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 as well as other BRIDGE related information.

In this issue, updates are provided on:

- WP10 - Products in Service
- WP15 - Policy & Innovation
- RFIDsec 08 - A BRIDGE sponsored event
- Agenda of events
- Latest news
- About the BRIDGE project

Any feedback or questions contact emilie.danel@gs1.org
WP10 - Products in Service
by Paris Pennesi (University of Cambridge, WP10 Leader)
and Wolfgang Schönfeld (Sony, Europe, WP10)

This Work Package is looking at the role of RFID accurate and complete item level information in a timely manner to enhance the management of products in service. The success of this business cluster provides a strong reference case for Europe on ways to enhance the product service industry.

Background

The BRIDGE ‘Products-in-Service’ Work Package is examining ways in which item-level information acquired during a product’s lifecycle could enhance its in-service use. The “in-service use” applications could range from warranty or maintenance management to enhancing customer’s experience when using the product. Other example in repair, if the specific parts from which a product were constructed were known, it might be possible to make faster arrangements for the repair of an item (e.g. by pre-ordering appropriate parts). Or the acquisition of data regarding a product’s in-service usage might be useful in improving product design and determining the end-of-life management of that item.

The success of this business cluster will provide a strong reference case on ways to enhance the product service industry. The fundamental capability of the networked RFID-based automated product identification systems enabled by the EPCglobal Network is the ability to connect products tagged with RFID to a network. As a result, every product could carry complete information associated with it throughout its lifecycle and ensuring the flow of this information available to all authorised actors in the supply chain. This will enhance the quality of product information available to make informed decisions along the product lifecycle.
**Problem Analysis**

The principal purpose of this Work Package is to explore ways to improve decisions and processes of products whilst they are in service by better exploiting accurate, timely and complete product lifecycle information. Figure 1 shows the boundaries and scope of products in service – we focus on the usage, monitoring and maintenance of products after the products have been delivered to customers (sold, rented, contracted etc) but before these products are disposed. Any activities related to ensuring that the products continuously provide the functions that are intended in a safe and prescribed manner constitutes the service.

The methodology we have adopted for WP10 (Figure 2) is to identify as many products in service applications as possible from our partner companies, and we described them in our first deliverable, the Problem Analysis document. In our second deliverable, the Requirement Analysis document, we evaluated the feasibility of these applications – a process which will eliminate certain applications deemed pragmatically too ambitious for this work-package to deliver. These applications have been “filtered” further through a Business Case phase where only applications that provide positive returns of investment within a specified period have been selected for actual deployment in the pilot.

![Figure 2 “Funnelling” Potential Applications as WP10 Progresses](image-url)
The Pilot

To demonstrate the concept of Products in Service in the pilot phase of the Work Package an RFID infrastructure has been deployed across the Sony Supply Chain (Figure 3) to capture and share logistic information to support three main business services:

- Paperless Warranty
- Improved management of purchase records and repair processes
- Phased Product Recall (Optional)

Currently, at the Sony European Central Warehouse in Tilburg, when the products are ready to be shipped they are tagged on case level and the tag is coded with a SSCC (Serialised Shipping Container Code) code. At this point the Warehouse Management System sends the SSCC data to the Company ERP system in the UK together with the associated delivery information. There, the installed RFID middleware gets fed with delivery and SSCC data from the ERP system and creates the ASN (Advanced Shipping Notice) for the Sony retail store and sends such information to the middleware in Berlin. Once the products arrive at the Sony retail store in Berlin, from Tilburg, the RFID readers read the tags and sends the data to the middleware, which matches them with the ASN information. The people in the Sony retail store in Berlin can use an application interface, developed to support the pilot, to consult Goods Receipts and to access additional information related with a particular product to improve the handling process at the store.
The RFID infrastructure is undergoing technical test to assess the reading rate of the RFID readers (the operator will confirm if one item has been read or not, feeding this information into the system for evaluation purposes) and the stability of the connection between readers and middleware across the supply chain.

The next steps will involve the development of two applications. The first application will link the products arrived with the list of customer orders already open and waiting for a particular product; the application will suggest dealing with such products in a specific way (i.e. store them in a particular area). The second application will link the sales data with the data stored in the RFID middleware to improve the warranty management process.

Once the technical stability of the system is proved, an assessment of the qualitative benefits of the infrastructure will be pursued in order to analyse the improvement in time, quality and information transparency of the handling process.
WP15 - Innovation & Policy
by Roger Till (GS1 UK, WP15 Leader)

This work package is developing high-level reports analysing on the one hand
the evolution towards the ubiquitous networked presence of the technology
and on the other hand the impact this technology will have on the development
of public policies.

When the BRIDGE project began, the Commission asked for this cross cutting Work Package to be
added to the project Work Plan. This was so that a
clear view of the important innovations being made in
the project and its interaction with the evolving public
policy discussions about the use of RFID could be
tracked and reported. Thanks to this addition I have
enjoyed a broad view of the BRIDGE research and
have been involved in generating a very interesting
opportunity to observe and participate in the
development of ambient intelligent supply chains – as
RFID tags and sensors become linked – and the
move towards ‘The Internet of Things’ progresses.

The work on WP15 has also allowed the BRIDGE
project to contribute positively to the Commission’s
on-going public consultation on the use of RFID and
its impact on security, data protection and privacy.
This is particularly important because a number of
the BRIDGE applications involve the use of RFID
throughout the supply chain to the retail outlet and
the interaction with the consumer.

WP 15 takes input from all the other Work Packages
to build a picture to produce an annual Innovation
Report and an annual Public Policy Report. The next
two paragraphs give a glimpse of these two areas of
work.

Can you define ‘The Internet of Things’ – is it
just the realisation of WEB 3.0?

To date the BRIDGE project has included significant
innovations in the development of:

- Small tags, design of small antenna and low
cost readers
- The EPCglobal network components and
Discovery Services
- Probabilistic track and trace algorithms for
serial level item identification, and
- A comprehensive security model for RFID tags

The development of ambient intelligence within
supply chains will involve the growth of EPCglobal
based networks containing many tagged items, in
many cases with associated and integrated sensors,
so that the status, location and environment of an
item can be assessed from reading the information in
the tag through finding the item in a global network.
There is a lot of interest in these ideas, though real
life-size implementations are only beginning. It is this
area of innovation that has lead to much discussion
of the idea of ‘The Internet of Things’, where
successive conferences and workshops (see http://
eec.europa.eu/information_society/newsroom/cf/
itemlongdetail.cfm?item_id=3745 and http://www.the
-internet-of-things.org/prg/scientific.html) are
developing fascinating scenarios.
I would also recommend a read of the ‘philoso-blog’ at http://www.i-o-t.org/post/EPCnamespace-I-o-TPART2-123 where Philippe Gautier, a member of the BRIDGE consortium, has been developing his ideas about how the EPCglobal network could/should become the framework for ‘The Internet of Things’ – also to be seen as an implementation of WEB 3.0.

Initially, the BRIDGE project proposed that there is a place for developing a European Technology Platform (ETP) around the concept of ‘Ambient Intelligence in Supply Chains’, but it begins to look as if the whole evolution of ‘The Internet of Things’ might be a better and broader focus for a new ETP.

Figure 1- The Lifecycle of an object (an item in a supply chain) in ‘The Internet of Things’ – an extract from http://www.i-o-t.org/post/EPCnamespace-I-o-TPART2-123.
The public policy discussion and the use of RFID

Following input from our external reviewers the brief for the public policy reports has been extended to include a deeper analysis and review of the privacy and security implications of the use of RFID to track and trace items in the supply chain.

To date the BRIDGE project has been actively involved in the Commission’s public policy consultation, which lead at CeBIT 2007 to Commissioner Reding launching the Commission’s Communication COM(2007) 96 - Radio Frequency Identification (RFID) in Europe: Steps towards a policy framework. The document can be found at http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0096en01.pdf.

Following a number of meetings with an RFID Stakeholder Group, where GS1 and other members of the BRIDGE consortium are represented, the Commission has recently issued a draft Recommendation on data protection, privacy and security of RFID as a public consultation which closed in late April 2008. This can be found at: http://ec.europa.eu/yourvoice/ipm/forms/dispatch?form=RFIDRec.

Figure 2 – Examples of information about use of RFID for the consumer and the employee in a retail outlet. Example from: WP 11 Item level tagging for non-food items
What is next for WP15?

The Commission has moved on to further activities with the RFID Stakeholder Group, looking at the Internet of Things which will culminate in an additional Communication at the end of 2008. Meanwhile there are a number of academic, business and Commission lead events trying to get a clearer understanding of just what the ‘Internet of Things’ encompasses. This cycle will close with a further conference in Nice, France in October 2008, towards the end of their Presidency of the EU.

The European Commission clearly believes that RFID has the capability to increase European competitiveness (see COM (2007) 96) and, in particular, seeks to balance that opportunity with the concerns voiced by consumer groups about the possible impact of RFID on privacy and data protection. In our work on intelligent supply chains for the future, we believe that proper and complete application of existing directives will adequately cover our potential applications and further regulation would be premature.

However, we also recognise the need to provide more and better information about the use of RFID to all interested stakeholders. To date, the dissemination of clear explanations of this technology are not generally provided and an important part of the BRIDGE project is doing that. GS1, the BRIDGE co-ordinator, has indigenous organisations supporting many thousands of companies of all sizes, with over 80% being SMEs, in all European countries. Therefore it is uniquely placed to perform that dissemination task.

For more information on this topic, contact:
Roger Till (GS1 UK, WP15 Leader)
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The workshop RFIDsec 08 focuses on approaches to solve security and data-protection issues in advanced contactless technologies like RFID. It stresses implementation aspects imposed by resource constraints. Security issues are a challenge for RFID to become an enabling technology for the Internet of Things. The Workshop on RFID Security 2008 will help to bridge the gap between researchers, developers and legal experts on data protection.

Topics of the conference include but are not limited to:

- New applications for secure RFID systems
- Data protection and privacy-enhancing techniques for RFID
- Cryptographic protocols for RFID
  - Authentication protocols
  - Key update mechanisms
  - Scalability issues
- Integration of secure RFID systems
  - Middleware and security
  - (Public-key) Infrastructures
  - Case studies
- Resource-efficient implementation of cryptography
  - Small-footprint hardware
  - Low-power architectures
- Attacks on RFID systems

This year’s workshop is the fourth edition of a series of workshops formerly held in Graz and Malaga. It will take place from July 9th to 11th in Budapest. TU Graz is the organiser of the event. The program will consist of different sessions of paper presentations and an exclusive selection of invited speakers from industry and academia.

For more information and to register, please visit [http://events.iaik.tugraz.at/RFIDSec08/](http://events.iaik.tugraz.at/RFIDSec08/)

The RFIDsec 08 is sponsored by:

[BRIDGE](http://www.bridgeproject.eu) and [NXP](http://www.nxp.com)

For further information on this event, please contact: Manfred Aigner (IAIK TU Graz) - Manfred.Aigner@iaik.tugraz.at
CALENDAR OF EVENTS

RFID 2008
29 May 2008, Antwerp, Belgium
http://www2.fairtec.com/rfid/2008/antwerpen/en/

BRIDGE will be presented at this event

GRIFS Open Meeting
18 June 2008, Brussels, Belgium
http://www.grifs-project.eu

GRIFS is an FP7 project aiming at creating a Forum of global collaboration for the interoperability of RFID standards. The first Open Meeting will discuss the current situation of global RFID standards and the challenges for the near future.
Register now to this event at http://www.grifs-project.eu/index.php/events/en/

RFID Technology in Portugal
19 June 2008, Lisbon, Portugal

The BRIDGE project will be presented at this event

Internet of Things, Internet of the Future
6-7 October 2008 - Nice, France

A BRIDGE booth will be displayed at the exhibition

RFID Journal LIVE! Europe 2008
4th Annual Conference & Exhibition
3-5 November 2008
* Clarion Congress Hotel * Prague
http://www.rfidjournalearvents.com/liveeurope/

BRIDGE will be presented at the exhibition

ICT 2008
25-27 November 2008 - Lyon, France
**News of the BRIDGE project**

BRIDGE General Assembly:

The 3rd BRIDGE General Assembly was organised in Malaga on 2 April 2008 before the EPC Technology Forum.

At the BRIDGE GA, 22 represented partner organisations of the project had the opportunity to meet—34 participants in total. Several updates were delivered on the project, in particular around the issue of Data Protection since a thorough analysis of the project in regards to data protection issues will be drawn in the next few months.

An update of the activities of the European Commission towards the RFID technology as well as an explanation of the EU consultation on privacy and security issues was also given by the WP15 Leader to encourage the members to express their views.

BRIDGE Review Meeting:

The review meeting also took place in Malaga on 3-4 April 2008. During one day and a half, all work package leaders had the opportunity to present their latest outcomes and results to the European Commission Project Officer and the 4 independant evaluators of the project. The evaluators will transmit their report in the course of May.

ABOUT THE BRIDGE PROJECT

BRIDGE is a European Union funded 3-year Integrated Project addressing ways to resolve the barriers to the implementation of RFID and EPCglobal technologies in Europe. 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.

http://www.bridge-project.eu
If you have questions regarding the BRIDGE project contact:
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