

ISO/IEC JTC 1
Information technology
Secretariat: ANSI (United States)

Document type: Business Plan

Title: BUSINESS PLAN FOR JTC 1/SC 31, Automatic Identification and Data Capture Techniques for the PERIOD COVERED: January 2015 – December 2015

Status: This document is circulated for review and consideration at the November 2016 JTC 1 meeting in Norway.

Date of document: 2016-10-03

Source: SC 31 Chair

Expected action: ACT

Action due date: 2016-11-07

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Committee URL: <http://isotc.iso.org/livelink/livelink/open/jtc1>

BUSINESS PLAN FOR JTC 1/SC 31

Automatic Identification and Data Capture Techniques

PERIOD COVERED: January 2015 – December 2015

1.0 Executive Summary

SC 31 continues to deliver technically rigorous standards that meet user requirements. Looking ahead in 2016 SC31 will deliver three standards of note. One jointly developed with SC 17 will measure the quality of OCR Characters used on passports significantly improving the readability of the characters (ISO/IEC 30116). The second will establish the first quantitative method for test and evaluation of localization systems aiding the first responder community and public safety (ISO/IEC 18305). The third is a method for uniquely identifying devices and items touching the Internet of Things (ISO/IEC 29161).

In 2016 SC31 will commence a joint effort with the ISO Conformance Assessment Organization (CASCO) focusing on use of an “eLabel” to replace traditional conformance markings on electronic devices.

2.0 CHAIRMAN'S REMARKS

2.1 Market Requirements, Innovation

AIDC serves many different applications (e.g., product/item identification, point-of-purchase/use, track and trace, product distribution) in such market sectors as retail sales, health care, supply chain, transportation, and many areas of the manufacturing and service industries, where reliable, fast and automated data input with reduced errors improves operational efficiency with a positive impact on financial returns. AIDC technologies are vital elements in global commerce and are among the basic enablers for the adoption of Electronic Commerce. They provide timely and cost-effective data on the business processes that cover product life cycles including ordering, back office operations, manufacture, distribution, sale, use, repair, warranty, and return of products.

The initial priority for SC 31 work was in the field of linear bar codes. There is growing adoption of the two-dimensional matrix symbologies such as Data Matrix, QR Code and Aztec Code, in response to space constraints and the need for expanded data capacity. Vendors are finding a ready place in military, industrial and pharmaceutical applications. Direct Part Marking and the need to permanently mark high cost serially managed industrial items has highlighted the need to augment the 2D print quality standard for the substrate alteration techniques such as dot peening and etching in response to market requirements. New applications in mobile are also based on 2D barcode and SC 31 has risen to the challenge and produced a suite of standards for this area.

There continues to be strong interest in the RFID market sector throughout supply chain, asset tracking, traceability and other application areas. Harmonization of available frequencies around the world will stimulate further growth. SC31 notes the emergence of the RAIN RFID Alliance established to foster the use of UHF RFID and the strong common membership between the two groups.

The convergence of AIDC and network technologies defines a large part of the Internet of Things (IoT). SC31 standardized technologies are the basis for much of the data capture and identification portions of the IoT, but the application is far wider than the scope of SC 31. Other groups have surfaced that believe the IoT is part of their remit and they are looking at standardizing areas that SC 31 already has covered. The second one is that the market needs to have consistency between the different standards that it is necessary for the Internet of Things. This will require a new area of collaboration between ISO

and other standardization bodies and also with public organization like the EC.

SC31 working group and comment resolution meetings now offer remote accessibility whenever possible. Remote participation still suffers from technical glitches and a lack of meeting discipline. These problems are often offset by increased participation and the decrease in the cost of participation.

2.2 Accomplishments

Though general standards development in some of the areas of AIDC has slowed as implementation of the technology becomes more the focus of activity in the industry, SC31 has continued to have more than adequate work in process, with new work items continuing to develop as well as continued cooperation with other SC's as applicable such as that between SC31's WG1 on Data Carriers & Conformance with SC17.

The overall progress of SC 31 and the Working Groups can be reviewed via the project table links and individual Work Group sections within this report. This progress continues to provide the platform for continued improvement in the quality, quantity and reach of standards across the entire spectrum of AIDC.

2.3 Resources

The Plenary of SC31 and the meetings of its working groups continue to be well attended. Though certain work groups tend to have more activity than others as the needs for standardization of the AIDC technologies matures at differing rates, there has been work in all areas keeping the members active. As SC31 monitors the needs of the AIDC industry it is anticipated that SC31's work program will continue to be an active one with no concern for either participation or resourcing.

In an effort to improve the efficiency of SC31 we have reorganized, reducing from six work groups to three. Additionally, all WG level meetings have remote participation whenever possible.

2.4 Competition and Cooperation

The full SC31 Membership list can be found at [SC Member Listing](#). SC31 has made a conscious effort to reduce or eliminate competition with other standards groups by establishing an extensive network of liaisons both internal and external to JTC 1. A list of liaisons can be found at [JTC 1/SC 31 Liaisons](#). Noteworthy are the internal liaisons with SC6 on object identifiers, SC17 on the use of optical character recognition, SC27 on viability of security algorithms and JTC 1/WG10 on the Internet of Things. The Category A liaisons with AIM Inc. and GS1 have resulted in numerous additions to the SC31 catalogue of standards.

In June 2017 SC31 will co-locate its Plenary in Stockholm, Sweden with JTC 1/WG 10 to encourage cross pollination of the memberships.

SC31 will work closely in the future with AIM's RAIN RFID Alliance to identify emerging requirements, de-conflict meeting schedules and better meet user requirements.

3.0 Working Groups

3.1 WG 1 - Data Carriers

SC 31/WG 1 manages the bar code symbology and symbol quality standards for ISO. The complete SC 31/WG1 programme of work can be found at ([SC Program of Work](#)).

3.1.1 WG 1 Accomplishments

WG 1 completed work on a new standard detailed the requirements for reading and displaying optically readable media on mobile devices typically SMART Phones. Airlines today accept boarding passes displayed only on a mobile phone. The new standard specifies the screen resolution necessary for consistent reading of the displayed symbol. Phone manufacturers can use this to make sure their phones will be read when presenting a 2D boarding pass. During 2015 WG1 also published periodic updates to the 2D Verifier Conformance, PDF 417 Symbology and QR Code symbology standards.

3.1.2 WG 1 Deliverables

WG1 is developing a standard for a symbology known as Han Xin Code intended to make encoding of Chinese, Japanese and Korean characters more efficient. WG 1 has also embarked on a multiyear project to convert the Technical Report on Quality for Direct Part Marking (DPM) into an International Standard.

3.1.2 WG 1 Risks, Opportunities and Issues

None

3.2 WG 2 – Data Syntax

WG focus is on the structure of the data to be encoded in an Automatic Identification and Data Capture (AIDC) device. This supports a data string containing multiple data elements without regard for the sequence of the individual data elements and the high level rules for constructing a unique identifier for both physical and virtual items. The detailed WG 2 programme of work can be found at [\(SC Program of Work\)](#)

3.2.1 WG 2 Accomplishments

In 2015 WG 2 completed work to designate AIM as the new registration authority for Issuing Agency Codes published in ISO/IEC 15459-2. This work is now performed by AIM free of charge. Issuing Agency Codes are the cornerstone of the unique identification concept.

WG2 also reissued ISO/IEC 15434 with minor editorial changes. The changes deal with the representation of non-printable characters used in data strings which previously had been represented in free text in varying and inconsistent fashion.

3.2.2 WG 2 Deliverables

WG will in 2016 complete its work on Unique Identification for the Internet of Things (ISO/IEC 29161). This landmark standard supports the interoperability of disparate numbering systems which previously operated in isolation but will now occupy a common space known as the IoT. Indications are that IEEE and ITU-T may adopt this envelope schema as the near term solution to IoT interoperability.

A second significant effort in 2016 will be a standard on Digital Signature (DigSig). Expanding on a concept already in use in South Africa, this standard will support international use of the DigSig using renewable certificates.

WG 2 also expects to reissue the standard on Data and Application Identifiers.

3.3 Working Group 4 Radio Frequency Identification (RFID)

WG 4 deals with all aspects of RFID including application and air interfaces, security, implementations and conformance. Starting in 2014 and finishing in 2016 WG 4 will have absorbed the work of the

previous WG5 RTLS (Real Time Locating Systems), WG6 MIIM (Mobile Item Identification Management) and WG7 (RFID Security).

The issue of registration authorities' compliance with the ISO policy remains. WG4 has three open RAs and is working towards resolution. The RA for Data Constructs is complicated by the number of documents the RA touches. The registration of Allocation Classes for RFID tag manufacturers (ISO/IEC 15963) was complicated when one of the RAs for UHF RFID went out of business and now we expect an application for an additional RA in this group to manage the mode 4 RFID devices in the 2.45 GHz band. It is anticipated that AIM will become the RA for both of these standards. Finally, the RA for ISO/IEC 29174 Service broker for MIIM requires updating to achieve compliance.

A detailed programme of work can be found at ([SC Program of Work](#))

3.3.1 WG 4 Achievements

In 2015 WG 4 published 12 standards. Of those five were additional RFID security algorithms while four dealt with RTLS.

3.4.2 WG 4 Deliverables

New work items in the areas of conformance and air interfaces have been accepted and progressed by WG 4. Two are new RFID security algorithms specifically designed for use with low power RFID.

Publication of a standard Test and Evaluation of Localization Systems (ISO/IEC 18305) has the potential to revolutionize the way in which localities track and locate first responders. The standard will allow localities to compare competing systems and provide reliable estimates of location accuracy for a given building and technology used.

3.4.3 WG 4 Strategies/Opportunities/Risks

WG 4 currently has seven published RFID Security algorithm standards with four in development and one as a potential technical specification. It is doubtful that all of these algorithms will be used to an extent that justifies their continued publication as an IS. The strategy is to allow the market to sort out those that deserve continued ISO support and refer the remainder to national or regional standards.

3.5 Vocabulary Rapporteur

3.5.1 Programme

SC31 now has a single part vocabulary published in five languages (English, French, German, Russian and Korean.)

3.8.2 Accomplishments and Deliverables

ISO/IEC 19762 completed its DIS Ballot and the comment resolution was held. The text was submitted for publication September 2015.