EXECUTIVE summary

The goal of DEMANES (Design, Monitoring and Operation of Adaptive Networked Embedded Systems) is to provide a framework and component-based methods and tools for the development of run-time networked embedded systems.

RELEVANCE CALL objectives

DEMANES will deliver results related to the following ARTEMIS targets:
> Reduce the cost of system design
> Achieve reduction in development cycles
> Achieve cross-sectoral re-usability of embedded systems
> Reduce effort and time for re-validation and re-certification
> Manage an increase in complexity with less effort

MARKET innovation

Application Contexts where DEMANES will provide market innovation and will generate an impact are:
> Industrial Systems (Industry for airports, urban transport, city logistics, urban safety and security)
> Nomadic Environments (PDAs, smart phones, body sensors, public transportation)
> Private Spaces (home, smart TVs and sensors)
> Public Infrastructure (public urban spaces, transport stations and vehicles, airports)

Therefore DEMANES will help to boost European industry’s potential to create major market opportunities and establish leadership. The networked embedded project aims to develop technologies that increase capabilities in strategic fields such as aerospace, automotive and emergency systems.

TECHNICAL innovation

DEMANES aims to develop a smart integrated tool chain, reusable components and a framework for the design, implementation, testing, validation and operation of adaptive networked embedded systems. The tool chain will:
> model the architecture and the operation of networked embedded systems to guide the design process and to enable the use of design patterns and reuse of software components
> support the design process of such systems by providing simulation and evaluation environments and test-beds along the different stages of the development process
> support the implementation of such systems by providing services for self-organisation, reconfiguration and self-optimisation as aspects of the execution environment
> monitor the internal and external operational conditions and manage adaptation at run time.