Towards Open Embedded Systems, Architectures, Standards & Open Source

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ARTEMIS SCOPE – PLATFORMS & UBIQUITY
Advanced Research and Technology in EMbedded Intelligence and Systems

- Develop and drive joint European vision and strategy on Embedded Systems
  - R&D and educational challenges
  - structural challenges: IPR, open source software, standards, research infrastructure,…
- Align fragmented R&D efforts in ERA along common strategic agenda at Community, intergovernmental and national levels

ARTEMIS Steering Board includes 10 of the top-25 EU companies in terms of global R&D
ARTEMIS STRATEGIC RESEARCH AGENDA (SRA)

Industrial

Application Contexts

- Industry
- Nomadic Env.
- Private Spaces
- Public Infrastructure

Reference Designs & Architectures
Seamless connectivity, Middleware
System Design methods & tools

Common objectives:
- Sustainability
- Design Efficiency
- Ease of Use
- High added value
- Time to market
- Modularity
- Safety / Security
- Robustness
- Competitiveness
- Innovation
- Cost reduction
- Interoperability

Dominique Potier, ETSI Workshop, Oct. 24th 2006
ISSUE I: OPEN EMBEDDED SYSTEMS

THREE ENABLING FACTORS

- OPEN ARCHITECTURES
  - Available information
  - Architectural qualities of the design, open to integration, evolution.. (Possibly by 3rd parties)

- OPEN STANDARDS
  - Understandable, shared definition
  - Accepted by the various actors in the field
  - Public and open definition process for the evolution of the standard

- OPEN MARKET
  - Open to several possible implementations, some of them … Open Source Software
  - Open market for products and support

Dominique Potier, ETSI Workshop, Oct. 24th 2006
EMBEDDED SYSTEMS HAS A TECHNOLOGY & A BUSINESS DIMENSION

IMPACT OF APPLICATION SPECIFIC REGULATIONS ON TECHNOLOGY DIMENSION

EVOLUTION OF COMMERCIAL IT STANDARDS TO MEET SPECIFIC EMBEDDED SYSTEMS REQUIREMENTS
ISSUE 3: END-TO-END CONNECTIVITY

REAL-TIME & EMBEDDED SYSTEMS

WEB CENTRIC SYSTEMS

Challenge ➔ Seamless, dynamic integration of *Embedded Systems* in *Web Centric Environments*

- End-to-end QoS (latency, reliability,
- Global resource management
- Security

Dominique Potier, ETSI Workshop, Oct. 24th 2006