Project Ara Module

Infos

- Agreement
- Ara MDK
- Verbaute FPGAs in den Modulen (LatticeECP3)
- UniPro
- Meta Tools Demo
- Build Environment Setup

Ideen

- Bus-Pirate-Modul
    - Open Source Logic Analyzer & BusPirate: dangerousprototypes.com
    - Etwas Inspiration: Novena OpenSource Laptop Oszilloskop
    - http://www.sump.org/projects/analyzer/
- magnetischer Connector an den man alle möglichen Messsonden anschließen kann
    - Bsp Connector: USB Magnet Connector

- Möglicher Bestücker für die Platinen: VBE Kamm, Ettlingen (Hab das Werk mal besichtigt. Die könnten die nötige Technik haben. –Sebastian) & Elbe, Ettlingen (Wir (Firma) lassen dort seit Jahren alles bestücken. Herr Dropschuk ist sehr nett und hilfbereit. - David Bauer)

- schaut euch mal den Buspirate genauer an … der ist nicht nur Logicanalyzer, sondern kann auch verschiedene Busprotokolle senden. Z.b. um mal eben nen I2C-Sensor zu testen. Und er kann JTAG sprechen und Arduinos programmieren. Ich denk das wären auch coole Features um sich von anderen Logicanalyzer Beiträgen abzusetzen.

DevKit Antrag

http://www.projectara.com/dev-board-form

Briefly describe the nature of your interest in the Ara platform

Modular and transformable technology is the future. FabLab Karlsruhe is a relatively new institution but already many very capable professionals joined us in the pursuit of new technology. We want to work on our own ara module because we are enthusiastic for the ara approach and want to participate in the prize challenge.

Briefly describe your module idea

The module we are currently developing is a versatile logic analyzer or bus pirate. It will be able to measure and visualize the electronic communication of devices. An open-source electronic multi-tool. It will also be extendable to support among other things a Multimeter-probe.

This is a module we would use everyday and is something we can't do with our smartphones yet. We dream of a smartphone for the modern hacker, able to help us push our tinkering projects into the realm of engineering and beyond.

Briefly describe the targeted users of your module and the potential market

Since this is a very specialized module the market won't be anywhere near the potential market for a GSM module for example, but the maker movement is growing. As Arduino, Raspberry Pi and many other new electronic platforms grow so does the accessibility of electronics development. This tool won't only be interesting for tinkerers, inventors and electronic technicians. Even the everyday handyman and household DIY fan can make use of a logic analyzer.

Briefly describe the estimated schedule of activities planned to develop your module

Since we want to participate in the prize challenge we want to have a working proof of concept until 1. Sept. and a working prototype until 30. Sept. We will have weekly meetings to discuss what we did the week before and plan to do the next week.

Until 8. August:

- finished evaluation of potential FPGAs
- initial draft for a firmware
- initial extension work of the sigrok android port
- initial PCB design

With access to software repository:

- build environment and build system setup
- get software prototype working with the build system

Until 22. August:

- Team Video for prize challenge
- first working prototype

Until 30. September:

- Bugfixing and optimization

Briefly describe the source of funding for these development activities

We are enthusiasts and our efforts will be self funded. We work on the project on our freetime.

Briefly describe relevant previous projects

Many of our team members have build their own 3D printer, designed electronic and mechanic systems from small hobby projects to full fletched mass market products.

Links to relevant project or portfolio

TODO

Briefly describe your team's relevant technical competencies (e.g. PCB design, mechanical, Linux and Android)

Our team members have experience with:

- Linux and Android development
- Mobile App development in general
- general electronics know-how in various categories (PCB design, arduino, raspberry pi, ti launchpad)
- signal processing and algorithm design
- Management and Execution of complex projects in short time periods
- Rapid Prototyping and scientific workflow
- Electronic design (PCB, EMI, HDL)

Which prototype interface do you intend to use? Check all that apply (I2C, I2S, SDIO, GPIO, DSI)

I2C

Prize Challenge Submission

http://www.projectara.com/entry-form

Describe the features of your module

TODO

Describe your development plan between now and the final submission deadline on September 30, 2014

TODO

Describe your development team

Sebastian Höfer - PhD Student at Karlsruhe Institute of Technolgy. Working at the development of new sensor technology and computer vision algorithms in the field of industrial, visual inspection.

Sarah Jansen - Working as R&D engineer in the field of hardware and FPGA development.

Sven Hecht - Software developer working at bluehands GmbH & Co.mmunication KG. Experience with android development, project management and design of human computer interactions.

Link to video demonstration

TODO

Lizenzen

Was man auf den ersten Blick auf der MIPI Seite findet: „MIPI specifications are available only to MIPI Alliance members.“ Und eine Mitgliedschaft kostet: MIPI Member werden. Aber keine Sorge … wenn die Firma weniger als 250Mio$ Umsatz im Jahr macht, bekommt man einen

Rabat! 😐