Press release

Barsinghausen, April 2018

CANgineBerry – CANopen co-processor for Rasperry Pi

The Embedded Systems Academy GmbH and Embedded Systems Solutions GmbH proudly present their latest shared development: CANgineBerry.

CANgineBerry is an active CAN interface with a Cortex-M0 microcontroller and various firmware options. Users can easily reprogram CANgineBerry with any of these options. At launch, two options are available: One for a CANopen Controller / Manager and one for a configurable CANopen slave device. The CANopen Controller scans the network for connected slave devices, sets up process data handling, starts the network and continues monitoring it. Once the host that CANgineBerry is connected to is up and running as well, it can immediately start using the CANopen network and access any attached device. The second option, the CANopen slave device is fully configurable with node ID and LSS (layer-setting services). It contains an Object Dictionary that the user creates with the provided CANopen Architect software.

The CANgineBerry's host is a Raspberry Pi®, another embedded computing systems or even a PC. The communication to the host system uses UART, so no special driver is required. The communication between host and CANgineBerry and the API is designed to serve the application. For example, heartbeats are automatically monitored but the host is only informed about changes in the heartbeat status (like "activated" or "lost") but not about every individual heartbeat message.

This architecture of CANgineBerry addresses the shortcomings of many "CAN shields" that are passive, have no own intelligence and require the host computer to handle all CAN communication message by message.

Using CANgineBerry, all real-time requirements in a CANopen network can be met without problems.

Summary of firmware options currently available or under development:

- CANopen self-configuring Controller / Manager
- CANopen slave device (configurable via EDS, Electronic Data Sheet)
- Lawicel CAN-RS232 protocol
- CANcrypt (secure CAN communication) for the above versions
- CiA 447 – automotive add-on electronics
- J1939 gateway

For more information about the CANgineBerry, current versions and sources, visit www.CANgineBerry.com

Press release

Download

The text of this press release can be found in Word (docx) and PDF formats in the enclosed zip-file together with images and the company logo of EmSA or you can download them at www.CANgineBerry.com.

About Embedded Systems Academy:

Embedded Systems Academy (EmSA) are Barsinghausen, Germany and San Jose, California based companies providing tools, training and services for planning, implementing, debugging, commissioning and testing of embedded networking technologies including CAN, CAN FD, CANopen, CiA447, J1939 and others. EmSA's tutors Olaf Pfeiffer, Christian Keydel and Andrew Ayre published two books about CAN, CANopen and security on CAN systems. They regularly publish related articles and papers for various international conferences.

About ESS Embedded Systems Solutions

ESS Embedded Systems Solutions GmbH was established in 2001 and is by now a privately owned GmbH. ESS is specialized in the development of micro controller based applications for industrial communication, industrial automation, for measurement and control technology and automotive applications. ESS offers innovative, high-quality telematic products, CANopen chips and modules along with protocol converters. Communication adapters for commercial vehicles represent a significant part of the portfolio. Products made by Embedded Systems Solutions are deployed in customer applications in more than 40 countries worldwide.

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