

E mbedded World is now a permanent fixture in the calendar of every embedded developer across central Europe, bringing together developers, and manufacturers to the exhibition centre in Nürnberg for three full days.

Most of our contacts at the event agreed that the exhibition seemed a little flat. The 'Internet of Things' message was stretched out for another year but embedded engineers have been connecting devices to one another for decades already and the hot air of hype around this

topic continues to irritate and divert attention away from the very real daily challenges of embedded development.

Especially for the show, the iSYSTEM team developed the 'iC&Greet' visitor greeter, or 'Wave-O-Matic', which caught a lot of attention. Based upon an Arduino M0 Pro (Atmel SAMD21) and some ultrasound distance sensors, the device waves in the direction of the closest visitor. In order to ensure everyone's safety, the hand folds away to a safe position if a visitor comes too close.

Visitor interest showed that serious topics, like functional safety, continue to be of more relevance than IoT.

Photo: bit.ly/icandgreet

Upcoming Events:

April and May 2016

Erst der Test beendet die Entwicklung - Build test into embedded development (German language)

More Info @ bit.ly/erst-der-test

28th - 30th June 2016

EMCC, Munich

More Info @ bit.ly/emcc-muc

BugHunter - the new iSYSTEM technical blog

Exhibitions like Embedded World provide us with a fantastic opportunity to engage directly with our customers and help them with their development challenges. In order to better share our experiences more regularly, iSYSTEM is launching "BugHunter", a technical blog focussed on daily embedded development challenges.

One such daily challenge is understanding whether our application is suffering from a stack or buffer overflow, or if a rogue pointer is overwriting data in RAM. In our first blog entry, we review how writing a known data pattern into memory can help to discover what memory locations

were modified at run-time. In the blog entry, we look at how winIDEA together with the memory window can be used to write the hexadecimal pattern 0xDEADBEEF into RAM. The 'Fill...' feature, available from the context menu, is covered along with how to configure the memory window to match the same word-size as the target MCU.

In order to make it easier for any reader to replicate what they have read, we will, where possible, use the Arduino M0 Pro together with winIDEA Open. This particular Arduino features a CMSIS-DAP debugging interface which works with our free version of winIDEA. This makes it ideal for students or new



employees trying out winIDEA for the first time, as well as experienced engineers wanting a 'known working version' upon which they can build their knowledge based upon previous experiences. The first blog entry is available now!

Link: bit.ly/bughunterblog



Seminar - Erst der Test beendet die Entwicklung

The topic of safety in embedded systems is often a key discussion point with the customers we meet. Even for those without any concrete safety criteria to fulfil, raising the quality of their software and improving the reliability of their products is a key focus. In recognition of this, iSYSTEM and our partner sepp.med GmbH are offering five seminars in the German language which aims to show how to get software testing into the development process earlier. The key premise is that, by developing unit tests during the development of embedded software, any bugs, errors or

coding mistakes can be detected and resolved much earlier.

The first step is to make use of the debug interface to the target MCU through an On-Chip Analyser, such as the iC5500. testIDEA, iSYSTEM's test environment, allows unit tests to be created and executed on the target MCU. Unlike other solutions that have to instrument

"The MBTsuite testing framework can be combined with testIDEA to create a complete testing platform..."

the code to perform such testing, testIDEA uses the developer's original binaries, thereby ensuring that the test is executed under the same conditions as the end application code. This is

achieved due to iSYSTEM's intimate knowledge of how various compilers create the call-stack when calling functions in C and C++.

The testing framework MBTsuite from sepp.med comes from the top end down, in that it can be used to develop system-level and integration tests based upon the original product specification. The clever element is how the tool analyses the UML test description to create an optimised test approach whilst ensuring optimal system coverage. The tool can then create a Python script which, when combined with iSYSTEM's testIDEA, can be used to implement a complete testing platform that also includes code coverage.

The first seminar is on the 19th April in Stuttgart, with further seminars in Ingolstadt, Berlin, Braunschweig and Munich.

Link: bit.ly/erst-der-test

iSYSTEM's CEO Erol Simsek nominated for "Manager of the Year"

The industry magazine Markt&Technik are, for the second time, running their "Manager of the Year" award and iSYSEM are proud to have their CEO, Erol Simsek, nominated in the category "Embedded Systems".

In total there are around ten nominees for each category, covering leaders in several further

industry areas such as SMT equipment, power supply, semiconductors, and passive components. Pioneers of the industry are also included such as Helmut Rudel, the founder of the distributor Rutronik, and Gerhard Sturm, who founded drive technology and ventilation experts ebm-papst.

The semiconductor industry is represented also with names such as Thilo von Selchow, former director of ZMDI, the analog and mixed-signal specialists, and Steve Sanghi, who has overseen the growth

and expansion of Microchip Technology Inc. since he became CEO back in 1990. Voting is currently open and closes on Friday 8th April. The final winners will be announced at an award ceremony on the 2nd June.

To vote, follow the link below:

Link: bit.ly/mdj2016



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