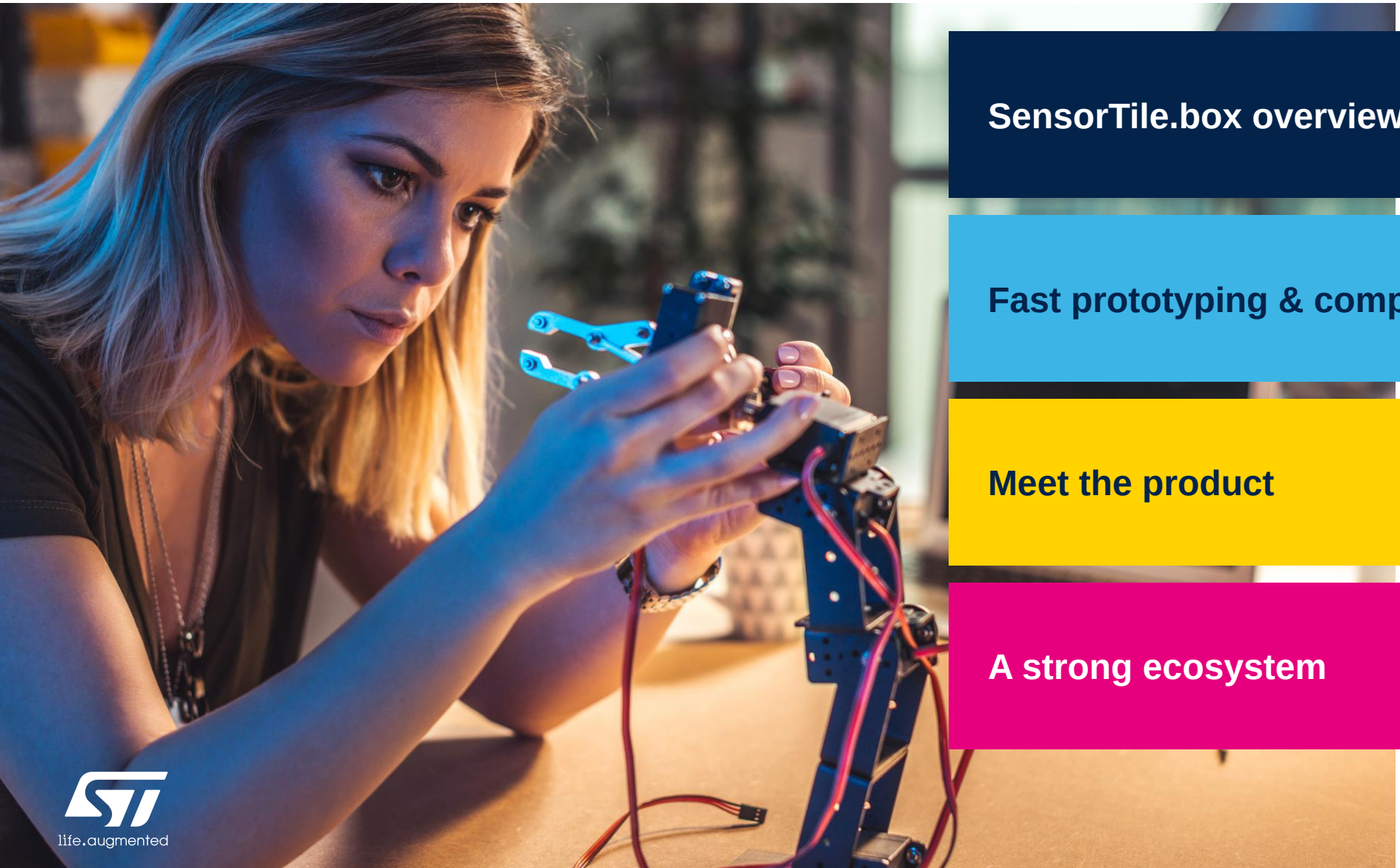
SensorTile.box



- SensorTile.box overview
- Fast prototyping & complete solution
- Meet the product
- A strong ecosystem

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SensorTile.box
Ready-to-go IoT node

ST makes IoT sensing accessible with a certified and ready-to-connect device

Built into a compact IP54 casing

Bundled with app for Smartphone

Can be configured **for users of any skill level** to support learning, prototyping, or even as a module within a commercial end-product.

Connects out-of-the-box with several Cloud services
to further extend opportunities for learning and new-product development

Microsoft Azure

IBM Watson

aws

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www.st.com/sensortilebox

SensorTile.box
A uniquely flexible solution

Fast prototyping	**Design** IoT node and wearable sensor applications quickly and easily, without performing any programming
Complete solution	From simple to advanced Connectivity and cloud / ecosystem
Expandable & Customizable	**Develop** accessories to expand SensorTile.box features **Tailor** the device to your needs 3D files of the plastic case and alternative provided for free

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One box for many users

Users with no programming skills / focus

Allows potential users with no programming capabilities / no focus in programming to have an «out-of-the-box» sensor trial platform

E.g.: Non-engineering companies willing to develop IoT-related use cases

System integrators

Availability of integrated compact platform embedding high-performance sensing and processing capabilities

Cloud developers

To experiment several functions with sensors and application programming

Ready to access to **AWS, IBM Watson, Azure** or **private MQTT**

Education

Easy access to sensors technology and ability to move from simple mode to programming

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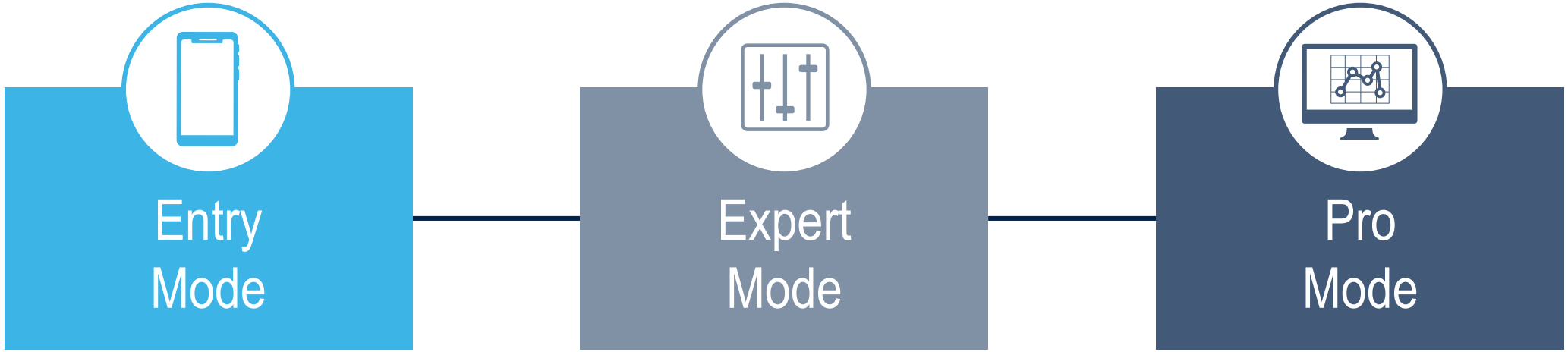
The IoT made easy

SensorTile.box has 3 operational modes



Entry working mode
No need to program anything

Out-of-the-box SensorTile.box connects to a smartphone

- The user access the predefined applications included in the provided Android / IOS app

Pedometer

Vehicle / goods tracking

Vibration monitoring

Inclinometer

Sensor fusion

Data recorder

Compass

Human activity

Environmental monitoring

Baby crying detection

AI based

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Expert working mode

The developer uses a graphical app on his smartphone to

- Define additional applications, like in lego bricks
- Build his own application, without programming

Some examples of configuration in Developer mode

Power optimization	Hard-iron compensation, offset cancelling	Pattern recognition, accuracy
Individual sensors can be **activated or shut down** to enable only the required sensor set	SensorTile.box can be **individually calibrated** after final assembly & positioning	**Machine Learning Core, Neural Networks** and dedicated **sensor fusion** options can be activated

Pro working mode

Full compatibility and support of STM32 Open Development Environment

Full Cube.MX compatibility

Many SW packages available including AI function packs

Adapter for STLink V2 included in bundle kit

STLink V3 programming and debug compatibility (with level shifter to 1.8V)

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Meet the product

- Compact casing, IP54-compliant
  57 x 38 x 20 mm (L x l x h)
  Additional cases (with flanges or hinges) available
- 500 mA-h Li-Po battery
- 8 GB µSD card as mass memory
  extendable to 64 GB
- Compatible with “ST BLE Sensor” app
  Available on Google Play and App Store

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Inside the SensorTile.box
Sensing, processing and connectivity

Motion Sensors

Low-power 6-axis IMU, embedding Machine Learning Core **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

SPBTLE-1S

Power management

Battery charger

STBC02

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The kit

Blister with quick starting guide

STLink V2 programmer adapter and cable

SensorTile.box

Additional back with fixing points

Pre-integrated application example

SensorTile.box is supported by several STM32Cube function pack

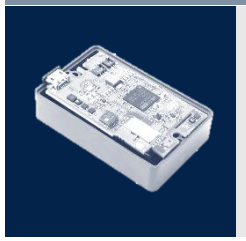
FP-AI-SENSING1

Ultra-low power IoT node with artificial intelligence (AI) application based on audio and motion sensing

FP-ATR-BLE1

For asset tracking using BLE connectivity

FP-SNS-STBOX1



For building custom applications using the Pro Mode

FP-SNS-ALLMEMS

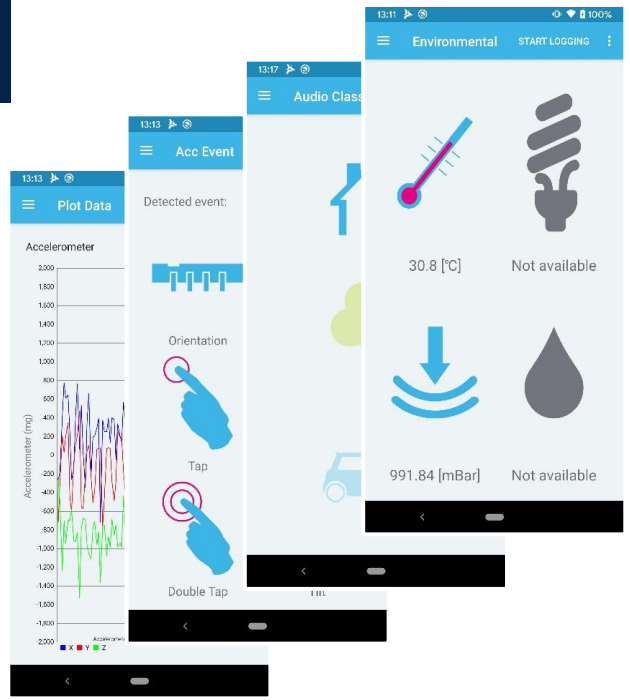
Ultra-low power IoT node with BLE connectivity, digital microphone, environmental and motion sensors

ST BLE Sensor app

An app to get the most out of your device

GET IT ON Google Play

Download on the App Store



- Sensor data reception and command transmission over Bluetooth® Low Energy (BLE)
- Data logging, plotting & publishing on the cloud
- Support for multiple STM32Cube function packs
- App development for SensorTile.box

Environmental data – MEMS sensor fusion – Plot – Activity recognition
Carry position – Acceleration event – Pedometer – Motion intensity – Compass
Speech to text – Beamforming – Sound source localization
Switch – Cloud logging – Node status

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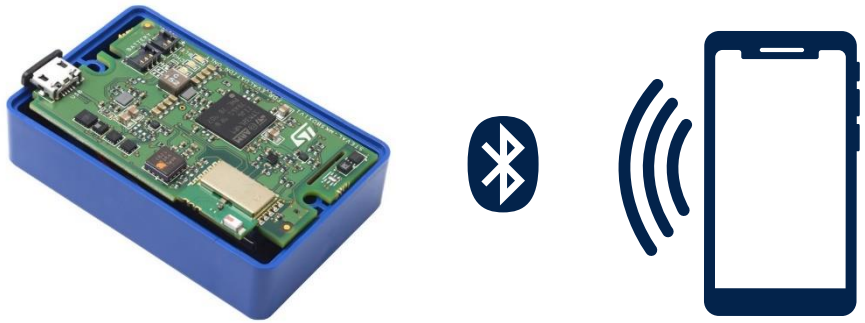
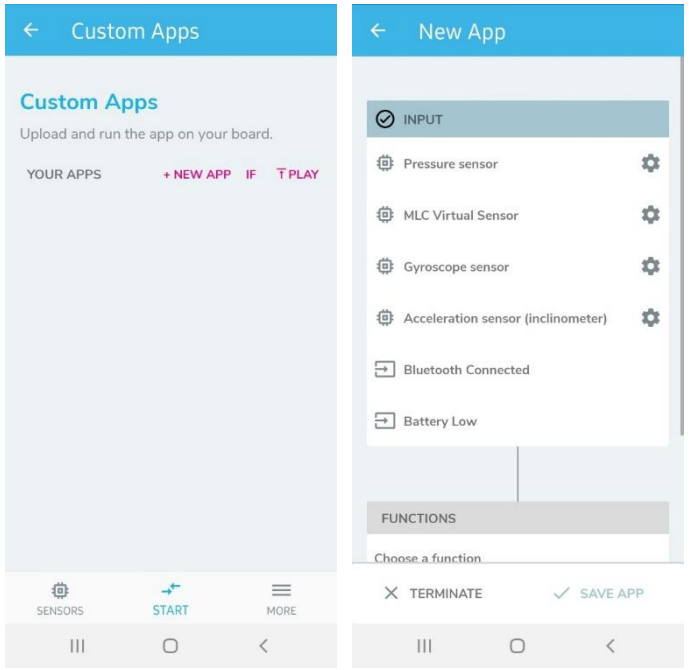
ST BLE Sensor app & SensorTile.box

Build your app for SensorTile.box



- Use the app builder to quickly develop your custom app using data retrieved from the device
- Browse the available app examples to speed-up your development



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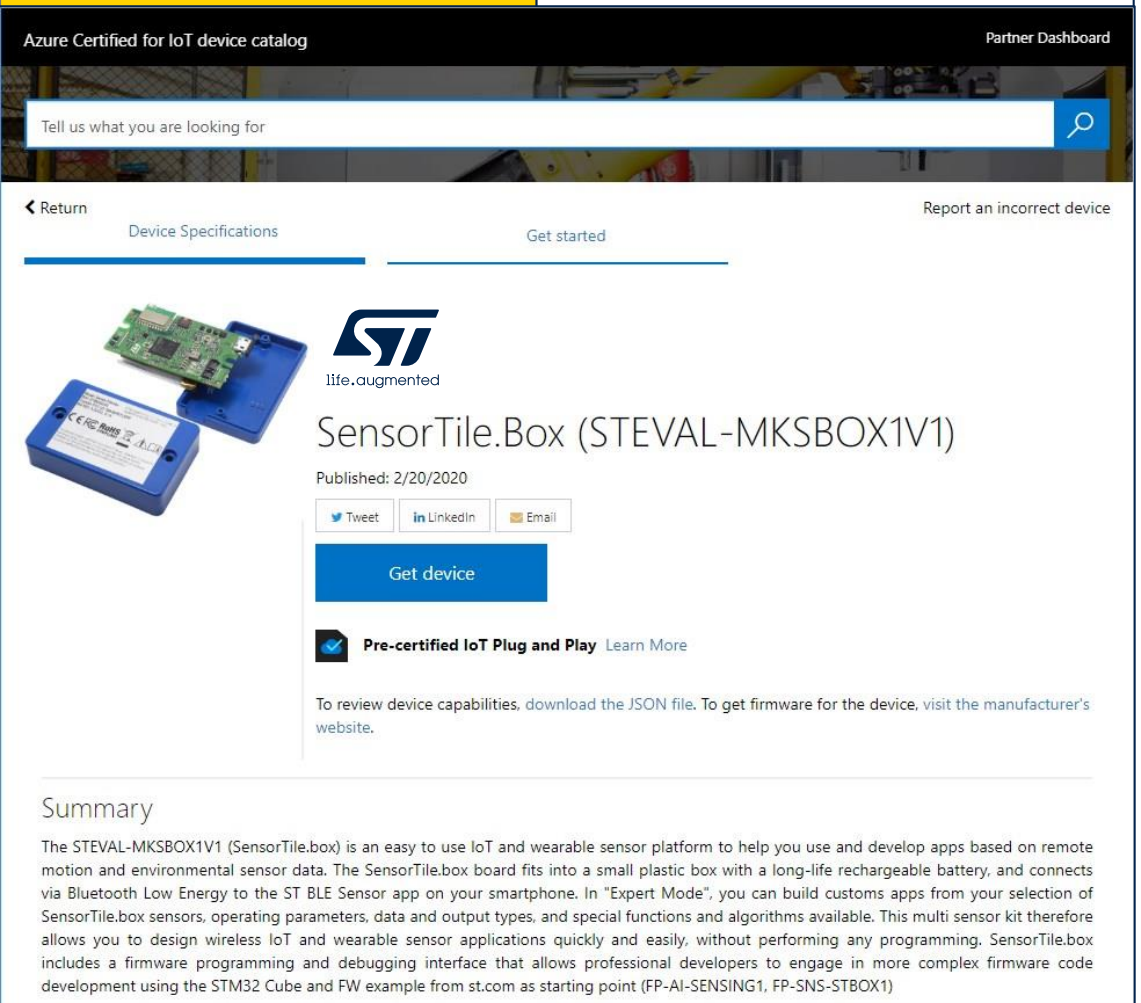
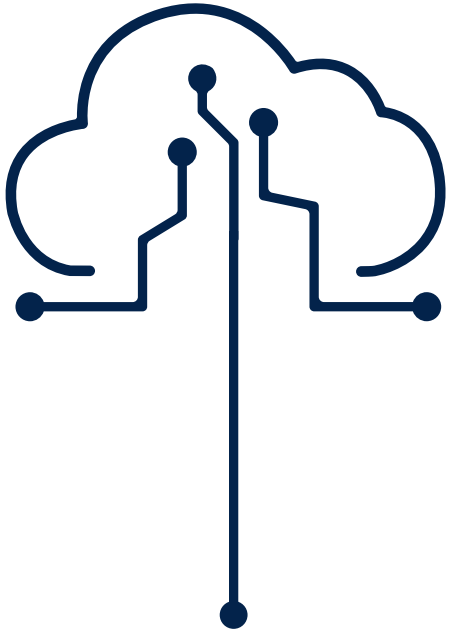
Ready-to-connect device

IoT Plug and Play certified
Compatible with **IoT Central**

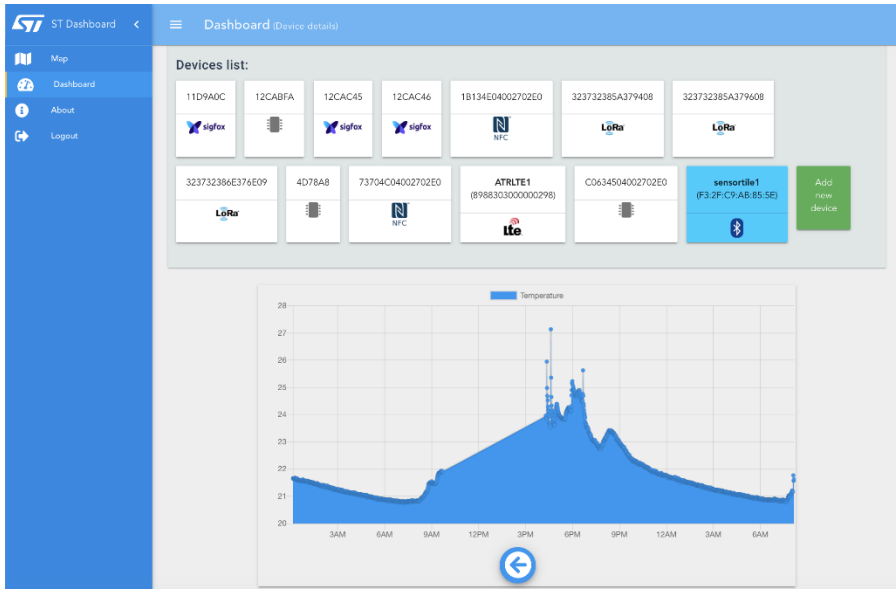
Microsoft Azure





aws

Available **dashboard** running on **AWS** for **asset tracking** applications



IBM Watson

Compatible with **IBM Watson** platform

Engineering services
By FAE technology

FAE Technology Spa is your industrial partner to customize the SensorTile.box

FAE technology offers the following services:

- Production-ready product with certifications
- New plastic housing to fit your form factor and your design needs
- Electronics board customization to fit different form, optimize component usage to reduce BOM costs and develop price competitive solution
- Firmware and app customization to customize your needs
- Production of hundred to thousand pieces

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