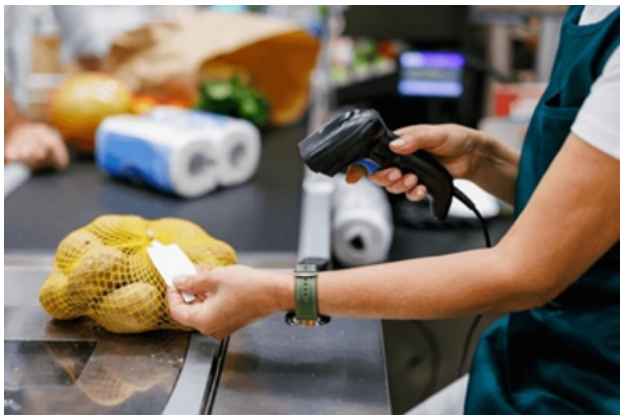
Celebrating the 30th Anniversary of Automatic identification and data capture techniques (ISO/IEC JTC 1/SC 31)

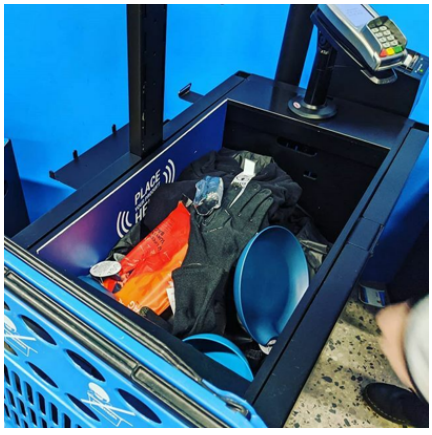
Every day, billions of barcodes are scanned at checkout counters, on hospital wristbands, on airport boarding passes, and on parcels winding their way across continents. Behind each scan lies a compact body of international standards, quietly ensuring that data moves fast, moves accurately, and moves in a language every machine understands. That body of standards is the life's work of ISO/IEC JTC 1/SC 31, which celebrates its 30th anniversary in 2026.

Established by Resolution 4 of the JTC 1 Plenary in Sydney, Australia, on 15 March 1996, SC 31 was chartered to standardise the data formats, syntax, and enabling technologies used to identify items and entities automatically. What began as an effort to bring order to a proliferating jungle of incompatible bar code schemes has grown into the authoritative global forum for *Automatic Identification and Data Capture* (AIDC) techniques.

The First Decade: Building the Foundation



The inaugural SC 31 Plenary was held from 17 to 20 June 1996 in Brussels, Belgium — the city that would host the committee again 27 years later, in 2023. Twenty-two national bodies were represented at that first meeting, along with three liaison organisations. Three Ad Hoc groups were immediately created to address the core work programme: Data Carrier, Data Structure, and Conformance.



At the second Plenary in Zurich in March 1997, the ad hoc groups became formal Working Groups. A fourth Working Group, on Radio Frequency Identification (RFID), was added at the Rio de Janeiro Plenary in January 1998 — reflecting the growing recognition that contactless identification technologies would become central to the AIDC ecosystem. Over the following years, SC 31 produced standards that are now embedded in the fabric of global trade.

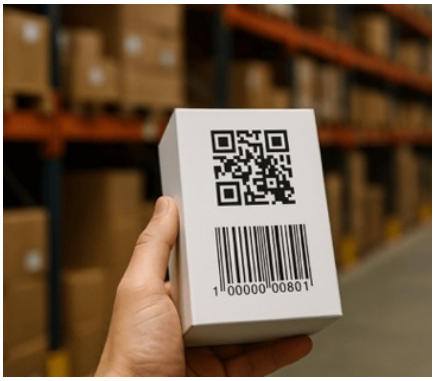
Milestones Across Three Decades

1996	SC 31 established by JTC 1 Resolution 4, Sydney, Australia. First Plenary held in Brussels with 22 national bodies. Chair: Alan Haberman (USA). Secretariat: Uniform Code Council.
1997–98	Ad Hoc groups become formal Working Groups. WG 4 on RFID created in Rio de Janeiro, anticipating the technology's commercial rise.
2004	QR Code standardised as ISO/IEC 18004, seven years before it became a cultural phenomenon in 2011's business-to-consumer wave.
2006	Chuck Biss becomes second Chairman of SC 31, serving until 2013. The committee continues rapid growth in both membership and published standards.
2014	Dan Kimball appointed third Chairman. The committee mourns the passing of Craig Harmon, a co-founder of SC 31 and tireless advocate for international AIDC standards.
2017	WG 8 on Application of AIDC Standards established at the Stockholm Plenary, creating a dedicated home for application-layer work and external engagement.
2018–19	Henri Barthel, SC 31 expert since 1996 and former Convenor of WG 4, appointed fourth Chairman. Extended DataMatrix and rectangular QR Code under development. Supply Chain RFID standards (ISO 17363–17367) transferred to SC 31.
2020–22	Three consecutive virtual Plenaries in response to the Covid-19 pandemic. SC 31 demonstrates resilience, 45–53 participants per session from 11+ countries.
2024	ISO/IEC 18975 published, addressing the link between identifiers in data carriers and web resources, paving the way for the Digital Product Passport and e-labelling.
2025	29th Plenary convenes in Seoul, South Korea, with over 20 active projects across four working groups. Duanfeng Jackson He takes over WG 1 Convenorship after Sprague Ackley's 27 years of service.
2026	30th Anniversary. SC 31 marks three decades of international standards that underpin automation, supply chain visibility, and digital transformation worldwide.

Building the Foundation for Global Interoperability

The mission of SC 31 is the standardization of “data formats, data syntax, data structures, data encoding, and technologies for the process of automatic identification and data capture.”

What began primarily with barcode-related technologies has expanded into a broad portfolio supporting digital supply chains, smart logistics, healthcare traceability, industrial automation, and the Internet of Things (IoT).



The committee's work contributes to several United Nations Sustainable Development Goals (SDGs), including SDG 3 (good health and well-being), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 12 (responsible consumption and production), and SDG 13 (climate action). By enabling accurate traceability and reducing waste across supply chains, the AIDC standards of SC 31 are instruments of sustainable development as much as they are instruments of commerce.

SC 31's technical work is carried out through four Working Groups, each addressing a distinct dimension of the AIDC standards landscape:

WG 1 Data Carriers: linear bar codes, two-dimensional symbols (including QR Code and Data Matrix), and optical character recognition

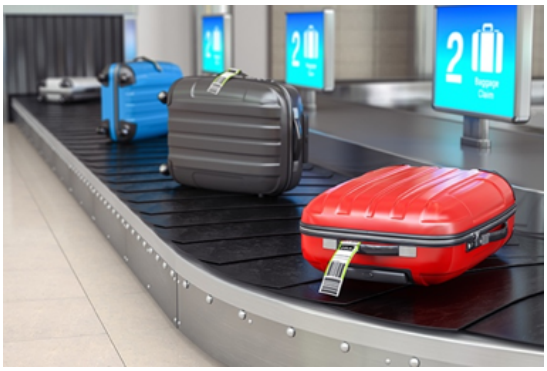
WG 2 Data Structure: data syntax, encoding rules, unique identification, and identifier-to-web resolution

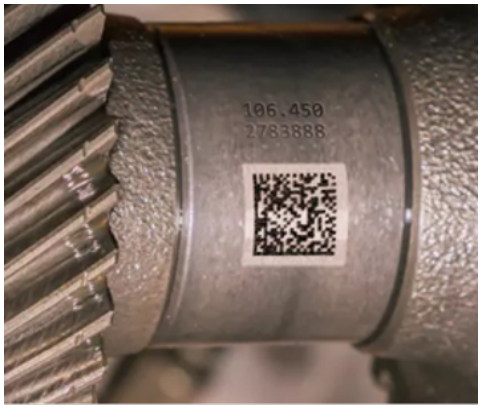
WG 4 Radio Communications: RFID air interface standards, sensor integration, real-time locating systems, and cryptographic security services

WG 8 Application of AIDC Standards: cross-industry application standards, e-labelling, and AIDC in industrial construction

From Barcodes to the Digital Product Passport

The scope of SC 31's work has expanded steadily to meet new technological and societal demands. In its early years the committee's attention was concentrated on bringing order to the bar code symbology landscape and ensuring that data structures could support multi-industry use. Today the committee's portfolio spans real-time locating systems, sensor-augmented RFID, mobile-device integration, and the emerging requirements of the Internet of Things.





Perhaps the most strategically significant development of recent years is the publication of *ISO/IEC 18975*, which addresses how the identifiers stored in data carriers (bar codes, QR codes, RFID tags) can be resolved to web-based information resources about the items they identify. This standard enables a new generation of *e-labelling* applications, including the European Union's Digital Product Passport initiative, which will require manufacturers to link physical products to detailed digital records of their composition, provenance, and recyclability.

The thread connecting the first UPC scan at a Marsh supermarket in Troy, Ohio in 1974 to a Digital Product Passport in 2026 runs directly through SC 31. The standards may have grown more complex, the technologies more sophisticated, but the underlying mission remains unchanged: to ensure that physical objects can be identified accurately, quickly, unambiguously, at any scale, in any country, by any system.

A Global Community of dedicated experts

SC 31's achievements over three decades have been made possible through global collaboration among national bodies, industry experts, and liaison organizations.
The subcommittee currently includes participating members from across the world and maintains strong cooperation with numerous international organizations and committees, including GS1, AIM, ETSI, RAIN Alliance, UPU, and IATA.

That global reach is not merely symbolic. AIDC standards succeed only when they work across borders, when a shipment leaving a warehouse in Shenzhen arrives with labels that can be read without ambiguity in Rotterdam or Memphis. The national bodies, industry liaison organisations, and individual experts who have given their time and expertise to SC 31 over thirty years are the reason those labels work.

Looking Forward

As industries continue to evolve toward greater automation, connectivity, and sustainability, the work of SC 31 will remain essential to ensuring interoperability, trust, and efficiency across global markets.

Every new supply chain, every new product that must be traced from manufacture to end-of-life, every healthcare pathway that depends on reliable patient identification adds to the demand for the kind of robust, internationally agreed standards that SC 31 provides. The committee's founding resolution in 1996 spoke of "standardisation of common coding, data format, syntax and structure, and enabling technologies to individually and uniquely identify items and entities without human intervention." Thirty years later, that mandate is more relevant than ever. SC 31 has earned its anniversary.

Henri Barthel
Chair ISO/IEC JTC 1/SC 31
June 2026