ANNUAL REPORT 2025

ICT STANDARDS CONSULTATIVE COMMITTEE (NSAI TC 2)

NSAI

Contents

1 Overview of 2025

1.1 Introduction

NSAI experts' engagement in key standardisation areas was again to the fore through their leadership positions in European and International technical committees and working groups; as working group convenors, project editors and in key liaison roles including between ISO/IEC JTC 1 and the European Commission.

At home, we expanded our engagement with stakeholders and have added new experts to our national committees. We continue to liaise with key partners to ensure our engagement in priority areas at both European and International level.

2025 also brought significant engagement by NSAI experts in relation to EU Commission standardisation requests related to the **Trusted Data Framework** (EU Data Act / Data Governance Act) and the **Cyber Resilience Act** (CRA) '*Cybersecurity Requirements for Products with Digital Elements*' and with the **Digital Product Passport**.

1.2 NSAI - Key areas of engagement

As was the case in 2024, our key areas of participation spanned European and International standards engagement in the following areas.

- Artificial Intelligence
- Blockchain
- Cloud Computing
- Dataspaces and Data Governance
- Digital Product Passport
- Electronic Invoicing
- Information Security, Cybersecurity and Privacy Protection
- IT Professionalism and Digital Competences

1.3 2025 Annual Union Work Programme for European Standardisation

The role of standardisation in EU policy is addressed in several Commission policy documents, most notably the [Standardisation strategy](#) and the [industrial strategy](#). Standards support EU policies to ensure that EU products and services are competitive worldwide and reflect state-of-the-art safety, security, health, social and environmental considerations. In addition, standards are an important tool for research, development and innovation through demonstrating proof of concept and leveraging the roll-out of completely new industrial value chains in the green and digital areas.

In the 2025 Annual Union Work Programme (AUWP) for European standardisation, the following digital priority areas were listed in support of EU Commission priorities.

- **EU Trusted Data Framework (**data Act implementation, trusted data sharing, interoperability)
- **EU Digital Identity Wallet (**secure EU-wide digital authentication and identity services)
- **Quantum Technology and Post-Quantum Cryptography (PQC) (**future-proof cryptography, quantum industry leadership)
- **AI and Cyber Resilience (**trustworthy AI, secure digital products, industrial digitalisation)
- **Digital Infrastructure Standards (**broader digital transformation, interoperability, smart systems)
  https://www.cencenelec.eu/news-events/news/2025/brief-news/2025-03-28-auwp/

1.4 Standards for future and emerging ICT

The ICT sector continues to be characterized by waves of innovation both for discrete technologies and novel combinations of existing technologies, as we have seen for the Internet of Things (IoT).

The ISO/IEC JTC 1 *Emerging technology and Innovation* (JETI) group conducts an annual strategic review which identifies and prioritises potential areas for future standardisation (see Table 1 below) and conducts a deeper dive into more immediate technology areas of interest, which are further explored through the publication of Technology Trend Reports (TTR). 2025 saw continuing work on draft TTRs on Intelligent Uncrewed Systems, Neuromorphic Computing Systems and on CitiVerse.

No.	Key Technology	2025 Category
1	Generative AI (GAI)	AI & ML
2	Adaptive AI	AI & ML
3	Human-Robot Collaboration	Robotics & Automation
4	Sustainable Computing	Next-Gen Computing
5	Reinforcement Learning	AI & ML
6	Real-time Analytics	Data & Analytics
7	Carbon-Neutral Cloud Computing	Green ICT & Sustainable Tech
8	Confidential Computing	Next-Gen Computing
9	Data Mesh	Data & Analytics
10	Data Warehouses	Data & Analytics
11	Swarm Robotics	Robotics & Automation
12	Hydrogen-Powered Data Centers	Green ICT & Sustainable Tech
13	Neuromorphic Computing	Next-Gen Computing
14	Soft Robotics	Robotics & Automation
15	Metaverse Expansion	Immersive Tech & HCI
16	Satellite Internet Expansion	Next-Gen Connectivity
17	Circular Economy in Electronics	Green ICT & Sustainable Tech
18	AI-Enhanced Drones	Robotics & Automation
19	Holographic Telepresence	Immersive Tech & HCI
20	Smart Agriculture	Data & Analytics

Table 1 – 2025 JETI's Top 20 Priority Technologies

2 I TC 2 - ICT Standards Consultative Committee – Operational Overview

NSAI TC 2 engages in a broad range of standardisation activities through its participation in those European and International standards committees listed in Table 2 below.

Committee Name	Committee Title
ISO/IEC JTC 1	Information Technology
ISO TC 307	Blockchain and distributed ledger technology
CEN TC 225	Automatic identification and data capture (AIDC) Technologies
CEN TC 428	Digital Competence and ICT Professionalism
CEN TC 434	Electronic Invoicing
CEN TC 440	Electronic Public Procurement
CEN/CLC JTC 13	Cybersecurity and Data Protection
CEN/CLC JTC 19	Blockchain and distributed ledger technologies
CEN/CLC JTC 21	Artificial Intelligence
CEN/CLC JTC 22	Quantum Technologies

Table 2 - European and International Committees mirrored by NSAI ICTSCC

2.1 European Standardisation

European standardisation work represents a very important activity as many standards projects have been supported, or are directly mandated, by the European Commission through a standardisation request process in order to facilitate the implementation of policy and legislative instruments. NSAI experts are actively engaged in leadership roles at European level as described in 2.3.1.

Summary of Active European Commission ICT Standardisation Requests

Key active and emerging standardisation requests issued by the European Commission in the ICT domain are as follows:

1. European Trusted Data Framework: Supports Regulation (EU) 2023/2854 with standards on trusted data transactions, interoperability, semantic assets and data space maturity models. Deadlines span 2026–2027.
2. AI Act Standardisation: Ongoing requests supporting trustworthy AI, risk management and conformity assessment.
3. European Digital Identity Wallet (eIDAS 2.0): Active standardisation on secure authentication, digital identity services and interoperability.
4. Cybersecurity and Cyber Resilience: Standards supporting NIS2, Cyber Resilience Act and secure digital products.
5. Data Governance and Interoperability: Active work on data spaces, metadata, and semantic interoperability frameworks.
6. eProcurement and eInvoicing: Continuing updates supporting EU public procurement digitalisation and the EU's VAT in the Digital Age (ViDA) requirements.
7. Accessibility Standards: Active work supporting Directive (EU) 2019/882 for ICT product and service accessibility.

2.2 International Standardisation

ISO/IEC JTC 1 is a joint technical committee of the International Organization for Standardisation (ISO) and the International Electrotechnical Commission (IEC) the scope of which is to develop, maintain and promote standards in the fields of information technology (IT) and information and communications technology (ICT). JTC 1 is a global standards development environment where experts come together to develop worldwide ICT standards for business and consumer applications. JTC 1 also supports the standards process for integrating diverse and complex ICT technologies. These standards rely upon the core infrastructure technologies developed by JTC 1 centres of expertise, complemented by specifications developed in other organizations.

Since its formation in 1987, 3,666 ISO/IEC standards have been developed and published by committees of JTC 1, which comprise some 4,500 technical experts from around the world. Currently there are 24 active sub-committees of JTC 1, covering the topics set out in Figure 1 below. The most recent of these JTC 1 subcommittees, established in 2024, was SC 44 "Consumer protection in the field of privacy by design".

Membership of an ISO/IEC committee is qualified as an observer or a participating member. Figure 1 identifies those JTC 1 subcommittees where NSAI experts are actively engaged as participating members together with those subcommittees where our experts have observer status. NSAI participation both as a participating member and as an observer is summarised in Figure.1. NSAI accredited experts are also actively engaged in leadership roles at international level as described in 2.3.1.
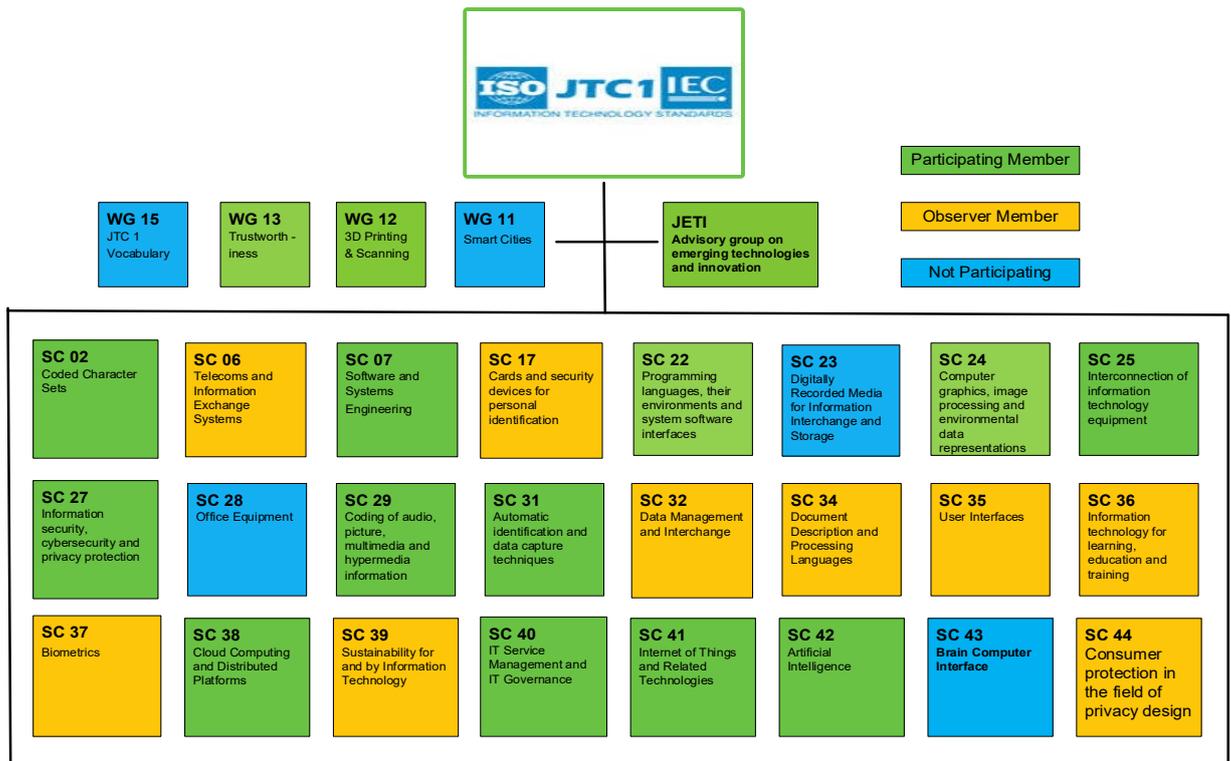
WG 15 JTC 1 Vocabulary	**WG 13** Trustworth -iness	**WG 12** 3D Printing & Scanning

WG 11 Smart Cities

JETI Advisory group on emerging technologies and innovation

Participating Member
Observer Member
Not Participating

SC 02 Coded Character Sets	**SC 06** Telecoms and Information Exchange Systems	**SC 07** Software and Systems Engineering	**SC 17** Cards and security devices for personal identification	**SC 22** Programming languages, their environments and system software interfaces	**SC 23** Digitally Recorded Media for Information Interchange and Storage	**SC 24** Computer graphics, image processing and environmental data representations	**SC 25** Interconnection of information technology equipment
SC 27 Information security, cybersecurity and privacy protection	**SC 28** Office Equipment	**SC 29** Coding of audio, picture, multimedia and hypermedia information	**SC 31** Automatic identification and data capture techniques	**SC 32** Data Management and Interchange	**SC 34** Document Description and Processing Languages	**SC 35** User Interfaces	**SC 36** Information technology for learning, education and training
SC 37 Biometrics	**SC 38** Cloud Computing and Distributed Platforms	**SC 39** Sustainability for and by Information Technology	**SC 40** IT Service Management and IT Governance	**SC 41** Internet of Things and Related Technologies	**SC 42** Artificial Intelligence	**SC 43** Brain Computer Interface	**SC 44** Consumer protection in the field of privacy design

Fig 1 - ISO/IEC JTC 1 Working Groups & Subcommittees (including NSAI participation)

2.3 1 New (*) and ongoing leadership roles held by NSAI Experts at European and International level

ISO/IEC JTC 1 Liaison to the European Commission 1

*Convenor JTC 1/AHG 8 'Succession Planning'

Convenor JTC 1/ SC 42 / WG 3 'Trustworthiness'

Secretariat JTC1/SC 42 / WG 3 'Trustworthiness'

*Convenor JTC1/SC 42 WG1 'Foundational Standards'

Project Editor ISO 42001 'AI Management Systems'

*Convenor JTC 1/SC 42/JWG 7 Joint Working Group ISO/IEC JTC1/SC 42 - ISO/TC 68: Artificial intelligence

*Convenor JTC 1/SC 38 / WG 6 'Data, interoperability and portability'

Secretariat of JTC 1/SC 40 / WG 1 'Governance of Information Technology'

Chair of CEN TC 428 'ICT professionalism and Digital competences'

Convenor of CEN TC 434/ WG 7 'eInvoicing – Registry services'

Co – Convenor of CEN TC 434 / WG 3 'eInvoicing – Syntax bindings'

Co – Convenor & Lead Editor of CEN TC 434 / WG 5 'eInvoicing –Extensions methodology'

3 Structure and Membership

NSAI TC 2 comprises a plenary group and 19 subcommittees which mirror the engagement of NSAI experts in European and International standardisation. Table 3 below details the current structure and organization of NSAI/TC 2.

Technical Committee	Committee Name	Mirroring	International Participation Type	Membership
TC 2	ICT Standards Consultative Committee	ISO/IEC JTC 1	Participating	18
TC2/WG 1	Quantum Technologies – Advisory Group	CEN/CLC JTC 22	Participating	1
TC 2/SC 2	Software Engineering	JTC 1/SC 07	Participating	6
TC 2/SC 3	Telecommunications, media encoding and green IT	JTC 1/SC 06	Dormant	-
TC 2/SC 4	Codes, character sets, and internationalization	JTC 1/SC 2	Participating	2
TC 2/SC 6	Generic cabling systems	JTC 1/SC 25	Participating	2
TC 2/SC 8	Biometrics	JTC 1/SC 17 & 37 / CEN TC 224	Observer	1
TC 2/SC 9	Automatic Identification and Datacapture Techniques	JTC 1 SC 31 / CEN TC 225	Participating	2
TC 2/SC 10	Information security, cybersecurity, privacy and data protection	JTC 1/SC 27, SC 44 /CEN-CLC JTC 13	Participating	35
TC 2/SC 11	Cloud Computing and Distributed Platforms	JTC 1/SC 38 / CEN-CLC JTC 25	Participating	7
TC 2/SC 12	eProcurement	CEN TCs 434 & 440	Participating	14
TC 2/ SC 13	ICT Professionalism and Digital Competences	CEN TC 428 / JTC 1/SC 36	Participating	10
TC 2/SC 14	Document description and processing languages	JTC 1/SC 34	Observer	3
TC 2/SC 15	IT Service Management and IT Governance	JTC 1/SC 40	Dormant	_
TC 2/ SC 16	Blockchain and electronic distributed ledger technologies	ISO TC 307 / CEN-CLC JTC 19	Participating	23
TC 2 / SC 17	Internet of Things and Digital Twin	JTC 1/SC 41	Participating	10
TC 2 / SC 18	Artificial Intelligence	JTC 1/SC 42 / CEN-CLC JTC 21	Participating	46
TC 2 / SC 19	Coding of audio, picture, multimedia and hypermedia information	JTC 1/SC 29	Participating	11
TC 2 / SC 20	Programming languages, their environment and system software	JTC 1/SC 22	Participating	5
TC 2/ SC 21	Smart Cities	JTC 1 / WG 11	Observer	3

Table 3 - ICTSCC Structure and Organization

4 ICTSCC Summary of Activities - 2025

4.1 Meetings

Meetings of NSAI TC 2 generally mirror the plenary meeting schedule of ISO/IEC JTC 1 which holds spring and autumn plenary sessions. In 2025, NSAI TC 2 held two formal meetings in April and December and two virtual meetings outlining our participation at the JTC 1 plenaries.

As with TC 2, subcommittees generally meet at least twice a year while individual experts may attend project meetings, usually on a monthly cycle.

Apart from formal meetings, adhoc meetings occur regularly on a needs-be basis.

4.2 Ballots on European and International Standards

An important obligation on the membership of committees is engagement in the standards balloting process. The balloting process is a fundamental step in building consensus and ensuring widespread adoption of standards. While our national experts are active in this process, NSAI also utilizes a default voting policy to ensure all ballots are appropriately addressed and in keeping with obligations as a participating member. Furthermore, through the NSAI web portal 'Your Standards Your Say" NSAI enables public participation in draft European and International standards open for public consultation.

4.3 Meetings Hosted in Ireland

The 32nd meeting of ISO/IEC JTC 1/SC 38 'Cloud Computing and Distributed Platforms' was held at Atlantic Technological University (ATU), Letterkenny during the first week of September 2025. This meeting was attended by in excess of 35 delegates in person with another 45 attending online. Representing member bodies were from the US, Brazil, Republic of Korea, Peoples Republic of China, India as well as a number of European countries. The week-long meeting was deemed hugely successful.

5 Work programme for 2026

Our work programme for 2026 includes a review of the operations of NSAI TC 2, including the identification of key areas of standardisation for enhanced engagement. As well as maintaining our current ICT standards coverage, we plan to consider the following areas for participation through engagement with national stakeholders.

- Quantum Computing.
- Metaverse.

2026 will also include engagement with stakeholders to provide support for SME participation in key areas of standardisation.

2026 will also bring focus to planning for NSAI hosting of ISO/IEC JTC 1 'Information Technology' in Dublin in November 2026. In excess of 100 delegates, representing up to 40 + countries, are expected to participate in this week-long conference. In conjunction with this event NSAI hopes to facilitate a number of industry outreach events.

One of the many benefits of hosting such a prestigious international committee is that it provides NSAI the opportunity to showcase our work to a broad range of stakeholders and to reach out to potential new organisations and experts.