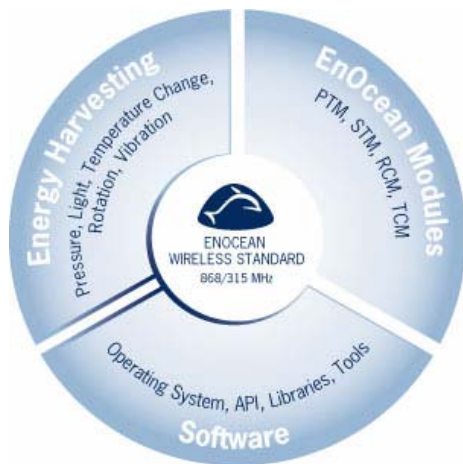


Dolphin system architecture

Dolphin system architecture joins the elements necessary for an energy-autonomous wireless sensor system through a wireless network in the process of standardisation. It consists of three groups.



Through consistent use of energy harvesting, EnOcean creates the world's sole wireless system architecture for sensor networks that manages entirely without batteries, making it completely service-free.

Devices that efficiently convert the smallest amounts of energy and make extremely economical use of energy drawn from the environment are the keys to what is called energy harvesting. For this purpose EnOcean has developed a number of new components and has further optimised existing ones. For example, the power consumption of the components has been reduced, their measuring accuracy has been increased and

there is now the possibility of bidirectional wireless data transmission between energy-autonomous devices.

The newly developed software components create a very high degree of flexibility in the modules. Since the new EnOcean modules have their own operating system, are user-programmable, and have high basic functionality this makes them very simple and fast to integrate. Complex software functions such as SMART ACK (bidirectional wireless transmission) are effortlessly integrated as ready macros using the Dolphin Studio development environment.

Dolphin sets course for new products and applications

The bidirectionality of Dolphin-based modules shows the way to a whole variety of new EnOcean-enabled products and applications. In future for example, energy-autonomous room sensors will indicate whether the heating or air-conditioning in a house are partially turned off because open windows have been identified. Also, when guests check out of a hotel, room controllers can be automatically reset because they are now able to receive the appropriate parameters. An especially spectacular product category addressed by EnOcean with new, bidirectional Dolphin-based modules is that of energy-autonomous actuators. Dolphin will allow the implementation of energy-autonomous heating radiator actuators that draw their energy from the difference in temperature between the heating and their surroundings, and fetch their settings in cycles from a central station.

Dolphin system architecture also creates greater user benefit through what is called SMART ROUTING, which put simply means increased wireless range. Plug & play installation and the choice of redundant wireless routes in realtime, and without bothersome switchover, are the declared strengths of Dolphin-based repeaters. Wireless modules can assume a repeater function in new Dolphin-based sensor networks – repeaters are no longer separate devices that have to be retrofitted.

Looking ahead to new products and applications, there is assurance that Dolphin system architecture is a follow-on from EnOcean system architecture and fully backward compatible with earlier EnOcean products and installations.