



INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

News from the field

Technical State-of-the-Union address
ITEA 2 Symposium 2009, Philippe Letellier - Vice-Chairman ITEA 2



Contents

- ITEA projects: some success patterns
- Results since the last symposium:
 - Projects which were completed
 - ITEA Achievement Awards
 - The 3 project candidates for the 2009 ITEA Achievement Award
 - Evaluation method
- Quality of our ITEA process



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Technical State-of-the-Union

ITEA success pattern Innovation



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- **ESNA** – Sensors network
- **PARMA** – High Performance Computing
- **SIRENA** – Applying SOA to embedded environments at device level
- **HIPIP** – New fast image processing algorithms running on multi-core hardware architectures
- **GEODES** – Power issues for distributed embedded software systems

And many others...



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ITEA success pattern Innovation



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- **GEODES: Wireless Sensor Network power consumption optimisation**
- Transmit power control
- Routing mechanisms take into account the remaining battery capacity of intermediate nodes for multi-hop mesh networking
- Power aware MAC layer
- MW which ensures power optimisation at the node level but also at the network level for the sensor networks
- Energy consumption is one blocking point for WSN deployment,
 - let expect a factor 5 in power consumption with the Geodes project
 - Great standardisation potential on a key worldwide topic
- Firemen use case



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ITEA success pattern

Business impact



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- Crossing industry sectors
- Creating Ecosystems
- Gathering all partners along a value chain
- Standardisation
- Fast exploitation
- Development team evolution



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ITEA success pattern

Business impact



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- **Crossing industry sectors**
 - Gene-Auto
 - MODELISAR
 - EUROSYSLIB



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Crossing industry sectors ITEA example – Gene-Auto



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- Strong Innovation
 - Open source certified software code generator:
 - Formal verification to check the integrity and correctness of the generated software code
 - A reduced need for low-level validation
 - Development cost divided by 3 and coding time reduced by 4
- Crossing industries
 - The Aeronautics industry (quality/security oriented) and the automotive industry (cost oriented) decided to share experiences
 - Niche market under the lead of two American companies but critical for very large other industries
 - → common investment by multi industries players through an ITEA project, and open source strategy



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ITEA success pattern Business impact



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- **Creating an Ecosystem**
 - Projects with large company/companies gathering SMEs
 - VERDE (8 SMEs around 7 large industrial companies)
 - Projects with strong connection between SMEs
 - UsiXML (12 SMEs/28 partners)
 - ITEI (19 SMEs/28 partners)
- **Gathering all the players of a value chain**
 - HD4U: Participation of the whole HDTV chain
 - SODA: Support the full value chain to implement SIRENA innovation
 - SmartTouch: Participation of City of Oulu (concept elaborated in SUS)
 - EPAS: Including banks
 - NUADU, CARE4ME: Including hospitals
 - WellCom: Broadcasters, Telecom operators, consumer electronics, Telecom manufacturer, content providers, SW provider



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Creating Ecosystems ITEA 2 example – ITEI



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- ITEI : Cyber Space for Product Innovation and Innovative Software Development
- A set of innovative SMEs: 19/28 partners (Spain, Belgian, Finnish)
- Supported by some top level academics
- With few large companies: NSN, Metso (paper industry), Steria, Keraben, Psi control
- The project objectives are:
 - Methodology for innovation strategy
 - Management of the execution of innovation
 - Support for new business opportunities offered by open innovation and Web 2.0 technologies.
- The innovative approach of the ITEI project :
 - Focus on solutions for decision making (e.g. what to select from the state of the art; how to combine and integrate methods, tools and techniques; ...) and tailoring towards enterprise specific context.
- Great potential to define a WW recognised maturity level model for innovation
- Huge potential for this innovative SMEs ecosystem to get a recognition on the market



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Gathering all the players of a value chain ITEA 2 example – HD4U



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- HD4U : focus on HD chain
- Demonstration of a complete HD4U chain on three different carriers (satellite, terrestrial and IP)
- The HD4U project has been a great support for the partners' involvement in the European HDTV pre-standardisation and deployment bodies (HD Forum, DVB TM-AVC, etc)
- Gather all the players of a value chain:
 - Audio video encoder manufacturer
 - Set top box manufacturer
 - Coding and modulation manufacturer
 - Display manufacturer
 - Broadcaster
 - IP TV player
 - Satellite broadcaster
 - TV Channel



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Standardisation

- **Contribution to Standardisation:**

- EPAS → endorsement of the EPAS Business Justification by ISO 20022 Cards SEG (CAPE).
- EAST-EEA → AUTOSAR
- COPS → Copy-protection system specification promoted and partly adopted by DVB-CPT
- OSMOSE → JCP, CORBA (CCM, lightCCM, UML component profiles), OSGi;
- OSIRIS → OSGi
- SIRENA → DPWS
- Magellan →
 - JVT/VCEG, DVB TM-AVC & DVB-IPI (MPEG4-AVC compression & transport),
 - DVB-IPTV (distribution), Pro-MPEG Forum & SMPTE (FEC for TVoIP)
- ESNA → 1st fully compliant IPv6 stack + a 6lowpan adaptation layer (RFC4944) implementation for the open source Contiki OS

- **Implementation of Standardisation:**

- SODA ← DPWS
- HDTVNext ← HDTV given profiles
- SEMbySEM ← use of different standards and extension definition to cope with critical systems



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Standardisation

ITEA example – EAST-EEA

- **EAST-EEA: a middleware based software architecture for networked electronic control units in vehicles**
- All the main European players of the automotive value chain were present
- The main results of the EAST-EEA project have been integrated in the new AUTOSAR standardisation initiative
- AUTOSAR is now shared by the main European automotive brands
- ITEA has strategically supported many projects around this standard to ensure the European leadership in this domain



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ITEA success pattern

Business impact

- **Fast exploitation**
 - Gemalto in Taiwan – SmartTouch
- **Development team evolution**
 - Agile/Flexi
- **Open source (OW2)**

Pushing international business

ITEA example – SmartTouch

- **SmartTouch : NFC technology**
- **A lot of innovation**
 - Batteryless NFC sensor
 - NFC Bluetooth Gateway
- **Some standardisation concern**
 - SWP in ETSI
 - Contribution to JSR257 API
- **Fast exploitation on an International business**
 - Gemalto wins a Taiwan call for tenders for a nationwide NFC payment deployment
 - Gemalto's response based on some SmartTouch research results



One year of project results A good coverage



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Societal challenges

SmartTouch
NFC

EPAS
E-payment

SODA
Web of Objects

NUADU
Networked healthcare & wellbeing services

Framework

E-Confidential
Security of end-user devices based on components off the shelf

SEMEASY
Semantic framework to enhance interoperability

Software engineering

GENE-AUTO
automatic code generation

SERIOUS
Evolutionary software development

COSI
Complex heterogeneous distributed software engineering

GGCC
Quality-oriented compiler enhancement



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Finished projects October 2008 – October 2009

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The 2009 Award nominees Selected by STG and BSG



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EPAS
E-payment



SmartTouch
NFC



SODA
Web of Objects



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The selection process: a quality process

- 2 reviewers, 1 project coordinator, 1 chairman, 1 mentor per project
- 10 eligible projects evaluated based on the final report
- Criteria (& weight) used:
 - Innovation (5)
 - Project Performance (Results, Management) (5)
 - Exploitation/Standardisation (4)
 - Dissemination (Publications, Presentations, Events, ..) (3)
 - European cooperation (Consortium, Internal & External Cooperation) (3)
- Individual evaluation by each reviewers
- Physical meeting and professional dispute
- Build a consensus
- Check the stability of the evaluation

Quality of the ITEA process

- Our Roadmap defines our scope but:
 - The ITEA community defines the detailed research topics
 - The ITEA community defines the time schedule
- PO days
 - An incredible open brainstorming to set up projects between all the different types of partners (IFC, industrials, SMEs, Academics)
- PO phase
 - Deliver recommendations shared between PAs and ITEA bodies to enhance the proposals
- PO and FPP phases
 - Each proposal is read independently by 3 experts of the Steering Group, then through physical meetings a common evaluation is built consolidated by consensus (reached by professional dispute)

Quality of the ITEA process

- Strong proximity between the PAs and the ITEA bodies
 - Continuous involvement of both parties
 - Shared evaluation criteria (innovation, business impact, strategic importance)
- Review process
 - Flexibility along the life of the project with the Change Requests evaluated by the STG reviewers
 - We are there to support improvement
 - Physical project reviews focussed on innovation and business impact rather than a pure administrative follow-up (1 mentor + 2 STG experts + 1 external expert + 1 project coordinator + 1 chairman responsible for the full programme)
- Symposium
 - The ITEA community shares her advancement with an impressive projects exhibition



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**ITEA delivers Quality
Thank you to all of you**

