

Bringing RIoT-OS to the RIoTboard

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- ▶ what do we want?
 - ▶ RIoT-OS running on the RIoTboard
 - ▶ have fun coding
 - ▶ fancy hardware
 - ▶ credit points
- ▶ what did we expect to achieve?
 - ▶ get the hardware for free
 - ▶ basic support of the RIoTboard for RIoT-OS
 - ▶ be motivated enough to continue working on the port after the software-project

- ▶ sub-goals:
 - ▶ gather relevant documents
 - ▶ find out how on the board "works"
 - ▶ build a basic application that runs on the board (LED-blinking)
 - ▶ build this application from within RIoT-OS (run our program from the `board_init`)
 - ▶ enable interrupts
 - ▶ UART for STDIO
 - ▶ implement timer-interface
 - ▶ wiki pages
- ▶ milestone arrangement
- ▶ milestones have dates assigned

- ▶ get familiar with the board
 - ▶ boot it, read manuals and documentation
 - ▶ try features with existing OS that supports it
 - ▶ understand target architecture
 - ▶ flash it
 - ▶ cross-compile
 - ▶ be able to actually run bare-metal code
- ▶ find out what needs to be done for a port
 - ▶ identify re-useable code
 - ▶ learn about interfaces in RIoT
- ▶ port it
 - ▶ patch SDK for use in RIoT
 - ▶ successfully build
 - ▶ debug

- ▶ all goals reached
- ▶ spaghetti

- ▶ expectation: to turn on the LED write a bit to \$beef1337:3
- ▶ reality:
 - ▶ i.MX6-reference-manual
 - ▶ the status of a GPIO-pin is determined by a bit in a register that can be anywhere - based on the configuration of the muxer
 - ▶ names of channels in the muxer are from the same namespace as the functions mapped onto them
 - ▶ RIoTboard-schematics
 - ▶ one LED on the RIoTboard is connected to a function "EIM_DATAwx" which you can then map GPIOyz on

- ▶ embest-tech doesn't supply a muxer-configuration-file that can be used with the SDK
- ▶ maybe looking at how they did it for their u-boot- and linux-ports helps?
- ▶ reconsideration: the i.MX6-platform-SDK has macros to abstract to and from the muxer config

- ▶ The platform-SDK differentiates between code concerning
 - ▶ the i.MX6-architecture
 - ▶ contained peripherals
 - ▶ board-specific headers and iomux-configuration
- ▶ RIoT has its own abstraction for each of those (dividing the sub-topics differently)

DEMO (of printf's and flashing LEDs)

- ▶ #1355 was closed in favour of #1359 Leon had trouble keeping the git-log tidy
- ▶ #1359 was merged - with the help of staff members and RIoT-maintainers.
- ▶ #1411 is still pending and we do not know whether it will be merged.

- ▶ still motivated
- ▶ perhaps scrap the existing code and restart

Questions?