



# Research Needs and Future Trends

Research in the scope of  
RFID and the Internet of Things

August 2008

## Table of Contents

<b>CERP Contact Persons</b> .....	<b>4</b>
<b>The Cluster of European RFID Projects</b> .....	<b>5</b>
<b>Future Research Needs</b> .....	<b>6</b>
<b>Prioritisation of Future Research Topics</b> .....	<b>7</b>
<b>AMI-4-SME</b> .....	<b>11</b>
Revolution in Industrial Environment: Ambient Intelligence Technology for Systemic Innovation in Manufacturing SMEs.....	11
<b>ASPIRE</b> .....	<b>12</b>
Advanced Sensors and lightweight Programmable middleware for Innovative Rfid Enterprise applications.....	12
<b>BRIDGE</b> .....	<b>13</b>
Building Radio Frequency Identification Solutions for the Global Environment.....	13
<b>CASAGRAS</b> .....	<b>14</b>
Coordination and Support Action (CSA) for Global RFID-related Activities and Standardisation.....	14
<b>CE-RFID</b> .....	<b>15</b>
Coordinating European Efforts for Promoting the European RFID Value Chain .....	15
<b>CoBIS</b> .....	<b>16</b>
Collaborative Business Items.....	16
<b>CuteLoop</b> .....	<b>17</b>
Customer in the Loop: Using Networked Devices enabled Intelligence for Proactive Customers Integration as Drivers of Integrated Enterprise .....	17
<b>Dynamite</b> .....	<b>18</b>
Dynamic Decisions in Maintenance .....	18
<b>EU-IFM</b> .....	<b>19</b>
Interoperable Fare Management Project .....	19
<b>EURIDICE</b> .....	<b>20</b>
European Inter-Disciplinary Research on Intelligent Cargo for Efficient, Safe and Environment-Friendly Logistics.....	20
<b>GRIFS</b> .....	<b>21</b>
GRIFS - Global RFID Interoperability Forum for Standards.....	21
<b>INDISPUTABLE KEY</b> .....	<b>22</b>
Intelligent distributed process utilization and blazing environmental key .....	22

<b>iSurf</b> .....	<b>23</b>
An Interoperability Service Utility for Collaborative Supply Chain Planning across Multiple Domains Supported by RFID Devices .....	
	23
<b>LEAPFROG</b> .....	<b>24</b>
Leadership for European Apparel Production From Research along Original Guidelines.....	
	24
<b>PEARS Feasibility</b> .....	<b>25</b>
Privacy and Security Ensuring Affordable RFID System: Technical and Commercial Feasibility .....	
	25
<b>PRIME</b> .....	<b>26</b>
Privacy and Identity Management for Europe .....	
	26
<b>PROMISE</b> .....	<b>27</b>
Product lifecycle management and information tracking using smart embedded systems .....	
	27
<b>SMART</b> .....	<b>28</b>
Intelligent Integration of Supply Chain Processes and Consumer Services based on Unique Product Identification in a Networked Business Environment .....	
	28
<b>SMMART</b> .....	<b>29</b>
System for Mobile Maintenance Accessible in Real Time.....	
	29
<b>StoLPaN</b> .....	<b>30</b>
Store Logistics and Payment with NFC.....	
	30
<b>SToP</b> .....	<b>31</b>
SToP Tampering of Products.....	
	31
<b>TraSer</b> .....	<b>32</b>
Identity-Based Tracking and Web-Services for SMEs .....	
	32

## CERP Contact Persons

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CASAGRAS	Coordination and Support Action (CSA) for Global RFID-related Activities and Standardisation	Ian Smith, AIM UK ian@aimuk.org
CE-RFID	Coordinating European Efforts for Promoting the European Value Chain	Gerd Wolfram, METRO Group, Germany gerd.wolfram@mgi.de
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Dynamite	Dynamic Decisions in Maintenance	Kenneth Holmberg, VTT, Finland kenneth.holmberg@vtt.fi
EU-IFM	Interoperable Fare Management Project	Inge Meister, TÜV Rheinland, Germany Inge.meister@de.tuv.com
EURIDICE	European Inter-Disciplinary Research on Intelligent Cargo for Efficient, Safe and Environment-Friendly Logistics	Paolo Paganelli, Insiel, Italy paolo.paganelli@insiel.it
GRIFS	GRIFS - Global RFID Interoperability Forum for Standards	Stephane Pique, GS1, Belgium stephane.pique@gs1eu.org
Indisputable Key	Intelligent distributed process utilization and blazing environmental key	Richard Uusijärvi, SP, Sweden richard.uusijarvi@sp.se
iSURF	An Interoperability Service Utility for Collaborative Supply Chain Planning across Multiple Domains Supported by RFID Devices	Asuman Dogac, METU, Turkey asuman@srcd.metu.edu.tr
LEAPFROG	Leadership for European Apparel Production From Research along Original Guidelines	Lutz Walter, euratex, Belgium lutz.walter@euratex.org
PEARS Feasibility	Privacy and Security Ensuring Affordable RFID System: Technical and Commercial Feasibility	Humberto Moran, Friendly Technologies, Scotland; hmoran@friendlytechnologies.eu
PRIME	Privacy and Identity Management for Europe	Marit Hansen, ULD, Germany prime@datenschutzzentrum.de
PROMISE	Product orientated manufacturing systems including RFID technology	Dimitris Kiritsis, EPFL, Switzerland dimitris.kiritsis@epfl.ch
SMART	Intelligent Integration of Supply Chain Processes and Consumer Services based on Unique Product Identification in a Networked Business Environment	Kostas Thiveos, INTRASOFT, Luxembourg Kostas.Thiveos@intrasoftware-intl.com
SMMART	System for Mobile Maintenance Accessible in Real Time	Jean-Louis Boucon, TURBOMECA, France jean-louis.boucon@turbomeca.fr
StoLPaN	Store Logistics and Payment with NFC	András Vilmos, Motorola, Hungary vilmos@stolpan.com
SToP	Stop tampering of products	Harald Vogt, SAP, Germany harald.vogt@sap.com
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## The Cluster of European RFID Projects

RFID (Radio-Frequency IDentification) technology has the potential to enhance Europe's competitiveness and is an important driver for the development of an information based economy and society. A wide range of EU-funded RTD projects about RFID have been recently set up in different application fields and are achieving considerable outcomes and results. Communication, coordination and collaboration among these projects is an essential requirement for a competitive EU-funded research and for a secure, safe and privacy-preserving deployment of RFID in Europe.

To promote this sharing of knowledge as well as to collect and organise all relevant research results obtained in recent and current European research projects, the "**Cluster of European RFID Projects**" (CERP) has been founded in January 2007.

The overall objectives of the cluster are:

- Facilitate networking of different projects in Europe
- Coordinate research activities
- Assure coherence of work in Europe
- Leverage expertise, talents, and resources and maximize impact
- Establish synergies between projects

On the one side, RFID technology is a very broad and typically multidisciplinary domain, encompassing hardware micro-systems, digital-intelligent sensors, communication frequencies as well as protocols, middleware for data collection and exchange. On the other side, RFID applications have spanned through all the sectors and domains, from manufacturing, to especially transportation, healthcare, agriculture and retail.

Understandably, CERP member projects had their own research & technological challenges and had to focus on their own application domains as reported and signed in their contracts' descriptions of work. As a consequence of that, CERP outcomes, including its "research roadmap", just cover a portion of all those technologies and application domains affected by RFID. Particular attention has however been put on the European manufacturing, supply chain applications and on the impact of RFID technologies applied to the industrial products & services life-cycle.

Even if the focus of the CERP group is defined within the frame of the aforementioned limitations, there is already evidence that RFID is no longer just a futuristic vision – but rather a technology, which is now being deployed in many industrial sectors. Therefore, the projects' descriptions provided by this document are aiming at detailing for each project

- the key objectives addressed for understanding the rational, current challenges, potentials as well as limitations of current technologies,
- the solutions developed by the individual CERP projects, enabling a pre-selection for reusing results and future collaboration and
- listing the project partners and contact points facilitating the identification of organisations for future research activities and industrial adoption of results.

As technological and organisational challenges are transferred in real-world solutions providing an added value to industry as well as to consumers, the identification of new potentials is continuously leading to an evolving scope of the CERP cluster.

Especially in the last months, the work was characterised by discussing the trends in creation of new networked objects, applications and services capable of interoperation across a wide variety of business domains and organisations of all sizes towards the “**Internet of Things**” (IoT). The IoT vision is a “**Vision of a future where each item or thing is networked and can communicate information about itself or from itself to other objects and to computer systems**” and it is part of the Future Internet vision, which aims at re-building the foundations of the next generation networks.

In this future perspective, the CERP projects are considering their research outcomes as basic milestones in approaching the vision of an Internet of Things. Since as most of the “CERP solutions” and elaborated case studies can be reused for future research and innovative application development under the IoT vision for the success of European industry as well as for the satisfaction of European citizens in the increased competition & globalisation of markets, production and IT development.

### Future Research Needs

Currently, there are 22 European RTD projects, which are members of CERP. Several are about to complete their research, while others have just started in 2008. It is also envisaged to invite additional projects which are starting in the future FP7 calls and specifically those proposed by DG INFSO Unit D4 about Enterprise environments and IoT.

The CERP projects (see project description - page 11 ff.) were able to realise innovative solutions and applications in multiple business domains. Nevertheless, new challenges were identified to fully exploit the benefits for all actors in complex business networks. For example, European airlines are on the way to exploit the benefits of using RFID solutions for passenger baggage processing, it was started to control the daily supplies in the food chain by RFID based applications or the RFID tags are beginning to facilitate an adequate up-to-date information to assist the mobile maintenance workers in all their tasks. Based on those results, the CERP cluster identified future research needs to pave the way for urgently required solutions in the next decade.

Regarding “RFID domains for the farther future”, i.e. with a time horizon from 1 year up to “5 years plus”, it is obviously difficult to determine where vision supersedes realism. Some essential features are known. For instance, there must be a paradigm change from the relatively simple “identification of objects at a distance” which may suffice in current projects and applications, to the much more challenging “communication between objects” and the even more challenging “distributed intelligence (or Internet) of things”, in order to link all involved objects. This in turn implies that the “intelligent rules” by which the linked objects will react must have been defined and analysed, requiring new approaches for realising RFID based and networked ICT solutions. Complex sets of rules and processes need to be planned and maintained on the long-term. Hardware and software components both for the network and the interacting objects need to be developed, and made available and affordable on a wide-scale, while especially the complex sets of rules and protocols governing all the interactions need to be accessed and managed with the required speed and quality. On the top of that, the human operators need also to be empowered to understand as well as to mitigate potential risks from technological point of view as well as with respect to privacy and health of the human operator themselves.

These requirements are connected to diverse enabling technologies and fields of knowledge, while CERP as well as other clusters and technology platforms identified the “Internet of things” as one of the key enablers which need to be addressed from several points of view.

From CERP cluster point of view, this means that especially technological research into e.g. advanced software applications, services, middleware, RFID tags & readers, decision rules, network structures and networked devices need to be propagated. Nevertheless, these activities are aiming to closely cooperate with other fields of knowledge like e.g. energy savings, IP v6, frequencies, naming problems, IP addresses as addressed by other groups, clusters and technology platforms in the scope of the Future Internet Assembly. However, this also need to be complemented by research into human & enterprise behaviour, organisational structures, governance and drawing from all human and social sciences, including psychology, health, education, and other social aspects such as privacy, which “pervasive networks”, even for things, may increasingly put at risk.

For example, it is certainly plausible that an “Internet of intelligent electrical appliances and main plugs” may substantially reduce the energy needs of the average household, e.g. by replacing so-called stand-by modes and other wastes of energy. Additionally, an “Internet of moving things” may avoid collisions and reduce traffic jams, or enable an immediate traceability of food products in case of harmful ingredients from fork to farm, by combining the food itself with RFID tags which successively collect the relevant information along the food chain.

However, the full potential of such an intelligent environment will only be fruitful if the user/ consumer/ citizen gives his proactive support: Transferring the “collision avoidance system” of civil aviation into millions of cars, by realising an Internet of cars will only lead to similar very positive results, if the public can be persuaded that no Big Brother shall be watching them. Or realising market structures which will not jeopardise the farmer’s competitiveness when supporting an information transparency towards the oligopsony of large retailers. Therefore, diverse research activities are required beyond the pure enabling technologies towards complex networks and human behaviour as well as business related interactions, to assure a wide user acceptance in future RFID and IoT based solutions as well as confidence of the Small and Medium sized Enterprises as one of the most important drivers of the European market place.

## Prioritisation of Future Research Topics

In the last 18 months, based on its origins in industry and related to the trends of the market, the CERP cluster specifically considered the current state of RFID application in four important business-oriented application areas:

- Logistical tracking & tracing
- Production, monitoring & maintenance
- Product safety, quality & information
- Payment

Within the “Working Paper on future RFID Research Needs” as already published in September 2007, CERP specifically described potential benefits of an intensified use of RFID tags in these areas, and came up with an analysis of the causes that prevent this intensification. Eventually, this analysis could help researchers and industry to direct their efforts to advance the required technology itself as well as its application.

In order to identify the most pressing problems that promise the most advancement, if overcome, at a reasonable investment, it was tried to judge the issues encountered in the four application fields according to additional criteria. The table presented on the following page gives a structured overview of the issues, with those at the top that should be given priority for future research.

First, it must be noted that a rating as it is done in this table is necessarily subjective and highly influenced by the priorities and working areas of the authors. Therefore, the conclusions drawn here should be taken by the reader as a supplement to provide a stronger basis of her or his own assessment. The issues are listed such that those with the highest impact on European industry are listed first. This reflects our commitment to the goals of the European research framework. The second criterion is the immaturity level, thus prioritizing those issues that need a stronger investment to yield results. However, it is easy to read the table the other way around and consider those issues first that require less investment for good results. This latter view would be favoured by short-term research projects or smaller consortia, while the former view is more shaped according to the characteristics of long-term projects carried out by larger consortia (with more funding capabilities).

To consider some examples, let's pick the issue at the top of the list: product life cycle related RFID enabled features and tag maintenance. This issue refers to the capability of RFID technology to support a product throughout its complete life cycle. It is easy to imagine that for all the stages that a product goes through, and for its potentially long lifetime, a single tag may not be capable to support all upcoming interaction needs. However, the "upgrading" of RFID tags is a somewhat neglected feature of RFID-enabled products. To have the technology and processes available to support it could have a high impact on industry, but we are certainly far from having them readily available, and creating them would require a significant effort. Let's also look at another issue, reading reliability, which would be the most promising short-term research goal according to this table. It's an important feature mainly in product safety, where tags are often read in uncontrolled environments. It might be a valuable research goal for a smaller group as the required effort is not overwhelming, and its commercial potential could be realized in a short term.

Many of the open problems listed are correlated, for example reading reliability and operation in harsh environments, and many of them could withstand a solution due to fundamental physical or economic reasons. To maximize the benefits, this should certainly be taken into consideration when selecting research topics. The challenges have been laid out, ready to be taken on by whoever brave enough!



	Research topic	Logistics	Product safety	Manufacturing & Maintenance	Payment	Impact on European Industry	Immaturity level	Required effort	Time to commercialization	
1	Product life cycle related RFID enabled features & tag maintenance			✓		high		90%	high	5+ y
2	Distributed decision making	✓		✓		high		70%	high	5+ y
3	Built-in security	✓		✓		high		70%	high	5+ y
4	User acceptance and privacy				✓	high		70%	medium	3-5 y
5	Complex interaction modelling & new RFID based interaction models	✓		✓		high		70%	high	3-5 y
6	Standardized data model for B2B exchange		✓		✓	high		60%	medium	3-5 y
7	Application integration	✓			✓	high		50%	medium	3-5 y
8	Reading reliability		✓			high		40%	medium	1-3 y
9	Protection of tags against extreme phenomena (e.g. EMP)				✓	med.		90%	high	5+ y
10	Advanced Sensor Systems	✓		✓		med.		70%	high	3-5 y
11	"Smart" tags (i.e. integrated displays, actuators)	✓		✓		med.		70%	high	3-5 y
12	Operation on metallic and moist products	✓	✓	✓		med.		60%	medium	3-5 y
13	Access control and security policies for data exchange		✓		✓	med.		60%	medium	3-5 y
14	Large range readability	✓				med.		50%	low	3-5 y
15	Operation in harsh environments (e.g. extreme temperature)	✓		✓		med.		50%	medium	3-5 y
16	Secure storage of tag data				✓	med.		40%	low	1-3 y
17	Tag robustness	✓		✓	✓	med.		30%	low	3-5 y
18	Improved reader performance (reads/second, range)	✓				med.		20%	medium	1-3 y
19	User interaction				✓	low		70%	medium	1-3 y
20	Confidentiality of tag data		✓			low		30%	low	1-3 y

# Description of the RTD Projects which are Member of CERP

<b>Project Acronym:</b>	<b>AMI-4-SME</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Revolution in Industrial Environment: Ambient Intelligence Technology for Systemic Innovation in Manufacturing SMEs		
<b>Start Date:</b>	01.10.2005	<b>Contact:</b>	Harald Sundmaeker
<b>End Date:</b>	30.09.2008	<b>Company:</b>	ATB Institut für Angewandte Systemtechnik Bremen GmbH
<b>Duration:</b>	36 months	<b>Phone:</b>	+49-421-220920
<b># of Partners:</b>	12	<b>Email:</b>	<a href="mailto:Sundmaeker@atb-bremen.de">Sundmaeker@atb-bremen.de</a>
<b>Partners:</b>	ATB (DE), Brügger (DE), CARSA (ES), DERI (IE), EURO COACH (IE), OAS (DE), PRO DV (DE), Sidheán (IE), Softrónica (ES), Telefónica (ES), TNS (PL), TRIMEK (ES)		
<b>Address:</b>	Wiener Str. 1 D-28359 Bremen, Germany		
<b>Web:</b>	<a href="http://www.ami4sme.org">http://www.ami4sme.org</a>		
<b>Project Objectives:</b>			
<p>Ambient Intelligence (AMI) technology is oriented to surround people with electronic environments, sensitive and responsive to their desires. It offers a multitude of process innovation potentials for manufacturing industry and it promises a revolutionary next step for systemic innovation of the whole industrial working environment. Furthermore, Aml enables realisation of new interaction paradigms and collaborative working environments for the employees. It facilitates collaboration between humans themselves and with their infrastructure such as machines on the shop floor or existing IT systems (e.g. ERP, PPC, MRP), enabling the creation of new networked applications and services capable of interoperation across technological and organisational boundaries.</p> <p>AMI-4-SME aims at realising a new scheme to exploit such potentials. Beyond a pure technical dimension, the RTD activities address development &amp; validation of new models of business processes for flexible manufacturing, specifically tailored to SME needs, based on an "Ambient Intelligence philosophy" – Asking the question: "What can be achieved by Aml Technology in SME reality?"</p>			
<b>Project Description:</b>			
<p>The project intensively analysed the SME innovation needs within manufacturing business cases. This clearly indicated the SMEs' need for highly tailored turn-key solutions, required to guarantee the realisation of business benefits and competitive advantage. To effectively serve those SME needs with turn-key solutions in a suitable price range, the AMI-4-SME project elaborated the following results:</p> <p><b>Building Blocks</b> as enablers for realising innovative "Aml" (Ambient Intelligent) as well as human centred solutions:</p> <ul style="list-style-type: none"> <li>• RFID based sensor system, mobile readers &amp; middleware, highly compatible for integration with SME infrastructures.</li> <li>• Speech recognition system, for implementing configurable natural human inter-action on mobile devices; easy to generate &amp; maintain; using standard interfaces.</li> <li>• Aml system adaptor for mobile device, service &amp; system integration. Enabling a flexible, secure &amp; efficient configuration, mapping &amp; interfacing of legacy systems, Aml services as well as mobile devices.</li> </ul> <p><b>AMI-4-SME Software Platform:</b> to easily set-up the required runtime environment as well as software infrastructure to provide a cost and time efficient realisation of a human centric turn-key solution.</p> <p><b>AMI-4-SME Methodology:</b> providing clear instructions, guidelines and templates for realising the successful utilisation of new Aml technologies. It is based on a traceable improvement process, driven by the company staff, enabling informed decisions of the management..</p>			
<b>Field of Application:</b>			
<p>Process improvement in manufacturing SMEs.</p> <p>Inter-enterprise interoperability and collaboration of networked manufacturing SMEs.</p> <p>Realisation of human centred support systems, based on Ambient Intelligent Technology Features.</p>			

<b>Project Acronym:</b>	<b>ASPIRE</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Advanced Sensors and lightweight Programmable middleware for Innovative Rfid Enterprise applications		
<b>Start Date:</b>	01.01.2008	<b>Contact:</b>	Prof. Dr. Neeli R. Prasad
<b>End Date:</b>	31.12.2010	<b>Company:</b>	Center for Teleinfrastruktur, Aalborg University
<b>Duration:</b>	36 months	<b>Phone:</b>	+45-9635-9835
<b># of Partners:</b>	10	<b>Email:</b>	<a href="mailto:np@kom.aau.dk">np@kom.aau.dk</a>
<b>Partners:</b>	<p>Aalborg University (DK), INRIA (FR) (ObjectWeb@INRIA – INRIA POPS); Université Joseph Fourier (FR); Athens Information Technology (EL); Melexis technologies SA (CH); Open Source Innovation Ltd (UK); UEAMPE European Office of Crafts, Trades and SMEs for Standardisation (BE); SENSAP S.A (EL); Pole Traceability Valence (FR); Instituto Telecomunicações (PT)</p>		<p><b>Address:</b> Niels Jernes Vej 12, Room #: A5 - 210, 9220 Aalborg East, Denmark</p> <p><b>Web:</b> <a href="http://www.fp7-aspire.eu/">http://www.fp7-aspire.eu/</a></p>
<b>Project Objectives:</b>			
<p>ASPIRE will research and provide a radical change in the current RFID deployment paradigm through innovative, programmable, royalty-free, lightweight and privacy friendly middleware. This new middleware paradigm will be particular beneficial to European SME, which are nowadays experiencing significant cost-barriers to RFID deployment. The project sets the following main objectives: (a) To elicit, identify and analyze requirements for RFID solutions (notably) for SMEs. (b) To specify an architecture for lightweight programmable RFID solutions, (c) To design, specify and implement a standards compliant RFID middleware platform supporting data collection, filtering and eventing, (d) To specify and implement a management plane enabling end-to-end infrastructure management of RFID systems, (e) To augment the ASPIRE middleware platform with programmability capabilities based on the specification of Domain Specific Languages that describe filters, business events, as well as whole applications, (f) To develop an integrated development environment facilitating programming and deployment of RFID solutions, (g) To design and implement low-cost devices with RFID reading capabilities based on legacy microsystems. (h) To integrate and test ASPIRE based solutions in the scope of pilots dealing with added-value business cases. (i) To provide a privacy certification testing suite for the ASPIRE middleware.</p>			
<b>Project Description:</b>			
<p>ASPIRE will develop and deliver a lightweight, royalty-free (i.e. open source), programmable, privacy friendly, standards-compliant, scalable, integrated and intelligent middleware platform that will facilitate low-cost development and deployment of innovative fully automatic RFID solutions. The ASPIRE middleware platform will provide fully fledged functionality including filtering, eventing and information sharing in different business contexts. The ASPIRE middleware platform will also include end-to-end management functionality for all the heterogeneous elements (e.g., readers, antennas, terminal devices, middleware servers) comprising an RFID infrastructure. Moreover, it will incorporate implementations of privacy specifications. On top of the middleware platform ASPIRE will implement an integrated development environment, which will leverage the project's programmability features in order to flexibly build, deploy and configure RFID solutions. The ease of development and cost-effectiveness enabled by the platform will be manifested across different application domains based on the organization and techno-economic evaluation of trials. An integral component of the ASPIRE trials and solutions will be a prototype low-cost reader, which will be developed based on legacy Microsystems. Overall, ASPIRE will demonstrate a paradigm shift in RFID deployment based on low-cost hardware and programmable royalty-free middleware.</p>			
<b>Field of Application:</b>			
<p>The ASPIRE middleware will support a variety of applications in different industries, with a primary focus on:</p> <ul style="list-style-type: none"> <li>• Logistics and Supply Chain Management (including cold-chain and mobility scenarios e.g. mobile warehouses, trucks, logistics, etc.)</li> <li>• Manufacturing and Process Management</li> </ul> <p>Traceability and Asset Tracking</p>			

<b>Project Acronym:</b>	<b>BRIDGE</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Building Radio Frequency Identification Solutions for the Global Environment		
<b>Start Date:</b>	01.07.2006	Contact:	Henri Barthel
<b>End Date:</b>	30.06.2009	Company:	GS1
<b>Duration:</b>	36 months	Phone:	+32-2-788-7823
<b># of Partners:</b>	30	Email:	<a href="mailto:henri.barthel@gs1.org">henri.barthel@gs1.org</a>
<b>Partners:</b>	<p>GS1: Global Office (Coordinator), France, UK, Germany, Spain, Poland, China; Universities: Cambridge, ETH Zurich, Fudan, UPC Barcelona, TU Graz; Users: Carrefour, Bénédicte, Kaufhof, Gardeur, Nestlé UK, Sony, Northland; Solution Providers: BT, SAP, AIDA, Caen, Confidex, AT4 wireless, UPM Raflatac, Verisign UK, Melior, Domino, JJ Associates.</p>		<p>Address: Blue Tower, Avenue Louise 326, bte 10 B-1050 Brussels, Belgium</p> <p>Web: <a href="http://www.bridge-project.eu/">http://www.bridge-project.eu/</a></p>
<b>Project Objectives:</b>			
<p>BRIDGE (Building Radio Frequency IDentification for the Global Environment) is a European Union funded 3-year Integrated Project addressing ways to resolve the barriers to the implementation of RFID in Europe, based upon GS1 EPCglobal standards. The project consists of a series of business, technical development and horizontal activities. The objective of the BRIDGE project is to research, develop and implement tools to enable the deployment of Radio Frequency Identification (RFID) and EPCglobal Network applications. The project will develop easy-to-use technological solutions for the European business community including small and medium sized enterprises (SME), ensuring a basis for collaborative EPCglobal systems for efficient, effective and secure supply chains.</p>			
<b>Project Description:</b>			
<p>The implementation of RFID and EPCglobal standard solutions is hindered by a number of technical, social and educational challenges. The BRIDGE project is organised in series of business oriented clusters, technical development clusters and horizontal activities.</p> <p>Seven Business work packages have been set up to identify the opportunities, establish the business cases and perform trials and implementations in various sectors including anti-counterfeiting, pharmaceuticals, textile, manufacturing, re-usable assets, products in service and retail non-food items. The project includes an important research and development program in various aspects of RFID hardware, software, network and security. A series of horizontal activities will provide training and dissemination services, enabling the adoption of the technology on a large scale in Europe for the sectors addressed by BRIDGE and beyond. BRIDGE involves 30 partners and is coordinated by GS1</p>			
<b>Field of Application:</b>			
<p>Project partners are working together on: Hardware development, Serial Look-up Service, Serial-Level Supply Chain Control, Security, Anti-counterfeiting, Pharmaceuticals Traceability, Textile Supply Chain Management, Manufacturing Process, Reusable Asset Management, Products in Service, Item Level Tagging for non-food items, Education and Training, Dissemination tools, Policy and Innovation perspectives.</p> <p>6 pilots are being implemented within the 7 application work packages.</p>			

<b>Project Acronym:</b>	<b>CASAGRAS</b>	<b>Date:</b>	February 2008
<b>Project Title:</b>	Coordination and Support Action (CSA) for Global RFID-related Activities and Standardisation		
<b>Start Date:</b>	01.01.2008	<b>Contact:</b>	Ian Smith
<b>End Date:</b>	30.06.2009	<b>Company:</b>	AIM UK Ltd
<b>Duration:</b>	18 months	<b>Phone:</b>	+44-1422-399-499
<b># of Partners:</b>	8	<b>Email:</b>	<a href="mailto:ian@aimuk.org">ian@aimuk.org</a>
<b>Partners:</b>	AIM UK Ltd; YRP Ubiquitous Networking Laboratory; Hong Kong Science Parks Corporation; AIDC UK Ltd; Electronics and Telecommunication Research Institute; FEIG Electronic; ETSI; QED Systems		<b>Address:</b> The Elsie Whiteley Innovation Centre; Hopwood Lane; Halifax/West Yorkshire HX1 5ER – UK
		<b>Web:</b>	<a href="http://www.rfidglobal.eu/">http://www.rfidglobal.eu/</a>
<b>Project Objectives:</b>			
To Provide:			
<ul style="list-style-type: none"> <li>• A Platform for international collaboration on all aspects of standards and regulations relating to RFID</li> <li>• A framework and supporting documentation for incisive and analytical review of international RFID standards</li> <li>• Recommendations with respect to international standardisation and regulatory developments for RFID</li> <li>• Recommendations with respect to applications methodologies and positioning</li> <li>• Recommendations for future research and development and international collaboration</li> <li>• Recommendations to encourage participation of SMEs</li> <li>• An ongoing collaborative research platform for RFID</li> </ul>			
<b>Project Description:</b>			
CASAGRAS aim to provide an incisive framework of foundation studies that can assist the European Commission and EU member states in influencing and accommodating international issues and developments concerning radio frequency identification (RFID) and the emerging "Internet of Things".			
CASAGRAS Work Packages:			
<ol style="list-style-type: none"> <li>1. Standards and Procedures for International Standardisation in relation to RFID, including applications and conformance standards.</li> <li>2. Regulatory issues in respect of RFID standards</li> <li>3. Global coding systems in relation to RFID standards</li> <li>4. RFID in relation to Ubiquitous Computing and Networks</li> <li>5. Functional, including sensory, developments in RFID and Associated Standards</li> <li>6. Areas of Application, existing and future, and associated Standards.</li> <li>7. Socio-economic components of RFID usage</li> </ol>			
<b>Field of Application:</b>			
The framework studies will draw particular attention to Objective ICT-2007-1.3: ICT in support of the networked enterprise and the call within that objective for a Support Action (SA) for global RFID-related standardisation activities involving in particular organisations from China, Japan, Korea and the USA.			

<b>Project Acronym:</b>	<b>CE-RFID</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Coordinating European Efforts for Promoting the European RFID Value Chain		
<b>Start Date:</b>	01.04.2006	<b>Contact:</b>	Dr. Gerd Wolfram
<b>End Date:</b>	30.09.2008	<b>Company:</b>	MGI METRO Group Information Technology GmbH
<b>Duration:</b>	30 months	<b>Phone:</b>	+49-211-969-2100
<b># of Partners:</b>	12	<b>Email:</b>	<a href="mailto:Gerd.Wolfram@mgi.de">Gerd.Wolfram@mgi.de</a>
<b>Partners:</b>	<p>Germany: MGI Metro Group, Deutsche Post AG, FEIG Electronic GmbH, Siemens AG, VDI/VDE Innovation + Technik GmbH, EADS Deutschland GmbH, Pleon GmbH, Austria: NXP Austria GmbH, RF-iT Solutions GmbH, Spain: AIDA Centre S.L., United Kingdom: ADT Fire and Security PLC, Finland: UPM Rafsec Oy.</p>		
<b>Partners:</b>	<p>Germany: MGI Metro Group, Deutsche Post AG, FEIG Electronic GmbH, Siemens AG, VDI/VDE Innovation + Technik GmbH, EADS Deutschland GmbH, Pleon GmbH, Austria: NXP Austria GmbH, RF-iT Solutions GmbH, Spain: AIDA Centre S.L., United Kingdom: ADT Fire and Security PLC, Finland: UPM Rafsec Oy.</p>		
<b>Project Objectives:</b>	<p>The Coordination Action "Coordinating European Efforts for Promoting the European RFID Value Chain (CE RFID) aimed at improving the conditions of competition for RFID technology and its further development in Europe as well as at reinforcing the political environment of RFID at the European level.</p>		
<b>Project Description:</b>	<p>The initiative was centred around a number of industry-driven workshops. The partners of CE RFID - supported by a number of additional contributors from academia and industry - elaborated a concise RFID technology roadmap for the public and provided detailed recommendations for a purposive European research and legislation policy on RFID. Additionally, CE RFID suggested – in close connection to organisations like EPC and AIM – means for an effective standardisation and harmonisation of RFID related frequencies and data formats in Europe.</p> <p>The project results are published at Springer Verlag:</p> <p>Gerd Wolfram, Birgit Gampl and Peter Gabriel (eds): The RFID Roadmap: The Next Steps for Europe. Springer: Berlin and Heidelberg 2008.</p>		
<b>Field of Application:</b>	<p>No specific application field, analysis of European conditions of competition for RFID technology across all RFID application fields.</p>		

<b>Project Acronym:</b>	CoBIS	<b>Date:</b>	July 2008
<b>Project Title:</b>	Collaborative Business Items		
<b>Start Date:</b>	01.08.2004	<b>Contact:</b>	Stephan Haller
<b>End Date:</b>	31.01.2007	<b>Company:</b>	SAP (Schweiz) AG
<b>Duration:</b>	30 months	<b>Phone:</b>	+41-58-871-7845
<b># of Partners:</b>	7	<b>Email:</b>	<a href="mailto:stephan.haller@sap.com">stephan.haller@sap.com</a>
<b>Partners:</b>	SAP AG (DE), Infineon Technologies Austria (A), Ambient Systems (NL), BP International Ltd. (UK), Universität Karlsruhe (DE), Lancaster University (UK), University of Twente (NL).		<b>Address:</b> SAP Research Kreuzplatz 20 CH-8008 Zürich, Switzerland
		<b>Web:</b>	<a href="http://www.cobis-online.de">http://www.cobis-online.de</a>
<b>Project Objectives:</b>			
<p>The core objective is to provide the technical foundation to make the benefits of embedded and wireless sensor network technology available to enterprise systems, particularly in industrial environments:</p> <ol style="list-style-type: none"> <li>1. Apply wireless networked (sensor) systems to embed business logic in physical entities</li> <li>2. Holistic service-oriented architecture covering all layers from hardware to business application</li> <li>3. Develop the collaborative and technological frameworks for CoBIs with necessary system management</li> </ol>			
<b>Project Description:</b>			
<p>Knowing the exact whereabouts of physical objects such as goods or tools in enterprise environments to optimize business processes has been a long-standing desire of several industries. The Collaborative Business Items (CoBIs) project develops a new approach to business processes involving physical objects. We embed business logic directly into the physical entities, therefore making it possible to relate more closely the state of an enterprise as represented in business processes to what is actually happening in the real world and furthermore extending the business process to the "point of action". CoBIs has developed an open platform based on a service-oriented architecture (SOA) that makes it possible to apply networked embedded systems technologies in large-scale business processes and enterprise systems. CoBIs evaluates its approach in real world application trials in two different domains: the petrochemical and retail (apparel) industries.</p> <p>Items have a unique digital identity, embody sensors to monitor their state and environmental conditions, communicate peer-to-peer and collaborate in order to fulfil collective services, such as the observation and monitoring of conditions (e.g., safe storage regulations) that no single item could do independently. Interfaces with enterprise backend systems ensure that these services become an integral part of the overarching business processes.</p>			
<b>Field of Application:</b>			
Tracking and tracing, industrial monitoring, process management, process industries.			



<b>Project Acronym:</b>	<b>CuteLoop</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Customer in the Loop: Using Networked Devices enabled Intelligence for Proactive Customers Integration as Drivers of Integrated Enterprise		
<b>Start Date:</b>	01.02.2008	<b>Contact:</b>	Harald Sundmaeker
<b>End Date:</b>	31.01.2011	<b>Company:</b>	ATB Institut für Angewandte Systemtechnik Bremen GmbH
<b>Duration:</b>	36 months	<b>Phone:</b>	+49-421-220920
<b># of Partners:</b>	9	<b>Email:</b>	<a href="mailto:Sundmaeker@atb-bremen.de">Sundmaeker@atb-bremen.de</a>
<b>Partners:</b>	ATB (DE); Uni Bonn (DE); UNINOVA (PT); The Open Group (UK); ETSI (FR); TraceTracker (DE); EuroTeleServ (L); Euro Pool (NL); CAPEB (FR)		<b>Address:</b> Wiener Str. 1 D-28359 Bremen, Germany  <b>Web:</b> <a href="http://www.cuteloop.eu/">http://www.cuteloop.eu/</a>
<b>Project Objectives:</b>			
<p>The strategic objective of CuteLoop is to explore how Intelligent Networked Devices such as enhanced RFID-based systems and Global Navigation Satellite Systems, can be used to effectively "integrate customers within an Integrated Enterprise" and with this to provide an important step towards 'real' Integrated, Real Time Enterprise.</p> <p>Such real time enterprises shall be supported to realise highly flexible and dynamic business interconnections for agile coordination in business networks and supply chains, having customers as key drivers. Moreover, the project will address just-in-time interaction of actors and exchange of knowledge/ experience among Large Enterprises (LEs), SMEs and customers.</p>			
<b>Project Description:</b>			
<p>CuteLoop intends to explore how to radically improve the interaction of diverse actors in the integrated enterprise. Specifically including the customer dimension as an integral part of these complex relationships, while focusing on the usage of "Networked Devices Enabled Intelligence" to realise distributed and autonomous control of business processes. CuteLoop is aiming at realisation of a holistic approach on:</p> <ul style="list-style-type: none"> <li>• an innovative architecture by integration of event-driven and SOA based principles,</li> <li>• intelligent and agile agents combined with an event-driven architecture,</li> <li>• decentralised and self-evolving approach for assuring security and trust as well as supporting a customer oriented privacy of data and</li> <li>• new interaction models and patterns for the real time enterprise.</li> </ul> <p>CuteLoop intends to address these problems in an SME driven integrated enterprise scenario, which is, due to its high complexity and requested flexibility, the most critical scenario from both technical and organisational/ business points of view. CuteLoop is focusing on SME in two sectors: construction and food industry.</p>			
<b>Field of Application:</b>			
<p>Logistical Tracking and Tracing; Production, Maintenance; Product Safety, Quality and Information;</p> <p>Peer-to-Peer Networking; Distributed and Asynchronous Interaction; Ad-hoc interaction of anonymous actors; Decentralised coordination of activities and enabling a coordinated extension of existing networks.</p> <p>CuteLoop includes two application scenarios (food and construction industry) for technological as well as organisational proof of concept for the new approach to be realised. On the top of that CuteLoop will realise generic services for supporting typical, while still generic Interaction Models, being cross sectorial.</p>			

<b>Project Acronym:</b>	<b>Dynamite</b>	<b>Date:</b>	February 2007
<b>Project Title:</b>	Dynamic Decisions in Maintenance		
<b>Start Date:</b>	01.09.2005	<b>Contact:</b>	Kenneth Holmberg
<b>End Date:</b>	28.02.2009	<b>Company:</b>	VTT Technical Research Centre of Finland
<b>Duration:</b>	42	<b>Phone:</b>	+358-20-5442285
<b># of Partners:</b>	17	<b>Email:</b>	<a href="mailto:kenneth.holmberg@vtt.fi">kenneth.holmberg@vtt.fi</a>
<b>Partners:</b>	<p>VTT Technical Research Centre of Finland, Manchester and Sunderland University (UK), Université Henri Poincaré (FR), Tekniker (E), Växjö University (S) VTT (FI), FIAT (IT), Volvo (S), Goratu (E), Zenon (G), Wyselec and Hydrox-Pipeline (FI), Martechnic (DE), Engineering Statistical Services and Diagnostic Solutions (UK), Prisma Electronics (GR) and IBK Krates (EE).</p>		
<b>Project Objectives:</b>	<p>The project objectives of DYNAMITE (Dynamic Decisions in Maintenance) are to produce an infrastructure for global e-maintenance to allow mobile monitoring of machinery and processes. It includes hardware and software as well as mobile devices for access to and reporting from the e-maintenance infrastructure. Further tools and methods are developed for cost-effective applications of maintenance technologies for continuous enhancement of companies' profitability and competitiveness.</p>		
<b>Project Description:</b>	<p>The maintenance of machinery is a huge cost to European industry. Studies over the last 20 years have indicated that around Europe, the direct cost of maintenance is equivalent to between 4 percent and 8 percent of the total sales turnover.</p> <p>The monitoring of machines and processes for predictive maintenance and control is crucial for a sustainable and competitive industry in Europe. Distributed, autonomous monitoring is fundamental to the penetration of e-maintenance to the cutting edge of a high capital and highly productive plant.</p> <p>DYNAMITE will create an infrastructure for mobile monitoring technology and create new devices which will make major advances in capability for decision systems incorporating sensors and algorithms. The key features include wireless telemetry, intelligent local history in smart tags, and on-line instrumentation.</p>		
<b>Field of Application:</b>	Industrial machinery maintenance		

<b>Project Acronym:</b>	<b>EU-IFM</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Interoperable Fare Management Project		
<b>Start Date:</b>	01.01.2008	<b>Contact:</b>	Inge Meister
<b>End Date:</b>	31.12.2009	<b>Company:</b>	TÜV Rheinland Consulting GmbH
<b>Duration:</b>	24 months	<b>Phone:</b>	+49-221-806-4165
<b># of Partners:</b>	9	<b>Email:</b>	<a href="mailto:Inge.meister@de.tuv.com">Inge.meister@de.tuv.com</a>
<b>Partners:</b>	<p>ITSO (UK), TÜV Rheinland (DE), VDV-KA (DE), UITP (BE), UNEW (UK), URBA (FR), SNCF (FR), UPX (FR), RATP (FR).</p>		<b>Address:</b> Am Grauen Stein 33, D-51105 Köln, Germany  <b>Web:</b> <a href="http://www.ifm-project.eu/">http://www.ifm-project.eu/</a>
<b>Project Objectives:</b>			
<p>The objective is to avoid the establishment of enduring isolated national solutions and to define route-maps leading the way toward pan-European interoperability. The IFM Project aims to be a European wide initiative dedicated to the establishment of attractive access to public transportation with modern fare management which is safe, reliable and convenient for both users and operators. Once achieved, this may serve as a model for many further countries outside Europe faced with the need to strengthen the use of public transport. The "IFM Project" will be the first step of the IFM initiative. The ultimate goal of the IFM Project at the end of the two-years is a European-wide agreed concept (Route Map) developing shared back-office rules for cross-border data exchange and the associated European Secure Access Module (EU-SAM). It will create a documented framework by 2010 to deliver the requirements for secure, fully-interoperable portable object for seamless mobility on public transport accessible to all European Citizens. In a second step comprising Research and Technological Development (RTD) and field operational tests, a European interoperable fare management standard will be developed and implemented by 2010.</p> <p>Following the definition and information sharing phase, existing and new schemes will be able to plan convergence strategies based on experience and utilising known technologies to enable a common Interoperable Fare Management area. The beneficiaries will be:</p> <ul style="list-style-type: none"> <li>• Transport Customers ("users") that will be able to use their local IFM transport cards outside their home networks as well as to use a multi-application contact-less wallet of their choice to upload the transport applications they need and carry the virtual transport tickets attached to each of them.</li> <li>• Transport Authorities that will be able to build new fare and distribution agreements with the support of standardised specifications.</li> </ul>			
<b>Project Description:</b>			
<p>The project is expected to significantly lower the barriers to mobility and encourage the use of public rather than private transport, contributing to a reduction of carbon emissions and a reduction or elimination of paper tickets, thus further enhancing the impact of smart media on environment and on the efficiency of public transport.</p> <p>It will be possible to tailor the media to assist specific groups (e.g. existing concessionary travellers, benefit recipients or part-time workers) thereby supporting the EU's Social Inclusion Agenda.</p> <p>The project is based on delivering an ICT environment that supports nomadic passengers. It will be delivered through work packages covering trust modelling, privacy modelling, common applications and interoperable media, model of IFM organisations and supporting back office ICT system interfaces. It will be managed to ensure effective and efficient consensus and dissemination of best practice among all stakeholders.</p> <p>The project is designed to provide world leadership in its segment and to deliver results which can be transferred to areas outside of the transportation sector world-wide. It will allow manufacturers and suppliers to offer the end-to-end, lossless nature of the IFM platform and transactions in other fields, thereby reducing time to market and lowering the cost of implementing other comparable schemes.</p>			
<b>Field of Application:</b>			
Public Transport			

<b>Project Acronym:</b>	<b>EURIDICE</b>	<b>Date:</b>	February 2008
<b>Project Title:</b>	European Inter-Disciplinary Research on Intelligent Cargo for Efficient, Safe and Environment-Friendly Logistics		
<b>Start Date:</b>	01/02/2008	<b>Contact:</b>	Paolo Paganelli
<b>End Date:</b>	31/01/2011	<b>Company:</b>	Insiel
<b>Duration:</b>	36 months	<b>Phone:</b>	+39-040-373-7001
<b># of Partners:</b>	22	<b>Email:</b>	<a href="mailto:paolo.paganelli@insiel.it">paolo.paganelli@insiel.it</a>
<b>Partners:</b>	<p>Akarport (GR), Assindustria Belluno (I), Autorità Portuale Di Trieste (I), BIBA (DE), CAEN RFID(I), CeTim (DE), Enicma (DE), FHV (AT), Gebrüder Weiss (AT), Insiel (I), JSI (SL), LogicaCMG (NL), Omega (GR), Oracle (PL), Proodos Kuehne Nagel (GR), SDAG (I), Searail (FI), Singular Logic (GR), Telit (I), TREDIT (GR), VIU (I), VTT (FI)</p>		<b>Address:</b> Via Cesare Battisti 27 40123 Bologna, Italy  <b>Web</b> <a href="http://www.univiu.org/projects/euridice/">http://www.univiu.org/projects/euridice/</a>
<b>Project Objectives:</b>			
<p>The EURIDICE project aims at creating an information services platform centred on the individual cargo item and on its interaction with the surrounding environment and the user, with the following main objectives:</p> <ul style="list-style-type: none"> <li>• Developing a fixed and mobile web services infrastructure supporting “on the fly” combination of services to address ad hoc user-cargo-context interactions, thus realizing the concept of “Intelligent Cargo”.</li> <li>• Improving logistic performances through application of the intelligent cargo concept and technologies in the working practices of logistic operators and industrial users.</li> <li>• Developing collaborative business models to sustain, promote and develop an intelligent cargo infrastructure.</li> <li>• Realizing more secure and environment friendly transport chains through the adoption of intelligent cargo to support modal shift and door-to-door inter-modal services.</li> </ul>			
<b>Project Description:</b>			
<p>Euridice is an Integrated Project funded by EU's Seventh Framework Programme ICT for Transport Area. The project has an estimated effort of approximately 1600 person months, subdivided into three main typologies of activities:</p> <ul style="list-style-type: none"> <li>• S/T Research, pursuing the required innovations into the four main areas of cargo connectivity and communication, service oriented architectures, cargo information management and decisions support.</li> <li>• Pilot applications, providing requirements and trial scenarios for test and assessment of the S/T results. Pilots will be designed and implemented taking into account of two dimensions: the supply chain/sector dimension, to assess impact from an industry viewpoint, and the stakeholder dimension, considering the different perspective of the main public and private actors involved in freight logistics.</li> <li>• Impact creation, including knowledge sharing, dissemination and training activities directed to target scientific and business communities to ensure proper diffusion of the project concepts and results. To maximize impact, business modelling activities are carried out throughout the duration of the project, involving industrial partners in the Consortium as well as key players in the field participating in the EURIDICE Business Forum</li> </ul>			
<b>Field of Application:</b>			
<p>The EURIDICE platform will support a broad range of applications in different sectors. In the project, pilots are being developed involving four main categories of stakeholders:</p> <ul style="list-style-type: none"> <li>• Industry and distribution companies, for supply chain management applications of the Intelligent Cargo concept.</li> <li>• Logistic Service Providers (LSP) for applications aimed at improving transportation and logistic services.</li> <li>• Intermodal logistic operators, for applications supporting door-to-door services involving different transport modes.</li> <li>• Public organizations and authorities, targeting ICT-based services for freight authorization, security and safety management.</li> </ul>			

<b>Project Acronym:</b>	<b>GRIFS</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	GRIFS - Global RFID Interoperability Forum for Standards		
<b>Start Date:</b>	01.01.2008	Contact:	Stephane Pique
<b>End Date:</b>	31.12.2009	Company:	GS1
<b>Duration:</b>	24 month	Email:	<a href="mailto:stephane.pique@gs1eu.org">stephane.pique@gs1eu.org</a>
<b># of Partners:</b>	3	Address:	Avenue Louise 326; 1050 Brussels; Belgium
<b>Partners:</b> GS1; European Telecommunications Standards Institute (ETSI); European Committee for Standardization (CEN)		Web:	<a href="http://www.grifs-project.eu/">http://www.grifs-project.eu/</a>
<b>Project Objectives:</b> The GRIFS will characterise the variety of standards activities taking place globally to: <ul style="list-style-type: none"> <li>• Create a number of liaison activities to disseminate information about the importance of global standards</li> <li>• Align RFID standards development globally</li> <li>• Put in place the 'Global RFID Interoperability Forum for Standards' (GRIFS) comprising global stakeholders</li> <li>• Ensure continuing close collaboration between standards activities.</li> </ul>			
<b>Project Description:</b> A world where global supply chains are the norm requires that RFID tags and associated sensors can operate, can be seen and can be interrogated anywhere in the world. For maximum competitiveness and greatest efficiency this requires standards that are global in definition and in application. GRIFS is a two year project to improve collaboration and thereby to maximise the global consistency of RFID standards. It is envisaged that the GRIFS project puts in place and initiates a Forum that will continue to work constructively thereafter. The activities of the Forum will be defined during the project. The membership will include high level representation of key standards and other related bodies.			
<b>Field of Application:</b> This support action will focus on the use of RFID in supply chain and related activities. These activities primarily encompass the tracking and tracing of physical items as they move through supply chains in many different businesses, both in the public and private sector.			

<b>Project Acronym:</b>	<b>INDISPUTABLE KEY</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Intelligent distributed process utilization and blazing environmental key		
<b>Start Date:</b>	01.10.2006	<b>Contact:</b>	Richard Uusijärvi
<b>End Date:</b>	31.09.2009	<b>Company:</b>	SP
<b>Duration:</b>	36	<b>Phone:</b>	+46-8-7621800
<b># of Partners:</b>	28	<b>Email:</b>	<a href="mailto:richard.uusijarvi@sp.se">richard.uusijarvi@sp.se</a>
<b>Partners:</b>	28 partners from Estonia, Finland, France, Norway and Sweden. The partners represent research institutes, universities, ICT companies, industrial developers, forestry and wood product companies.		<b>Address:</b> SP Trätek, Box 5609 SE-11486 Stockholm, Sweden
		<b>Web:</b>	<a href="http://www.indisputablekey.com/">http://www.indisputablekey.com/</a>
<b>Project Objectives:</b>			
<p>Increase the usage of wood material and maximize the value in its transformation all along the supply chain from the forest to the customer, minimizing environmental impacts. "The best wood raw material for the right usage at the right time and location".</p> <p>The project aims to develop and introduce new methods and advanced ICT technology to support this overall objective.</p>			
<b>Project Description:</b>			
<p>When other industrial sectors already have developed optimizing systems for their supply chain, the wood industry is still experience-driven. Indisputable Key aims to trigger a knowledge-based breakthrough by the development of a traceability system and associated services ("Digital Forest Chain") including the following areas:</p> <ul style="list-style-type: none"> <li>• RFID technology for marking and reading, especially at the early stage of the wood value chain. The technology must be compatible with the wood specific requirements (very tough conditions, bio-degradable and pulping compatible transponders).</li> <li>• Developing an architecture and adapting standards for exchanging information all along the wood transformation chain.</li> <li>• Modelling the gathered IAD (Individual Associated Data) to improve the critical processes including the reduction of the environmental impacts by real time indicators.</li> <li>• Training people to get the necessary skills to benefit from those new technologies and open their willingness towards a collaborative model of working.</li> <li>• Validating the functionality and benefits by real implementations at industrial partners. Benefits are expressed as improvements in efficiency, agility, higher quality, etc and the Return on Investment is calculated.</li> </ul>			
<b>Field of Application:</b>			
Supply chain collaborative tracing systems and services for all actors in the wood procurement and wood products industries.			

<b>Project Acronym:</b>	<b>iSurf</b>	<b>Date:</b>	February 2008
<b>Project Title:</b>	An Interoperability Service Utility for Collaborative Supply Chain Planning across Multiple Domains Supported by RFID Devices		
<b>Start Date:</b>	01.02.08	<b>Contact:</b>	Prof. Dr. Asuman Dogac
<b>End Date:</b>	30.07.10	<b>Company:</b>	Middle East Technical University, Computer Engineering Department
<b>Duration:</b>	30 months	<b>Phone:</b>	+90-312-210-5598
<b># of Partners:</b>	7	<b>Email:</b>	<a href="mailto:asuman@srdc.metu.edu.tr">asuman@srdc.metu.edu.tr</a>
<b>Partners:</b> METU (TR), SRDC (TR), Intel (IE), FhG-IPA (DE); TXT (IT), Uninova (PT), Piacenza (IT)		<b>Address:</b>	Inonu Bulvari, Campus 06531 Ankara, Turkey
		<b>Web:</b>	<a href="http://www.isurfproject.eu/">http://www.isurfproject.eu/</a>
<b>Project Objectives:</b> iSURF will develop knowledge-oriented inter-enterprise collaboration tools for European SMEs to enable them to be more agile, self-sustainable and responsive to the changes in the supply chain. An open smart product infrastructure will be developed to collect supply chain visibility information and an interoperability service utility will be provided for seamless exchange of planning documents.			
<b>Project Description:</b> In order to guarantee the survival in today's competitive and demanding digital world of business, the European companies, especially SMEs, should be more agile, self-sustainable and responsive to the changes in the supply chain. Trading partners have different competencies based on their business strategies and varying sources of information. Competitiveness of European Companies is reduced when decision making is inconsistent due to incomplete understanding of the impact of decision on the supply chain as a whole. The distributed intelligence of multiple trading partners needs to be collaboratively exploited in the planning and fulfilment of customer demand in the supply chain in order to achieve "network is the business" vision. As a response to this need iSURF project will provide a knowledge-oriented inter-enterprise collaboration environment to SMEs to share information on the supply chain visibility, individual sales and order forecast of companies, current status of the products in the manufacturing and distribution process, and the exceptional events that may affect the forecasts in a secure and controlled way. iSURF project will provide an open source smart product infrastructure based on RFID technology using EPCGlobal standards. Through this infrastructure, necessary tools and processes will be provided to collect realtime product visibility events from massively distributed RFID devices; filter, correlate and aggregate them in order to put them into business context. iSURF project will provide a Service Oriented Collaborative Supply Chain Planning Process Definition and Execution Platform based on "Collaborative Planning, Forecasting, and Replenishment (CPFR)" guidelines.			
<b>Field of Application:</b> Our pilot application will be deployed in textile clothing supply chain and will demonstrate how product identification techniques integrated with collaborative planning tools could dramatically improve the efficiency and the effectiveness of this supply chain.			

<b>Project Acronym:</b>	<b>LEAPFROG</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Leadership for European Apparel Production From Research along Original Guidelines		
<b>Start Date:</b>	01.05.2005	Contact:	Lutz Walter
<b>End Date:</b>	30.04.2009	Company:	Euratex
<b>Duration:</b>	48 months	Phone:	+32-22-854-885
<b># of Partners:</b>	35	Email:	<a href="mailto:lutz.walter@euratex.org">lutz.walter@euratex.org</a>
<b>Partners:</b>	35 partners from 11 European countries; 11 of them being Textile and Clothing Industry		Address: Rue Montoyer 24 1000 Brussels; Belgium
		Web:	<a href="http://www.leapfrog-eu.org/">http://www.leapfrog-eu.org/</a>
<b>Project Objectives:</b>			
<p>The goal of LEAPFROG is to achieve a step change in productivity and competitiveness of Europe's clothing industry and to decrease its dependence on the labour cost factor. LEAPFROG, led by Euratex, is a research and innovation initiative of the European Textile and Clothing Industry and which brings together a critical mass of the sector companies and research centres. It aims at a technology breakthrough in the clothing industry by researching on new materials, technologies and processes enabling:</p> <ul style="list-style-type: none"> <li>• innovative fabric preparation,</li> <li>• automated garment manufacturing,</li> <li>• 3D virtual garment prototyping, and</li> <li>• a high quality (of) partnership of networking companies.</li> </ul>			
<b>Project Description:</b>			
<p>Clothing production in Europe suffers from high labour costs in garments manufacturing which makes this activity largely uncompetitive in high-labour cost countries. Design and prototyping of garments today remains much too time and cost intensive with its craft-like organisation; likewise lengthy trial and error procedures and inefficient means of communications often hamper full competitiveness. Spread inefficiencies in the overall organisation of the clothing business and the complexity of the supply chain lead to frequent overstock as well as out-of-stock situations, which determinate enormous missed business opportunities. To overcome these problems LEAPFROG researches in 4 areas:</p> <ul style="list-style-type: none"> <li>• <b>Innovative Fabrics:</b> Exploring applications of permanent/temporary stiffening of fabrics and new fabrics-processing techniques.</li> <li>• <b>Automation of Garment Manufacturing:</b> automating the garment assembling by innovative fast and highly re-configurable robotic devices (multi-points grippers, re-configurable mannequins, sewing operations) with as yet unforeseen dexterity, cooperation ability and efficiency in handling and working with limp material.</li> <li>• <b>Virtual Garment Prototyping:</b> to revolutionise garments design and prototyping by developing 3D Virtual Prototyping infrastructures, reducing the number of fabrics physical prototypes, shortening company-time to develop a new collection, efficient cost estimations from sketch drawing to pattern making.</li> <li>• <b>New Quality of Partnership:</b> the new concept of the extended Smart Garment Organisation (xSGO) to improve design and operation of all (business and production) activities in networking garment organisations which cover all life cycle stages (design, development, production, distribution including logistics).</li> </ul>			
<b>Field of Application:</b>			
LEAPFROG addresses areas for RFID application in the Textile and Clothing industry as: textile and garment production, logistics in the textile supply chain and in the distribution to retail and consumers.			



<b>Project Acronym:</b>	<b>PEARS Feasibility</b>	<b>Date:</b>	August 2008
<b>Project Title:</b>	Privacy and Security Ensuring Affordable RFID System: Technical and Commercial Feasibility		
<b>Start Date:</b>	15.07.2007	<b>Contact:</b>	Humberto Moran
<b>End Date:</b>	15.01.2009	<b>Company:</b>	Friendly Technologies Ltd
<b>Duration:</b>	18 months	<b>Phone:</b>	+44-79-212-13749
<b># of Partners:</b>	5	<b>Email:</b>	<a href="mailto:hmoran@friendlytechnologies.eu">hmoran@friendlytechnologies.eu</a>
<b>Partners:</b>	Friendly Technologies Ltd (Coordinator), Thales Services, Open Source Innovation Ltd, TagTech Ltd, Added Value Capital Partners		<b>Address:</b> Unit 5, The James Gregory Centre Aberdeen Science and Technology Park Aberdeen AB22 8GU - Scotland
		<b>Web:</b>	<a href="http://www.friendlytechnologies.eu">www.friendlytechnologies.eu</a>
<b>Project Objectives:</b>			
<p>The objective of PEARS Feasibility is to determine the commercial and technical feasibility of the PEARS system in high-volume applications. This should in turn pave the way for further R&amp;D on PEARS.</p>			
<b>Project Description:</b>			
<p>It is commonly accepted that the economic, environmental and consumer benefits from the widespread adoption of RFID are paramount - e.g. from the improvement of cost efficiencies in the supply chain, product quality and security, and recycling and waste-reduction possibilities; the traditional proposal for item-level tagging is inadequate because the typical passive tag can be surreptitiously read by any compatible reader. This poses tremendous privacy issues and exposes consumers and industry to crime by allowing the fraudulent detection, misuse, abuse, transplant, cloning or counterfeiting of tags. For example, consumers might be unable to hide sensitive or expensive products in pockets or handbags.</p> <p>The PEARS Feasibility project is based on an invented and patented novel RFID approach that allows the item-level tagging of Fast Moving Consumer Goods (FMCGs) and other common objects with very affordable passive tags that pose no privacy or security issues for consumers and industry. However, the proposed system requires the development of custom-made tags, compatible readers and supporting software; none of which currently exists at commercial level.</p> <p>Whilst the technical viability of the invention in low-volume applications has been proven by a prototype; commercial and technical viability in high-volume applications is yet to be demonstrated. Due to the complexity and novelty of the proposed technology and target market; most potential investors have expressed concerns about the high project risks and recommended applying for public grant support to undertake a thorough technical and commercial feasibility study of the proposed technology and applications before committing to a massive development project. This feasibility project is to explore commercial and technical feasibility by exploring the market and developing business cases, determining the necessary technology capabilities and viable costs for high-volume applications, and exploring technical alternatives for the development of a commercial product.</p>			
<b>Field of Application:</b>			
<p>Item-level tagging of retail goods for real-time stock availability.</p> <p>Product authenticity and integrity.</p> <p>Compliance with recommendations on RFID and privacy by the European Commission.</p> <p>Consumer or post-POS RFID applications.</p> <p>Ensured consumer and industry privacy and security with affordable and reliable tags.</p>			

<b>Project Acronym:</b>	<b>PRIME</b>	<b>Date:</b>	January 2007
<b>Project Title:</b>	Privacy and Identity Management for Europe		
<b>Start Date:</b>	01.03.2004	<b>Contact:</b>	Marit Hansen
<b>End Date:</b>	28.02.2008	<b>Company:</b>	ULD
<b>Duration:</b>	48 months	<b>Phone:</b>	+49-431-988 1214
<b># of Partners:</b>	20	<b>Email:</b>	<a href="mailto:prime@datenschutzzentrum.de">prime@datenschutzzentrum.de</a>
<b>Partners:</b>	IBM Belgium (Coord.), IBM Zürich Research Laboratory, Unabh. Landeszentrum für Datenschutz (DE), TU Dresden (DE), Katholieke Universiteit Leuven (BE), Universiteit van Tilburg (NL), Hewlett-Packard (UK), Karlstads Universitet (SV), Università di Milano (IT), Joint Research Centre Ispra (IT), LAAS-CNRS (FR), J. W. Goethe-Universität Frankfurt am Main (DE), Chaum LLC (USA), RWTH Aachen (DE), Institut EURECOM (FR), Erasmus University Rotterdam (NL), Fondaz. Centro S. Raffaele del Monte Tabor (IT), Deut. Lufthansa (DE), Swisscom (CH), T-Mobile (DE)		<b>Address:</b> Holstenstr. 98, 24103 Kiel, Germany  <b>Web:</b> <a href="http://www.prime-project.eu/">http://www.prime-project.eu/</a>
<b>Project Objectives:</b>			
<p>In the online world, every person has to handle numerous accounts and data sets. These so-called "partial identities" will increasingly play a key role in future electronic services as well as in public security. They may very well convey sensitive personal data, such as patient health data, employee data, credit card data, etc.</p> <p>The project "Privacy and Identity Management for Europe" (PRIME) aims at developing a working prototype of a privacy-enhancing identity management system. The project focuses on solutions for identity management that support end-users' sovereignty over their private sphere and enterprises' privacy-compliant data processing. To foster market adoption, novel solutions for managing identities will be demonstrated in challenging real-world scenarios, e.g., from Internet Communication, Airline and Airport Passenger Processes to Location-Based Services and Collaborative e-Learning.</p>			
<b>Project Description:</b>			
<p>The PRIME project envisions user-controlled identity management systems within which the players concerned act together, mediated by technology to enforce the rules set by law and the contracting partners. In these systems, the user has control of personal information and discloses it only after agreeing to the service's privacy policy. Such privacy policies describe the data processing, e.g., purpose, possible transfers to other parties and retention. All parties act within the strict bounds of law, under anonymity, pseudonymity, or on the basis of explicitly agreed terms between the parties. In all cases technology supports accountability and recourse.</p> <p>The PRIME concept contrasts with approaches from other identity management systems under development by strongly focusing on putting the user in control and enforcing the individual's privacy needs, based on privacy-enhancing solutions (in particular an innovative credential system).</p> <p>All PRIME results are being evaluated by legal, social, economic, usability and assurance experts.</p>			
<b>Field of Application:</b>			
<p>User-controlled identity management.</p> <p>Data minimisation and data exchange considering privacy and security aspects.</p>			

<b>Project Acronym:</b>	<b>PROMISE</b>	<b>Date:</b>	January 2007
<b>Project Title:</b>	Product lifecycle management and information tracking using smart embedded systems		
<b>Start Date:</b>	15.11.2004	Contact:	Dr. Dimitris Kiritsis
<b>End Date:</b>	15.05.2008	Company:	EPFL, STI-IPR-LICP
<b>Duration:</b>	42 months	Phone:	+41-21-693-5163
<b># of Partners:</b>	22	Email:	<a href="mailto:dimitris.kiritsis@epfl.ch">dimitris.kiritsis@epfl.ch</a>
<b>Partners:</b>		Address:	1015 Lausanne
Germany: BIBA, COGNIDATA, INDYON, INFINEON, InMediasP, SAP; Switzerland: Bombardier Transportation, EPFL; UK: Cambridge University; France: Caterpillar; Ireland: CIMRU; Italy: CR FIAT, FIDIA S.p.A., ITIA-CNR, Politecnico di Milano, WRAP; Greece: INTRACOM; Norway: SINTEF, Finland: Helsinki University of Technology, Trackway.		Web:	<a href="http://www.promise.no/">http://www.promise.no/</a>
<b>Project Objectives:</b>			
<p>The core innovation of PROMISE is the concept of smart products that are able to sense their condition and environment. PROMISE-Product Lifecycle Management (PLM) addresses gaps in information flow and creates better understanding and extends control of products over the lifecycle, giving manufacturers effective instruments to create more value to the end users and win market share</p> <p>PROMISE focuses on the complete lifecycle of a product from the Beginning of Life (BOL) to the Middle of Life (MOL) to the End of Life (EOL) with more emphasis in tracking and managing of information at the last two phases of the product's life cycle. PROMISE's main objectives are</p> <ol style="list-style-type: none"> <li>1. To develop new closed-loop life cycle information flow models all three product life-cycle stages,</li> <li>2. To develop new PLM systems and IT infrastructure exploiting the capabilities of smart product embedded information devices,</li> <li>3. To develop new standards allowing the technologies and associated tools developed by the PROMISE project to be accepted by the market, enabling market growth by creating a favourable environment for the development of new innovative applications in Product Lifecycle Management systems</li> <li>4. To develop new business models for innovative technologies to be deployed by all players in the Product Life-Cycle.</li> </ol>			
<b>Project Description:</b>			
<p>PROMISE will develop appropriate technology, including product lifecycle models, Product Embedded Information Devices (including firmware and software components) as well as 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, from its delivery to the customer to its final destination (deregistration, decommissioning) and back to the designer and producer.</p> <p>The key result will be a new IT infrastructure and ubiquitous Product Lifecycle Management software which maximises strengths of existing hardware and legacy systems. Achieving maximum advantage may require the development of industry- or product- specific Product Embedded Information Devices (PEIDs) which are based on a combination of existing technologies, such as bar-code, RFID transponders and short- as well as long-range wireless communication technologies. Applications are being tested in 10 PROMISE demonstrators in the automotive, railway, heavy load vehicle, electronics and white goods sectors. Activities also address integration and standardisation, business development, and training issues.</p>			
<b>Field of Application:</b>			
<p>PROMISE offers potential stakeholders an attractive business proposition: to create value by transforming information to knowledge at all phases of the product lifecycle and thus improving product and service quality, efficiency and sustainability. The product and service value may be created at various levels: technical (e.g. exploiting knowledge gained "in the field"); economic (e.g. new business opportunities, better customer relations); environmental (minimisation of pollution, resource use and energy consumption); and social (greater comfort, safety, security). Closing product lifecycle information loops has several benefits:</p> <ul style="list-style-type: none"> <li>• Producers will be provided with complete data about the modes of use and conditions of retirement and disposal of their products.</li> <li>• Service and maintenance as well as recycling experts will be assisted in their work by having: (a) a complete and always up-to-date report about the status of the product, and (b) real-time assistance and advice through the internet.</li> <li>• Designers will be able to exploit expertise and know-how of the other players in the product's lifecycle and thus improve product designs towards lifecycle quality goals.</li> <li>• Recyclers/re-users will be able to obtain accurate information about "value parts and materials".</li> <li>• In the very end PROMISE gives better value to end users, lowers manufacturing costs and gives product a new life.</li> </ul>			

<b>Project Acronym:</b>	<b>SMART</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	Intelligent Integration of Supply Chain Processes and Consumer Services based on Unique Product Identification in a Networked Business Environment		
<b>Start Date:</b>	01.11.2006	<b>Contact:</b>	Kostas Thiveos
<b>End Date:</b>	30.04.2009	<b>Company:</b>	INTRASOFT International S.A.
<b>Duration:</b>	30 months	<b>Phone:</b>	+30-210-6876483
<b># of Partners:</b>	10	<b>Email:</b>	<a href="mailto:Kostas.Thiveos@intrasoft-intl.com">Kostas.Thiveos@intrasoft-intl.com</a>
<b>Partners:</b>	<p>INTRASOFT International (LU), Cambridge University -Auto-ID Lab (UK), Athens University of Economics &amp; Business - ELTRUN/SCORE Research Group (GR), Trinity College Dublin (IE) Massachusetts Institute of Technology, Planning (CY), Alpha-Mega Super Markets - C.A.Papaellinas Trading (CY), Hellas-Spar Veropoulos Super Markets (GR), Superquinn Supermarkets (IE), WHU -Otto Beisheim School of Management (DE), Rilken-Schwarzkopf-Henkel (GR).</p>		<b>Address:</b> 2b, Rue Nicolas Bove, L-1253, Luxembourg  <b>Web:</b> <a href="http://www.smart-rfid.eu/contact.php">http://www.smart-rfid.eu/contact.php</a>
<b>Project Objectives:</b>	<p>The SMART research project aims to support intelligent business networking and consumer services based on efficient information sharing and collaboration across supply chain partners. This can be realised because products are uniquely and automatically identified with the use of RFID technology. In this context processes like collaborative planning and replenishment, product tracking and traceability, promotions management and consumer in-store support can be improved.</p>		
<b>Project Description:</b>	<p>The SMART project will provide the infrastructure, electronic services and software applications to enable supply chain collaboration and innovative consumer services. These services will be based on a scalable-distributed-architecture and building on the possibilities provided by peer-to-peer networks, web-service orchestration and choreography, data-stream systems and smart tagging technologies.</p> <p>The SMART collaboration infrastructure shall be in close integration with the EPCglobal Network information infrastructures. It will provide a complete and solid collaboration framework offering innovation to specific supply chain processes and consumer services.</p>		
<b>Field of Application:</b>	Data stream management, real time analytics, tracking and tracing, web services		

<b>Project Acronym:</b>	<b>SMMART</b>	<b>Date:</b>	January 2007
<b>Project Title:</b>	System for Mobile Maintenance Accessible in Real Time		
<b>Start Date:</b>	01.11.2005	Contact:	Jean-Louis BOUCON
<b>End Date:</b>	31.10.2008	Company:	TURBOMECA
<b>Duration:</b>	36 months	Phone:	+33-5-59-251-10 +33-6-82-072-266
<b># of Partners:</b>	24	Email:	<a href="mailto:jean-louis.boucon@turbomeca.fr">jean-louis.boucon@turbomeca.fr</a>
<b>Partners:</b>	2MoRO SAS (FR); 2MoRO SPRL (B); AVONWOOD (GB); CAM GmbH (DE); CEA List (FR); EHM (GB); ESTIA (FR); Univ of Stuttgart (DE); FRAUNHOFER (DE); MICROTURBO (GB); M & M (PL); ROBOTIKER (E); TDM (F); THALES COM (FR); THALES TRT (FR); TURBOMECA (FR); TRICON (A); Univ Milan Bicocca (I); VOLVO (S); SGH (PL); TELETEL (GR); SNECMA Services (FR); EUROCOPTER (FR); MIK MCC (E)		Address: TURBOMECA - DDP bal 39 - 64511 BORDES CEDEX - France  Web: <a href="http://www.smmart.eu/">http://www.smmart.eu/</a>
<b>Project Objectives:</b>			
<p>The project "System for Mobile Maintenance Accessible in Real Time (SMMART) aims at defining a new integrated concept to answer the maintenance challenges of the transport industry – aeronautics, road transport, marine transport.</p> <p>It will help to reduce the time and cost for scheduled and unscheduled maintenance inspections of increasingly sophisticated and complex products.</p> <p>SMMART wants to remotely provide the adequate up-to-date information to assist the mobile workers in all their tasks wherever they operate, also minimising the cost penalties of unscheduled downtime on large transport fleets. Lastly, SMMART aims at offering new services for the maintenance of vehicles in order to simplify and secure the exploitation.</p>			
<b>Project Description:</b>			
<p>Capture usage and installation data on equipment with smart tags and exploit data for optimisation of maintenance and equipment availability:</p> <ul style="list-style-type: none"> <li>• Real time vision on status and installation of equipment for all actors involved</li> <li>• Build-up of knowledge to be used for more efficient maintenance and (re-) design</li> <li>• Enhanced troubleshooting tool</li> <li>• Enhanced configuration control</li> <li>• Worldwide maintenance planning</li> <li>• Decrease reaction time in "crisis scenarios"</li> <li>• Logistical tracing &amp; tracking of equipment when not installed on vehicle</li> <li>• Remote access to data "in the field"</li> </ul>			
<b>Field of Application:</b>			
<p>Targeting at Aeronautics, Road and Marine Transport, but also extendable to other fields like elevators and escalators, windmills, micro power stations</p>			

<b>Project Acronym:</b>	<b>StoLPaN</b>	<b>Date:</b>	January 2007
<b>Project Title:</b>	Store Logistics and Payment with NFC		
<b>Start Date:</b>	01.07.2006	<b>Contact:</b>	András Vilmos
<b>End Date:</b>	30.06.2009	<b>Company:</b>	Motorola
<b>Duration:</b>	36	<b>Phone:</b>	+361-212-4321
<b># of Partners:</b>	16	<b>Email:</b>	<a href="mailto:vilmos@stolpan.com">vilmos@stolpan.com</a>
<b>Partners:</b>	Motorola, NXP Semiconductors, Auto-ID-Lab St. Gallen, Banca Popolare di Vicenza, Bull, Baker&McKenzie, Consorzio Triveneto S.P.A., Consult Hyperion, Deloitte, Fornax, Libri, Safepay Systems, Sun Microsystems, T-Systems, the Budapest University of Technology and Economics, and Budapest Tech John von Neumann Faculty of Informatics		<b>Address:</b> Lajos u.48-66 H-1036 Budapest; Hungary  <b>Web:</b> <a href="http://www.stolpan.com/">http://www.stolpan.com/</a>
<b>Project Objectives:</b>			
<p>Store Logistics and Payment with NFC (StoLPaN) is a pan-European consortium supported by the European Commission's IST program. StoLPaN will examine the potential for bringing together the new kind of local wireless interface, Near Field Communication (NFC) and mobile communication.</p> <p>The project is expected to define the Business Rules and Technical Specifications required for the successful commercial deployment and operation of third party applications in the Secure Chip in an NFC-enabled mobile device. The project will establish a smart retail environment including support devices and business processes to demonstrate the new solutions.</p>			
<b>Project Description:</b>			
<p>The StoLPaN project intends to turn NFC (Near Field Communication) enabled mobile handsets into multifunction terminals with bi-directional interaction between the wireless NFC interface and mobile communication channels. It will show the use of this generally applicable new technology in the retail logistical value chain, and also in mobile payment, ticketing and other use cases. Mobile NFC services are developed based on their existing contact less use cases and also on the available infrastructure. In addition, their features are enhanced through the functional capabilities of the mobile handsets and the remote application management potential.</p>			
<b>Field of Application:</b>			
Near Field Communication for Ticketing, access control or payment processes.			

<b>Project Acronym:</b>	<b>SToP</b>	<b>Date:</b>	July 2008
<b>Project Title:</b>	SToP Tampering of Products		
<b>Start Date:</b>	01.11.2006	<b>Contact:</b>	Harald Vogt
<b>End Date:</b>	30.04.2009	<b>Company:</b>	SAP AG
<b>Duration:</b>	30 months	<b>Phone:</b>	+49-6227-7-52551
<b># of Partners:</b>	8	<b>Email:</b>	<a href="mailto:harald.vogt@sap.com">harald.vogt@sap.com</a>
<b>Partners:</b> SAP, Novartis, Richemont, Airbus, Bundesdruckerei, Oria, Spacecode, University St. Gallen		<b>Address:</b>	Vincenz-Priessnitz-Str. 1; D-76131 Karlsruhe; Germany
		<b>Web:</b>	<a href="http://www.stop-project.eu/">http://www.stop-project.eu/</a>
<b>Project Objectives:</b> The project "Stop Tampering of Products" (SToP) aims at providing solutions for the authentication of products based on Radio Frequency Identification (RFID) and related ambient intelligence technologies. The technologies employed must be adequate for the specific environments regarding the structure of products and the environments in which they are produced, stored, transported, and traded. Technical challenges that currently prohibit the use of RFID in many areas are targeted as well as the integration of the verification technologies and processes into enterprise system architectures, such as supply chain management systems. Finally, the overall solution must be economically feasible.			
<b>Project Description:</b> The SToP project is an international research consortium lead by SAP and comprises Hochschule St. Gallen, Oria Computers, Spacecode, Richemont, Novartis, Airbus, and Bundesdruckerei. The consortium members provide substantial knowledge in the areas of RFID product integration, product tracking, economical issues of counterfeiting, and enterprise processes. We are investigating the economics of the counterfeiting business and propose a technical approach to product authentication that will address important issues regarding product security and anti-counterfeiting. The approach is being embedded into an economic framework that shows how the approach can be efficiently and effectively adopted by companies of different size in various industries. One of the key elements in the project is the development of a prototype system infrastructure and its evaluation in extensive trials demonstrating its potential in the context of a variety of industries and processes.			
<b>Field of Application:</b> Anti-counterfeiting, product security, supply chain integrity			

<b>Project Acronym:</b>	<b>TraSer</b>	<b>Date:</b>	January 2007
<b>Project Title:</b>	Identity-Based Tracking and Web-Services for SMEs		
<b>Start Date:</b>	01.06.06	<b>Contact:</b>	Zsolt Kemeny
<b>End Date:</b>	01.05.09	<b>Company:</b>	Computer and Automation Research Institute Hungarian Academy of Sciences
<b>Duration:</b>	36 months	<b>Phone:</b>	+36-1-279-6195
<b># of Partners:</b>	8	<b>Email:</b>	<a href="mailto:kemeny@sztaki.hu">kemeny@sztaki.hu</a>
<b>Partners:</b> Computer and Automation Research Institute, Hungarian Academy of Sciences (coordinator, H); Helsinki University of Technology (FIN); University of Groningen (NL); Innotec Magyar Kft. (H); Finland Post Corporation (FIN); TNO Information and Communication Technology (NL); Wittmann & Partner Computer Systems (RO)		<b>Address:</b>	Kende u. 13-17; 1111 Budapest; Hungary
		<b>Web:</b>	<a href="http://www.traser-project.eu/">http://www.traser-project.eu/</a>
<b>Project Objectives:</b> The TraSer project ("Identity-Based Tracking and Web-Services for SMEs"), financed within the EU 6th Framework Program, was started to offer a free, open-source alternative to today's proprietary tracking and tracing solutions. This will help making tracking and tracing beyond company borders affordable for small and medium-sized enterprises (SME). This allows for a low initial systems investment, the applicability with legacy and low-end standard systems and the lean implementation and maintenance, minimising the requirements for IT specialist staff. Thus SME will have easier access to tracking infrastructures and RFID systems of Logistic Service Providers (LSPs).			
<b>Project Description:</b> TraSer is an open source project, developing, testing, and documenting innovative open-source tracing and tracking solutions for products and product data of companies in changing networks.			
<b>Field of Application:</b> Tracking and Tracing applications for SMEs.			