BRIDGE

eNewsletter

July 2007

Welcome to the BRIDGE Project *eNewsletter* !

This newsletter is published every two months with a short overview on the happenings within the BRIDGE project. Each edition contains topical information arising from the various Work Packages within the BRIDGE Project. 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:

- First anniversary message from the coordinator
- The BRIDGE project - A year of progress
- Update from WP 1 – Hardware Development, Led by Universitat Politècnica Catalunya (UPC)
- RFID Towards the Internet of Things, Berlin 25-26 June 2007
- BRIDGE project General Assembly July 2007
        Any feedback or questions contact Audrey.nicheallaigh@gs1.org

BRIDGE

A year of progress for the BRIDGE project

Congratulations and thanks are due to the BRIDGE project consortium for a great year of progress. Over the past year, the BRIDGE consortium has made enormous strides to achieve its objective to research, develop and implement tools to enable the deployment of RFID and EPCglobal network applications.

Some of the main achievements include:

Pilot
BRIDGE pilot exploring Item level tagging on Cultural Products at retailer level.

Prototypes
Prototypes developed to-date include: miniature tag, low cost reader, high read rate antennas for reader, a controlled board, EPC gen2 Semi passive tag with security features.

Publications
Several papers and articles have been published on a range of subjects : Anti-counterfeiting and the use of Crypto, Hardware development, the use of EPC in the textile industry etc.

Deliverables
22 deliverables already submitted to the European Commission with 20 currently under review and scheduled for submission in September.

Events and Other Projects
Active participation in CERP
Participation in numerous conferences and events

All the public documents are available on the BRIDGE website. www.bridge-project.eu

First year anniversary

A message from the coordinator

RFID and EPCglobal technologies are on the agenda in many company boardrooms nowadays. Thousands of pilots and trials are being run all over the world. The attention has shifted from analysing and understanding the technology to the determination of the ideal business plan for implementation. Research and development are critically important to support the massive deployment of the technology that will happen over the next few years.

It has been a privilege to work over the last 12 months with a dedicated team of close to 100 researchers and business executives from the 30 member organisations of the BRIDGE consortium. I look forward to enjoying the next 2 years of the project as much as the first year.

The initial results are extremely interesting. I have no doubt that the BRIDGE project will deliver value beyond our current expectations and prove to be the catalyst of major rollouts in Europe and beyond.

Henri Barthel
BRIDGE Project Coordinator

WP 1 – Hardware Development, Led by Universitat Politècnica Catalunya (UPC)

This work package is dedicated to hardware development. Five tasks in WP1 are devoted to the development of state of the art prototypes of tag antenna, low cost reader, high read rate antenna, sensor enabled tag and metal-dielectric tags. Other deliverables for the WP include; a handbook of sensor enabled tags, specification of the smart object in supply chains and a demonstration of smart object.

WESTY MALIK
WP1 Deputy

A lot of research is being carried out around the world with the aim of improving RFID hardware. BRIDGE considers hardware improvement as one of the major goals to be achieved in the next few years. It's a common understanding that the price of RFID hardware is quite inhibitive leading to a slower than expected acceptance of the technology that promises so much.

Contrary to popular belief, RFID is more than just a wireless identification technology. Its integration with sensor technology combined with software capabilities has all the ingredients to create smart objects for everyday use or to facilitate the management, maintenance and use of complex objects.

Task one* will be prototyping a sensor enabled tag along with a sensor tag handbook. It will highlight the state of the art in sensor tags, formulate technical requirements, research necessity of sensor functionality amendment for air interface standard, create a data management scheme for sensor tags.

In task two **a far field UHF tag prototype† has already been manufactured based on the radiating structure inspired by the Split-ring resonator (SRR) used in some meta-material structures. It is formed by two concentric metallic rings with small gaps in the opposite directions. The prototype has already been tested for a read range of 6.5m for a 15mm outer ring. Another near field UHF tag prototype is in development with a read range of 2.8m and size 21mm x 31.5mm. See Fig 1.1
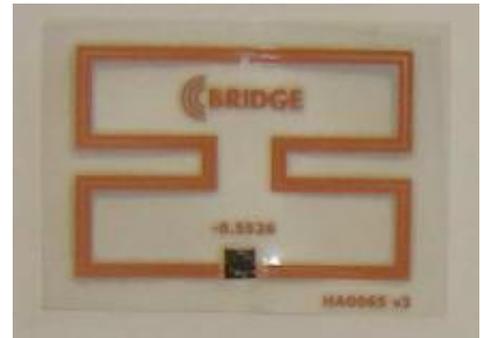

Fig 1.1

The issue of tag performance with the presence of a metal or dielectric like glass or water† will be addressed in task 3. The WP will study techniques to make tags suitable for dielectric and metal surfaces followed by prototyping such a tag.

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†See details at http://www.rfidconvocation.eu/Papers presented/Technical/Near-field UHF tags based on meta-materials concepts.pdf
 *Lead by CONFIDEX, Partners – FUDAN, CAEN, AT4 wireless, UPC, RAFLATAC
**Lead by UPC, Partners – AIDA, CONFIDEX, RAFLATAC, AT4 wireless

WP 1 – Hardware Development, Led by Universitat Politècnica Catalunya (UPC)

Fig 1.2

In task four CAEN‡ has developed model A528 which is one of the first UHF readers based on the Intel R1000 chipset. It is an OEM UHF multiregional compact reader suitable for integration into label printers, label applicators, handheld devices and in general for any fixed or mobile short and medium range device requiring UHF tag programming and reading. It can operate in both European (ETSI EN 302 208) and US (FCC Part 15) regulatory environments. It is also compliant with EPC C1G2 protocol. See fig 1.2.

Also included in this task is the work being carried out by Fudan University on the RFID chip prototype where they plan to put transmit, receive, modulation, demodulation and baseband functions into one single chip.

In task five§ our focus is on techniques to increase the read rate and of the reader antenna. In fig 1.3 the design attempts to achieve this by randomly and periodically moving the radiation pattern of the reader antenna. Another design under progress is that of a near field reader antenna.
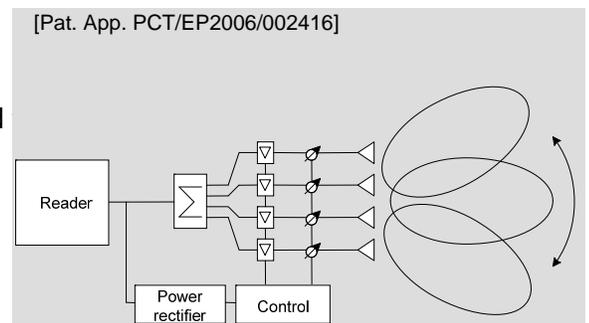

[Pat. App. PCT/EP2006/002416]

Fig 1.3

In task six†† we are working on the smart object specifications‡‡ for the supply chain. The specifications will try to highlight the universal characteristics of any supply chain. Smart objects would be categorized according to their smartness into different levels based on the smartness level definition formulated in the document. Later in the task we plan to do a demonstration of our smart object.

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‡See details at http://www.caen.it/rfid/syproduct.php?fam=sread&mod=A528
§Lead by AIDA, Partners – UPC, CONFIDEX, AT4 wireless
††Lead by Cambridge University, Partners – UPC, AIDA, CONFIDEX
‡‡Document will be released to the BRIDGE consortium in the 1st week of July 2007

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RFID: Towards the Internet of Things

The German Presidency of the EU (drew to a close with an Expert Conference in Berlin on 25/26 June 2007 which was entitled 'RFID: Towards the Internet of Things'. Well over 300 people attended this event having received in advance a draft document 'European Policy Outlook RFID', prepared by several of the German Federal Ministries, together with the European Commission and a number of associations, institutes and organisations. The contributors to the text included Marisa Jimenez and Stephane Pique from EPCglobal in Europe. The document can be found at
[http://www.nextgenerationmedia.de/Nextgenerationmedia/Redaktion/en/PDF/european-policy-outlook rfid,property=pdf,bereich=nextgenerationmedia,sprache=en,rwb=true.pdf](http://www.nextgenerationmedia.de/Nextgenerationmedia/Redaktion/en/PDF/european-policy-outlook)

The conference was in an unusual, and potentially stimulating, format with a small number of plenary speeches and most of the time being devoted to workshops on the first day and round table discussions on the second day. The topics covered in both were aligned to the content of the Policy Outlook document, namely – Market driven Innovations; Technology driven Innovations; and Societal Issues and Concerns. Details can be found at http://www.nextgenerationmedia.de/Nextgenerationmedia/Navigation/en/rfid-conference.html .

Overall I felt that the conference was something of a curate's egg - that is 'only good in parts'.

EPCglobal was well represented by our European

Roger Till
WP15 leader

Public Policy Director, Marisa Jimenez who spoke in the workshop session on Societal Issues and Concerns. She not only had to address the questions from a number of Consumer organisations, but also faced very pointed questions from the Moderator! Two members of the EPCglobal European Working Group (EWG) also prepared short statements (spotlights) for the workshop. Katrin Springob (GS1 Germany/ WP7 leader) spoke about the potential of the Electronic Product Code (EPC) as a global standard, and Antonia Voerste (METRO Group) talked about the EPCglobal guidelines at the METRO Group.

Overall, I did not feel that the conference took us forward significantly from the communication released by the Commission on RFID issued on the 15th March 2007. There was much rehearsal of already known positions, on competitiveness, governance, security and privacy.

The European Commission clearly believes that RFID has the capability to increase European competitiveness (see COM(2007) 96 entitled Radio Frequency Identification (RFID) in Europe: Steps towards a policy framework) and, in particular, seeks to balance that opportunity with the concerns voiced by consumer groups about the possible impact of RFID on personal privacy and data protection. That seems to involve them in walking a tightrope, balanced by ongoing, until 2009, stakeholder group consultations, commitment to RFID and the move towards the Internet of Things in Framework Programme 7, together with six-monthly RFID conferences – one in each of the Portuguese, Slovenian and French successive Presidencies.

In our work on intelligent supply chains for the future we believe that proper and complete application of existing data protection directives will adequately cover our potential applications. However, the conference did make a good point about the need to provide more and better information about the use of RFID to all interested stakeholders, especially consumers and SMEs. It is true that to date the dissemination of clear explanations of this technology are not available widely enough.

An important part of the BRIDGE project is doing that through the training and dissemination work packages and with indigenous organisations in all European countries GS1 is uniquely placed to perform that task.

To add 'verisimilitude to an otherwise bland and unconvincing narrative', I offer a few (unassigned) quotes from the conference:

…discussion about privacy - 'start by building roads, not traffic lights'

' physical objects can have a digital identity. Objects can sense, communicate and interact'

'RFID offers unique risks – reader and tag communicate invisibly'

'we need clarification in law about indirect personal data'

'a global standards allow for a more competitive market'

'regulation where necessary, self-regulation wherever possible'

'we need to find our way in the Internet of Things'

'the Internet of Things should lead to an Internet for People'

'the broad public needs to be better informed about RFID'

'governance of the Internet of Things must uphold European interests in the global network'

Finally, just so we can all agree what that vague, but very topical phrase 'The Internet of Things' means, here is a definition from the European Draft Policy Outlook RFID:

"The Internet of Things is a metaphor for the universality of communication processes, for the integration of any kind of digital data and content, for the unique identification of real or virtual objects and for architectures that provide the "communicative glue" among these components. RFID serves as a means to uniquely identify objects. Via RFID, the Internet of Things connects real world items with further data and digital "brains", and, vice versa, it supports software systems with sensor and context information accessed by the RFID tags. In the weakest version of the Internet of Things, these objects can be identified but do not "do" anything actively; in the strongest version, objects communicate with each other so that the Internet of Things and Ubiquitous Computing complement each other."

For more information go to the following URL
www.rfid-outlook.de or www.rfid-outlook.eu

BRIDGE project General Assembly,
July 2007, Brussels

The third BRIDGE project General Assembly (GA) is scheduled to take place this week in Brussels. All BRIDGE partners, representing the consortium of 30 global organisations are expected to attend the meeting. With the one year anniversary of the project falling the same week, there is much progress to celebrate at the Brussels meeting.

CALENDAR OF EVENTS

IDTechEX RFID Europe 2007, Cambridge, 18-19 September 2007. http://rfid.idtechex.com/rfideurope07/en/index.asp

RFID Smart Labels Europe, Cambridge, 17-20 September 2007 http://rfid.idtechex.com/smartlabelseurope06/en/

RFID Journal Live! Europe 2007, Amsterdam, The Netherlands, 6-8 November 2007. http://www.rfidjournal.com/events/

RFID-Outlook.pt, Lisbon, 15-16 November 2007. http://www.rfid-outlook.pt/

ID World 2007, Milan, Italy, 26-28 November 2007. http://www.idworldonline.com/

ABOUT THE BRIDGE PROJECT

The BRIDGE Project (Building Radio frequency IDentification solutions for the Global Environment) is being supported by the European Union's Sixth Framework Programme for Research and Technological Development (FP6) .The BRIDGE project will focus on business-based research, provision of information services and hardware (sensors, tags) and software development. This will lead to pilots, deployment and comprehensive training materials in the use of RFID in a variety of business sectors.

With the globalisation of supply chains, it is essential to find more efficient ways to trace and transport goods. The widespread adoption of standardised RFID technology can help tackle this issue and the BRIDGE project will help make this happen and ensure the benefits of RFID are available for all businesses, large and small.

URL
http://www.bridge-project.eu

If you have questions regarding the BRIDGE project contact:
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