

PROMETEO

Plataforma Tecnológica Española de
Sistemas con Inteligencia Integrada



Asamblea PROMETEO - Valencia 3/12/08

Call2 ARTEMIS JTI 2009.

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www.prometeo-office.org



- **Evolución hasta la J.U. ARTEMISIA**
- **Datos de la Convocatoria-1**
- **Datos de la Convocatoria-2**
- **Detalles sobre Objetivos y retos de los ASPs**

PLATAFORMA TECNOLÓGICA ARTEMIS: evolución

- **Enero 2004: Primera reunión del “High-Level Group”.**
 - Primeros Grupos de Trabajo
 - Documento de Visión Estratégica y 1ª Conferencia Anual en Roma.
- **2005: Primera versión de la SRA y Conferencia Anual en Paris.**
- **2006: Segunda versión de la SRA y Conferencia Anual en Graz (Austria).**
- **2007: Se forma la JTI Artemisia el 17 de enero en Eindhoven.**
- **2008: Se lanza la primera “Call” tras acordar la forma de financiación de los proyectos.**

Datos de la “CALL 1” DE ARTEMIS

- ARTEMIS recibió **27 propuestas** en la primera convocatoria de proyectos que cerró el 3 de septiembre 2008. El presupuesto total de las propuestas ascendió a **323M€**, con una solicitud de financiación de 170M€. Las **27** propuestas agrupan a **397 participantes de 22 países**, (**un 28%** de los participantes **son PYMEs**).
- Se han **seleccionado 12 proyectos**. Estos proyectos están ahora en la fase de negociación, esperando arrancar a principios de 2009.
- **España ha sido el tercer país** en número de participantes en propuestas por detrás solo de Alemania e Italia, y que de las 12 propuestas aprobadas, **hay participación en 9 de ellas**.
- Destaca la variedad de tamaño de proyectos (entre 2 y 60 millones de euros de costes elegibles) y la distribución en los subprogramas (SP1, SP3, SP5, SP7 y SP8).
- Dos de las propuestas tienen **liderazgo español**: iLAND (3,9M€) e DIANA (17,3M€).

PLATAFORMA TECNOLÓGICA ARTEMIS: Call 2

- Basado en “The ARTEMIS JU Annual Work Programme 2009”
(elaborado por el IRC)



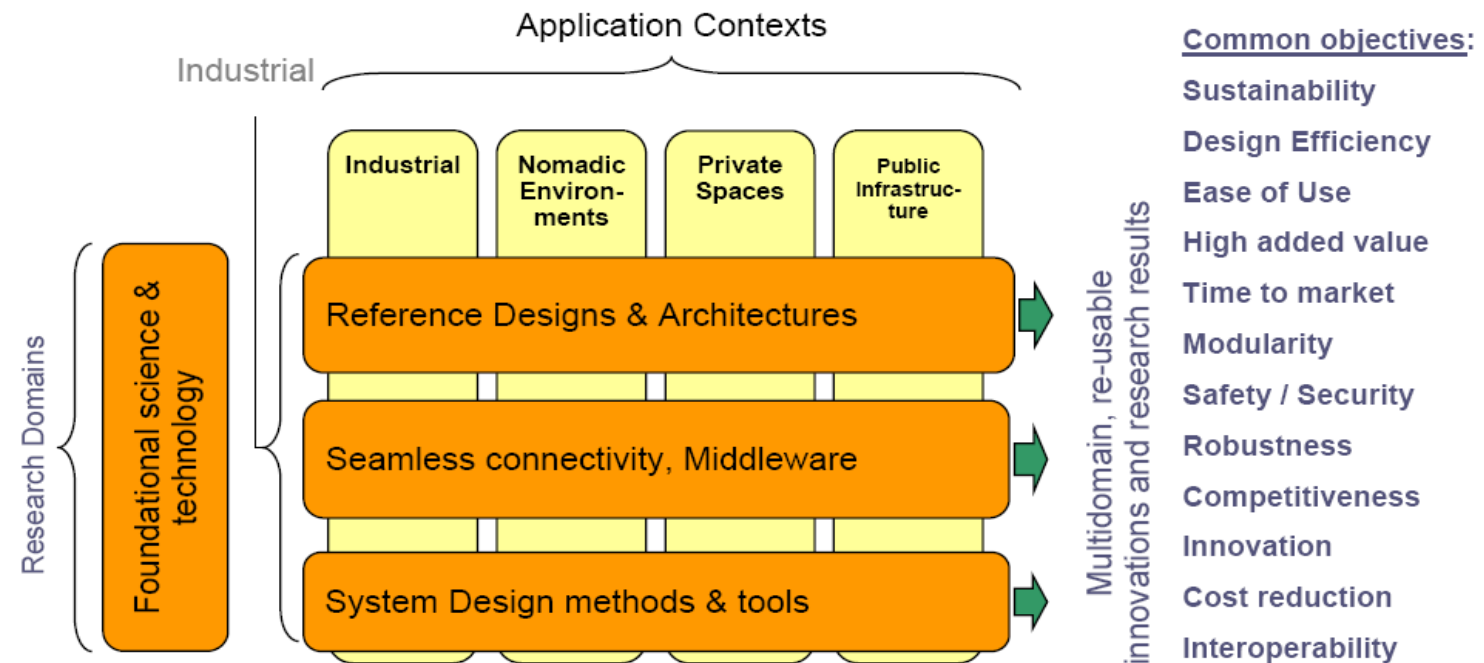
ARTEMISIA Working Group SRA

ARTEMISIA ASSOCIATION - 11

■ Industrial Priorities

- Reference designs and architectures
- Seamless connectivity and middleware
- Design methods and tools

■ ARTEMIS envisages cross-application solutions



ARTEMISIA Working Group SRA

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ARTEMIS - Call 2

ARTEMIS Sub-programmes: Investigación “orientada a la aplicación”.

Desarrollo de prototipos de sistemas embebidos para **validar nuevas aplicaciones de nuevos SEs en dominios específicos.**

ASP1. Methods and processes for safety-relevant embedded systems

ASP2. Person-centric health management

ASP3. Smart environments and scalable digital services

ASP4. Efficient manufacturing and logistics

ASP5. Computing environments for embedded systems

ASP6. Security, privacy and dependability in ESs for applications, networks and services

ASP7. Embedded technology for sustainable urban life

ASP8. Human-centric design of embedded systems

■ Requisitos

Each proposal should address at least one ARTEMIS Sub-Programme and address within that at least one of the Industrial Priorities

Each proposal should include demonstration of core technological developments in order to achieve the empirical validation expected.

Proposals addressing any of the 8 ASPs are invited. However, based on the results of Call 2008, projects addressing ASPs 2, 4 and 6 are especially welcome.

- **La Call 2** de ARTEMIS va a diferenciarse de la Call 1 en que habrá dos fases: La primera para elaborar los PO (Febrero-Abril 2009) y la segunda para elaborar los FPP (hasta Julio o Septiembre 2009).
- **"Brokerage Event"** a mediados de enero (13-14 Bruselas)
- Desde **PROMETEO** se informará de las fechas precisas de estos eventos una vez confirmadas (fechas provisionales en sección noticias – octubre)

Elegibilidad y Evaluación de Propuestas

Project Outline (PO)

- (Elegibilidad) It involves at least 3 non-affiliated legal entities established in at least 3 ARTEMIS Member States

The Project Outline will be assessed by the ARTEMIS JU, on the basis of the following criteria:

- Relevance and contribution to the overall ARTEMIS targets
- Soundness of the concept
- Clarity and quality of the objectives and expected results
- Contribution, at the European and/or international level, to the expected impacts listed in the work programme under the relevant sub-programme
- Degree of application innovation in the context of the sub-programmes addressed
- Expected market impact of the results for the industrial partners
- Quality of the consortium as a whole including complementarities, balance and involvement of SMEs

Full Project Proposals (FPP)

When The corresponding PO has been considered eligible by the ARTEMIS JU

Complete set of documents of the proposal (changes between the PO and the FPP should not significantly alter the nature of the original work proposed or expected results)

Preparación de Propuestas

To submit a proposal, applicants should consult the following documents:

- The text of the call for proposals, as announced in the Official Journal of the European Union and published on the webpage of the ARTEMIS Joint Undertaking
- The AWP
- The guide for Applicants

There are also a number of other useful texts which applicants could refer to:

Document	Document / Web site
ARTEMIS SRA Introduction	http://www.artemis-sra.eu/downloads/SRA_MARS_2006.pdf
Reference Design & Architecture SRA	http://www.artemis-sra.eu/downloads/RAPPORT_RDA.pdf
Seamless Connectivity and Middleware SRA	http://www.artemis-sra.eu/downloads/RAPPORT_SCM.pdf
System Design Methods and Tools SRA	http://www.artemis-sra.eu/downloads/RAPPORT_DMT.pdf
ARTEMIS-JU MASP (including the ARTEMIS-JU Research Agenda)	https://www.artemis-association.org/publications/MASP.pdf
STANDARDISATION SA	https://www.artemis-association.org/publications/STANDARDS-SRA.pdf



Financiación de Proyectos ARTEMIS Call 2009

Origen	Budget of Call 2009 (M€)
Total EC Contribution	53.5
Total contributions from ARTEMIS Member States	97.2
Total budget of Call	150,7

(datos no definitivos)

ARTEMIS - MASP: Estrategia de ‘Entornos de Innovación’

El Plan Multianual de ARTEMIS (MASP) identifica varias areas clave para estimular la emergencia de los llamados “pan-European Innovation Eco-systems”:

- **SME involvement** : Supporting the integration of the SME environment into ecosystems and facilitating the participation of SMEs in collaborative R&D projects
- **Business models**: exploring new business models for trading in the envisaged dynamic innovation environment, including incorporation of open source concepts
- **Tool platforms**: establishing a framework that will support and drive a common approach to address the need for adequate and competitive design tools
- **Education and Training**: closing the gap between theory and practise and optimisation of the relations between the academic and the industrial worlds,
- **Standards**: assuring the application of ARTEMIS policies and actions towards standardisation,
- **Collaborative Innovation**: Stimulating the creation and extension of Centres of Innovation Excellence, including the reinforcement of SMEs activities in these centres,
- **External relations**: Manage to best advantage the relationships between ARTEMIS and the other R&D initiatives, in Europe and with other global partners.

Referencias de interés

- <http://www.artemis-office.org/>
- <https://www.artemis-ju.eu/>
- <http://www.prometeo-office.org>
- <http://www.prometeo-office.org/noticias.php>
- http://cordis.europa.eu/technology-platforms/individual_en.html

Muchas gracias

ASP1. Methods and processes for safety-relevant embedded systems

Main Goals and Approach

The overall aim of this sub-programme is to enhance the quality of services and products in strategic European industrial sectors and to decrease fatalities and injuries by building cost-efficient **processes and methods supporting the development and operation of safety enabling embedded systems.**

The aim is to achieve technological breakthroughs in four research areas:

- Requirement Management
- Architecture Modelling and Exploration
- Analysis Methods
- Component Based Design

These breakthroughs will contribute to progress in several transverse processes, e.g. Design for Safety, Design for Maintainability, Design for Reuse, Considerations for Certification aspects...

ASP2. Person-centric health management

Main Goals and Approach

This sub-programme will establish an overall system approach for person centric health management based on an **integrated system concept of seamless integration of interoperable components (devices as well as services)**. This will offer personalized prevention and treatment strategies by taking advantage of the opportunities offered by new technology, such as: gathering data by a large variety of sensors and controlling treatment by various actuators in relevant situations: at home, on the move, at work, in health centres, clinics and hospitals; analysis of the gathered data, from historical as well as parallel care cycles, and present the relevant information in adequate way to persons related to their task and situation; ubiquitous access to a citizens health data, by all partners in an inter-disciplinary care team under the conditions of proper privacy enforcements; adequate communication between partners in inter-disciplinary care teams using collaboration technology, including secure messaging, instant messaging, audio and video communication and even remote sharing of applications at any place and time on the device of choice.

An essential part in this eHealth approach relates to embedded systems technology: communicating sensors and actuators, improvements in genetic, molecular and imaging equipment for diagnostics, advanced treatment technology in surgery, chemical and radiation therapy and guidance based on tele-monitoring in post event care; facilities for diagnostic and epidemiological analysis, remote management of implanted drug delivery, tele-surgery.

ASP3. Smart environments and scalable digital services

Main Goals and Approach

The overall goal of SP3 is to provide methods, tools, technology and models with which developers will be able to build “smart environments”, i.e. **ecosystems of smart and heterogeneous devices interacting with each other and with the environment, and cooperating together to provide a foundation for rapid local applications and service innovations.**

This will be achieved by building an interoperable infrastructure for service innovation and identifying vertical service cases with relevant business models. The requirements of all stakeholders must be accommodated - SMEs, corporations, research institutes and public authorities willing to enter the innovative market of smart environment applications.

Application scenarios for smart environments that have been identified already include:

Smart locations (smart city, smart home, smart public space, ...)

Smart physical objects (objects equipped with identification mechanisms such as RFID tags, smart multi-media content storage, smart communications objects such as wireless grids and co-operative networks)

Smart virtual spaces (Mixed mode Physical and 3D-Virtual spaces, community spaces)

Private mobile social networks ('PMSNs')

ASP4. Efficient manufacturing and logistics

Main Goals and Approach

The main ambitions of this sub-programme are to improve time-to-market, productivity, and efficiency in manufacturing and logistics, recognising that the boundaries between manufacturing and logistics will become blurred as manufacturing operations are carried out closer to the customer and in-transit manufacture blurs the boundaries between production and distribution.

The approach is therefore the **establishment of an embedded systems' architecture, together with supporting methodologies and tools that enables holistic lifecycle management for manufacturing, distribution, recycling and disposal of goods.**

The architecture should enable the interoperation and reconfiguration of embedded devices and systems in both products and processing equipment so as to build complete plant solutions that enable owners and operators to save energy and achieve greater transparency of operation, greater predictability, reduced safety risks, enhanced security, and cost efficiency.

The architecture should be supported by all the necessary systems and tools to support development and implementation of systems conforming with the architecture.

ASP5. Computing environments for embedded systems

Main Goals and Approach

A main goal of this sub-programme is to enable transition from separate sectorial, vertically structured markets to a horizontally structured market.

A second goal is to **enable massive real-time data-processing in multiple domains** (image processing, signal processing, computational fluid flow, ...).

A third goal is to enable composition of platform independent software over highly concurrent, fault-tolerant systems with a variety of communication schemes, types of core, etc. Run-time adaptability is required so as to optimise performance and resource usage - particularly extremely low power consumption.



ASP6. Security, privacy and dependability in Embedded Systems for applications, networks and services

Main Goals and Approach

The main goal of this sub-programme is **to ensure that security, privacy and dependability (SPD) can be ensured in the context of integrated and interoperating heterogeneous services, applications, systems and devices**. Systems and services must be robust in the sense that an acceptable level of service is available despite the occurrence of transient and permanent perturbations such as hardware faults, design faults, imprecise specifications, and accidental operational faults.

The approach is to establish a common conceptual framework - and thereafter conformant methods and tools for design and implementation - to assure security, privacy and dependability in three classes of systems. These three classes are differentiated on the basis of the difference between 'managed systems' where the security attributes are centrally defined by the provider managing the system and 'unmanaged systems' built on the top of a set of independent and dynamic managed systems, where the security attributes cannot be defined by a single provider.

ASP7. Embedded technology for sustainable urban life

Main Goals and Approach

The main goal of this sub-programme is to enable sustainable urban life through rationalisation in the use of resources while increasing comfort and security in urban environments by means of embedded intelligence and integration technology. It is expected that the results will also bring urban benefits to non-urban areas, thereby countering the tendency towards over-urbanisation.

The approach is to achieve greater efficiency in use of resources, more flexibility in the provision of resources and better situation awareness for the citizen and for service and infrastructure owners. This should be achieved through the deployment and inter-operation of embedded systems throughout the environment.

Therefore, the main outcome of application should be improved energy efficiency in residential and non-residential buildings as a first priority, while efficiency in the management of other resources in more extensive urban and sub-urban areas are to be addressed in subsequent years.

ASP8. Human-centric design of embedded systems

Main Goals and Approach

This sub-programme aims to automate tasks which are today fully under human control (e.g., driver assistance in the automotive domain) and to extend automation in tasks which are today highly assisted (e.g., pilot assistance systems in the avionics domain). The HMI determines how these systems are perceived by the users. It is the mediator between new functionalities or services and the user, mediating human intervention (like configuration, adjusting or overriding) and machine intervention (like preventing hazardous manoeuvres).

The approach is to establish a **methodology for design and development of human-in-the-loop adaptive control systems suitable for application in multiple safety critical domains** and sectors, taking into account not just explicit interactions between human and machine, but also the cognitive state of the human.

Sub-Programas de I+D. ARTEMISIA



Sub-Programme	DM&T	SC&M	RD&A
Methods and Processes for Safety-relevant Embedded Systems	X	X	X
Person-centric Health Management		X	X
Smart Environments and Scalable Digital Services	X	X	X
Efficient Manufacturing and Logistics	X	X	X
Computing Environments for Embedded Systems	X	X	X
Security, Privacy and Dependability		X	X
Embedded Technology for Sustainable Urban Life	X	X	X
Human-centric Design of Embedded Systems	X		X

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PROMETEO: CONTEXTOS DE APLICACIONES

Sistemas Industriales

Automoción

Aeroespacial

Manufacturing

Entornos Móviles

Medios de Pago

Espacios Privados

Hogar

Sistemas de Consumo

Infraestructura pública

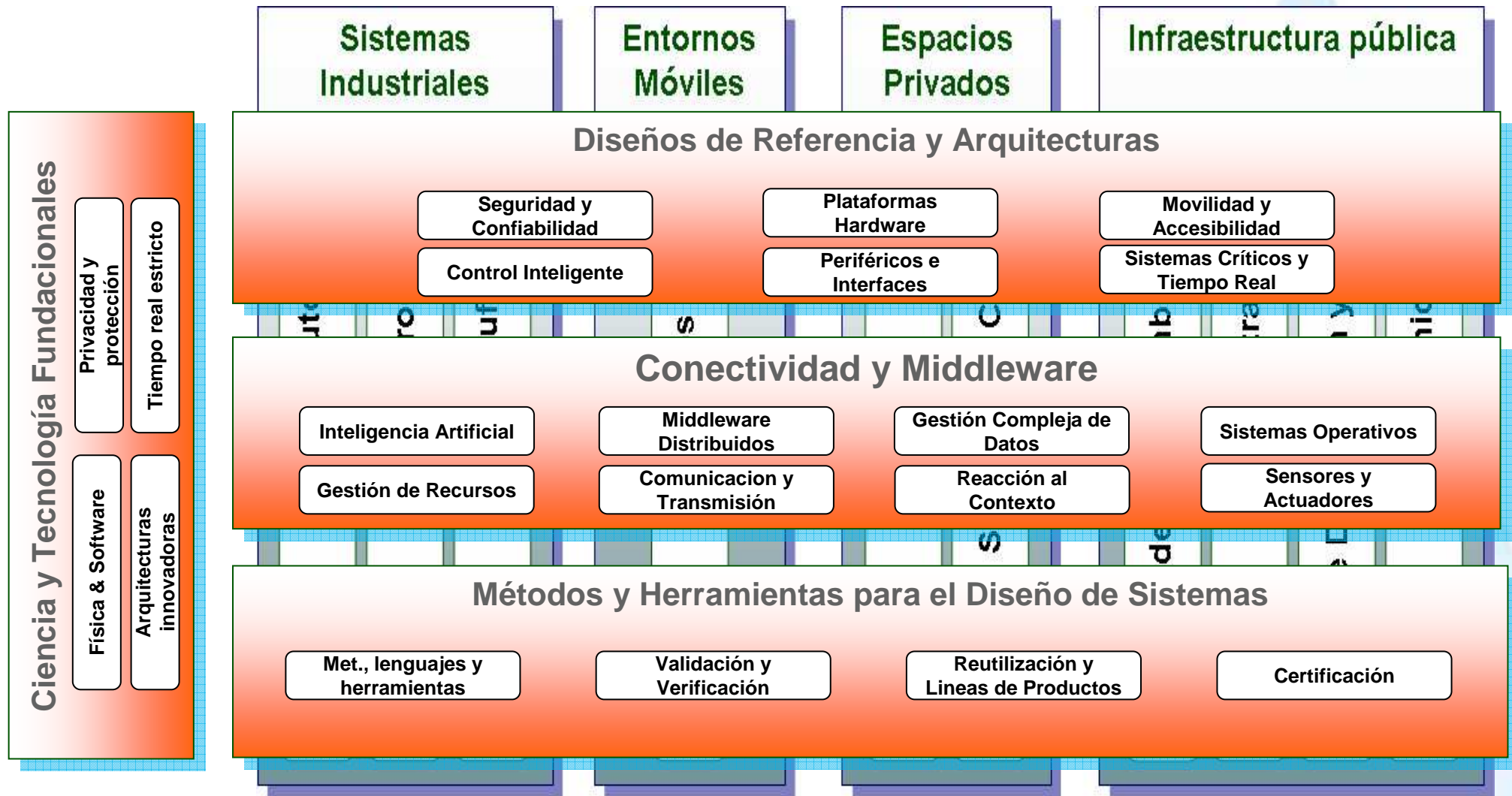
Redes medioambientales

Redes de transporte

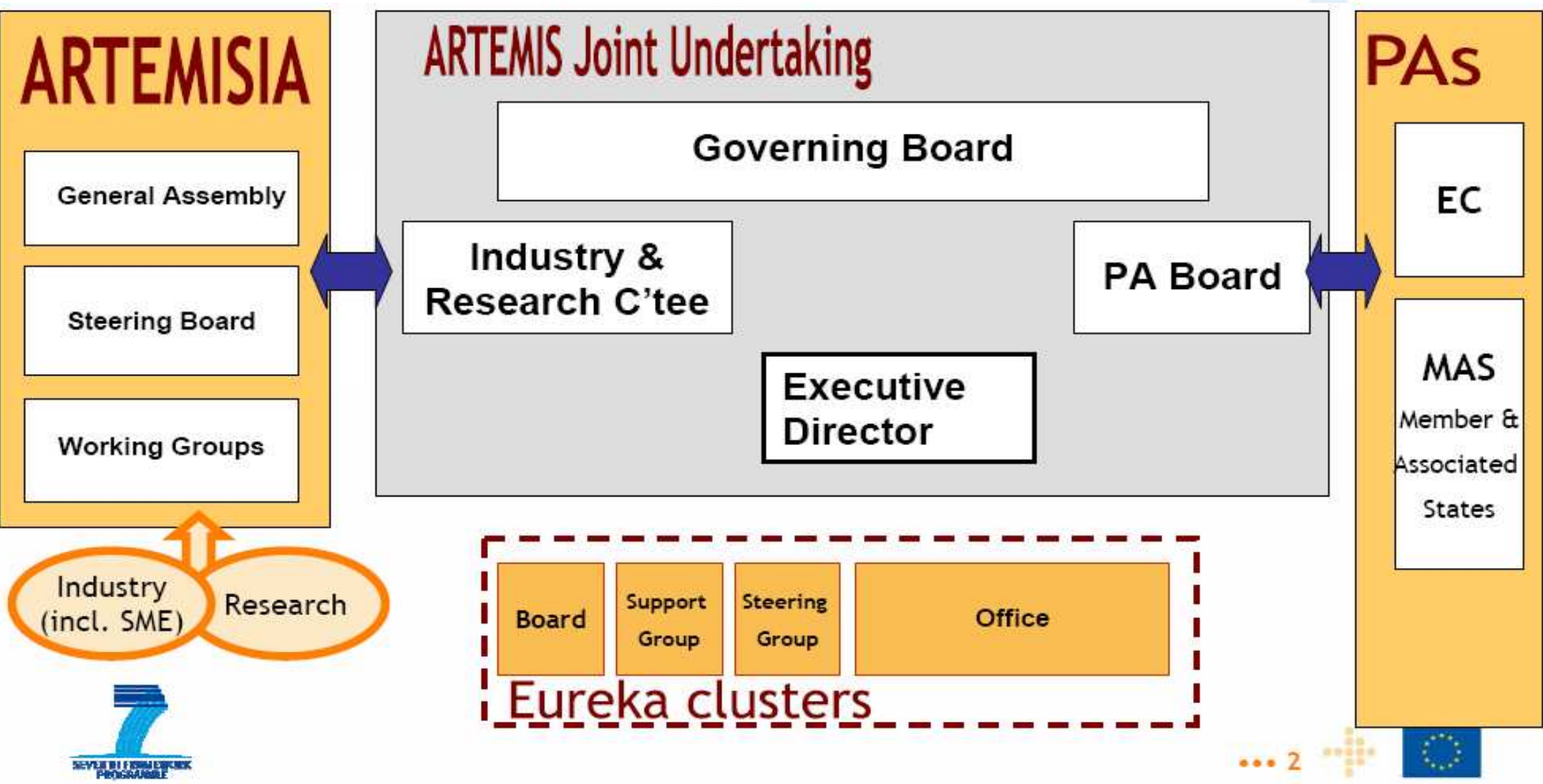
Redes de Distribución y Medida

Telecomunicaciones

PROMETEO: AGENDA ESTRATÉGICA DE INVESTIGACIÓN



LA “JOINT-UNDERTAKING”



JOINT UNDERTAKING FLOW

