RIOT Hackathon: Power Management / Energy

Robert, Michel, Raphael

July 2017

Goals

- ~~Timer~~
- Implement power management
- Generic test application
- Energy consumptions measurements

atmega

general

- ▶ Watchdog and rudimentary RTT
- ▶ gpio: pin change interrupts
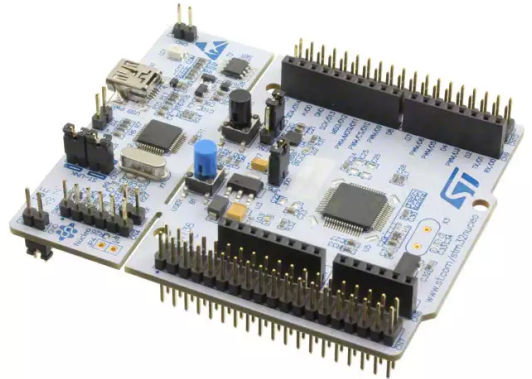
cpu/atmega_common

- ▶ Draft for power management ✓
- ▶ implemented poweron/poweroff for all periph modules ✓

cpu/atmega1284p

- ▶ `pm_set` implemented and using `pm_layered` ✓
- ▶ Disable all peripherals by default
- ▶ All sleep modes implemented ✓

STM32L4

- RTC implemented ✓
- Four sleep modes implemented ✓
  - Using the deepest with persistent state
  - But: specific for board
- No clock recovery needed due to system reset

Future Work

atmega_common/atmega1284p

- ► Reduce power levels to four
- ► Code requires a lot of hacks ⇒ discuss!

STM32L4

- ► Generic module for backup domain
- ► Implement pm in periph drivers

General

- ► Rudimentary documentation in the RIOT Wiki (based on atmega proposal)
- ► Generic test application
  - ► One idea implemented (check flag and mode of pm)

DEMO

Demo