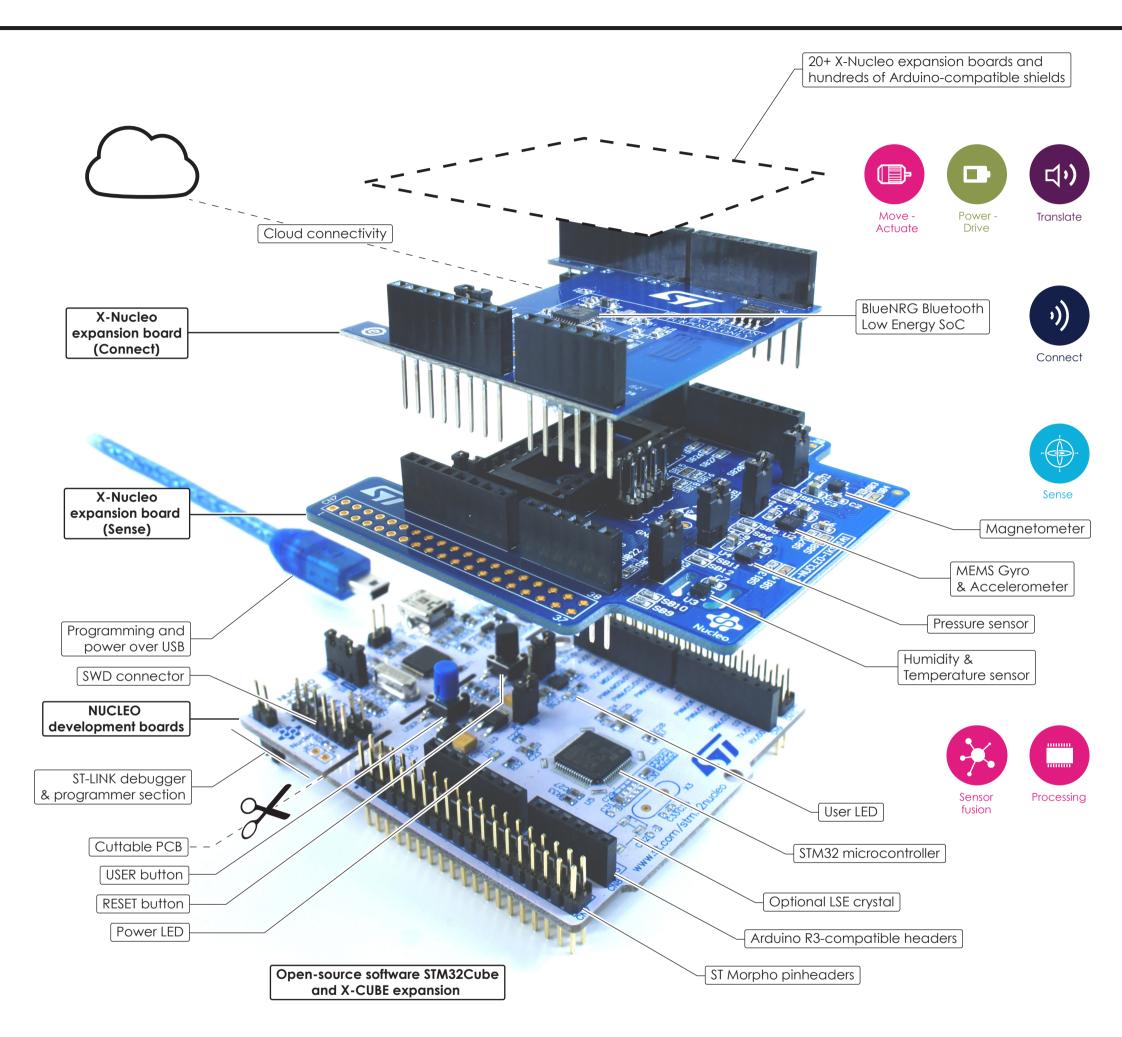# STM32 **O**pen **D**evelopment **E**nvironment

A comprehensive range of affordable development boards - for all STM32 microcontroller series - with expansion boards to provide additional hardware functionality and free software for application development

life.augmented

20+ X-Nucleo expansion boards and hundreds of Arduino-compatible shields

Cloud connectivity

Move - Actuate

Power - Drive

Translate

X-Nucleo expansion board (Connect)

BlueNRG Bluetooth Low Energy SoC

Connect

X-Nucleo expansion board (Sense)

Sense

Magnetometer

MEMS Gyro & Accelerometer

Pressure sensor

Humidity & Temperature sensor

Programming and power over USB

SWD connector

NUCLEO development boards

ST-LINK debugger & programmer section

Sensor fusion

Processing

Cuttable PCB

USER button

RESET button

Power LED

User LED

STM32 microcontroller

Optional LSE crystal

Arduino R3-compatible headers

ST Morpho pinheaders

Open-source software STM32Cube and X-CUBE expansion

Overview

This poster has a richly detailed exploded view of the STMicroelectronics STM32 Open Development Environment (ODE), a prototyping and development environment that facilitates the design of embedded projects by providing easy-to-use hardware and open-source software functional blocks. With its unique combination of a broad range of stackable boards based on leading edge integrated circuits and modular software — from driver to application examples — the STM32 Open Development Environment enables engineers and makers to easily and quickly transform their bright ideas into optimized projects.

Development Board

STM32 Nucleo development boards include a 64-pin STM32 microcontroller based on a 32-bit ARM® Cortex®-M core and are available in a variety of memory sizes and peripherals as well as computing power versions. Thanks to the embedded ST-LINK/V2-1 debugger/programmer tool with mini USB port, you'll have all the tools to start developing and debugging code right away.

Expansion Boards

With the STM32 ODE, your project can grow at the speed of thought as Nucleo development boards have a standardized morpho connector giving access to all of the STM32 I/Os and enabling connections with STM32 Nucleo expansion boards (X-NUCLEO). Expansion boards provide more than 20 different hardware functions including the Connect, Move-Actuate, Power-Drive, Sense and Translate series and can be stacked like building blocks to let your project grow in a modular way. Moreover, STM32 Nucleo development boards also have an Arduino Uno R3 connector for you to easily integrate your favorite shields in your project.

Software

Tired of spending sleepless nights developing software from scratch again and again? Developers will enjoy peace of mind and appreciate having more time to be creative thanks to the STM32 ODE with the STM32Cube software environment and embedded software libraries, including Hardware Abstraction Layer (HAL) APIs, as well as STM32Cube expansion software (X-CUBE) with pre-defined software projects created for the different expansion boards. Function Packs greatly accelerate the development of complex Bluetooth, Wi-Fi and IoT applications.
www.st.com/stm32ode

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