

Bringing RIoT-OS to the RIoTboard

Leon Martin George
Freie Universität Berlin

Softwareproject - Telematics, 2014

- ▶ Designed for developing

- ▶ Designed for developing
- ▶ Cortex-A9-based

- ▶ Designed for developing
- ▶ Cortex-A9-based
- ▶ Freescale i.MX6-architecture

- ▶ Designed for developing
- ▶ Cortex-A9-based
- ▶ Freescale i.MX6-architecture
- ▶ Co-processing power

- ▶ Designed for developing
- ▶ Cortex-A9-based
- ▶ Freescale i.MX6-architecture
- ▶ Co-processing power
- ▶ Many different interfaces

Why Do We Want This?

- ▶ Automotive
- ▶ Industrial

Why Do We Want This?

- ▶ Automotive
- ▶ Industrial
- ▶ Handheld consoles

Why Do We Want This?

- ▶ Automotive
- ▶ Industrial
- ▶ Handheld consoles
- ▶ Easy developement

- FU Berlin, Bringing RIoT-OS to the RIoTboard, Softwareproject - Telematics, 2014

- FU Berlin, Bringing RIoT-OS to the RIoTboard, Softwareproject - Telematics, 2014

- ▶ Assess the situation
- ▶ Try running anything on the board
- ▶ Run our own code

- ▶ Assess the situation
- ▶ Try running anything on the board
- ▶ Run our own code
- ▶ Get a framework to run
- ▶ Split to work on different components individually

- ▶ UART I/O for debugging and shell communication

The Original Plan:

- ▶ UART I/O for debugging and shell communication
- ▶ Timer(s) so the kernel can run

- ▶ UART I/O for debugging and shell communication
- ▶ Timer(s) so the kernel can run
- ▶ Interrupts

- ▶ UART I/O for debugging and shell communication
- ▶ Timer(s) so the kernel can run
- ▶ Interrupts
- ▶ Set up a stack

- ▶ UART I/O for debugging and shell communication
- ▶ Timer(s) so the kernel can run
- ▶ Interrupts
- ▶ Set up a stack
- ▶ Build it successfully (probably the hardest part :-))

- ▶ The UART

- FU Berlin, Bringing RIoT-OS to the RIoTboard, Softwareproject - Telematics, 2014

- ▶ The UART
- ▶ Timers
- ▶ Interrupts

- ▶ Going from u-boot to SDK

- ▶ Going from u-boot to SDK
- ▶ The UART initialisation process

- ▶ Try altering IOMux-configurations for other boards

- ▶ Try altering IOMux-configurations for other boards
- ▶ JTAG-debugging