

## **Thinking Outside the Chip:**

### **The European Technology Platform of Smart Systems Integration (EPoSS)**

*Dr. Gereon Meyer, VDI/VDE Innovation + Technik GmbH, Berlin, Germany*

#### **Abstract**

With MEMS and sensor technologies entering the nanoscale, opportunities to integrate an ever and ever larger number of functions into a single device will continue to increase. This purely technological trend wouldn't mean anything if not applied for any greater good. Advancements in the technologies for patterning, fabrication and characterization of devices and the embedding of software thus require in parallel the setting of objectives outside the chip that go beyond just reduction of cost. Smartness of a system is a concept that independently of a specific application can well describe the capabilities of a technology to tackle major challenges of society, economy and environment. It thus helps to identify those functionalities that will determine the competitive edge of integrated micro- and nanosystems in the future.

A Smart Systems can be defined as a miniaturized device that incorporates functions of sensing, actuation and control. It is capable of describing and analyzing a situation, and taking decisions based on the available data in a predictive or adaptive manner, thereby performing smart actions. In most cases the "smartness" of the system can be attributed to autonomous operation based on closed loop control, energy efficiency and networking capabilities.

EPoSS, the European Technology Platform on Smart Systems Integration, is an industry-driven policy initiative, defining R&D and innovation needs as well as policy requirements related to Smart Systems Integration and. Markets considered by EPoSS members include biomedical, information and communication technologies, internet of things, safety and security, aeronautics and automobile, for which EPoSS is organising the annual International Forum on Advanced Microsystems for Automotive Applications (AMAA) and also is closely involved in the public private partnership European Green Cars Initiative.

#### **References:**

EPoSS website [www.smart-systems-integration.org](http://www.smart-systems-integration.org)

AMAA website [www.amaa.de](http://www.amaa.de)