Hello, and welcome to the presentation of the STM32WB55 Nucleo pack (P-NUCLEO-WB55). It covers the main features of this 2-board kit enabling the demonstration and testing of many wireless use cases.
The STM32WB55 Nucleo pack offers everything required for users to get started quickly and develop applications easily. This pack consists of 2 boards both with an STM32WB microcontroller enabling a wide range of wireless applications. It comes with the comprehensive STM32 software HAL library together with various packaged software examples.
This are the front and back sides of the STM32WB55 Nucleo Pack insert card.
This is the STM32WB55 Nucleo board. It offers several connectors for power and 2 USB peripherals. Multiple user switches and LEDs are also available. Support for Arduino connectivity ensures unlimited expansion capabilities with a large choice of specialized add-on boards. It also embeds a debugger that helps you develop and test your own applications from the existing examples. The STM32WB55 Nucleo board has many power supply options, either through the ST-LINK USB connector, a long-lasting battery cell or via external sources.
This is the STM32WB USB dongle. It is a 2-layer PCB with a user push button and three user LEDs. This dongle can interact with the STM32WB55 Nucleo board demonstrating the support of the main adopted GATT-based profiles and services.
Each board has an STM32WB55 microcontroller. This device embeds a powerful and ultra-low-power radio module compliant with the Bluetooth® Low Energy (BLE) specification v5.0 and with the IEEE 802.15.4 standard. The Bluetooth® range can be up to 100 meters in an open field with up to eight simultaneous connections.
The STM32WB55 Nucleo pack runs demonstration software based on the BlueNRG-MS software stack. It supports multiple roles simultaneously and can act at the same time as Bluetooth LE sensor and a hub device.

The Arm® Cortex®-M4 core controls the BlueNRG-MS software and manages the main part of the application while the Arm® Cortex®-M0+ core runs the RF BLE stack.

Once paired, the dongle and the Nucleo board interact using specific profiles and services.

The latest versions of the demonstration source code and associated documentation can be downloaded at www.st.com/stm32nucleo.
This slide summarizes the GATT-based applications developed for STM32WB and supported by the STM32Cube Firmware library. These applications range from sensor applications like measuring heart rates or blood pressure to communication applications such as peer-to-peer connectivity or over-the-air updates.
This peer-to-peer demo uses both the Nucleo board and the dongle.

- At start-up, the Nucleo board, acting as a P2P server, broadcasts its presence for 60 seconds.
- At start-up, the dongle, acting as a P2P client, starts scanning for a P2P server.
- Once the P2P client detects the P2P server, it connects to it.
- Once paired to the P2P server, the P2P client loads its associated P2P services as well as the characteristics of any available LEDs and buttons. It also enables notifications.
- Press the SW1 button on one device to toggle the LED 1 on the other device.
This peer-to-peer connection and data exchange demo uses the Nucleo board and a smartphone.

- At start-up, the Nucleo board, acting as a P2P server, broadcasts its presence for 60 seconds.
- Launch the ST SensNet application on the smartphone and click “Start scanning”.
- Once the smartphone, acting as a P2P client, detects the P2P server, it connects to it.
- Once paired, the application main menu appears on the smartphone.
- Press the SW1 button on the Nucleo board to toggle the virtual LED status on the smartphone.
For more information on the STM32WB55 Nucleo pack, go to www.st.com. You can also watch our videos on our YouTube channel.

Thank you.