

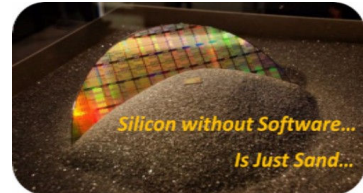


Revolutionizing Embedded Software Development

Imperas Newsletter: January 2017

"Silicon without software is just sand."

Updating you on what's new in the embedded software revolution.



Viewpoint: Simon Davidmann, CEO Imperas

2016 Year in Review: Imperas Roundup

Happy New Year from the Imperas team! We have made progress along many fronts in 2016. Below are the top 2016 announcements, articles, interviews and videos. Enjoy!

Also, Imperas will attend the [embedded world conference](#), March 14-16, 2017 at the Exhibition Centre in Nürnberg, Germany. Imperas will be featuring two papers:

- "Using Virtual Prototypes to Improve the Traceability of Critical Embedded Systems"
- "Fast Fault Injection to Evaluate Multicore Systems Soft Error Reliability"

For more information, or to set up a meeting at embedded world, please email us at sales@imperas.com.

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2016 Year in Review: Imperas Roundup

Why Imperas, Why Virtual Platforms?

Video: [CEO Simon Davidmann Introducing Imperas Software.](#)

Podcast: [Silicon Without Software is Just Sand - EE Journal - Amelia Dalton](#), Embedded Software Development with Virtual Platforms: Shifting Left with Imperas, July 15, 2016. No one builds a chip without simulation, right? In this Fish Fry, Amelia Dalton of Electronic Engineering Journal takes a closer look at the value of virtual prototypes to simulate embedded software. Simon Davidmann (CEO - Imperas) talks about why no one should design embedded software without simulation, and the benefits of using virtual platforms to develop a verification and test environment.

Processor Models

[ARM Cortex-A72 Models and Virtual Platforms Released by Imperas and Open Virtual Platforms](#), May 24, 2016. Imperas Software announced the availability of models and virtual platforms for the Cortex-A72 ARMv8 processors, in addition to the previously released Cortex-A53 and A57 models. This boosts the OVP processor model library to over 160 models across a spectrum of IP vendors. Over 40 ARM cores are supported, including Cortex-A, Cortex-R and Cortex-M families. Imperas support for ARMv8 cores includes models, Extendable Platform Kits™ (EPKs™), integration with ARM DS-5 for software debug and Linaro Linux booting on the virtual platforms.

[Fast Processor Model of Renesas RL78 CPU Released by Imperas for Open Virtual Platforms](#), May 31, 2016. Imperas and eSOL TRINITY announced the release of an OVP Fast Processor Model for the Renesas RL78 CPU, along with virtual platforms and support for the new model in the Imperas M*SDK™ advanced software development tools. The model of the RL78 was developed by eSOL TRINITY, Imperas' partner in Japan, providing technical support for Imperas customers as well as services for embedded software development.

Software Verification

[Video: "Software Verification for Low Power, Safety Critical Systems."](#) Simon Davidmann speaks at DVClub Europe, November 2016.

[Imperas Virtual Platform Based Software Tools at DAC and Embedded TechCon 2016](#). At the Embedded TechCon conference, which was co-located with DAC, Imperas presented a paper on the use of virtual platforms for software development targeted at ARM-based devices, "Accelerating ARM Software Development, Debug and Test."

Security

[Use a virtual platform to maintain security](#), October 19, 2016. One of the big challenges in the deployment of IoT across varied markets is security, for both hardware and software. A pragmatic approach for developers is the use of hypervisors and virtual platforms, as Larry Lapidés of Imperas discusses.

[prpl Security Group & Imperas Address IoT Security Challenges via Multi-Domain Virtualization](#), May 18, 2016. Imperas and several other members of the prpl Foundation security working group are using OVP technologies to explore the use of hypervisors for improved device security. This article discusses concerns over automotive security and introduces a hypervisor from SELTECH.

[prpl Foundation Publish First Newsletter](#), April 8, 2016. Newsletter for the embedded systems community includes an article by Imperas CEO Simon Davidmann, "prpl Security Group and Imperas Address IoT Security Challenges via Multi-Domain Virtualization."

[Video: Larry Lapidés on the prpl Foundation](#).

IoT

[Imperas presents tutorial at DATE 2016](#). Imperas CEO Simon Davidmann spoke on embedded software development, debugging, analysis, and verification with virtual platforms supporting today's multiprocessor SoCs, as part of the tutorial "Internet-of-Things: Virtual Platforms in the Internet-of-Things Era – State of the art and perspectives."

Operating System and Debugger Support

[eSOL RTOS and Debugger Support Available from Imperas for Software Development and Test](#), October 25, 2016. Imperas Software now supports the eSOL eMCOS RTOS and eBinder debugger, integrated

with Imperas Virtual Platforms. eSOL is the leading RTOS and embedded software supplier in Japan. This partnership and the new capabilities accelerate embedded software development, debug and test across a variety of markets, including automotive.

Video: [Using the GHS MULTI Debugger with Imperas simulators and models.](#)

[Imperas Virtual Platform Based Software Tools at DAC and Embedded TechCon 2016.](#) Imperas delivered a tutorial “Linux Porting and Bring Up, and Driver Development” featuring virtual platforms. At the co-located Embedded TechCon conference, Imperas presented a paper on “Pre-Silicon OS Porting, Bring Up and Driver Development.”

Business News

[Imperas and T&VS Partner to Update Software Verification and Validation Methodology for Embedded Systems.](#) November 2, 2016. Imperas Software and Test and Verification Solutions (T&VS) have partnered to promote state-of-the-art software verification and validation methodologies for embedded systems.

[Imperas Expands University Partners Program.](#) September 28, 2016. 34 universities now participate in the worldwide Imperas University Program, granting academic and research institutions free access to OVP models and the Imperas tools and technology needed for challenges across embedded software and systems, from development and test, to quality and standards compliance, to security and IoT, to system architecture and optimization. Through this program and OVP, Imperas software reaches thousands of students and professors worldwide every year.

[Imperas Announces Coontec as Distributor in Korea.](#) September 20, 2016. Imperas Software and Coontec Co., Ltd., a Korea-based provider of embedded software solutions, have formed a distribution and technical support partnership. It combines technology-leading Imperas high-performance software simulation and virtual platforms with the power of Coontec’s expertise on embedded systems for the automotive, IoT and mil-aero markets, to further drive the adoption of virtual platforms in Korea.

[Lee Moore of Imperas Receives RAeC Award from HRH Prince Andrew for New Aviation Traffic Awareness Technology.](#) September 20, 2016. Imperas Software is proud to announce that Imperas’ own Lee Moore has received an Royal Aero Club (RAeC) award from His Royal Highness Prince Andrew. Affordable PilotAware product is an ARM/Linux based real-time embedded system with smartphone iOS/Android application that helps pilots avoid accidents and save lives.

Industry Round Up Articles Featuring Imperas

[Heterogeneous System Challenges Grow.](#) October 3, 2016. Ann Steffora Mutschler and Simon Davidmann on the challenges of heterogeneous systems. As more types of processors are added into SoCs—CPUs, GPUs, DSPs and accelerators, each running a different OS—there is a growing challenge to make sure these compute elements interact properly with their neighbors.

[Rethinking Verification For Cars.](#) September 29, 2016. How the car industry can improve reliability. As the amount of electronic content in a car increases, so does the number of questions about how to improve reliability of those systems. Semiconductor Engineering article on how to improve reliability in automotive.

[Hypervisors: Help Or Hindrance?.](#) September 29, 2016. Brian Bailey (Semiconductor Engineering) article on Hypervisors, with Imperas. Hypervisors are seeing an increased level of adoption, but do they help or hinder the development and verification process? The answer may depend on your perspective.

[Will Hypervisors Protect Us?.](#) August 25, 2016. The industry must start becoming more responsive by adding increasingly sophisticated layers of security and protection. Brian Bailey of Semiconductor

Engineering and Simon Davidmann, CEO of Imperas examine how hypervisors are entering the embedded world and frame some questions.

[Grappling With Auto Security](#), July 7, 2016. It's a changed world under the hood of automobiles today, as vehicles become increasingly connected to infrastructure and each other. But that connectedness also is creating new security risks. The search is on for a way to balance connectivity, performance and security, with Ann Steffora Mutschler of Semiconductor Engineering and Imperas.

[Automating System Design](#), May 2, 2016. Change is underway in the chip design world, creating opportunities and challenges that reach far beyond questions about whether Moore's Law is slowing or stopping. An article on System Level design and its automation by Ann Steffora Mutschler (Semiconductor Engineering) with comments from Simon Davidmann (Imperas).

[ESL Flow Is Dead](#), April 29, 2016. Brian Bailey (Semiconductor Engineering) interviewed several industry leaders on the past and future of ESL. Simon Davidmann, CEO of Imperas, commented: "What is needed is to move away from the EDA vendors trying to define ways to sell the technologies they have, to asking the question, 'How are we going to design systems which are incredibly complex, containing many processors, many hardware blocks and more software than you can imagine?' How can we design things in a better way? How do we verify things in a better way?"

[System-Level Verification Tackles New Role](#), April 28-June 15, 2016. Brian Bailey of Semiconductor Engineering states, "*The role of system-level verification is not the same as block-level verification and requires different ways to think about the problem.*" He and experts in a round table, including Larry Lapides of Imperas, discussed system level verification. [Part 1 here](#). [Part 2 here](#). [Part 3 here](#).

["Redefining ESL" Panel Insights from DVCon 2016](#), March 31, 2016. At the DVCon 2016 conference in Silicon Valley, the lively and popular panel moderated by Brian Bailey of Semiconductor Engineering, featured a variety of views on the role of ESL ("Electronic System Level") in design and verification for both hardware and software.

OVPsim Release News

OVP: Fast Simulation, Free open source models, Public APIs: Open Virtual Platforms.



A new Imperas and OVP release became available, October 2016.

The [Open Virtual Platforms](#) portal is one of the most exciting open source software developments in the embedded software world since GNU created GDB.

- For embedded software developers, virtual platforms are increasingly important, especially for multi-core designs.

The resources on this portal can significantly accelerate your development and test. The next release of OVPsim is expected to be available in February 2017.



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