

ISO/IEC JTC 1 "Information technology"

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SC 31 Business Plan 2021

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Description

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BUSINESS Plan for ISO/IEC JTC 1/SC 31

Automatic Identification and Data Capture Techniques

PERIOD COVERED: November 2020 to October 2021

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 129 published standards. In addition, 26 standards are under development. During the period September 2020 to August 2021, SC 31 has published the following documents:

- ISO/IEC 29160:2020 Information technology — Radio frequency identification for item management — RFID Emblem
- ISO/IEC 29158:2020 Information technology — Automatic identification and data capture techniques — Direct Part Mark (DPM) Quality Guideline
- ISO/IEC 23200-1:2021 Information technology — Radio frequency identification for item management — Part 1: Interference rejection performance test method between a tag as defined in ISO/IEC 18000-63 and a heterogeneous wireless system
- ISO/IEC 20830:2021 Information technology — Automatic identification and data capture techniques — Han Xin Code bar code symbology specification
- ISO/IEC 19823-16:2020 Information technology — Conformance test methods for security service crypto suites — Part 16: Crypto suite ECDSA-ECDH security services for air interface communications
- ISO/IEC 18046-3:2020 Information technology — Radio frequency identification device performance test methods — Part 3: Test methods for tag performance

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. Several projects have been developed under the “Vienna agreement”.

The collaboration with ISO TC 122 (Packaging) resulted in the transfer of five projects “supply chain applications of RFID” from ISO TC 122 to SC 31. One of these projects, ISO/IEC 17363 is very specific to freight containers and has been transferred to ISO/TC 104/SC 4.

The Category A liaisons with AIM Inc. and GS1 have been very useful, and the cooperation will continue.

The growth of the Internet of Things (IoT) has awakened interest in the technologies based on the SC 31 technology standards. Standards for Radio Frequency identification, Real-Time Locating System, and barcodes are important to the fast and efficient adoption of the IoT concepts.

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 Han Xin Code to publication in August 2021. Han Xin was modified from its AIM standard to add GS1 functionality and specific web address support. A new symbology based on QR Code, called rMQR, which adds a full suite of rectangular formats to support marking requirements on long, thin objects, is nearing publication. There is a new bar code scanner and decoder performance standard to support label printing nearing publication. The first colour bar code symbology to be standardized in WG1, called JAB Code, which supports efficient encoding of personal information including biometrics in identity documents, is nearing publication. On the print quality front, Direct Part Mark (DPM) Quality measurement has been updated to include a new lighting configuration to support automated reading applications and is now published as a standard. 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 five to 41 to support improved consistency and repeatability in print quality assessment. Finally, 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 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

A revision of ISO/IEC 20248, Digital signature data structure schema, has been launched and should be completed in 2021. It will include a correction of a few errors and the addition of examples to aid in the implementation of the standard.

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. New work is typical around test methods.

3.3.2 WG 4 deliverables

WG 4 currently has 10 ongoing work items. All of them have already passed CD ballot, or in an even higher stage. 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 2021/2022:

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

WG 8 completed FDIS 22603-1, Digital representation of product information, in Aug 2021. New work item for 22603-2 is completing a second round of voting. The first round did not obtain required consensus. 17367, Supply chain applications of RFID, was completing resolving DIS comments when the decision was made to suspend work in favour of a combined 17364, 17365, 17366 and 17367. AIDC Application in Construction will complete balloting for NWI in September 2021.

3.4.2 WG 8 deliverables

WG8 will continue to progress the work items above.

3.4.3 WG 8 strategies/risks/opportunities/issues

The work on ISO/IEC 22603 has generated immense interest in the international regulatory community. This work is challenging with trying to understand how to address Conformance Marking/e-Labeling. This led to making the standard a multi-part standard to address the various type of Conformance Marking/e-Labeling. The matter is under pressure from regulated sectors where complex labelling, the access to that label, and the long-term storage of e-Label data is increasingly important. Part 1 of 22603, General Requirements is expected to be published in 2021.

The transfer of the ISO 1736x series, Supply Chain Applications of RFID, was driven by the need for SC 31 technical experts to contribute to refining the standard as requested by JAIF, Joint Automotive Industry Forum. The JAIF is a consortium of Japanese (JAMA and JAPIA), European (Odette) and North American (AIAG) standards organizations that collaborates on global best practice recommendations and worldwide solutions for the global automotive industry. The decision was made in Q2 2021 to combine 4 ISO specifications into 1 – 17367, 17366, 17365, 17364. A plan is being developed in Q3 2021 to see the document through FDIS by Q4 2022.

Internet of Clothing will proceed to a NWI by Q1 2022.

WG 8 has reached out to TC204/WG7 for the systematic review of ISO 18495-1, Automotive visibility in the distribution supply chain – Architecture.

3.5 SC 31 Vocabulary

ISO/IEC 19762:2016 is the AIDC harmonized vocabulary. It is available in English, French, German, Russian, Korean, and Japanese. Following the systematic review process, some P-members have suggested to re-publish an updated version of the standard in English only, while others suggested to keep a multi-language standard and even add some languages, e.g. Chinese. An ad-hoc group will be established to develop recommendations on the best way forward.