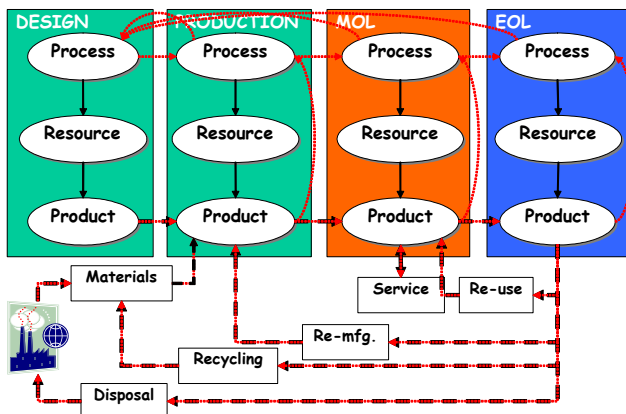


# Product Lifecycle Management and Information Tracking using Smart Embedded Systems - PROMISE

*The breakthrough contribution of PROMISE is to allow information flow management to go beyond the customer, to close the product lifecycle information loops, and to enable the seamless e-Transformation of Product Lifecycle Information to Knowledge*

A product system's life cycle is characterised by the three phases: Beginning of Life (BOL), including Design and Production, Middle-of-Life (MOL), including Use, Service and Maintenance and End-of-Life (EOL), characterised by various scenarios such as: reuse of the product with refurbishing, reuse of components with disassembly and refurbishing, disposal with or without incineration etc.



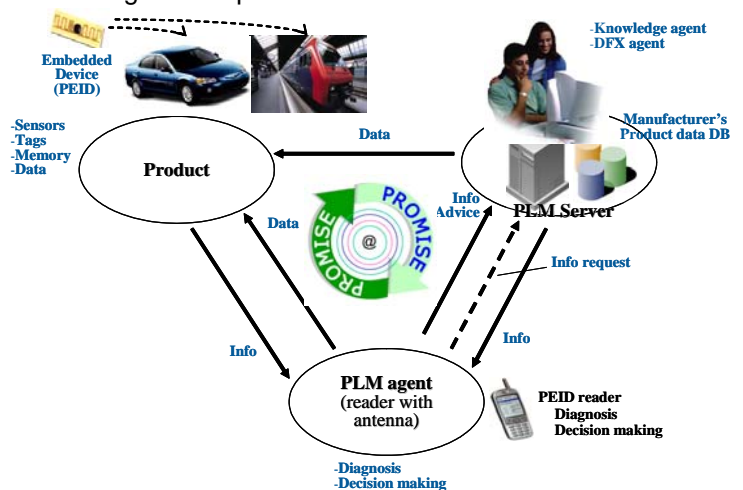
The product lifecycle

PROMISE focuses on the complete lifecycle of a product with special emphasis in tracking and managing of information at the last two phases of the product's life cycle, i.e. Use, Service and Maintenance or MOL and EOL, and, the possible feedback of information from these phases to BOL (Design and Production). The reason for PROMISE to focus on the two last phases of a product's lifecycle is the following:

(a) Between the first phases, design and production, the information flow is quite complete and supported by intelligent systems like CAD/CAM. Product Data Management (PDM), and Knowledge Management systems are effectively and efficiently used by the industry and, through their influence, by their suppliers

(b) The information flow becomes less and less complete in and from the MOL phase to the final EOL phase. In fact, for the majority of today's technological products and especially for those producing "hi-tech" waste, consumer electronics, household "white" machines, vehicles etc. It is fair to say that **the information flow breaks down after the delivery of the product to the customer.**

PROMISE will develop appropriate technologies, including product lifecycle models, Product Embedded Information Devices with associated firmware and software components and tools for decision making based on data gathered throughout a product lifecycle. This is done to enable and exploit the seamless flow, tracing and updating of information about a product, after its delivery to the customer and up to its final destiny (deregistration, decommissioning) and back to the designer and producer.



The concept of PROMISE

**The breakthrough** contribution of PROMISE, in the long term, is to **allow information flow management to go beyond the customer, to close the product lifecycle information loops, and to enable the seamless e-Transformation of Product Lifecycle Information to Knowledge.**



The PROMISE R&D implementation plan includes fundamental and applied research activities in the disciplines of information systems modelling, smart embedded systems, short and long distance wireless communication technologies, data management and modelling, statistical methods for preventive maintenance, End Of Life planning, Adaptive production management and Design for X. PROMISE integrates **Research Cluster** activities which will result in a prototype *PROMISE PLM System (Product Lifecycle Management)*, **Application Cluster** activities covering applications of the PROMISE concepts with 11 *PROMISE Demonstrators* in the Automotive, Railway, Heavy Load Vehicle, EEE and White goods sectors, **Innovation Cluster** activities covering *Integration & Standardisation* and *Business Development* issues and **Training Cluster** activities covering development and delivery of *specific training packages* for an extended trainee audience involving potential PROMISE technology developers as well as end-users.

PROMISE offers the following business proposition to the Product Lifecycle stakeholders: **to create value by transforming information to knowledge at all phases of the product lifecycle and thus improve product and service quality, efficiency and sustainability.** The product and service value may be created at various levels, with respect to the above statement, as follows:

- **Technical:** optimal accomplishment of the expected functions and user expressed and unexpressed needs, after exploiting "field" knowledge gathered through the product lifecycle.
- **Economical:** creation of value for the producer (better products, better CRM (Customer Relation Management)), for the service provider (new business opportunities, better CRM), for the product owner (extended product life).
- **Environmental:** minimisation of pollution, of resources and of energy consumption by applying optimal BOL (Beginning of Life), MOL (Middle of Life) and EOL (End of Life) planning.
- **Social:** comfort, safety, security and satisfaction of the product user, either the operator of the product (e.g. the driver of a truck) and /or the user of the service (e.g. the passenger of a bus, the user of an elevator, etc.).

The development of Product Embedded Information Devices (PEID) is expected to progress rapidly and be largely used for advanced Product Lifecycle Management and real-time data-monitoring throughout the Product Supply Chain and it will expand greatly and explode into a **multi-billion dollar market in 2006 and beyond.** This technology will particularly allow producers to dramatically increase their capability and capacity to **offer high-quality after-sales services** while, at the same time, being able to **demonstrate responsibility as producers of environmental friendly and sustainable products.** Some examples of new after-sales services and breakthrough improvements that will become possible through PROMISE are: new types of leasing services, closing of the information gap in customer relationship management, proof of producer, damage management, and enhancement of security.

The PROMISE consortium consists of 22 partners from 8 EU member states and 3 Swiss partners including end-users, world leaders in their respective domains, a world leader in PLM (Product Lifecycle Management) software, 6 high-tech SMEs, reserving about 30% of the requested funding, in the domains of transponder applications and associated software development and 4 well known Universities and 4 Research Institutes. In addition to this, PROMISE also cooperate and integrates research activities performed in different private, national and EU projects.

PROMISE is also an **endorsed IMS project** (PROMISE IMS project no. 01008) and brings together a large international partnership involving five IMS regions: **EU, Switzerland, Japan, Australia and USA.** This kind of integration of research efforts with common or similar objectives contributes to develop synergies at four levels: **private, national, EU and international.**

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