



## EnOcean launches Dolphin platform at electronica

New system architecture for energy-autonomous sensors and wireless sensor networks

**Oberhaching near Munich, Nov 11, 2008**

EnOcean is launching its Dolphin system architecture on Booth 266, Area A4, at electronica 2008, setting entirely new standards in wireless sensor networks. Dolphin enables energy-autonomous actuators, bidirectional communication of sensors and innovative routing concepts, creating the foundation for a wide variety of new products and applications.

### **Future-proof, modular system architecture**

EnOcean Dolphin allows on-demand matching and continuous optimisation of central system features such as energy budget, peripheral functionalities and wireless communication. The length of wireless telegrams, for example, is minimised dynamically to the data content for transmission, and in programming only those software function blocks actually needed by the user are saved to memory.

EnOcean technology is already being used to wirelessly link hundreds of thousands of energy-autonomous sensors in buildings worldwide. The Dolphin architecture was developed to enable non-proprietary systems to match the increasing demands of very different applications, and grow in their functionality together with the demands of such applications. The launch of the Dolphin platform marks an entry into new industrial control and automation systems, an expansion of existing applications to save energy, to enhance comfort, convenience and security, for access control and consumption data metering in building services. Dolphin system architecture, through its modularity, is ideally suited for future demands such as encryption or meshNet routing.

### **EnOcean Dolphin: electronic modules**

New EnOcean modules based on the Dolphin system architecture enable bidirectional communication of energy-autonomous sensors. The bidirectional plug&play TCM 300 transceiver module for EnOcean wireless systems has half the standby power requirement compared to its predecessor (2.5 to 3.3 V, receiving approximately 30 mA and transmitting approximately 15 mA) cutting the costs for the power supply and reducing power consumption by around 50%.

Compared to its forerunner STM 110, the 10-bit A/D converter produces greater measuring accuracy and four times the resolution for sensors. An optional repeater function, activated by a pin, reduces the number of system components needed and simplifies start-up. The mini operating system and new API enable straightforward programming of applications. Parameters can be changed using software updates during installation or in operation.

Complex software functions such as SMART ACK (bidirectional wireless transmission), encryption and routing can be integrated as ready macros, maintaining the interoperability of end-user equipment and shortening time to market. The module offers a number of ready programmed operating modes for switching and dimming. A bidirectional serial interface serves for integration in external logic or an automation system.

The STM 300 is the bidirectional EnOcean module for energy-autonomous device applications. The STM 300 differs from the TCM 300 through its extensive energy management of miniature converters which harvest energy from differences in temperature, rotation, light or vibration. Central parts of the integrated circuit are the ultra-low-power wake-up, threshold switch and voltage limiter. Like its predecessor, the STM 110, the STM 300 has a number of basic plug&play operating functions removing the need to program STM before start-up. These functions are three analog inputs, four digital inputs, configurable wake and presence cycles and wake-up pins.

EnOcean's Dolphin system architecture, together with the new TCM 300 and STM 300 modules, is a next generation EnOcean system architecture, and is fully backward compatible with earlier EnOcean products and installations. In addition to the introduction of new platform the company has also further developed its EnOcean wireless standard and has created new space for innovative non-proprietary solutions. Dolphin is the ideal technical system platform for worldwide standardisation because it ensures interoperability, backward compatibility and maximum flexibility well into the future.

## **New software and new development environment**

In conjunction with the new modules, EnOcean is launching an operating system with an application programming interface (API) that allows application-specific programs to be written in high-level C language. In addition to the protocol stack for EnOcean wireless, the API offers many powerful functions, for controlling energy management for example, use of digital or analog I/Os, access to flash memory and the continuously powered RAM0, and control of timer functions.

EnOcean has added the powerful Dolphin Studio development environment to the API. This supports configuration of the various API modules and ensures fast time to develop. The command line program integrated in Dolphin Studio controls the programming operation, and it is easily implemented in fabrication and T&M engineering.

## **Self-powered and wireless actuators**

In its Dolphin-based modules, EnOcean is now also implementing energy-autonomous actuators. Actuators of this kind can be used to control heating radiator valves for example. They draw their energy through the use of Peltier elements. This is where the bidirectional Smart Acknowledge function comes in. SMART ACK allows return messages from self-powered EnOcean wireless sensors so that the processor of an actuator can communicate bidirectionally with a central control point. The processor inquires of the central point through the wireless transmitter whether there is need for action and receives a response in a precisely defined time interval. In this way actuator components with a high power requirement only operate on demand.

## **About EnOcean**

EnOcean GmbH, established in 2001 and headquartered in Oberhaching near Munich, develops innovative, self-powered wireless sensor technology. The company manufactures and markets service-free and flexible wireless sensor solutions for use in buildings and industrial installations. The products are based on a combination of miniaturised power converters and reliable wireless transmission. More than 500,000 of the company's wireless components are already in use.

EnOcean GmbH employs more than 40 people in Germany and the USA, and cooperates with well-known manufacturers of system solutions for building and industrial installations engineering worldwide. EnOcean has won numerous awards, most recently the "Batimat Innovation Award in Bronze" at Batimat 2007, as well as the "Best innovation in green product and services" award of the Working Buildings Week Innovation Awards 2007, the "Building Product Innovation Award" at the 100% Design London Awards 2007, the "BuildingGreen's 2007 Top-10 Green Building Products" and the title "Technology Pioneer 2006" of the World Economic Forum.

EnOcean GmbH is a promoter of EnOcean Alliance Inc., established at the light+building show 2008 on April 7.

For more information, please visit [www.enocean.com](http://www.enocean.com).