SIMPLE

ARTEMIS

COMPLETED

EXECUTIVE *summary*

The main goal of SIMPLE is to research and deliver an intelligent, self-organising embedded middleware platform, designed for the integration of manufacturing and logistics. SIMPLE will address the self-organisation and cooperation of wireless sensors and smart tags for federated, open and trusted use in the manufacturing, logistics applications and domestic use. SIMPLE will prototype, test and validate the technologies using three test-beds under normal operation; a complete manufacturing plant solution, a complete logistics supply chain and a domestic case.

MARKET *innovation & impact*

The deployment of Wireless Sensor Networks (WSN) in "smart factories", logistics and domestic applications is already a fact and has attracted the interest of the research community and the electronics development giants worldwide. Before their wide exploitation however, WSNs have to solve some significant problems, including simple installation, simple adaptation, simple integration, simple maintenance and simple utilization.

The primary idea is to enable the dynamic inter-working of ultra heterogeneous sensors and tags, which should autonomously be organised in hierarchies, thus leveraging the development of a new class of secure, scalable, cost-effective, and easy-to-deploy "smart factory" logistics and domestic applications. The SIMPLE outcomes aim at compensating the current lack of solutions capable of monitoring the state of shipments at different grouping levels and, more generally, of tracing goods along the whole supply chain (manufacturing, logistics, consumption).

Wireless Sensor Networks (WSNs) have been identified as one of the most important technologies for the 21st century and, according to current market projections, more than half a billion nodes will have been shipped for wireless sensor applications by 2010. On the other hand, the evolving "Internet of Things", considered as the global network infrastructure, linking physical and virtual objects through the exploitation of data capture and communication capabilities, raises the already high hopes of WSN even more.

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