



life.augmented



Wearable Applications with **SensorTile.box**

Kirby ATWATER

Sensor scaling in advanced wearables



- ST offers scalable solutions that leverage Bluetooth LE SoC, MEMS accelerometers, temperature sensors, as well as anti-tampering features, remote notifications, and long battery life.
- Suitable for bands and bracelets for use in open-air or closed professional environments such as factories, offices, and medical facilities
- ST sensors provide all the required features for latest Covid-19 Contact Tracing bracelets being requested by different countries and governments.
- Multiple hardware development kits and software are available for evaluation of multiple sensors, BLE, etc.

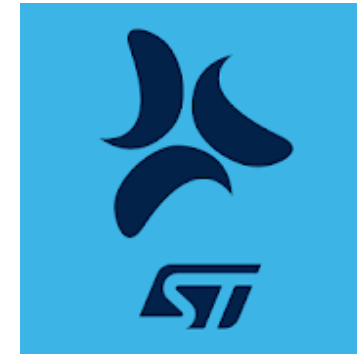
Flexible plug-and-play module jumpstarts IoT Applications with a user-friendly App for Smartphone

SensorTile.box

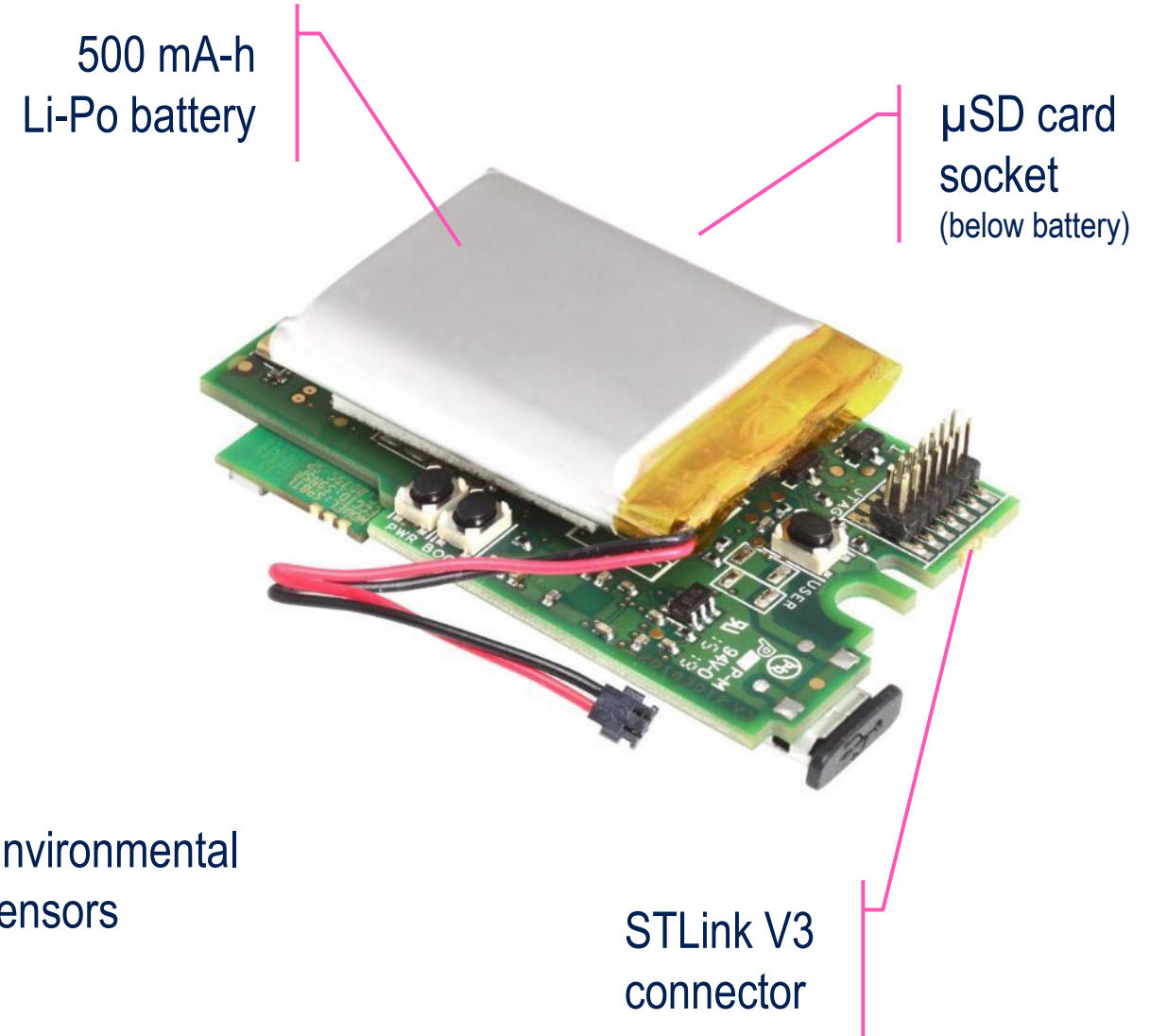
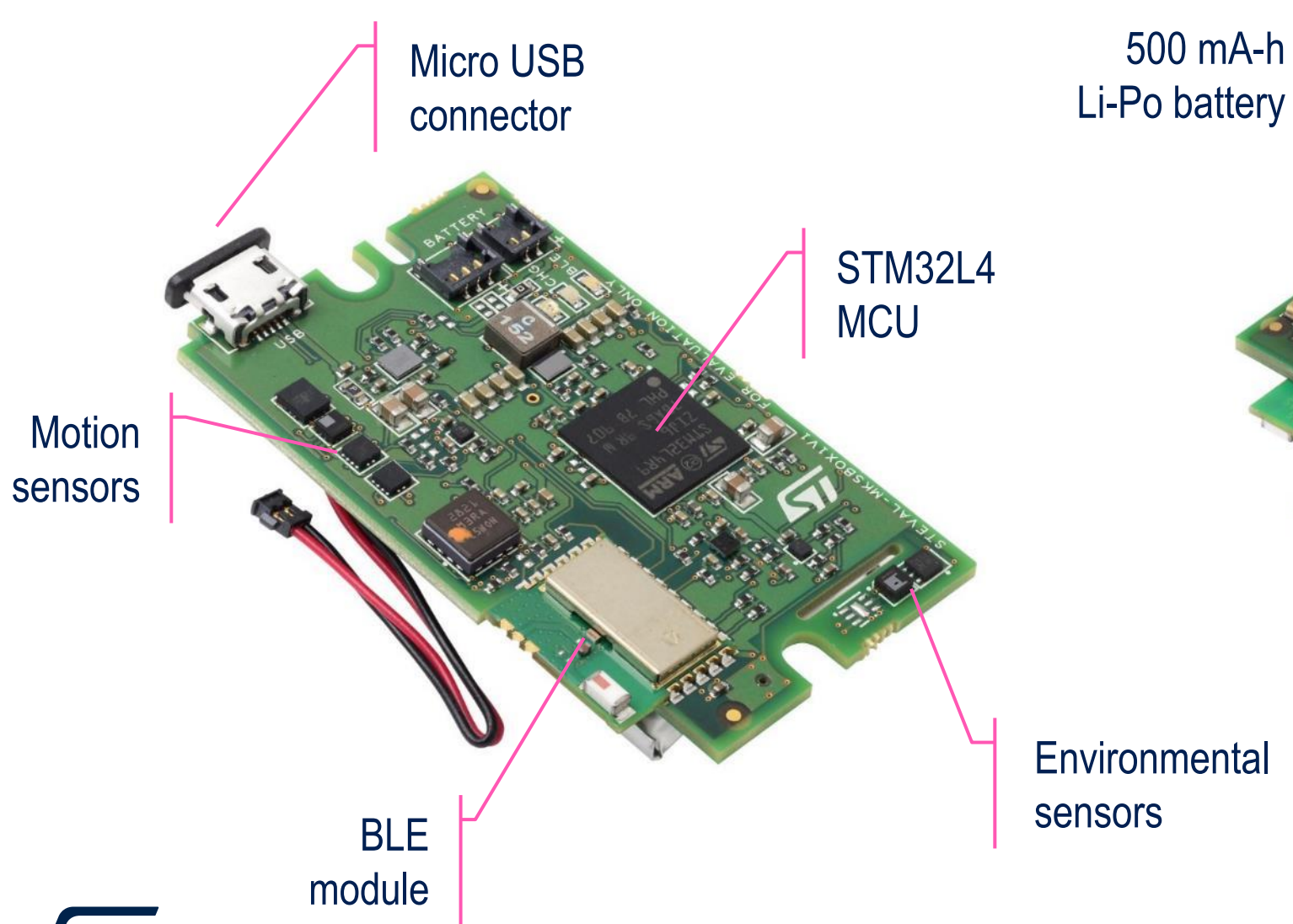
Play with ST sensors



ST's Bluetooth® Low Energy Sensor App
(ST BLE Sensor)



The Board



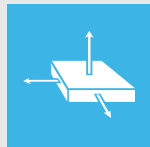
Inside the SensorTile.box

Sensing, processing and connectivity

Motion Sensors



Low-power 6-axis IMU,
embedding Neural Network
LSM6DSOX



High-performance and low
power accelerometers
LIS3DHH & LIS2DW12

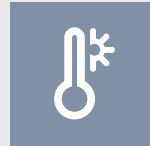


Magnetometer
LIS2MDL

Environmental Sensors



Altimeter / Pressure sensor
LPS22HH



Accurate temperature sensor
STTS751



Humidity sensor
HTS221



Analog wide-band microphone
MP23ABS1

Processing



STM32L4 low-power MCU
STM32L4R9ZIJ6

Connectivity



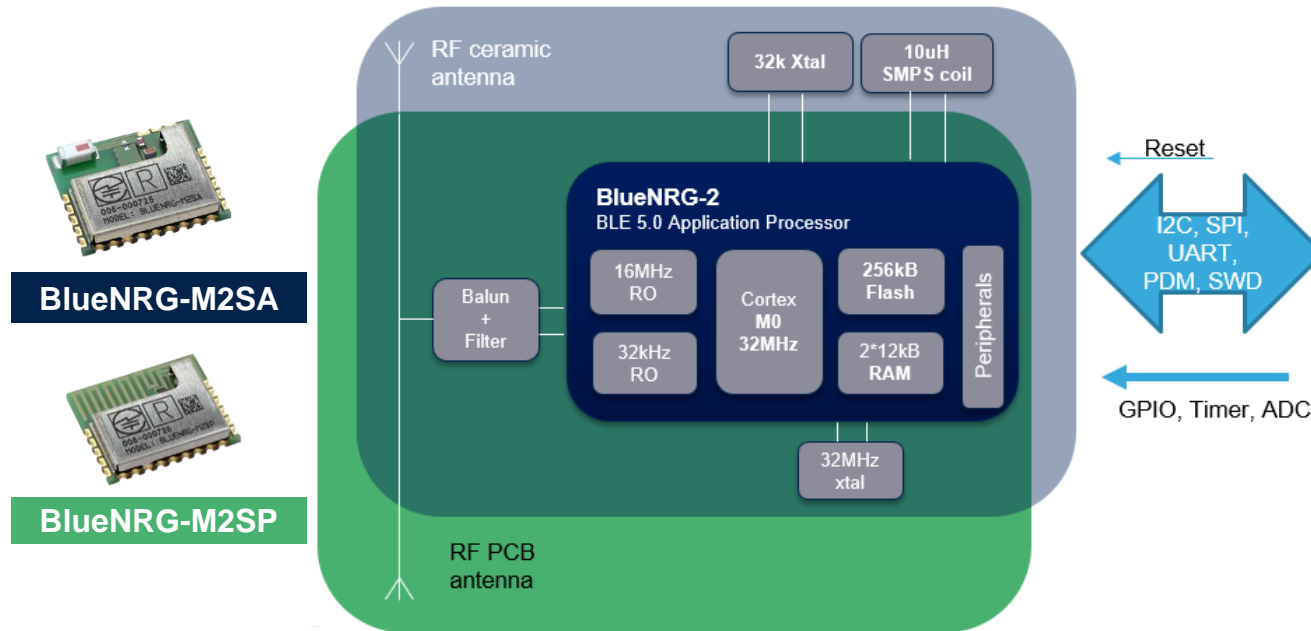
Bluetooth Low Energy Module

Power management



Battery charger
STBC02

BlueNRG Modules



KEY APPLICATIONS

- Smart-home appliances
- Industrial automation
- Remote control and monitoring

KEY BENEFITS AND FEATURES

READY-TO-GO BLE CONNECTIVITY:

- BlueNRG-232 Bluetooth Low Energy wireless processor
- Up to +7 dBm output power (-M2SP), -85 dBm Rx sensitivity
- Cortex-M0 @ 32MHz, 2x 12KB RAM and 256KB Flash memory
- Included AES-128 security co-processor
- CE/RED, FCC, IC, TELEC, WPC (-M2SP) and coming soon SRRC (-M2SA) modular approval certified for fast time to market

PRE-CERTIFIED SOLUTION:

- BT SIG 5.0 end-product QDID 121363
- Supports master and slave modes
- Multiple roles supported simultaneously
- Embedded GAP, ATT/GATT, SM and L2CAP layers
- Bluetooth low energy profiles supported

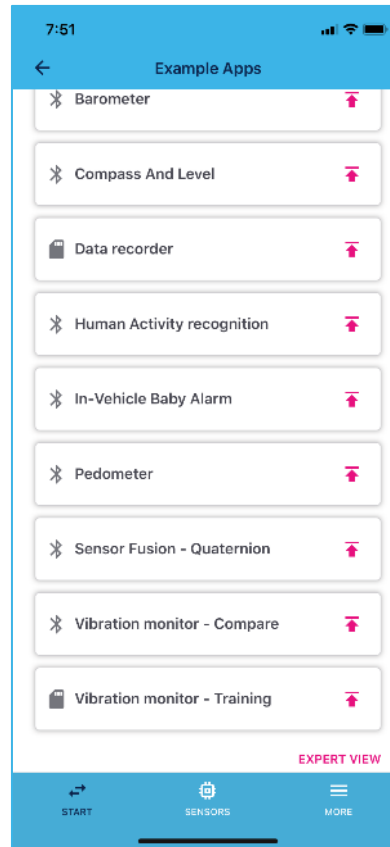
ALL-IN-ONE SOLUTION:

- Small form factor: 13.5 x 11.5 x 2 mm
- Industrial temperature range: -40 °C to +85 °C
- Power supply voltage from 1.7V to 3.6V

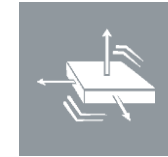
Entry Working Mode

No Need to Program Anything

Entry Mode



Pedometer



Human Activity Recognition



Sensor Fusion Quaternion



Compass And Level



Data Recorder



In-Vehicle Baby Alarm



Vibration Monitor



Baby Crying Detector



Barometer

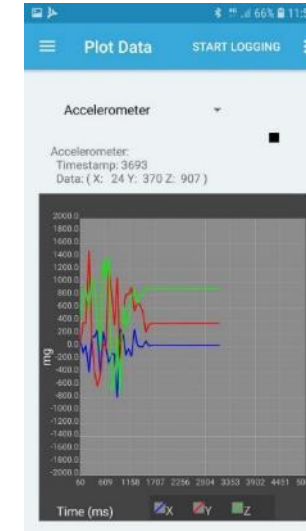
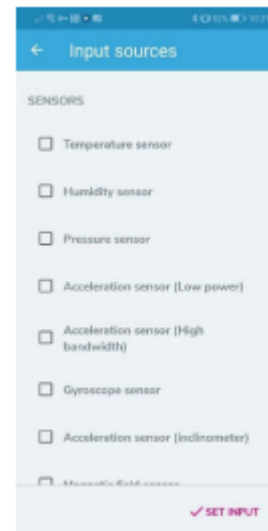
AI based



Expert Working Mode

Expert Mode

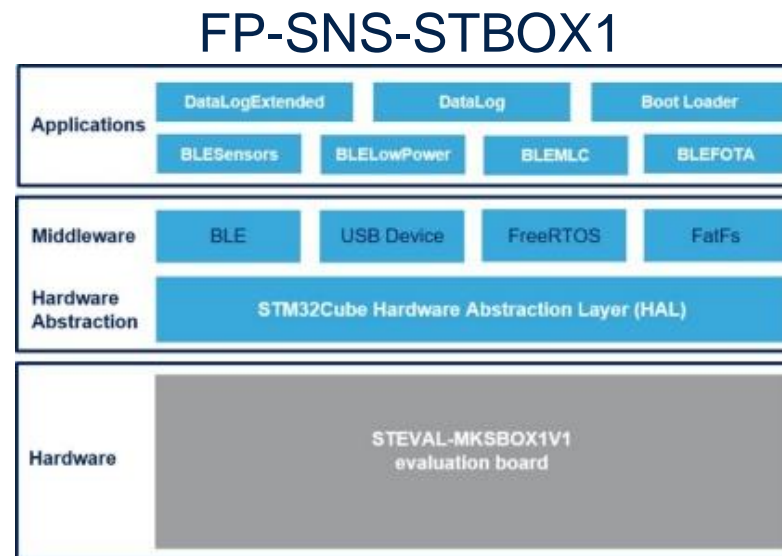
- Define additional applications, like in Lego bricks
- Build your own application, without programming



Pro Working Mode

Pro Mode

- Full compatibility and support of STM32 ODE
- Professional Level of Development



FP-AI-SENSING1
FP-ATR-BLE1

AlgoBuilder



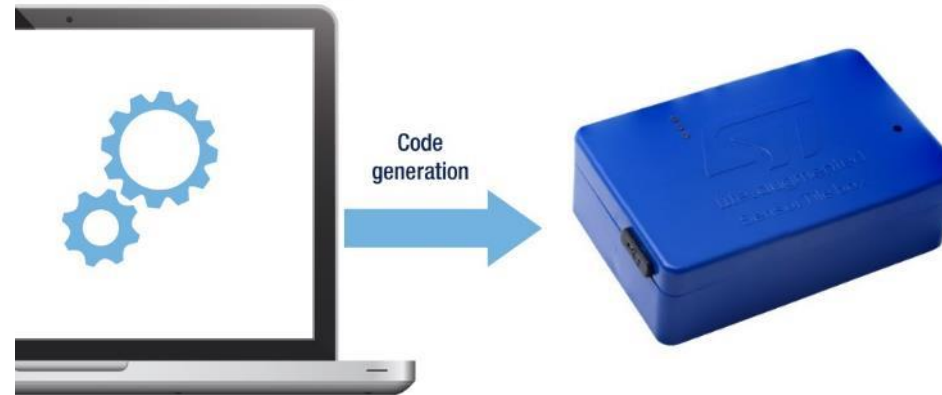
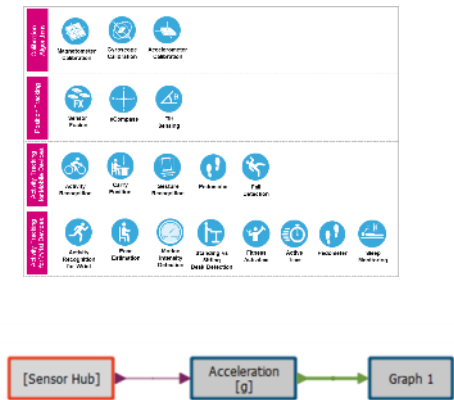
Unicleo GUI





AlgoBuilder

An application for the graphical design and testing of algorithms



Existing algorithms
User-defined data
processing blocks
Additional functionalities

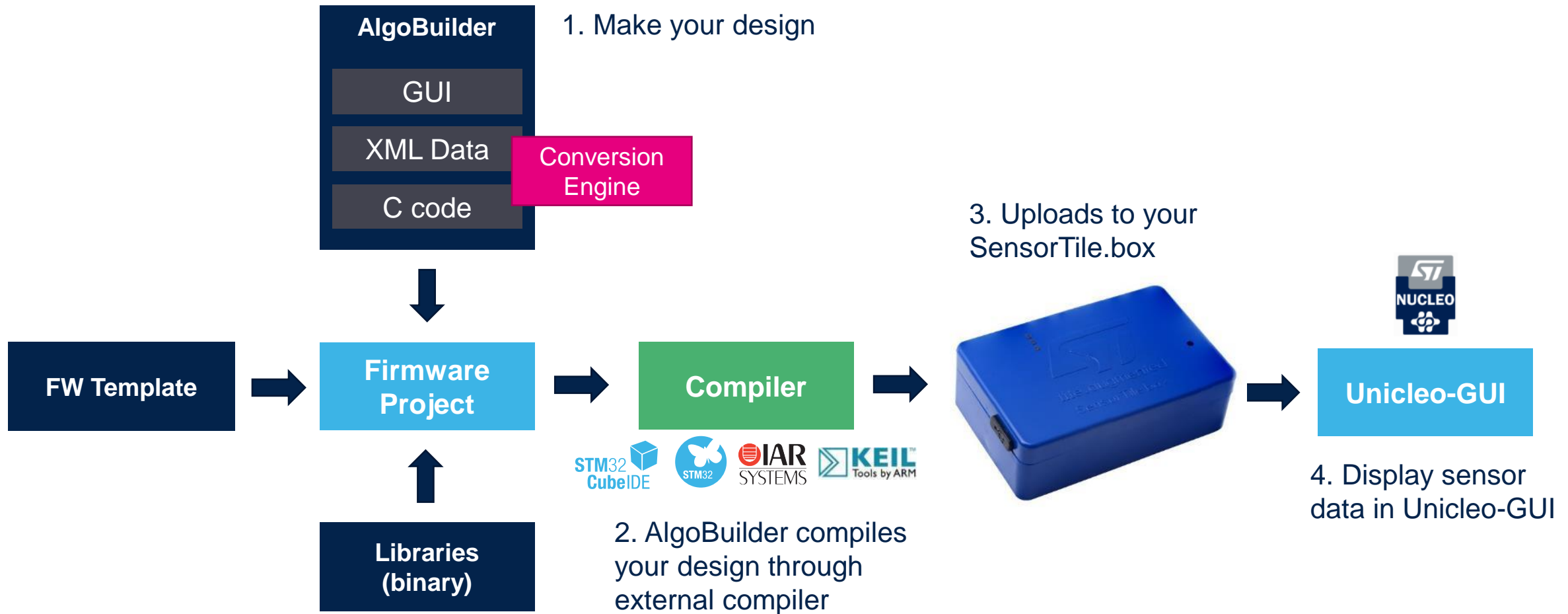
GUI quickly elaborates proto applications
for
MEMS sensors
and
STM32 microcontrollers

AlgoBuilder
eases the process of
implementing
proof of concept
without writing the code

www.st.com/algobuilder



AlgoBuilder + SensorTile.box



Questions?

