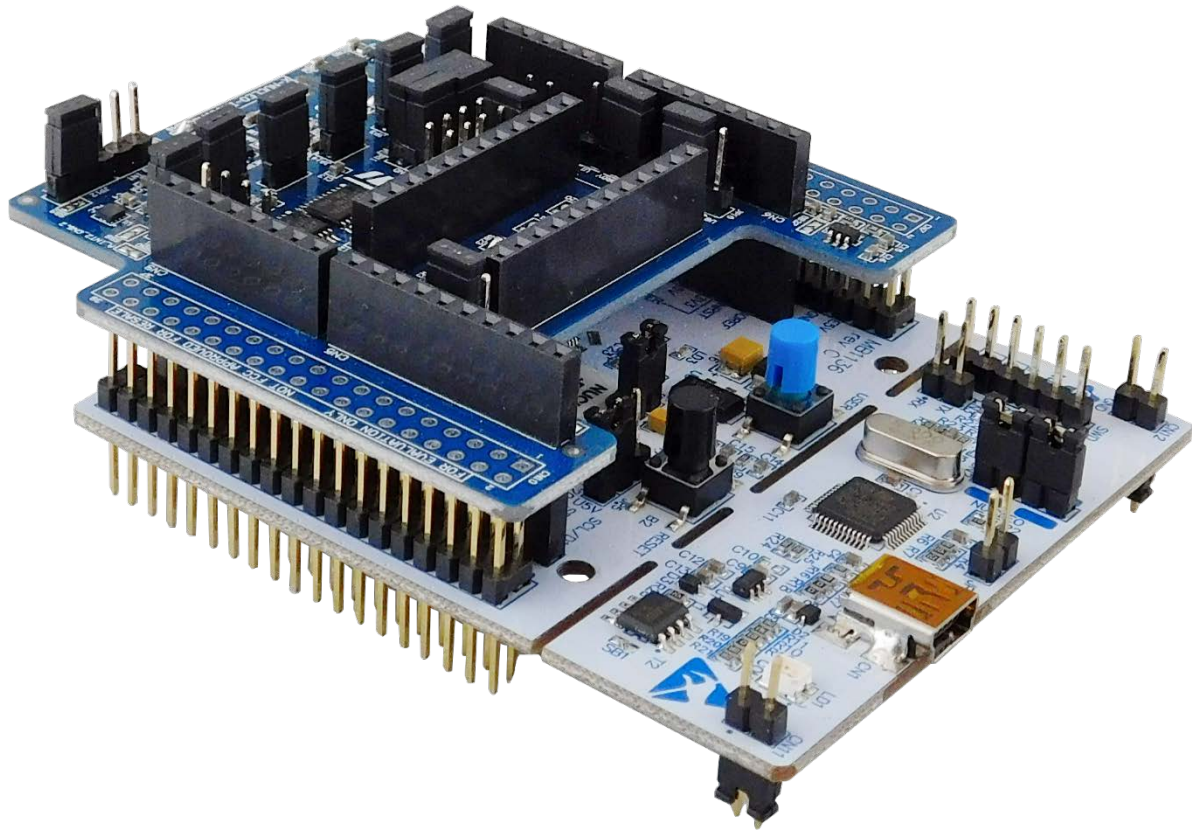


# Development Environment



Modular Evaluation Board

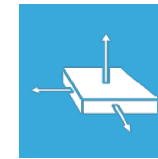
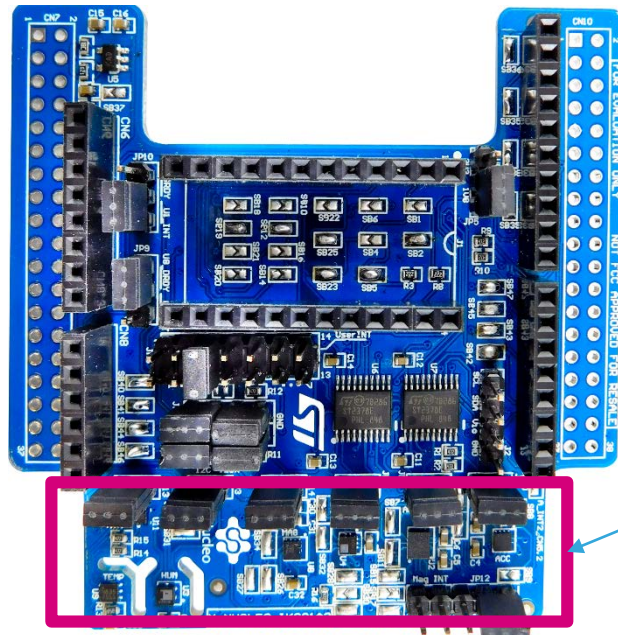
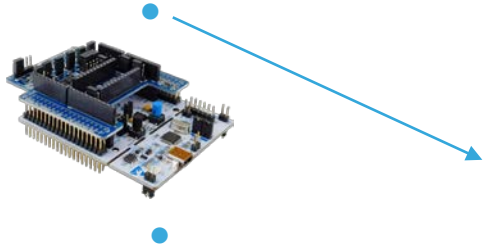
All In One Development Environment

ST Sensors Software



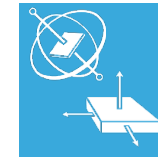
# Modular Evaluation Board

X-NUCLEO-IKS01A3 has the newest, high performance motion & environmental sensors from ST



Accelerometer:

LIS2DW12



Accel. + Gyro:

LSM6DSO



Pressure:

LPS22HH



Temperature:

STTS751



Humidity:

HTS221



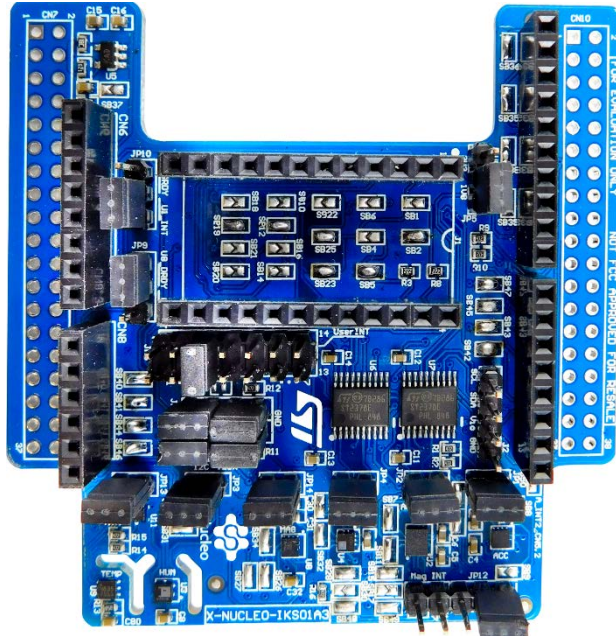
Magnetometer:

LIS2MDL



# Modular Evaluation Board

X-NUCLEO-IKS01A3 has the newest, high performance motion & environmental sensors from ST

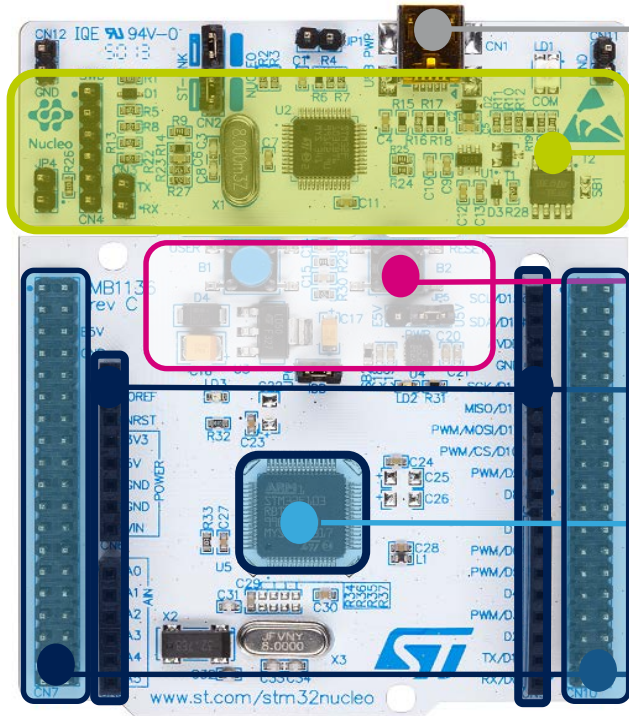


- **LSM6DO:** MEMS 3D accelerometer ( $\pm 2/\pm 4/\pm 8/\pm 16$  g) + 3D gyroscope ( $\pm 125/\pm 250/\pm 500/\pm 1000/\pm 2000$  dps)
- **LIS2MDL:** MEMS 3D magnetometer ( $\pm 50$  gauss)
- **LIS2DW12:** MEMS 3D accelerometer ( $\pm 2/\pm 4/\pm 8/\pm 16$  g)
- **LPS22HH:** MEMS pressure sensor, 260-1260 hPa absolute digital output barometer
- **HTS221:** capacitive digital relative humidity and temperature
- **STTS751:** Temperature sensor ( $-40$  °C to  $+125$  °C)
- DIL 24-pin socket available for additional MEMS adapters and other sensors



# Modular Evaluation Board

STM32 Board: many options of 32 bit Microcontrollers



Flexible board power supply :  
through USB or external source

Integrated ST-Link/V2-1:  
mass storage device flash programming

2 push buttons, 2 color Leds

Arduino extension connectors :  
easy access to add-ons

STM32 MCU

Morpho extension headers :  
direct acces to all MCU I/Os

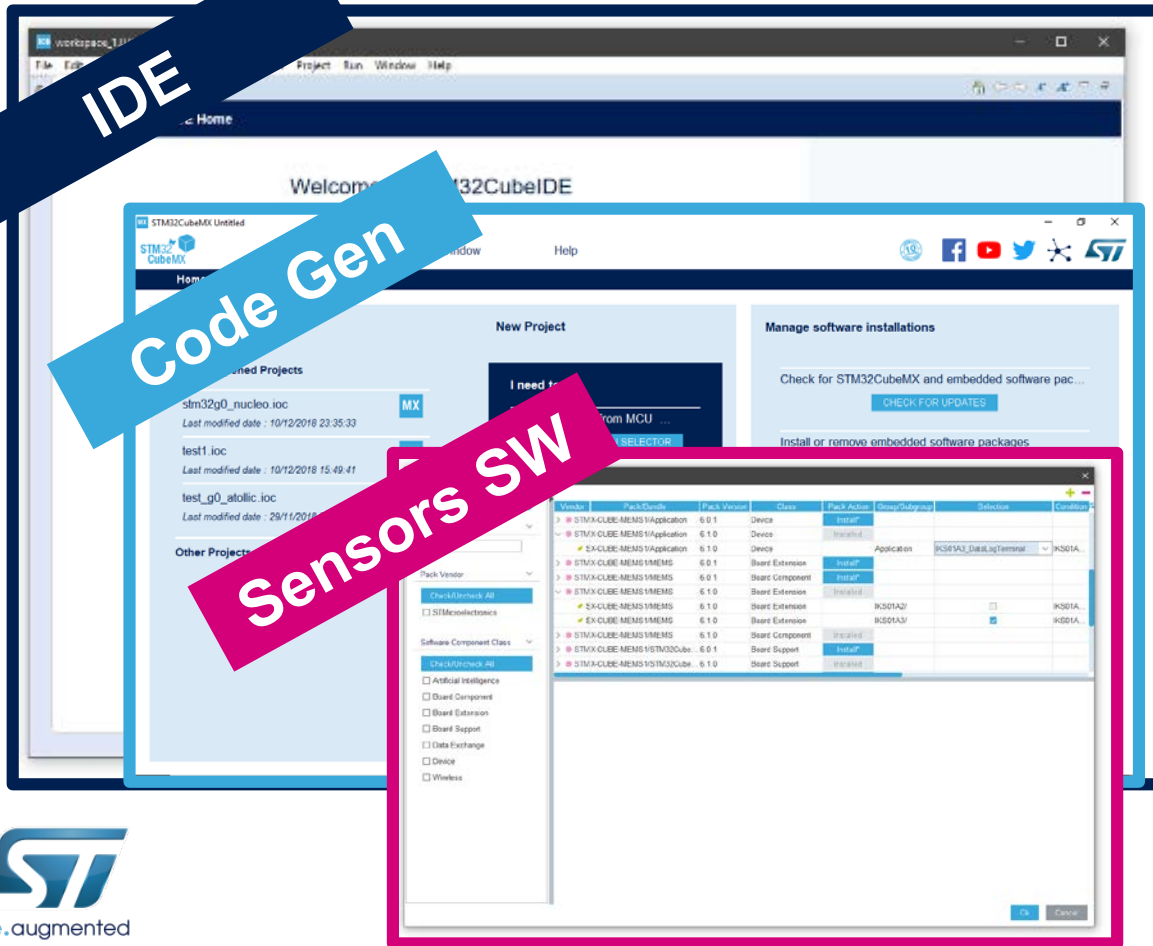






# All in One Development Environment

STM32CubeIDE offers seamless development & configuration environment for ST's sensors with STM32



“STM32CubeIDE”  
development environment

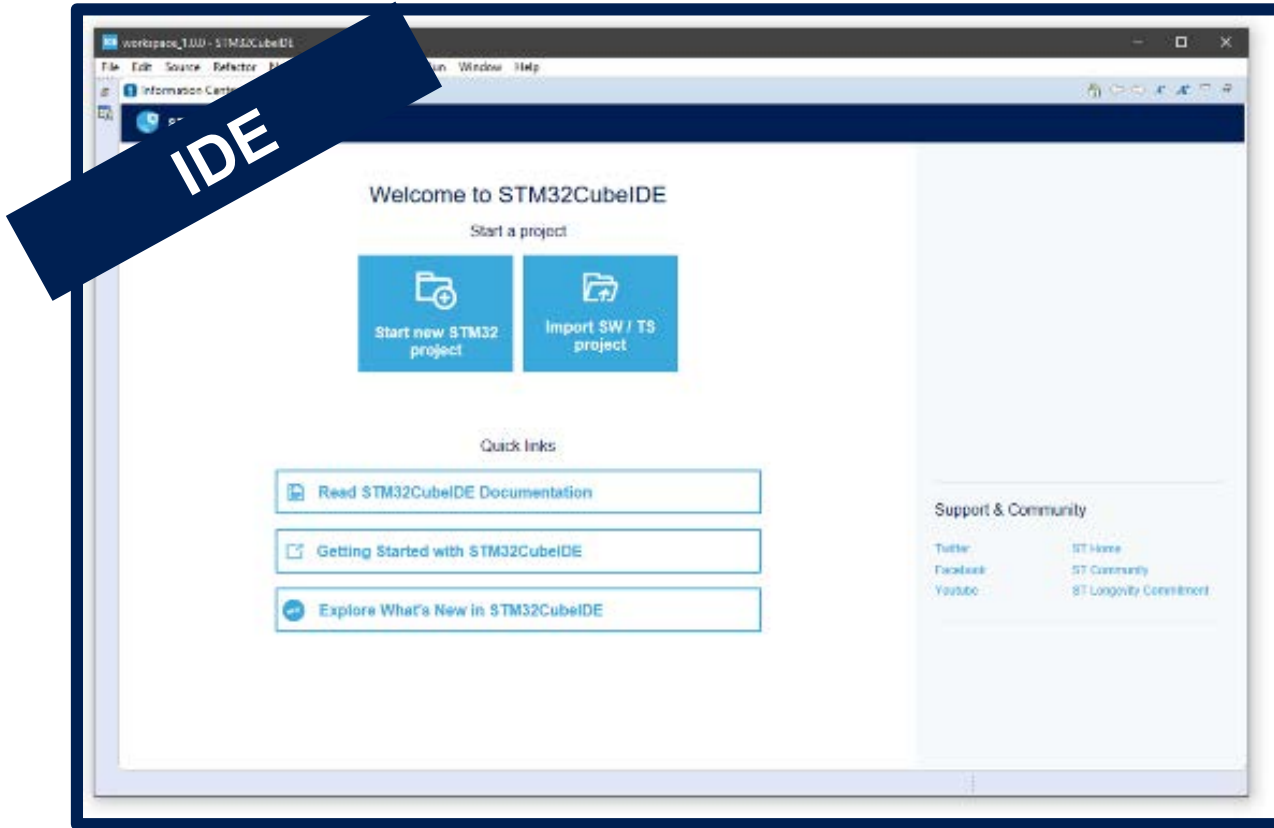
↳ “STM32CubeMX”  
automatic code generator

↳ “X-CUBE-MEMS1”  
application code and drivers for sensors



# All in One Development Environment

STM32CubeIDE offers seamless development & configuration environment for ST's sensors with STM32



STM32CubeIDE: dedicated IDE for all STM32 microcontrollers

STM32CubeMX is natively integrated as code generator

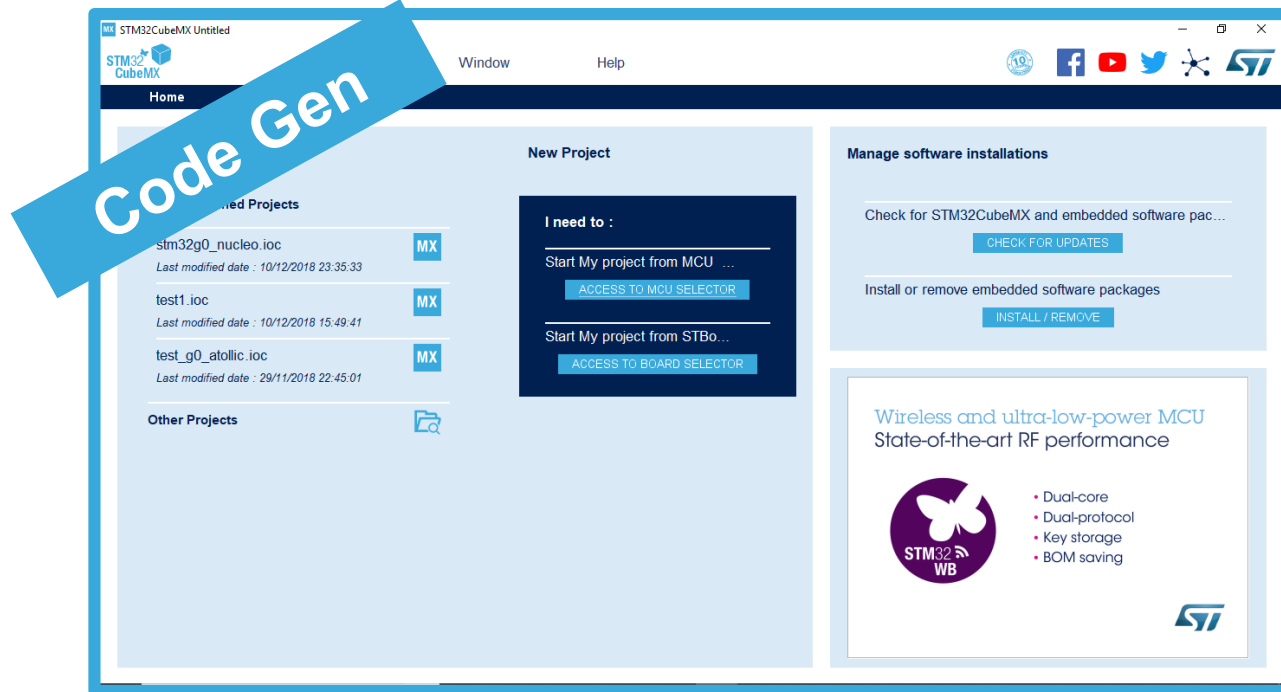
Based on Eclipse (Text editor), GCC (compiler) and GDB (debugger)





# All in One Development Environment

STM32CubeIDE offers seamless development & configuration environment for ST's sensors with STM32



STM32CubeMX: very powerful configuration and code generation

Support all STM32 MCU and MPU, with integrated powerful Finder

Pinouts, clock tree, peripherals and middleware configuration.

Expandable to support wireless connectivity, sensors and much more!



STM32CubeL0 STM32CubeL1 STM32CubeL4 STM32CubeF1 STM32CubeF3 STM32CubeF2 STM32CubeF4



STM32CubeG0 STM32CubeF0 STM32CubeF7 STM32CubeH7





# ST Sensor Software

X-CUBE-MEMS1 plugin for STM32CubeMX to allow easy sensor config, with examples ready to go

**Sensors SW**

Vendor	Pack/Bundle	Pack Version	Class	Pack Action	Group/Subgroup	Selection	Condition
>	STMX-CUBE-MEMS1/Application	6.0.1	Device	Install*			
>	STMX-CUBE-MEMS1/Application	6.1.0	Device	Installed			
>	SX-CUBE-MEMS1/Application	6.1.0	Device		Application	IKS01A3_DataLogTerminal	IKS01A...
>	STMX-CUBE-MEMS1/MEMS	6.0.1	Board Extension	Install*			
>	STMX-CUBE-MEMS1/MEMS	6.0.1	Board Component	Install*			
>	STMX-CUBE-MEMS1/MEMS	6.1.0	Board Extension	Installed			
>	SX-CUBE-MEMS1/MEMS	6.1.0	Board Extension		IKS01A2/	<input type="checkbox"/>	IKS01A...
>	SX-CUBE-MEMS1/MEMS	6.1.0	Board Extension		IKS01A3/	<input checked="" type="checkbox"/>	IKS01A...
>	STMX-CUBE-MEMS1/MEMS	6.1.0	Board Component	Installed			
>	STMX-CUBE-MEMS1/STM32Cube...	6.0.1	Board Support	Install*			
>	STMX-CUBE-MEMS1/STM32Cube...	6.1.0	Board Support	Installed			

Accelerometer   Inertial module   Magnetometer   Gyroscope   Pressure Sensor   Temperature Sensor   Humidity sensor

Drivers for sensors

Board Support Package firmware architecture

Include Sample Applications





# ST Sensor Software

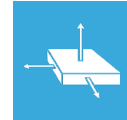
X-CUBE-MEMS1 plugin for STM32CubeMX to allow easy sensor config, with examples ready to go

## Features

- Package compatible with STM32CubeMX, can be downloaded from and installed directly into STM32CubeMX
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

## Sample Applications

- Data Logging on Terminal All Sensors



Accelerometer

6D Orientation, Wake Up, Self Test



Magnetometer

Self Test



Pressure Sensor

FIFO Mode



Inertial module

6D, FIFO Modes, FreeFall, Pedometer, Tap, Tilt, Wake Up, Self Test



Temperature Sensor

Temperature Limit

