

Complete hardware and software solution to quickly build a Contiki sensor network

The [STM32 Open Development Environment](#) (ODE) provides developers with end-to-end solutions to explore and validate design concepts leveraging an extensive set of hardware and software that help add functionalities and scale-up your project. Today developers can easily create a Contiki 6LoWPAN, sub-GHz network with extensive sensing capabilities to harvest and review sensor data on a smartphone or tablet through a dedicated Android app.



This complete hardware and software package comprises:

- [Pre-built software function pack](#) (FP-NET-6LPBLE1) that implements the application layer with bridging functions to connect a 6LoWPAN network to a BLE-enabled device. The function pack includes:
 - Middleware library with a Bluetooth Low Energy (BLE) and Contiki 3.x 6LoWPAN protocol stack
 - Support for mesh networking technology through a standard RPL protocol
 - Sample application to connect a border router to a sensor node using 6LoWPAN mesh network technology
 - App to display mesh network tree and sensor data on an Android™ device
- [STM32 Nucleo development board](#) (NUCLEO-F401RE) powered by a high-performance STM32F4 microcontroller and including an integrated ST-LINK/V2-1 debugger and programmer. [Read more](#)
- [Bluetooth Low Energy \(BLE\) expansion board](#) (X-NUCLEO-IDB05A1) designed around ST's SPBTLE-RF Bluetooth Low Energy module based on BlueNRG-MS. [Read more](#)
- Sub-GHz RF expansion board [X-NUCLEO-IDS01A4](#) (868 MHz) or [X-NUCLEO-IDS01A5](#) (915 MHz), based on the SPIRIT1-RF

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module SPSGRF-868 or SPSGRF-915.

- [Motion MEMS and environmental sensor expansion board](#) (X-NUCLEO-IKS01A1) featuring accelerometer, gyroscope and compass MEMS as well as pressure, temperature and humidity sensors. [Read more](#)

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