



BRIDGE

Newsletter - November 2007

BUILDING RADIO FREQUENCY
IDENTIFICATION SOLUTIONS
FOR THE GLOBAL ENVIRONMENT

Welcome to the BRIDGE Project Newsletter !

This newsletter is published every two months to keep you updated on the happenings within the BRIDGE project. Each edition contains topical information arising from the various Work Packages within BRIDGE. You can also expect to find information on: current RFID-related hot topics, reports on conferences and meetings, project milestones and achievements, events calendar and other BRIDGE related information.

In this issue you will find:

- ◆ WP2 - Discovery Services
- ◆ BRIDGE features six pilots in its second project year
- ◆ WP13 - BRIDGE delivers exciting EPCglobal promotional & educational material
- ◆ Review meeting of the BRIDGE project
- ◆ Upcoming events
- ◆ About the BRIDGE project

Any feedback or questions contact emilie.danel@gs1.org

WP2 - Discovery Services

Co-authored by Mark Harrison (University of Cambridge) and Miguel Angel Guijarro (AT4 wireless)

The object of this Work Package is to investigate the different possibilities for creating, addressing and maintaining the large heterogeneous network of ICT resources to hold information about physical objects (items)

Background

EPC Networks are designed to enable computer systems to be informed of the presence and movement of physical objects (observations at locations where readers are placed). The EPC Network architecture is depicted in Figure 1 and consists of a number of inter-related technical standards for interfaces and information formats, together with core services. These standards have been developed by the EPCglobal community (consisting of end users, technology solution providers and academics), driven by the requirements of end-users. A key principle of the EPC Network design is that data ownership should

be respected. This means that companies can collect information within their organisation and are not required to route that information to any other organisation. However, they can choose to share selected information with trusted partners using the EPC Information Service query interface as a standard mechanism for exchange of information between organisations. This in turn means that the complete lifecycle information about any individual object may be held by multiple organisations throughout the supply chain or the product lifecycle. A mechanism is therefore needed in order to facilitate the gathering of this information.

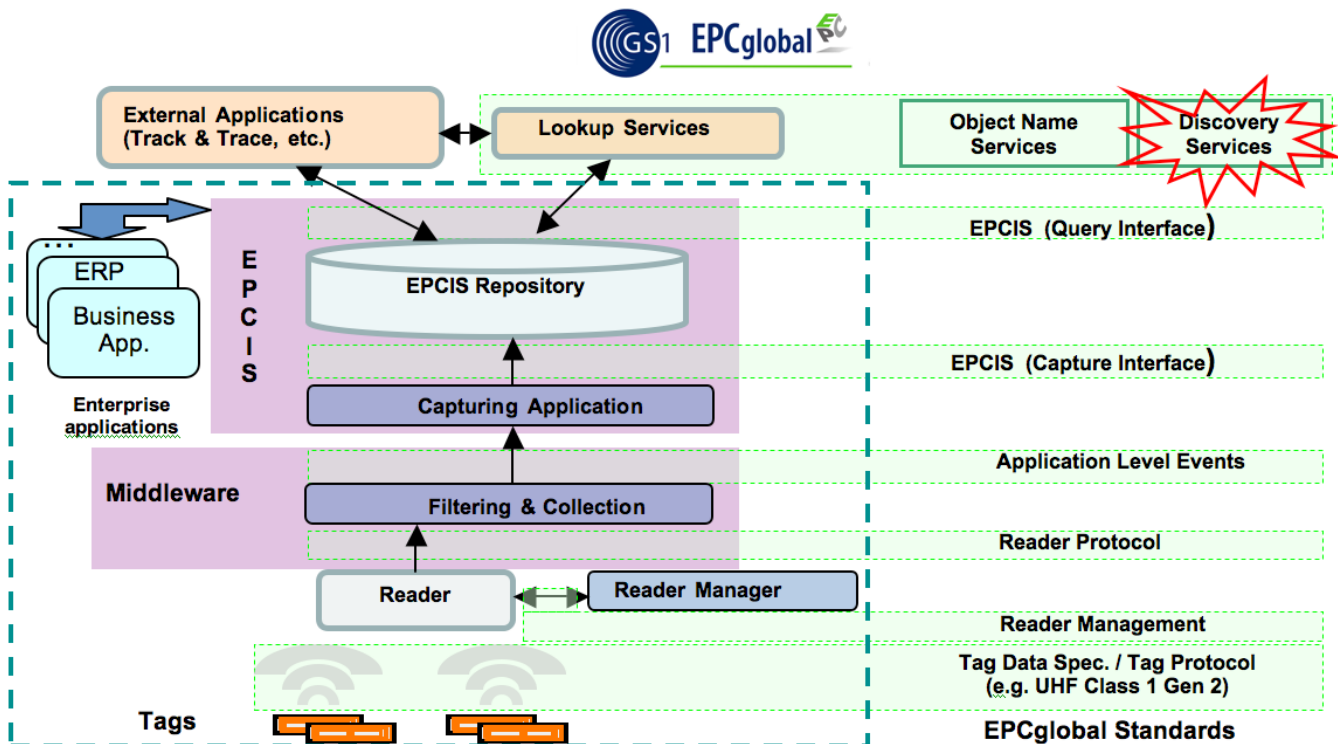


Figure 1 – EPCglobal Architecture



What are Discovery Services?

Discovery Services (DS) are envisaged to provide pointers to multiple providers of information across a supply chain, to indicate the addresses of information services of all organisations that hold information about a given physical object (identified by its EPC (Electronic Product Code)). In some senses, Discovery Services play an analogous role to that of search engines on the World Wide Web, in that they can provide links to sources of more detailed information. The EPC or unique identifier acts in place of the keyword in the primary search criteria. Unlike most web search engines and unlike the Domain Name System (DNS) and the Object Name Service (ONS), access to information held within Discovery Services will usually require a client to authenticate with a Discovery Service – and the amount of information returned in response to their query will be subject to filtering by access control policies that are set by each information provider.

Although the Object Name Service (ONS) and Discovery Services are both lookup services, it is important to understand their different capabilities and purposes. The Object Name Service points to

authoritative information about an object; in practice this means that it usually points to the manufacturer's information service(s). Because ONS and DNS do not normally require authentication, records within the ONS are equally visible to all clients – so it is usually considered inappropriate to store serial-level records or events in the ONS, since this might reveal commercially sensitive information about volumes and flows of goods. Furthermore, there are concerns that the population of ONS with billions or trillions of records may overload the underlying DNS infrastructure.

In contrast, Discovery Services are designed to provide pointers to multiple information providers across the supply chain or product lifecycle and to do this in a scalable manner, while respecting data ownership principles through appropriate use of authentication and authorization (access control) mechanisms.

The complementary role of ONS and Discovery Services in relation to multiple EPC Information Services is shown in Figure 2 below:

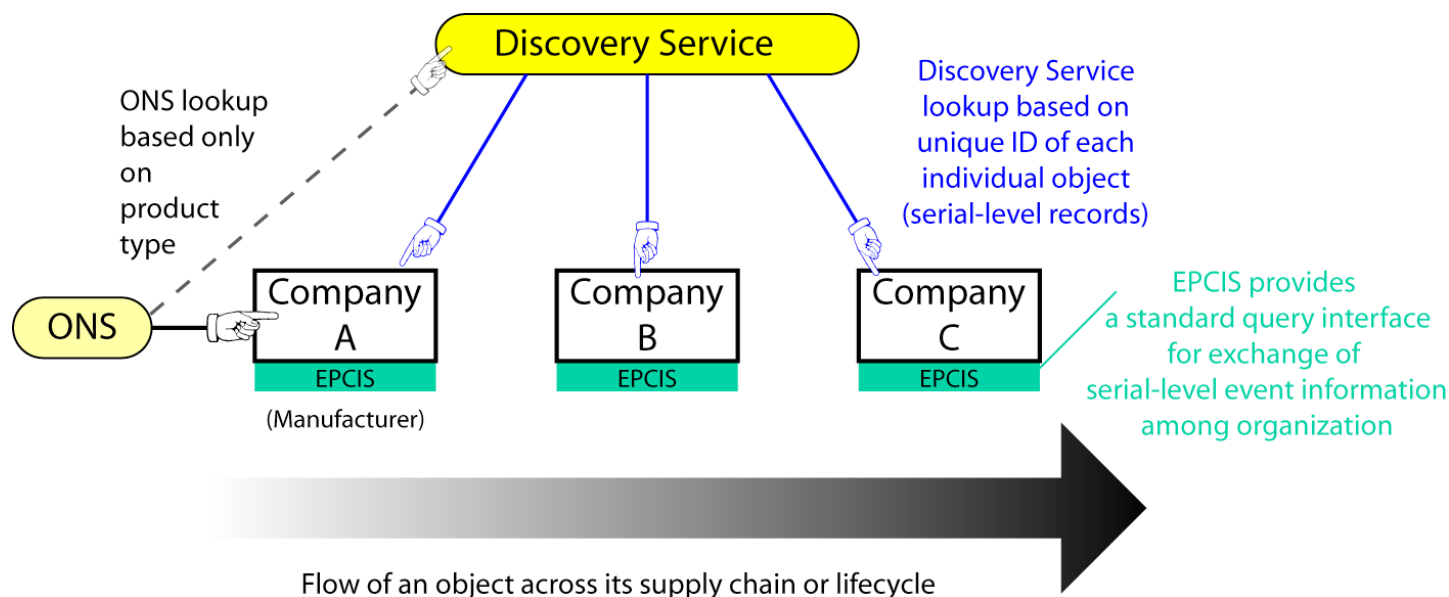


Figure 2 – Complementary roles of ONS and Discovery Services



What are the challenges?

Discovery Services will need to be designed to accept updates in close to real time from multiple providers of information across the supply chain or lifecycle of an object (including organisations that handle the object beyond the point of sale or delivery, e.g. for repair purposes, maintenance, returns and reverse logistics, as well as recycling, remanufacturing and other end-of-life processes). Because they store serial-level records, they will need to be sufficiently scalable to store large volumes of data, possibly up to trillions of records per year. They will also need to provide for authentication of both information providers (publishers) and those making queries (clients) and accept and enforce access control policies that are defined in a manageable way (WP4 Security is currently developing recommendations on how to implement authentication and access control policies for Discovery Services).

What has been done so far?

BRIDGE WP2 began its work by performing a survey of user requirements and integration requirements (Tasks 2.1 and 2.2). Having identified technical requirements from these, a high-level design activity (Task 2.5) developed a design for a data model and interfaces for Discovery Services, both for querying them as well as for publishing records to Discovery Services. Recently, a working software prototype of Discovery Services has been implemented (Task 2.3) and final integration and testing are currently underway. This Discovery Service implements the data model and interfaces defined in the design task, and consists of a set of layers. The prototype also interfaces to the Accada open source implementation of EPCIS.

What is available now?

The BRIDGE WP2 Discovery Service will be available to support pilot and trial activities of the various business application work packages in BRIDGE. WP2 have already begun to establish contact with the application work packages and to discuss how it can be used in pilots and trials. The BRIDGE WP2 Discovery Service will also be used to support the enhanced track & trace software prototype that is currently being designed by BRIDGE WP3.

Contribution to standardization developments

Recently, two standardization efforts on Discovery Services have begun. EPCglobal has launched a Joint Requirements Group on Data Discovery and held their first face-to-face meeting in Hong Kong on 8th October 2007. A brief overview of the work that BRIDGE WP2 has done on Discovery Services was

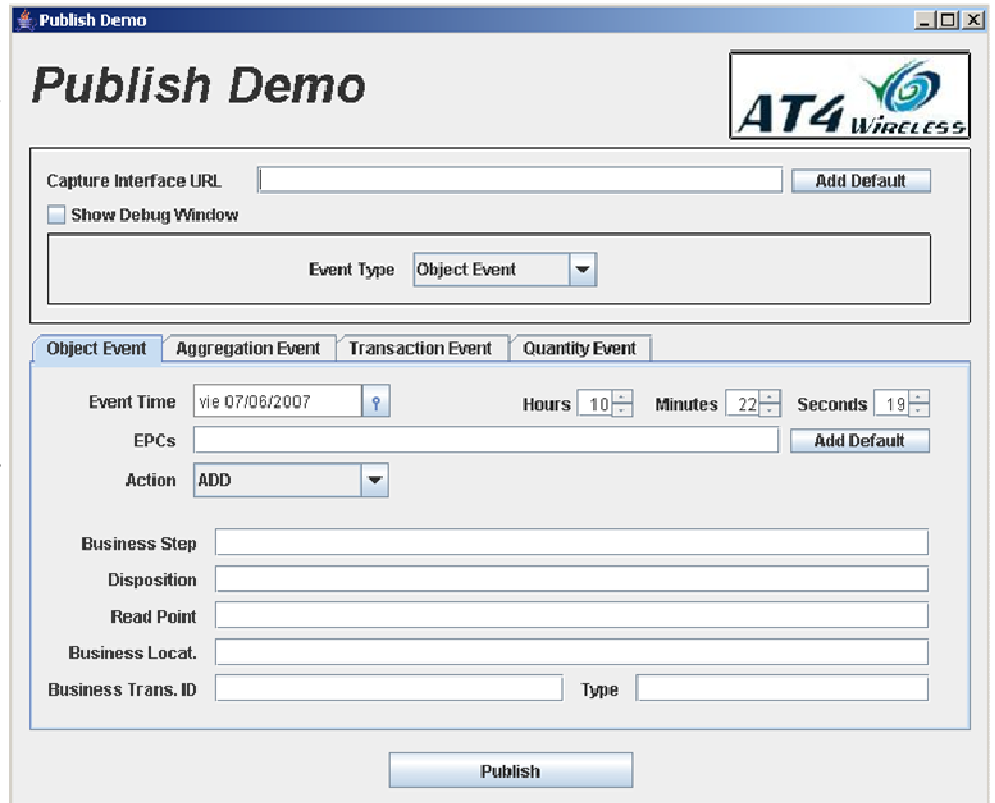


Figure 3 – Publish Application



presented in that meeting. The Data Discovery JRG will collect user requirements from use cases across various sectors and aim to conclude their work around June 2008. These user requirements will then feed into a future technical work group within the EPCglobal Software Action Group.

Many members of BRIDGE WP2 have opted into the EPCglobal Data Discovery JRG and are likely to contribute to the discussions over the coming months.

In parallel, three IETF drafts on Extensible Supply-chain Discovery Services have been drafted by members of Afilias. Members of BRIDGE WP2 have provided feedback on these via the IETF mailing list esds@ietf.org. An initial kick-off (Birds of a Feather [BOF]) meeting is planned at the spring IETF meeting in Philadelphia, 9-14 March – and it is likely that some members of BRIDGE WP2 may participate in that.

BRIDGE WP2 has issued public versions of its first two deliverables, namely D2.1 on user requirements and integration requirements and D2.4 on the high-

level design. These documents are available free for all to download from the BRIDGE public website and have also been contributed to both the EPCglobal Data Discovery JRG and to the IETF mailing list on Extensible Supply Chain Discovery Services.

Beyond Discovery Services

WP3 focuses on enhanced track and trace models for serial-level control. WP3 has already published a document describing a theoretical model for enhanced track and trace capabilities at serial level and is currently working on converting this design into a working software prototype. The WP3 software will provide more user-friendly integration to applications, together with a number of convenient track & trace functions, including the ability to gather EPCIS events from across the whole supply chain or lifecycle, as well as enhanced track & trace information derived from event data that has been enhanced using probabilistic algorithms. This will be reported in further detail in the next issue of the BRIDGE newsletter.



Members of WP2 at a recent team meeting

For more information on this topic, please contact:

Miguel Angel Guijarro (AT4 wireless, WP2 leader) Tel: +34 (0)95 261 94 03

E-mail: bridge-at4wireless@at4wireless.com

Mark Harrison (Auto-ID Labs Cambridge, WP3 leader) Tel: +44 (0)1223 338178

E-mail: mark.harrison@cantab.net



BRIDGE features six pilots in its second project year

BRIDGE's second year will see the implementation of 6 pilots, corresponding to 6 of the 7 business oriented work packages of the project. These pilots will test RFID technology and partly test the results of the technical work packages of the project, in such diverse areas as pharmaceutical, retail, manufacturing, logistics, and services.

Here is an overview of the different pilots in progress:

Pilot 1:
Work Package 6: Business Application Pharma Traceability

This work package is focusing on the traceability of pharmaceutical products in the European supply chain from the point of manufacture to the hospital pharmacy. It will use Data Matrix 2-D bar codes and RFID tags. The pilot started in October 2007 and will last approximately 6 months. It is led by JJ Associates

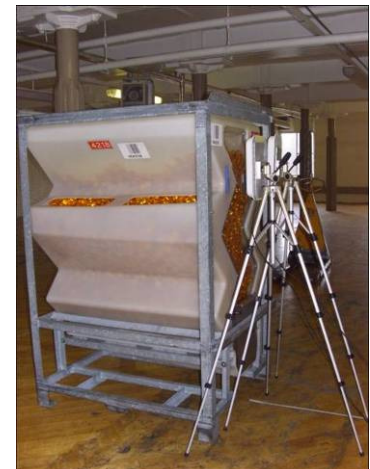


Pilot 2:
Work Package 7: Business Application Supply Chain Management Scope European Textile Industry

This empirical study, led by GS1 and Kaufhof, was launched in September 2007 and will last 10 months. It consists of 2 pilots, one in Kaufhof (big department store) and one in Northland (SME). The Kaufhof pilot will include different front store EPC/RFID applications such as smart shelves and dressing rooms. Customer reactions and the benefits for the supplier Gardeur will be analysed. The Northland pilot will focus on inventory management on the sales floor.

Pilot 3:
Work Package 8: Business Application Manufacturing Process

This pilot will start in January 2008 and will end latest in June 2009. It will be led by Nestlé and will include a prototype development and the monitoring of its implementation in the manufacturing process.





Pilot 4:
Work Package 9: Business Application Reusable Asset Management

The empirical study of this work package will be led by GS1 France, together with Carrefour on the retail side and Benedicta on the industry side. It will include several pilots on different reusable assets such as plastic pallets, crates, barrels, and other reusable containers for transporting food. The pilot will run from January 2008 until April 2008.



Pilot 5:
Work Package 10: Business Application Products in Service

Sony is the leader of this pilot which is starting in November 2007. It will last until the end of the BRIDGE project. The objective is to deploy a simple but meaningful RFID track and trace for supply chain visibility from Sony Warehouse in Tilburg to the service centres in Germany.

Pilot 6:
Work Package 11: Business Application Item level tagging for non-food items

This work package comprises several pilots:

- 1) internal tagging of cultural products (DVDs, games) for inventory and return management purposes;
- 2) similar process but source tagging by the manufacturer;
- 3) tagging at source and inventory management of textile products;
- 4) tagging of another product category to be defined later on.

It started in July 2006 and will end in June 2009.



For more information about the development of these pilots, please contact info@bridge-project.eu



WP13 - BRIDGE delivers exciting EPCglobal promotional & educational material

By Jean-Marc D'Hooghe (GS1)

This Work Package delivers adoption tools that will enable project partners to inform and educate all stakeholders (consumers, industries, SMEs, solution providers, non-profit organisations, etc.), not only on the findings and results of the various business clusters, but also on the impacts and benefits of RFID/EPC in general

Six multimedia concept animations illustrating in a dynamic way the concepts implemented or developed in BRIDGE are now publicly available. A full portable demonstration of the EPCglobal Network will be available early 2008.

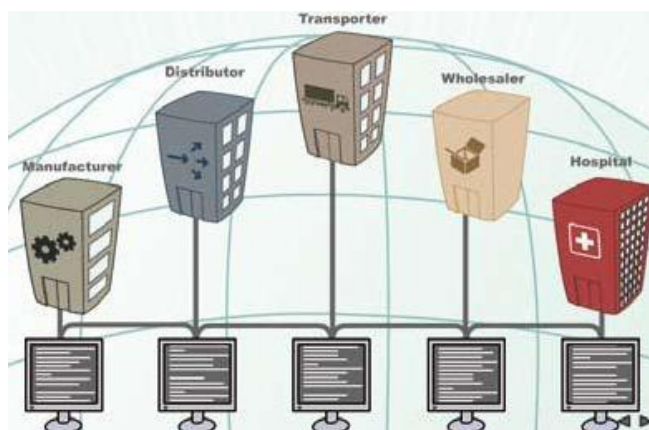
Multimedia animations on EPC/RFID benefits

Each animation is basically a 2-3 minute flash file showing in cartoon format how various industry processes as well as consumers can benefit from EPC/RFID technology. You can download these animations from the BRIDGE website <http://www.bridge-project.eu>

The subjects of the animations are:

- Underpinning patient safety - Mass serialization enabling traceability
- EPC/RFID in the apparel retail
- Returnable Transport Items (e.g. pallets) management
- Improving repair for products in service (e.g. TV set)
- EPCglobal Network in shipping & delivery
- Consumer Benefits

Animations were submitted in August and they were accepted by the European Commission at the review meeting in September 2007.





Another great tool for promoting the EPCglobal Network: The portable demonstration

The portable demonstration is an interactive tool showing how EPCglobal standards are working in a real-life environment.

It can be easily downloaded from the Internet and installed onto 1 to 4 Personal Computers for demonstration purposes. RFID readers can be connected to the demonstration equipment. Alternatively, the reading process is executed by a virtual reader. Each PC highlights the transactions managed by supply chain partners, for example a manufacturer, a distributor, a retailer or a hospital, while sample goods are scanned and moved from one party to another.



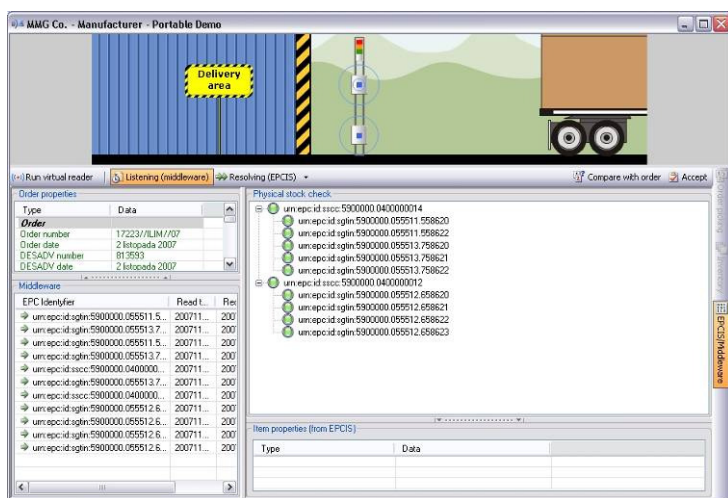
*Michal Grabia,
GS1 Poland*

Our colleagues from GS1 Poland presented a very professional beta version of this portable demonstration to the Commission during the EU BRIDGE review meeting held at GS1 Global Office on September 17-18 and excellent feedback from the reviewers was received.

The portable demonstration will be available in English early 2008 and will be translated in several languages

soon after. Promotional collaterals are currently under development by our colleagues from GS1 China.

This demonstration software is another deliverable of the Work Package 13 of the BRIDGE project and we invite you to look at a wealth of additional **BRIDGE** deliverables at <http://www.bridge-project.eu>



For more information, please contact
Jean Marc D'Hooghe (GS1, WP 12 & WP 13 leader)
Tel:+32 (0)2 7887843 - E-mail: jeanmarc.dhooghe@gs1.org or
Henri Barthel (GS1, BRIDGE Project Coordinator)
Tel: +32 (0)2 7887823 – E-mail: henri.barthel@gs1.org



Review meeting of the BRIDGE project

The second review meeting of the BRIDGE project took place on 17 and 18 September 2007. The team leaders of the different work packages had the opportunity to present their work and intermediary results to the European Commission project officer Dr Florent Frederix and to the five independent experts contracted by the Commission for that purpose. The project progress was very well received and most of the deliverables issued so far were approved by the Commission. The meeting discussed at length the issue of data protection in the perspective of technological research and pilot implementations. This will be further addressed over the coming weeks in collaboration with the EC.

CALENDAR OF EVENTS

On RFID: The Next step to the Internet of Things 15-16 November 2007 Lisbon, Portugal http://www.rfid-outlook.pt/	6th Annual Global RFID-ROI Summit 2008 29-30 January 2008 Munich, Germany http://www.rfid-roi.com/
RFID 2007 21-22 November 2007 Paris, France http://www.rfid-show.com/	CeBIT Forum 2008 4-9 March 2008 Hannover, Germany http://www.cebit.de/homepage_e
ID World 2007 26-28 November 2007 Milan, Italy http://www.idworldonline.com/index.php?id=conference	Internet of Things 2008, International Conference for Industry and Academia 26-28 March 2008 Zurich, Switzerland http://www.internet-of-things-2008.org/

ABOUT THE BRIDGE PROJECT

BRIDGE is a European Union funded 3-years Integrated Project addressing ways to resolve the barriers to the implementation of RFID and EPCglobal technologies in Europe. The project consists of a series of business, technical development and horizontal activities. 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.

URL

<http://www.bridge-project.eu>

If you have questions regarding the BRIDGE project contact:

info@bridge-project.eu



Latest News

***Would you like to learn more about the BRIDGE project?
Attend our Webinars where the project partners will present their work and progress***

Webinars are seminars that you can attend from home or from your office. All you have to do is call the conference call number and go to the website address that will be given to you once you register.

You will then be able to follow the presentation directly on your computer and hear the speaker on the phone.

**Next Webinar: Wednesday 21 November 2007 11:00 to 12:00 CET
- Results and lessons learnt before the launch of the Pharma Traceability pilot -
Speaker: John Jenkins, John Jenkins Associates,
Leader of the Work Package 6 – Pharma Traceability Business Application**

If you would like to attend this Webinar, please contact us at webinar@bridge-project.eu to register. We will then send you the necessary information to access the Webinar.

Other Webinars will be scheduled for December 2007 and January 2008
more information soon on the BRIDGE website <http://www.bridge-project.eu>

Launch of <http://www.discoverrfid.org>

The EPCglobal's Public Policy Steering Committee European Working Group led initiative *Discover RFID*, was launched this week.

Discover RFID aims to raise awareness by informing consumers and consumer organisations about the benefits of RFID with special focus on the Electronic Product Code (EPCglobal).

The website contains a wealth of information and invites the consumer to discover the potentials of RFID in daily applications, now and in the future.

This is an interactive website which contains special areas where the consumer can send questions and comments.

The educational concept animations of the BRIDGE WP13 are also available on this website under <http://www.discoverrfid.org/service/press/media-archive.html>

Visit <http://www.discoverrfid.org> to learn more about the RFID technologies!