ARTEMIS Call 2008 Project

EMMON

EMbedded MONitoring

EXECUTIVE *summary*

EMMON's objective is to research and deploy a Wireless Sensor Network of 10,000 to 100,000 nodes for the continuous environmental monitoring and situation analysis of specific scenarios (e.g. urban environments, water pipelines, civil protection, etc.).

RELEVANCE CALL *2008 objectives*

EMMON is relevant to ARTEMIS Industrial priorities 3.1.2 Seamless connectivity and middleware (researching WSN cross domain connectivity, middleware services and communication capabilities) and 3.1.1 Reference designs and architectures (architectural scalability and dependability, ensuring secure, reliable and timely system services in large-scale WSN deployments).

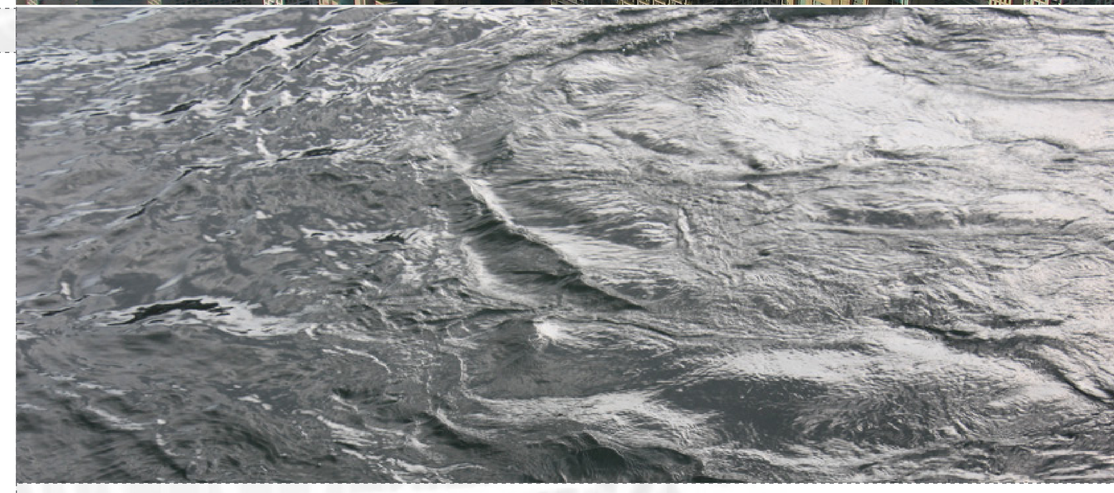
MARKET *innovation*

EMMON will tackle the scalability challenge in large-scale WSNs, which means using thousands of embedded networking devices in large-scale distributed application scenarios, covering the technology chain from OS to middleware and from protocols to system integration in large geographical areas. The potential impact on the market lies in enabling the deployment of large-scale, near real-time robust and reliable environmental monitoring applications. These will provide unprecedented situation analysis and awareness (data and information), thereby facilitating decision makers, organisations and authorities to reduce and optimise costs as well as provide better services to citizens.

TECHNICAL *innovation*

The project goal's is to deploy a functional Large Scale Wireless Sensor Networks (LSWSN) composed of 10,000 nodes (10 times more sensors than today's existing deployments), which is reliable and robust, allowing for the real-time monitoring of large geographical areas (up to 50 km^2). To achieve this goal, EMMON research will surpass the existing state of the art by developing an innovative and scalable WSN network architecture, composed of new energy-efficient and reliable communication protocols and stacks, middleware layers, and a geographical visualisation platform specifically designed for LSWSN.

The network design derived from EMMON will be as generic and horizontal as possible, emanating from gathering and combining multiple project end-user needs and requirements, and from diverse domains such as water, ocean, urban environments or forest / civil protection.



PROJECT COORDINATOR	START
Mr. Délio Almeida	March 2009
INSTITUTION	DURATION
Critical Software, SA	36 months
EMAIL	TOTAL INVESTMENT
dalmeida@criticalsoftware.com	2,57 M€
WEBSITE	PARTICIPATING ORGANISATIONS
www.artemis-emmon.eu	9
	NUMBER OF COUNTRIES
	6

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project partners

IRELAND

DSG Distributed Systems Group
Trinity College Dublin

UNITED KINGDOM

Critical software

InteSys Ltd

PORTUGAL

Critical

isep

SPAIN

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CEIT

ITALY

SESM
A Finmeccanica Company

GREECE

Advanced Research & Technology for EMbedded Intelligence and Systems