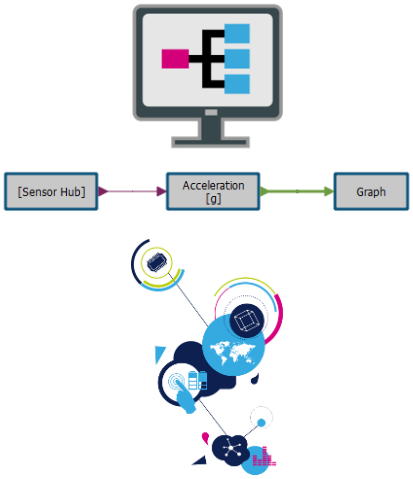
AlgoBuilder

Data brief

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 µVision®, System Workbench for STM32)
- 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 and SensorTile.box STEVAL-MKSBOX1V1
- Network updates with automatic notification of new releases
- Free user-friendly licensing terms

Product summary	
Application for the graphical design of algorithms	AlgoBuilder
STM32 Nucleo development board	STM32 Nucleo
Motion MEMS and environmental sensor expansion board for STM32 Nucleo	X-NUCLEO-IKS01A2 or X-NUCLEO-IKS01A3
GUI for motion MEMS and environmental sensor software expansion for STM32Cube	Unicleo-GUI
SensorTile.box wireless multisensor development kit with user-friendly app for IoT and wearable sensor applications	STEVAL-MKSBOX1V1

Description

AlgoBuilder is a graphical design application to build and use algorithms.

It quickly elaborates 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 eases 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) and Unicleo-GUI.

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)