ISO/IEC JTC 1 "Information technology"
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JTC 1/SC 31 Business Plan 2022

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Description

This document is circulated for review and consideration at the November 2022 JTC 1 Plenary.

BUSINESS Plan for ISO/IEC JTC 1/SC 31
Automatic Identification and Data Capture Techniques

PERIOD COVERED: November 2021 to October 2022

1 Executive summary

The scope of SC 31 is the standardization of data structures and technologies for the process of automatic identification and data capture. The technologies addressed by SC 31 are barcodes, optical character recognition, radio frequency identification and real time locating systems. SC 31 also develops and maintains standards for the identification of items and data structures to encode information in data carriers. In addition, SC 31 has a working group developing application standards. It is available to assist ISO, IEC and JTC 1 committees developing standards making use of automatic identification and data capture.

2 Chairman's Remarks

2.1 Market Requirements, Innovation

The Automatic Identification and Data Capture (AIDC) market is well established and growing steadily. The focus is on efficient implementations of the standards. Governmental bodies in a growing number of countries mandate AIDC technologies, for example in the pharmaceutical and medical device sectors or in the areas of fighting against illicit trade in the tobacco industry. There are still requirements for new technology standards, specifically new barcodes and standards related to the conformance and performance of data carriers and reading devices.

2.2 Accomplishments

SC 31 is responsible for 134 published standards. In addition, 22 standards are under development. During the period September 2021 to August 2022, SC 31 has published the following documents:

- ISO/IEC 24458:2022 - Information technology – Automatic identification and data capture techniques – Bar code printer and bar code reader performance testing specification
- ISO/IEC TR 24244:2022 - Automatic identification and data capture techniques — Bar code print quality test specification — Evolution of the grading and measurement of linear symbols in ISO/IEC 15416
- ISO/IEC 23941:2022 - Information technology — Automatic identification and data capture techniques — Rectangular Micro QR Code (rMQR) bar code symbology specification
- ISO/IEC 23634:2022 - Information technology — Automatic identification and data capture techniques — JAB Code polychrome bar code symbology specification
- ISO/IEC 22603-1:2021 - Information technology — Digital representation of product information — Part 1: General requirements
- ISO/IEC 20248:2022 - Information technology — Automatic identification and data capture techniques — Digital signature data structure schema
- ISO/IEC 18047-3:2022 - Information technology — Radio frequency identification device conformance test methods — Part 3: Test methods for air interface communications at 13,56 MHz
- ISO/IEC 18000-63:2021 - Information technology — Radio frequency identification for item management — Part 63: Parameters for air interface communications at 860 MHz to 960 MHz Type C
- ISO/IEC 15962:2022 - Information technology — Radio frequency identification (RFID) for item management — Data protocol: data encoding rules and logical memory functions
- ISO/IEC 15961-1:2021 - Information technology — Data protocol for radio frequency identification (RFID) for item management — Part 1: Application interface

2.3 Resources

SC 31 has 24 Participating members and 26 Observing members. In addition, SC 31 enjoys liaisons with 15 ISO and JTC 1 technical bodies as well as 10 external organisations.

SC 31 is privileged to have top world experts participating actively in the working groups and taking the initiative to propose new work items. It will continue paying attention to the inclusion of additional participants to make sure that the expertise is maintained and enhanced.

The number of countries having an active mirror committee in place is declining. This is likely because barcode and RFID technologies are well established and there is a perception of a lack of new challenges. This perception needs to be corrected. There are new AIDC technologies coming up and there is no limit in the number of creative solutions making use of AIDC technology standards.

2.4 Competition and Cooperation

SC 31 continues to collaborate with CEN TC 225, although the latter committee is not active any longer.

New liaisons were established with ISO/TC 154, Processes, data elements and documents in commerce, industry and administration and with ISO/TC 321, Transaction assurance in E-commerce.

The Category A liaisons with AIM Inc. and GS1 have been very useful, and the cooperation will continue. A new liaison was established with RAIN RFID, whose primary goal is to encourage the adoption of passive Ultra-High Frequency RFID specified by ISO/IEC 18000-63 and of the related conformance and performance standards.

Standards for Radio Frequency identification, Real-Time Locating System, and barcodes are important to the fast and efficient adoption of the Internet of Things.

2.5 Work Plan and structure

The SC 31 plenary held in June 2021 decided to launch an ad-hoc group with the objective to look at future work items and to assess the organisation structure of the sub-committee. The main conclusions were as follows:

- The current SC31 structure is fine
- SC 31 should consider new AIDC technologies like Vision and BLE (Bluetooth Low Energy)
- SC 31 should consider a common data stack for AIDC; harmonize and simplify data standards
- The need for education has been identified
- A survey was done, resulting in comments and proposals. Proposals directly relevant to working groups will be addressed by them.

3 Discussion of SC program of work

3.1 WG 1 - Data Carrier

SC 31/WG 1 manages Optical Character Recognition, linear and 2D bar code symbologies and symbol quality standards.

3.1.1 WG 1 accomplishments

WG 1 progressed to publication a new symbology based on QR Code, called rMQR (23941), which adds a full suite of rectangular formats to support marking requirements on long, thin objects. There is a new bar code scanner and decoder performance standard (24458) to support label printing that was published. The first colour bar code symbology to be standardized in WG1, called JAB Code (23634), which supports efficient encoding of personal information including biometrics in identity documents, was published this year. A new technical report (TR 24244) that describes the evolution of the grading and measurement of linear symbols in ISO/IEC 15416 is now published. The linear and 2D printed bar code quality standards are opened to apply consistently the new decimal grading system, which expands the available grade levels from 5 to 41 to support improved consistency and repeatability in print quality assessment. In addition, several other standards are open for revision to update to decimal grading and other refinements including Data Matrix, QR Code, Aztec Code, DMRE and Code 39. Finally,

the Technical Report surveying DPM methods and applications (24720) is undergoing a major update.

3.1.2 WG 1 deliverables

In addition to progressing the above projects, WG 1 is working on developing a DPM quality conformance process and is keeping up with potential future technology developments such as spread spectrum printing technology called digital watermarking and other colour symbologies.

3.1.3 WG 1 strategies/risks/opportunities/issues

WG 1 intends to develop technically rigorous international data carrier standards that stand the test of time. To support that goal, WG1 invites bar code scanning, printing, and decoding technologists to join our efforts. We meet for two or three days in the spring and fall in places (or virtually, in time zones) convenient sequentially to the Americas, Asia and Europe. The meetings are highly technical in nature and often result in some voluntary "homework" between meetings typically involving research to help resolve technology issues with the various standards undergoing revision.

3.2 WG 2 - Data and structure

WG 2 focuses on the structure of the data to be encoded in Automatic Identification and Data Capture (AIDC) devices. This includes the high-level rules for constructing unique identifiers for both physical and virtual items.

3.2.1 WG 2 accomplishments

WG 2 manages a mature set of standards that are widely adopted by industry and governmental bodies around the world.

3.2.2 WG 2 deliverables

The revision of ISO/IEC 20248, Digital signature data structure schema, was completed and published in June 2022. It includes a correction of a few errors and the addition of examples to aid in the implementation of the standard.

The revision of ISO/IEC 15434, Syntax for high-capacity ADC media, started in April 2022. This standard specifies a transfer structure, syntax, and coding of messages and data formats when using high-capacity ADC media between trading partners (specifically between suppliers and recipients) and, where applicable, in support of carrier applications, such as bills of lading, and carrier sortation and tracking

3.2.3 WG 2 strategies/risks/opportunities/issues

A key WG 2 issue to be addressed by both WG 2 and WG 8 is the prevention of data structure conflict, which may lead to denial of services, especially in the light of IoT, mobile systems and convergence of traditional markets.

3.3 WG 4 – Radio communications

WG 4 deals with all aspects of Radio-Frequency Identification (RFID) and Real Time Locating Systems (RTLS) including air interfaces, security, conformance, and performance.

3.3.1 WG 4 accomplishments

WG 4 worked on various standards on RFID, RTLS, security and test methods. Due to the maturity of RFID and RTLS, most work is currently on revising and maintaining existing standards. By the end of 2022 it is expected that all documents except those due for systematic review are published. New work and revision to address new topics is expected mid-2023.

3.3.2 WG 4 deliverables

WG 4 currently has 6 ongoing work items. All of them have already passed DIS ballot and are due for publication or FDIS ballot. One work item is new work, while all others are revisions of earlier published standards

3.3.3 WG 4 strategies/risks/opportunities/issues

WG 4 is expecting the following topics of relevance for 2022/2023:

Item	Strategy	Risk	Opportunity
1	Improve existing standards based on market feedback	Backwards compatibility may limit the changes that can be done	Increased market acceptance due to more advanced products based on the standards
2	Inform other standardization groups about the SC31 work	Prior work or other interests would not fit to the SC31 work	The industry could benefit from the fact that all RFID applications use the same test standards and therefore the tests only need to be done once. Only the requirements for different applications will vary.

3.4 WG 8 – Applications of AIDC

The purpose of WG 8 is to develop AIDC applications standards, to promote SC 31 internally to ISO and externally to all Standards bodies including Industry Groups and to be the external focal point for SC 31 and its working groups.

3.4.1 WG 8 accomplishments

ISO/IEC 22603-1, Digital representation of product information was published in September 2021. ISO/IEC 22603-2 is ready for publication as of September 2022. ISO/IEC DIS 17360 will be finalised by the end of 2022. This document replaces ISO/IEC 17364, 17365, 17366 and 17367 that have been withdrawn. ISO/IEC 8506, AIDC Application in Industrial Construction, will go to committee draft consultation in September 2022.

3.4.2 WG 8 deliverables

WG 8 will continue to progress the work items above.

3.4.3 WG 8 strategies/risks/opportunities/issues

WG 8 will continue working in its role of promoting the development of application standards making use of automatic identification and data capture technologies. ISO and IEC committees are welcome to rely on WG 8 or to consult WG 8 experts to develop standards making use of AIDC. Upon approval, a new work item proposal, Encoding and resolving identifiers over HTTP, will bring an additional dimension to the work of SC 31 by linking the data captured automatically to the internet.

3.5 SC 31 Vocabulary

ISO/IEC 19762:2016 is the AIDC harmonized vocabulary. Following the systematic review and internal consultations, the decision was taken to develop the next version of the standard in English only. National bodies will be encouraged to issue national versions of the standard in local language. The revision of the standard will bring the opportunity to ensure that the vocabulary meets the requirements of the large portfolio of documents managed by SC 31.