

Answer to the European Commission public consultation on the early challenges regarding the "Internet of Things"

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- Your organisation details
 - o location: [Brussels, Belgium](#)
 - o size: [11.000 members worldwide](#)
 - o scope of activities (max 3 sentences): [ARMA International is a global not-for-profit association for professionals responsible for managing records and information, both in paper and electronic form. It is known worldwide for setting standards and best practices, and for providing comprehensive education, publications, and information on the efficient maintenance, retrieval, and preservation of vital information created in public and private organisations in all sectors of the economy.](#)
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1. Introduction

ARMA International (ARMA) wishes to present its views on the Commission's Working Document: Future networks and the internet - Early Challenges regarding the "Internet of Things".

ARMA International is a global not-for-profit association for professionals responsible for managing records and information, both in paper and electronic form.

This reply has been prepared in consultation with the ARMA International Public Policy Group; a diverse member-based committee that helps ARMA International execute its commitment to improved information management practices around the world.

As expressed in this Working Document, the "Internet of Things" (IOT) will bring new services that will improve productivity and benefit European citizens. The Commission expressed in its Communication on RFID¹, which is one of the technologies that will make the "Internet of Things" a reality, that RFID chips can deliver new services and applications when linked to databases and communication networks and thus are seen as the gateway to a new phase in the development of the Information Society.

This technology has an important potential in areas such as retail and the supply chain. Innovative uses of this technology are also appearing in records management, including the embedding of RFID chips into file folders in order to improve location tracking of the individual files, as well as RFID chips employed for location tracking of boxed and archived stored records.

The Commission Working Document presents issues such as privacy and data protection as essential elements of the IOT but makes no reference to records and information management (RIM) as a critical part of the policy architecture that the IOT should take into account.

The ISO standard 15489-1:2001² defines a record as "information created, received, and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business."

Records Managers ensure that records are maintained and retained in a manner required by legislation, regulation and organisational policy. They perform this mandate with the help of various departments and individuals within their organisation, such as IT, legal, finance, security, risk management, business line executives and compliance. As a result, with the emergence of a new technology with significant impact on how records and information management will be performed, ARMA International believes it is useful to provide these comments, in order to better inform those formulating the related policies, on the needs of the records management professional for a suitable legal framework to ensure the successful functioning of the IOT and would like to bring the following points to the attention of the Commission:

- The policy architecture of the IOT should take records and information management (RIM) into account.
- The management by record managers within European organisations affected by the new technology of the volume of information created should have been taken into account.
- The need for RIM standards.

ARMA International also would like to put forward the following points:

- Data storage capacities.
- The boundaries of the term "things" in order to include any and all physical assets over which RIM professionals exercise management or responsibility.

¹ "Radio Frequency Identification (RFID) in Europe: steps towards a policy framework", adopted on 15 March 2007

² Information and Documentation – Records Management – Part 1: General (ISO 15489-1:2001(E)), s. 3.15.

- The taking into account of privacy and data protection principles in the design and functioning of the IOT.

2. General comments

2.1 Inclusion of Records and Information Management (RIM) in the design of the policy architecture

ARMA International would like to point out that the Commission Working Document makes no reference to RIM as a critical part of the policy architecture that the IOT (Internet of Things) should take into account.

RFID, Near Field Communication (NFC) and similar technologies introduce new devices. These devices create information assets in significant volume. Many of them displace or represent new breeds of records that have been more traditionally managed within records management professional services. The introduction of these new types of data assets has significant potential, but also significant risks to public policy administration (such as tax collections, border protection, product quality, etc.). ARMA International encourages that further research and discussion include RIM as an important part of the policy architecture, comparable to privacy, security, etc.

Topics of specific interest could include:

- Classification of new data assets for appropriate retention or authorised destruction.
- Suitability security and integrity controls to protect new data assets as records.
- Electronic records management systems to ensure appropriate management and quick retrieval of the electronic information generated.
- Creation of protocols for mapping more traditional record classifications to new data assets (e.g., what is an invoice created through NFC transactions?)
- Professional training and certification requirements for those managing new data assets.

2.2 An Additional Presumption to challenge

A representative from the European Data Protection Supervisor indicated, during a roundtable organised by ARMA International on 7 November in Brussels, that there is presumption data storage is unlimited. This presumption is at odds with environmental sustainability objectives. It also significantly undermines a key function of the RIM professional to develop and administer the disposition of records and information--if storage is unlimited, there is no need for disposition and that is simply not consistent with effective organisational governance principles and legislation.

3. The Internet of Things

ARMA International's aspirations are that the definition of the term "Internet of Things" stresses that businesses and information processes take RIM into account.

ARMA International members have already witnessed the emergence of RFID technologies and similar tracking tools that significantly impact how RIM professional manage records and assets. ARMA encourages that the boundaries employed to think about the "things" be expansive to include any and all physical assets over which RIM professionals typically exercise management or responsibility.

These would include (but not be limited to):

- Physical records and assets
 - Paper documents (including records bearing bar codes)

- Things (mechanical samples for patent purposes)
- Storage media (backup tapes)
- Records management assets
 - Warehouse/storage locations
 - File folders
 - Existing RFID technology in commercial use embeds RFID chips in the tab of physical file folders, enabling the folder locations to be scanned by readers installed in ceilings or hand-carried.
 - Storage boxes
 - File labels

Deliberate decisions must be made regarding how digital assets may be treated as “things” within the broad scope of vision for IOT. Records management standards (including ISO/IEC 15489-1 and 15489-2) treat paper and digital records (and metadata) as assets requiring consistent management; the IOT effort should not destabilise an important principle of “media neutrality” that is embedded in the prevailing global standards for records management.

ARMA would like to stress that the sentence on page 4 – related to “...the complex web of networked connections and smart systems, which capture information, process it, transmit it and store it.” - means in RIM terms RIM involvement required in systems documentation and change control; the design of systems to ensure the capture, creation, receipt and management of the proliferation of data and unique identifiers/information codes; data classified to ensure retrieval; metadata creation and management; appropriate data/records formats; naming conventions; controlled deletion/destruction of data; audit trails; preservation of records and data over time for what will be massive volumes accumulating at an exponential rate. Establishing these requirements will help to ensure the IOT will function effectively and efficiently on an ongoing basis. Records management professionals work in organisations (public or private) that will be directly affected by the IOT. As they will not be external to the process, record managers have a vested interest in the IOT’s success.

ARMA welcomes the fact that the Commission takes into account privacy and data protection principles in the design and functioning of the Internet of Things and believes that the existing legislation is sufficient to protect these rights. However, ARMA International would like to reiterate one of its concerns expressed in its reply to the consultation on the draft Recommendation on the implementation of privacy, data protection and information security principles in applications supported by RFID. Even if taking into account privacy and data protection in the design and functioning of RFID applications and other technologies of the Internet of Things is a necessity, the capability of SMEs to implement these principles - due to a lack of financial resources or of qualified personnel – should also be taken into account. Moreover, ARMA believes that the financial crisis has shown the limits of self regulation and that this method should not be applied regarding the protection of personal data.

Regarding the need for research in order to accelerate the adoption of the Internet of Things, expressed in the second annex, ARMA would like to bring to the attention of the Commission that it is able and willing to provide valuable input concerning the RIM aspects of the Internet of Things based on its own research to ensure that the IOT launches and operates seamlessly and successfully so that its citizens reap its benefits and rewards, with full confidence in the IOT's operation.

4. Standards

International standards are required to more carefully define how monitoring, sensing and reporting data from devices will be considered, tracked and managed over time (collectively, “new data assets”). New data assets include both the new assets created by RFID and NFC

technologies, as well as the additional management records that are created in building and managing additional networks and systems through which those assets are deployed and controlled. ARMA International considers that the call for standards³ is a vital element of the working document and that the need for RIM standards relating to new data assets is a critical target to be identified in future IOT deliberations and planning.

ARMA International has an invaluable role to play in enabling the consistent management of new data assets in order that important public policy interests are not disrupted or compromised.

Areas in which standards can be developed include:

- Classification and indexing criteria for new data assets
- Retention and disposition of electronic data
- Recommended storage and preservation protocols
- Recommended security and management controls for protecting data with substantive evidential value.
- Long-term preservation of critical data sets.

The ARMA International website (www.arma.org) provides detailed information on RIM standards. ARMA regularly issues new standards and resources related to the creation and management of digital information.

³ See *Early Challenges paper at Sec 3.2.1*

Annex: ARMA International comments on the i2010 strategy

i2010 encompasses the “Internet of Things” as the goals of this strategy are to promote the positive contribution that ICT can make to the economy, society and quality of life; as well as promoting convergence (of content and infrastructure) in information and communication. Consequently, ARMA International would like to provide some comments on the strategy which embraces the internet of the future.

While regional goals are important, i2010 must recognize and accept the global nature of things--trade, commerce, production, human movement, education--all will be enabled by, and threatened from--a global infrastructure in which European assets are components.

- One of the strongest commitments to enabling globalised leadership for the EU is to develop a resolve to embrace international standards that do not recognise, nor facilitate, regional variations that lack compelling geographic justification.
- In RIM topics, Europe can achieve digital leadership by avoiding the use of technology standards that have the functional value of replicating traditional barriers to trade that insulate the internal market.
- The Internet is architected on a critical principle, that communications can be "routed around failure". The i2010 initiative should evaluate how restrictive rules, non-global standards or similar regionalized rulemaking may actually inhibit the interest and attraction of global data services toward European assets. Europe could benefit from a climate that attracts global data services, knowledge aggregation and information management that is compelling and open to all potential customers.
- The boundaries of a "single European Information Space" must be carefully evaluated in order to understand the more profound implications on trade services that may result from boundaries created by artificial rules that favour internal markets, investors, technologies or services.
 - RFID is a perfect example of a technology that, for public policy purposes, presents international challenges or concerns. Privacy, monitoring, supervision, trade and transport regulation, market-efficient business practices, taxation--all of these issues are shared across the global space and need a global approach.
 - This approach will ensure European leadership in the thought process and development of solutions and will improve Europe attractiveness, particularly for digital assets and services.