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D5.1.2 – Requirements for RFID Sign

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1. Introduction

The concept of using a sign to identify RFID applications for the benefit of public notification and transparency has been introduced over the past few years by a number of RFID related organisations including RFID operators. The emphasis of these signs has been to notify of the application and not the technology. From early applications such as Exxon Speedpass contactless payment through to more recent moves by organisations such as GS1 EPCglobal and its user communities on to electronic passports, a logo or sign was created to highlight to the public the application without specific mention of the technology. Most of these signs are specific to applications or a particular service and have no visibly recognizable commonality.

To date only very few operators have chosen to display signs publicizing the use of RFID technology as such. This is partly because the technology can be used in a variety of ways and there are significant functionality and performance differences within the scope of technologies referred to as RFID. These are elements which are easier to describe in terms of the application than in terms of the technology. Possibly also the activities of some public interest groups making sensational claims as to the potentially negative impacts of RFID upon individual privacy rights either today or at some time in the future have dissuaded operators from drawing public attention to the use of RFID as such.

It is important to recognize that RFID reader systems as well as embedded or applied RFID tags are present in consumer products. This is the case with RFID enabled mobile phones and it is conceivable that such readers could be present in other consumer electronics products of the future. Therefore, consideration of the appropriate RFID sign should reflect this and be a part of the overall approach of agreeing to common RFID signs.

Members of the retail sector subscribing to EPCglobal have created and are currently using a globally harmonized sign to draw attention to the use of EPC RFID technology and a specific standard. Some signs also indicate compliance with specific guidelines and codes of conduct. In addition, in 2009, ISO released a standard for a generic RFID emblem that can be used to indicate technical specifics of tags and readers.¹

¹ See more about existing signs relating to RFID in chapter 4.

This concept was also recognized at European level when the European Commission published its *Recommendation on the implementation of privacy and data protection principles in applications supported by radio-frequency identification* on May 12th, 2009. Sections 8 and 9 of the Recommendation address the use of a common European signs to inform individuals of the presence of readers and tags that are placed on or embedded in products as part of its guidance on the *lawful, ethical and socially and politically acceptable* design and operation of RFID applications that respect the right to privacy and ensures the protection of personal data.

Section 8 recommends Member States to ensure that operators take steps to inform individuals of the presence of readers on the basis of a common European sign, developed by European Standardisation Organisations with the support of concerned stakeholders. The sign should include the identity of the operator (of any type of RFID application) and a point of contact for individuals to obtain the information policy for the application.

Section 9 applies primarily to RFID applications used in the retail trade. In this section, the European Commission recommends that operators inform individuals of the presence of tags that are placed on or embedded in products on the basis of a common European sign, developed by European Standardisation Organisations with the support of concerned stakeholders.

Thus, the European Commission recommends the use of common European signs for two related purposes, namely:

- Informing about the presence of readers
- Denoting the presence of RFID tags placed on or embedded in products in particular related to the retail trade.

In early 2008, the European Commission called for the creation of a Thematic Network on RFID. In March 2009 stakeholders from industry, academia, and standardisation organisations established RACE networkRFID to promote the uptake of RFID technology and address key issues for its further development and successful implementation in the EU.

Work Package 5 of RACE networkRFID addresses different aspects of improving public awareness for RFID as a means to allow this technology to fulfil its economic promise, while at the same time mitigating the risks of it being used to the detriment of the public interest, thus enhancing its acceptability. One of the deliverables of WP 5 is the aggregation of stakeholder input to formulate requirements for the best possible approach to inform about the presence of readers and tags through common European signs.

The following report addresses this topic and is created jointly with the support of the following organisations: AIDC Global (UK), AIM-D (Germany), AUEB (Greece), BITKOM (Germany), ECP-EPN (Netherlands), ETSI (EU), FilRFID (France), GS1 Europe (EU), IberLOG (Portugal), Informationsforum RFID (Germany), ISMB (Italy), METRO Group (Germany), RFID Nordic (Sweden) and VTT (Finland).

2. Terminology

While the concept of using a sign to indicate the use of RFID is already deployed for a number of specific applications, the inconsistent use of terms is not necessarily helpful for a comparative approach. Terms such as “sign”, “logo”, “icon”, or “emblem” are used sometimes without sufficient definition or differentiation. For the purposes of this report, WP5 wishes to clarify the terminology used in order to facilitate a common understanding of the issues at stake.

The EC Recommendation uses the word “sign” as generic term without specifying whether notification occurs through the use of pictures, words, or a combination of both.

By contrast, the term “logo” usually refers to a graphic mark commonly employed by commercial enterprises for company recognition.

The term “emblem”, finally, is often used for sovereign or official purposes e.g. on a passport; it is sometimes confused with the term “logo”.

WP5 uses the term “sign” throughout this document, as it is the broadest and most generic term, also used in the EC Recommendation. Whether in the end a logo or a word/picture combination is suitable to inform about the presence of RFID readers or tagged products has to be determined in the course of the ongoing process for which the requirements developed in this document will be a reference.

Finally, this document will distinguish between the signs mentioned in sections 8 and 9 of the EC Recommendation by using the terms “reader sign” and “tag sign”.

3. Purpose of RFID signs in the context of the RFID Recommendation

In order to formulate requirements for the best possible approach to inform about the presence of readers and tags with common European signs, it is necessary to define the purpose of such measures in connection with the rest of the provisions of the EC Recommendation, in particular those related to transparency and awareness of RFID use. WP5 understands that the recommendation to use common European signs needs to allow for the specific context of the EC Recommendation on privacy and data protection principles for implementing RFID applications.

Taken together, WP5 sees RFID signs that inform about the presence of RFID readers and tags as addressing a key feature of the technology that requires particular attention to privacy and data protection issues, namely: the possibility of RFID technology to capture and process data, including personal data, over short distances without physical contact or visible interaction between the RFID reader or writer and the tag, in such a way that this interaction can happen without the individual concerned being aware of it. Thus, when discussing requirements for common European RFID signs to indicate the presence of readers or tags, it should be kept in mind that these signs are an important part of an overall approach to comply with the objectives of the EC Recommendation, i.e. to adhere to privacy and data protection principles when implementing RFID applications. As such, the usage of signs is the responsibility of an RFID operator who wants to inform individuals of the presence of tags and/or readers that belong to its RFID application. Since operators that comply with the RFID recommendation are requested to develop and publish a concise, accurate and easy to understand information policy for their applications, signs are a vital tool of reference between the manifestation of an RFID application and the relevant information about what kind of data is processed by the application.

By using RFID signs as a cross-reference between readers and/or tags and the relevant information about the application, the use of RFID can be made transparent. A sign can give visibility to the particular use of the technology and foster trust in RFID. In addition, by providing transparency, a sign provides the basis for exercising the additional options given by the

EC Recommendation, namely receiving information about a specific application, gaining access to the PIA summary, and – in the retail sector – requesting deactivation of tags.

Another important consideration refers to the versatility of the technology and the potentially ubiquitous deployment of RFID applications.

The provisions of the RFID Recommendation suggest informing about the presence of readers for all kinds of RFID applications, regardless of whether the general public has access to the areas where RFID is used or not; however, RFID applications could differ substantially with regard to potential privacy impact and technical functionalities. For example, tags in passports contain data and security features that are very different from tags in one-way public transport tickets or tags used in manufacturing processes. A mobile phone with NFC technology works in the HF range in a near field whereas a UHF tag in a ticket can be read from longer distances. Even applications in the same sector such as public transportation can vary substantially: some process data about the ticket owner while others exclusively retain a number contained in the tag that opens the gate.

Consequently, operators that are using signs as part of an effort to provide transparency about the deployment of an RFID application are interested in differentiating themselves, since the relevance of a RFID application in regard to privacy and data protection depends not only on the base technology, but even more on the data captured and processed within it.

Generic RFID signs have only a limited informational value as they just notify about the presence of the technology. Accordingly, the use of a generic RFID sign may not be sufficient to fulfil the goal of informing individuals about the use of RFID in the context of the EC Recommendation. Therefore, a generic sign should be accompanied by additional information regarding the specifics of the application in a privacy and data protection context. Also, it should be ensured that existing signs fulfilling the same purpose and providing information to consumers can coexist with a generic RFID sign.

Finally, another important consideration to be taken into account refers to the use of signs to inform individuals about the presence of tags that are placed on or embedded in products.

Given the fact that RFID tags might be used by different operators within different applications, each operator will want to use the best possible sign to inform about the presence of a tag placed on or embedded in products. Also, some RFID tags cannot be read by a specific RFID application due to a technical incompatibility. Accordingly, operators need to have suf-

ficient flexibility in determining the best placement and format of a sign given the specifics of their application.

In turn, the placement of the sign will impact its character and form. For example, a product manufacturer could include a tag in a product to offer additional services to the customer, while a retail operator might use the same tag for a purpose that is more or less separated from the item, i.e. inventory measurements or theft prevention. While the manufacturer might inform about the presence of a tag with a logo on the product package, for the retail operator it might be more appropriate to deploy a sign pointing out that all products in a specific area are tagged. In the future, operators may use even RFID technology itself to convey additional information regarding their application. Thus, each entity needs to have the flexibility to inform about the presence of tags in the most appropriate manner according to a specific RFID application.

Based on the specific purpose for using RFID signs to inform individuals about the presence of reader and/or tags in the context of the EC Recommendation, WP5 members regard the following requirements (point 4) as guidelines to develop and deploy RFID signs in Europe.

4. Requirements for common European RFID signs

As indicated above, the primary reason for deploying RFID signs is to help regaining visibility as the first step in creating trust in the technology. Regaining visibility is in the interest of all stakeholders and, therefore, the lowest common denominator to which all parties can agree. Hence RFID signs should help to inform about the presence of RFID applications. The consumer must be sure that wherever RFID is used, a sign will tell. Therefore, signs need to be clearly visible, easy to understand and provide distinct application-specific information that RFID is being used.

Requirement 1

Signs need to be visible, easy to understand and provide distinctive information on RFID use

The European Commission recommends that signs should include information about the identity of the operator and a point of contact for individuals to obtain the information policy re-

lating to the application. Based on the need to cross-reference between signs and further information about a RFID application, it is considered that the information related to the operator identity and contact does not necessarily have to be an integral part of the sign itself, as long as this information is available where signs are placed.

Requirement 2

Signs should include or be accompanied by the name of the operator and contact information

Any new sign should allow for informing about other non-technical application-specific characteristics of the RFID technology that are of relevance for the consumer in the context of the recommendation. The sign should not undermine the use of other established signs that fulfil the same objectives and give extra information relevant to the consumer.

Requirement 3

Signs should be able to coexist with established signs that fulfil at least the same objectives and provide relevant information to the consumer

According to a comprehensive study conducted by ECP.NL in 2008² an RFID sign alone cannot communicate the different messages that need to be sent in order to make the use of RFID transparent and trustworthy. Especially in regard to versatility of the technology and the potentially ubiquitous deployment of RFID applications, any RFID sign must always be part of a broader strategy to inform individuals and to create transparency about the use of RFID. As such, an RFID sign is a *means* not an end. The main objective of a sign should be to help to provide for transparency and, thereby, trust in a specific application and the use of RFID by a specific operator.

Requirement 4

Signs should be part of a broader awareness and consumer information strategy

² http://www.ecp-epn.nl/sites/default/files/Verkenning_mogelijkheden_uniform_logo_systeem.pdf

Labelling of RFID applications for notification purposes must follow the rules for quality signs. Thus, any sign must be comprehensive, unambiguous and uniform. The creation of a sign should be professional and standard-compliant.

Requirement 5

Signs should be comprehensive, unambiguous, uniform and standard compliant

In regard to the function of a sign the appropriate placement is an important consideration. Accordingly, signs need to be flexible in regard to the placement. Any sign should at least be *placeable* either on the product, reader or reader antenna or in a given area to be used to notify about the use of RFID. As the decision about the placement has significant impact on the way an operator informs about the use of RFID, any sign should allow for cross-referencing complementary information, such as contact information or links to additional information. Any RFID operator needs to have a clearly defined flexibility to use signs in size, colour etc. as they are best suitable to inform individuals about the presence of tags and/or readers of a given RFID application.

Requirement 6

Operators should be granted sufficient flexibility with respect to the exact placement of such signs

As any sign should be part of a broader effort to inform about the use of RFID and in regard to the global character of many RFID applications as well as the international scope of modern trade and manufacturing processes, any new sign should not prevent the use of established RFID signs in the European Union. Rather, such RFID signs need to be appreciated in regard to the considerable resources that have been employed to associate a specific meaning and establish a level of recognition.

Requirement 7

Signs should take into account and not discriminate against the global scope of certain RFID Applications

Finally, the signs should not convey any value judgment regarding the use of RFID technology. A warning sign, which was also introduced into the debate, is considered to be counter-productive. It would generate the idea that RFID is dangerous; whereas the technology as such is not.

Requirement 8

The signs should be neutral in regard to value judgments

Any common RFID sign should take into consideration the many ways to notify the public through existing and new technologies. A common RFID sign should be compatible with the broadest range of communications media including simple and complex electronic displays, projection displays, Web pages, text messages, all printing technologies, embossing technologies, and others.

Requirement 9

The signs should offer sufficient flexibility to be combined with different technologies offering additional information and to use different communication technologies for public notification

5. Existing Signs

5.1 Signs currently in use

5.1.1 EPCglobal EPC symbol
(also in black and white ink)



www.aboutepc.com

5.1.2 NFC Forum



5.1.3 ISO



5.1.4 Japan



5.2 Signs developed as contribution to the current policy debate

5.2.1 Informationsforum RFID



5.2.2 FoeBuD

