



# eDIANA

*Embedded Systems for Energy Efficient Buildings*

## EXECUTIVE summary

eDIANA, Embedded Systems for Energy Efficient Buildings, addresses the need to achieve energy efficiency in buildings through innovative solutions based on embedded systems.

## RELEVANCE CALL 2008 objectives

The main goal of eDIANA, in line with ARTEMIS Sub Programme 7, is to enable sustainable urban life through rationalisation in the use of resources while increasing comfort in urban environments by means of embedded intelligence and integration technologies. The eDIANA approach is to achieve greater efficiency in use of resources, prioritising energy as a scarce resource, more flexibility in the provision of resources and better situation awareness for the citizen and for service and infrastructure owners.

## MARKET innovation

The technology to be developed in eDIANA will improve energy efficiency and optimise the energy consumption of buildings by 25%, providing real-time measurement, integration and control. Moreover, comfort will be improved, making the user aware and enabling user-controlled policies for household devices (lighting, domestic electronics, etc.). Such progress beyond the state of the art will enable the building to become an 'active macroCell' in the energy network, connected to similar macroCells in a district or urban area.

## TECHNICAL innovation

The eDIANA Platform is a reference model-based architecture, implemented through an open middleware including specifications, design methods, tools, standards, and procedures for platform validation and verification. The eDIANA Platform will enable the interoperability of heterogeneous devices at the Cell and MacroCell levels, and it will provide the hook to connect the building as a node in the producer/consumer electrical grid.

Thus, eDIANA will provide a reference architecture for a network of composable, interoperable and layered embedded systems that will be instantiated to several physical architectures. The eDIANA Platform realisations will then cope with a variable set of location and building specific constraints, related to parameters such as climate, Cell/MacroCell configuration (one to many, one to one, energy regulations etc.).



<b>PROJECT COORDINATOR</b> Rafael Socorro	<b>START</b> February 2009
<b>INSTITUTION</b> Acciona Infraestructuras S.A.	<b>DURATION</b> 36 months
<b>EMAIL</b> rsocorro1@acciona.es	<b>TOTAL INVESTMENT</b> 17,5 M€
<b>WEBSITE</b> www.artemis-ediana.eu	<b>PARTICIPATING ORGANISATIONS</b> 21
	<b>NUMBER OF COUNTRIES</b> 5



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