

Application for the graphical design of algorithms



Features

- Simple graphical design of algorithms (drag and drop, connect, set properties, build, upload)
- Optional multi-level design
- Wide range of function blocks available in libraries, including motion sensor algorithms (e.g. sensor fusion, gyroscope, magnetometer calibration, pedometer, ...)
- Integrated function blocks for FFT analysis
- Function block creator for custom block creation
- Automatic validation of design rules
- C code generation from the graphical design
- Use of external compilers ([STM32CubeIDE](#), IAR EWARM, Keil μ Vision[®], System Workbench for STM32)
- Possibility to automatically generate MLC settings for compatible iNEMO inertial modules using [Unico-GUI](#)
- Generated firmware output displayed through integrated output data monitor or [Unicleo-GUI](#)
- Open XML format for function blocks and design storage
- Possibility to send output data to AWS cloud using MQTT protocol
- Support for [NUCLEO-F401RE](#) or [NUCLEO-L476RG](#) with connected [X-NUCLEO-IKS01A2](#) or [X-NUCLEO-IKS01A3](#) expansion board, [SensorTile STEVAL-STLKT01V1](#), [SensorTile.box STEVAL-MKSBOX1V1](#) and [STWIN SensorTile STEVAL-STWINKT1](#)
- Network updates with automatic notification of new releases

Description

[AlgoBuilder](#) is a graphical design application to build and use algorithms.

The software is distributed in two versions:

- [AlgoBuilder](#) – standalone [AlgoBuilder](#) software;
- [AlgoBuilderSuite](#) – all-in-one software package which contains [AlgoBuilder](#) and two other software tools, [Unico-GUI](#) & [Unicleo GUI](#) that facilitate the programming of sensors for an easy and intuitive experience for the user.

These tools quickly elaborate prototypes of applications for STM32 microcontrollers and MEMS sensors, including already existing algorithms (i.e. sensor fusion or pedometer), user-defined data processing blocks and additional functionalities.

The application facilitates the process of implementing proof of concept using a graphical interface without writing the code.

[AlgoBuilder](#) reuses previously defined blocks, combines multiple functionalities in a single project and visualizes data using [Unicleo-GUI](#) in real time using plot and display.

[AlgoBuilder](#) utilizes the STM32 ODE (Open Development Environment) ecosystem which combines hardware like [STM32 Nucleo](#) boards ([NUCLEO-F401RE](#) or [NUCLEO-L476RG](#)), [X-NUCLEO-IKS01A2](#) or [X-NUCLEO-IKS01A3](#) expansion board and software (STM32 HAL drivers, BSP structure, low and high-level sensor drivers) along with [SensorTile.box](#) and [STWIN](#).

Product summary	
Application for the graphical design of algorithms	AlgoBuilder
Installer for MEMS software suite	AlgoBuilderSuite
STM32 Nucleo development board	STM32 Nucleo
Motion MEMS and environmental sensor expansion board for STM32 Nucleo	X-NUCLEO-IKS01A2 or X-NUCLEO-IKS01A3
SensorTile.box wireless multisensor development kit with user-friendly app for IoT and wearable sensor applications	STEVAL-MKSBOX1V1
STWIN SensorTile Wireless Industrial Node development kit	STEVAL-STWINKT1

Revision history

Table 1. Document revision history

Date	Version	Changes
26-Mar-2018	1	Initial release
25-Jul-2018	2	Addition of SensorTile STEVAL-STLKT01V1 (Features)
05-Apr-2019	3	Updated Features Added X-NUCLEO-IKS01A3 expansion board
18-Jun-2019	4	Added SensorTile.box STEVAL-MKSBOX1V1
19-Aug-2019	5	Added STM32CubeIDE compiler (Features)
12-Oct-2020	6	Updated Features , Product summary, and Description

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