BUSINESS PLAN 2017-2018

CEN/TC 225
AUTOMATIC IDENTIFICATION AND DATA CAPTURE (AIDC) TECHNOLOGIES AND APPLICATIONS

EXECUTIVE SUMMARY

AIDC technologies will provide the sensors and data capture systems which drives the Internet of Things (services and applications).

The scope of CEN/TC 225 is standardisation - within a European context - of automatic identification and data capture (AIDC) technologies and applications, in particular

- The data carriers (currently barcode, RFID, OCR) and their means of communication with reader systems, and in the case of RFID, environmental sensors
- The necessary data architecture, including security of data access and consumers' privacy
- The necessary conformance and performance test specifications
- Normative and informative guidance for applications of AIDC systems, including both technical and societal aspects.

CEN/TC 225 will adopt/adapt global standards for use in Europe as appropriate.

The strict remit of CEN/TC 225 is item identification. However the increasing need to address societal issues, in particular at the application level, will additionally require CEN/TC 225 to consider personal identification and personal data issues. This will place importance on liaisons with entities involved with personal identification, and with personal privacy.

Given the potential complexity of both the attributes associated with an item ID and the communications links with those attributes, the use of the term object identification may be more meaningful than item identification.

CEN/TC 225 is tasked to deliver standards, technical specifications and guidance documents which facilitate the creation of an open European environment for:

- The operation of AIDC equipment and technologies including sensors and sensor networks.
- The testing and verification of AIDC equipment and technologies
- The application of AIDC technologies.
- In order to ensure interoperability

AIDC technology standardisation will facilitate

- an open environment for the unique identification of objects
- the free movement of goods within the EC and to and from the rest of the world
- improved health and safety in supply chains

CEN/TC 225's main priorities for 2017-2018 will be to

- promote the work done within EC RFID Mandate M436 which deals with public awareness and Privacy Impact Assessments.
- develop New Work Items to produce the EN standards and TR's required to implement AIDC technologies within verticals
- help any other TC in the implementation of AIDC standards in way that guaranties interoperability
- encourage greater participation in its work by NB's and Trade Associations
- provide neutral and independent assistance to user businesses and organisations, especially SME's

When preparing standards for Europe, CEN/TC 225 will take account of the technical specifications, standards and regulations currently available or being prepared at international levels. In particular account will be taken of the technical work in ISO/IEC JTC1/SC31 (AIDC techniques) and ISO/IEC JTC1/SC27 (Security and Privacy). Wherever possible, CEN/TC 225 will use the Vienna Agreement to align the development of European AIDC standards with the ISO environment.

CEN/TC 225 will establish and maintain effective liaisons with interested bodies e.g. other standards organizations, committees, trade associations and regulatory bodies.

CEN/TC 225 will take account of the advent of the Internet of Things and associated EC work plans, and also the work of ISO/IEC JTC1 SC41.

1 BUSINESS ENVIRONMENT OF THE CEN/TC 225

1.1 Description of the Business Environment

AIDC technologies permit the identification, location, and status/condition monitoring of any type of object with minimal human intervention and with minimal delay.

AIDC technologies provide the environmental sensors required to enable the Internet of Things applications.

AIDC is used in all sectors of society. Technical innovation, driven by the needs of a wide range of applications, has resulted in multiple techniques, each with its own functional deliverables.

Optical Readable Media (ORM) (1D and 2D Bar codes, OCR) and RFID (including environmental sensors) are the most implemented and well known forms of AIDC.

CEN/TC 225 has published 24 barcode EN standards to date, the majority of which have been adapted by ISO/IEC JTC1 SC31 as International Standards.

CEN/TC 225 will continue to maintain and develop its ORM (optical readable Media) standards.

The development of RFID building block standards has been carried out to date by global standards bodies, in particular ISO/IEC JTC1 SC31, in response to the expressed needs of both user and supplier communities.

The end result is a set of technical standards covering the aspects of air interface, data structure and performance/conformance testing, thereby facilitating the application of the technique in a wide range of sectors.

The work of global RFID standards bodies will continue, especially where other technologies are converging with RFID, such as environmental sensors and mobile/ubiquitous systems, and also in creating a security architecture for the data carried by RFID devices.

At the application level, there are a limited number of global RFID standards developed by ISO and by global sector bodies, especially in aeronautics and logistics. These standards focus primarily on interoperability at the technical and data level.

RFID applications were identified within the Lisbon Treaty as a key enabler of both European economic competitiveness and as a deliverer of European social objectives. This will not only demand the creation of multi-sectoral application standards to ensure interoperability within Europe (and by implication between Europe and its trading partners), but also observance of, and support for, European social norms and objectives.

CEN/TC 225 will address these new needs by delivering

- technical standards relating to interoperability of RFID systems in Europe
- technical standards relating to data security in RFID systems deployed in Europe
- technical standards and technical reports to facilitate the adoption of RFID systems on a sectoral basis, including privacy aspects.

CEN/TC 225 also developed a serie of 11 documents as response to the M436 EC RFID Mandate. CEN/TC 225 will promote these documents especially the two EN dealing with public

awareness and Privacy Impact Assessment methodology. These EN could be revised in order to take into account the multiplication of available IoT applications and technologies. Such revisions could help data controllers to comply with the new European regulation on Data protection.

Target socio-economic sectors in Europe will include:

- Aerospace
- Agriculture
- Automotive
- Defence
- Electronics
- Events management
- Facilities management
- Hospitals
- Healthcare in community
- Libraries
- Life Sciences
- Logistics
- Mining
- Oil and Gas
- Paper
- Post
- Retail/FMCG
- Transport (all modes)

Cross sector subjects include asset control, traceability and privacy.

1.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the CEN /TC:

The IdTechEx report shows that the total RFID market in 2016 is more than 10 $bn.

Total market $ bn	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2026**
Passive RFID Tags	3.65	3.63	3.79	4.06	4.21	4.39	4.59	4.95	5.38	6.88
Passive RFID Interrogators	1.47	2.01	2.12	2.18	2.43	2.56	2.95	3.37	3.79	4.90
Passive RFID Services, Networking, Software	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.2	2.8	3.2
Active RFID/RTLS Systems	1.26	1.41	1.64	1.88	2.10	2.28	2.44	2.64	2.82	3.70
Total $ billions	**8.79**	**9.45**	**10.05**	**10.62**	**11.23**	**11.83**	**12.58**	**13.15**	**14.79**	**18.68**

The number of RFID tagged item (UHF passive technology) will grow up to 20 billions in 2020. These figures have to be compared with those described in IoT reports like those from Gartner, CISCO or Mc Kinsey that estimate a total of 20 to 30 billions of connected objects in 2020. This clearly shows that RFID is one of the most important technology that supports the IoT.

2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC 225

The AIDC technology standards and reports developed by CEN/TC 225 will

- accelerate the deployment of AIDC technologies into European business processes
- create new value from new markets and innovations
- support industry and cross-industry applications;
- facilitate the achievement of social, safety, security and environmental policy objectives;
- create an open market for AIDC technology suppliers;
- support coexistence of and migration between AIDC technologies.

3 PARTICIPATION IN A CEN/TC

All CEN national members are entitled to nominate delegates to CEN Technical Committees, and experts to Working Groups, ensuring a balance of all interested parties.

Participation as observers of recognized European or international organizations may be authorised by an appropriate CEN National member body.

4 OBJECTIVES OF THE CEN/TC 225 AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Objectives

CEN /TC 225 will deliver EN standards and technical reports to

- Guide the deployment of AIDC systems in public and private enterprises within Europe
- Ensure the deployments are secure and protect personal privacy issues identified by the European regulation on Data protection
- Provide guidelines for the unique identification of all types of objects supporting the free global movement of goods, enhanced health and safety aspects in industries and in governmental sector:

4.2 Identified strategies to achieve the CEN/TC 225's defined objectives. .

CEN/TC 225 will

- Focus on issues arising form the European regulation on Data Protection, and rapidly develop ENs/TRs to help the stakeholders to comply with
- Promote the CEN/TC 225 WG work plans to mirror committees in all CEN member states
- Establish and maintain effective liaisons with other ESOs, global standards organizations, trade associations and regulatory bodies
- Evaluate the need for adopting ISO/IEC JTC1/SC31 standards as EN standards
- Help European Commission in spectrum regulation issues especially for the 915-921 MHz band.
- Take account of the technical standards and regulations currently available or being prepared at international levels. In particular account will be taken of the technical work in ISO/IEC JTC1/SC31.
- Use the Vienna Agreement to ensure alignment of European AIDC standards with the ISO environment.

4.2.1 Scope of the Working Groups

CEN/TC 225 and its working groups will develop EN's/TR's defining the operation of AIDC systems at technical and application levels within CEN member countries.

WG1 (Optical Readable Media) will focus on

- Barcode symbologies (1D and 2D)
- OCR and novel ORM techniques
- Technology related datasets
- Interoperability with RFID at data level
- Performance/conformance testing

WG3 (Data structure and Security) will work to develop a common approach to data structures, including related security issues, for use in the data carrier technologies in the scope.

WG4 (AIDC Applications) will focus on applications involving

- Optical and wireless data capture
- Convergence with other technologies such as mobile phones
- Networked systems

WG5 (RFID, RTLS, on-board sensors) will focus on

- Performance/conformance testing for RFID systems
- Interoperability of RFID systems within Europe.

4.2.2 Work plans of the Working Groups

WG1: Optical Readable Media

WG1's work plan recognises that barcode will continue to deliver significant and increasing value to European enterprises, with the use of 2D barcodes and Direct Part Marking growing rapidly.

Specific tasks include

- Review of symbologies used for track-and-trace purposes in Europe.
- Use of ORM techniques for product authentication
- Developing and maintaining a communication plan with European stakeholders about the activities of CEN/TC 225 WG1.

The deliverables will be supplied as internal reports, guidelines or technical reports in accordance with the given tasks and be published as CEN TC 225 documents.

General work includes

- Liaison with JTC1 SC31 WG1
- Liaison with CEN/TC 225 WG 3 and WG 4 on migration/interoperability of ORM and RFID

WG3: Security and data structure

- Promoting and extending the use of data structures compliant with ISO/IEC 15434, 15459 and 15961-2.
- Guidelines on migration of data structures from barcode to RFID environment (with WG4)
- Developing and maintaining a communication plan with European stakeholders about the activities of CEN/TC 225 WG3.
- Research into migration of existing data standards to a networked based options, especially the Internets of Things and Services

The deliverables will be supplied as internal reports, guidelines or technical reports in accordance with the given tasks and be published as CEN TC 225 documents.

General work includes

- Liaison with JTC1 SC31 WG2 Data structure
- Liaison with JTC1 SC31 WG4 (Security aspects)
- Extending the participation of existing and new liaison organisations to increase the harmonisation of primary data structures in Europe;

The work of WG3 will be aligned with the work of JTC1 SC31 WG2 Data structure, and JTC1 SC31 WG4 (Security issues).

WG4: Automatic ID applications

- **Publication of ENs for the use of AIDC in**
  - **Rail**
  - **Fish and Fish products**
  - **Electronic identification plate**
- RFID implementation guidelines including use of PIA and related issues.
- Carry out research into the migration and integration issues experienced by sectors in adopting RFID

The deliverables will be supplied as EN, internal reports, guidelines or technical reports in accordance with the given tasks and be published as CEN TC 225 documents.

WG4 will liaise closely with WG1 on barcode applications, with WG5 on RFID applications and with ISO/IEC JTC1/SC31 WG8 (Applications)

WG5: RFID, RTLS and on-board sensors

- Carry out research and identify some of the interoperability gaps, including the potential for standards.
- Carry out research to the extent of active tag and RTLS applications in Europe, with a comparative analysis of the technologies.

- Carry out research with liaison organisations on the potential requirement for sensors to be used to monitor items in supply chains and the use of sensors in RFID tags in fixed locations.

The deliverables will be supplied as internal reports, guidelines or technical reports in accordance with the given tasks and be published as CEN TC 225 documents.

WG5's work plan will focus on defining the physical system components needed to construct RFID systems including the operational parameters, within a European context.

The work will include performance and conformance test plans for particular applications to assist users, with a particular objective of achieving interoperability within Europe.

All frequencies, coupling techniques and powering methodologies will be included in the scope. WG5 will be guided by the results of the application research carried out by WG4.