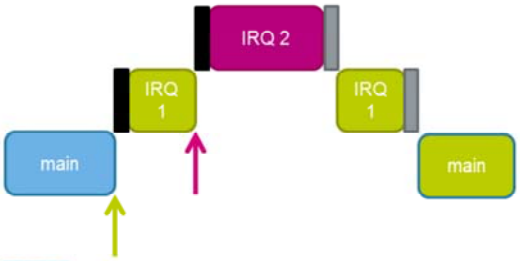
Hello, and welcome to this presentation of the STM32 extended interrupts and events controller. We will be presenting the features of the EXTI controller.

Overview

- Up to 41 events / interrupt lines
- Independent masks and configuration

	L49x L4Ax	L47x L48x	L45x L46x	L43x L44x	L41x L42x
configurable lines	26	26	25	25	25
direct lines	15	14	12	12	12



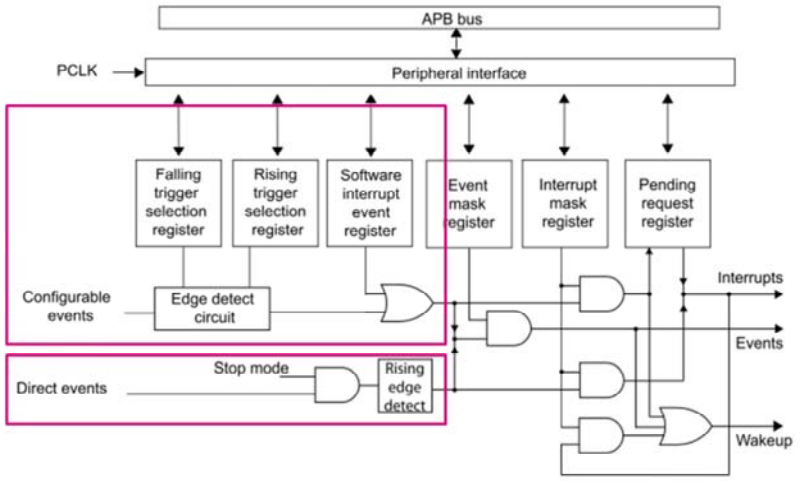
Application benefits

- Manage external and internal events / interrupts
- Generates wake up requests to the processor

The EXTI controller provides up to 41 independent lines, split into two categories – configurable lines and direct lines.
The applications could benefit through smarter use of low power modes , taking advantage of the capability to wake up via external communication or requests.

Key features

- Wake-up from stop, interrupts and events generation
- Configurable lines
  - Active edge selection
  - Dedicated status flag
  - Trigger-able by software
  - Linked to:
    - GPIO, PVD, RTC, COMPx, PVMx
- Direct lines
  - Status flag provided by
    - related peripherals
  - Linked to:
    - LCD & communication peripherals



The EXTI controller provides interrupt and event generation, as well as the capability to wake up the processor from stop modes. Configurable lines allow the user to select which active edge generates interrupts or events, with a dedicated status flag for each line. Requests on configurable lines can also be generated by software. Configurable lines are linked with external interrupts from GPIO, comparators, PVD, RTC and PVM. These lines can wake up the processor from both Stop 0, Stop 1 and Stop 2 modes. Direct lines provides less configuration options, with status flags provided by related peripherals. They are linked mainly with LCD and communication peripherals. Direct lines can only wake up the processor from Stop 0, Stop 1 mode, except those coming from I2C3, LPTIM1 and LPUART1.

Low-power modes

- Configurable lines can wake up the processor from both Stop 0, Stop 1 and Stop 2
  - GPIO, PVD, RTC, COMPx, and PVMx provide wake up from Stop 0, Stop 1 and Stop 2
- Direct lines can only wake up the processor from Stop 0 and Stop 1
  - OTG_FS, I2Cx, USARTx, LPTIM2, SWMPI1, LCD provide wake up from Stop 0 and Stop 1
  - Except I2C3, LPUART1 and LPTIM1 wake up, allowing to wake up from Stop 0, Stop 1 and Stop 2

As mentioned on the previous slide, configurable lines can act as a wake up source from both Stop 0, Stop 1 and Stop 2 modes. They provide the capability to wake up from a GPIO rising or falling edge, programmable voltage detector, RTC, comparators and peripheral voltage monitor.
Direct lines can only act as a wake up source from Stop0/Stop 1 mode, except I2C3, LPUART1 and LPTIM1, which can serve as a wake up source from Stop 2 mode as well.