



NSAI

ANNUAL REPORT 2018

NSAI TECHNICAL COMMITTEE (TC) 02
ICT STANDARDS CONSULTATIVE COMMITTEE

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1 Statement from the Committee Chair

1.1 Overview

1.1.1 Data driven digital transformation

The ICT sector is growing from strength to strength as digital transformation takes hold; redefining business models, value chains and customer experiences around the world. From aviation to driverless vehicles, from retail to healthcare, change is coming.

While this represents a unique growth opportunity, for others it poses an existential threat to their business model and organization continuity.

Already, dramatic changes in the workplace are arising from this transformation: e.g. impermanence of jobs (as a result of the so-called gig economy), the need for ongoing re-skilling, the emergence of new professions and greater opportunities for women in the workplace. McKinsey's¹ has estimated that up to 800 million global workers are at risk of replacement by robotic automation, underpinning the need for better training and education for dealing with new and disruptive technologies.

Here in Ireland, the 2018 Skills Ireland² report highlighted many similar challenges for Ireland in the coming years.

Whether through Amazon or Uber, consumers are moving more of their buying online, seeking a combination of convenience, price, speed, and variety that meets their needs. This change is having a dramatic effect on retail, including the demise of some of the global retailing giants like Sears.

1.1.2 Policy & Regulation

Government is increasingly interested in ICT and particularly in procurement policy & regulations. 2018 was also a big year for ICT policy with the introduction by the European Commission of the General Data Protection Regulation (GDPR) in May, and more recently by the introduction of new privacy regulations in California. Privacy and data protection remain key areas of focus, including the right to be forgotten. There is also growing focus on securing critical infrastructure which are increasingly cyber-physical systems. With the emergence of 5G and IOT technologies, legislators are taking more interest in the potential vulnerability of critical infrastructure to cyberattack.

1.2 Standards at the forefront

1.2.1 Blockchain goes large

The World Economic Forum (WEF) has concluded, after a year-long study of the emerging technology, that blockchain technology "will fundamentally alter the way financial institutions do business around the world". Additionally, a broad array of new use cases is emerging, including blockchain for the environment³.

¹ Source: McKinseys Global Institute

² <http://www.skillsireland.ie/Publications/2018/Digital-Transformation-Assessing-the-Impact-of-Digitalisation-on-Ireland-s-Workforce.html>

³ WEF/ Stanford joint study

<https://www.investinblockchain.com/world-economic-forum-blockchain-solve-environmental-issues/>

1.2.2 Cybersecurity

Cybersecurity is a topic loaded with meaning and to a large extent it depends on individual perspective; whether coming from law enforcement, a financial institution, a hospital or indeed the individual citizen.

The advent of IoT, with tens of billions of active endpoints, greatly extends the potential attack perimeter.

Cyberattacks represent an increasing threat; the WEF predicts economic loss due to cybercrime to reach \$3 trillion by 2020, and that 74% of the world’s businesses can expect to be hacked in the coming year⁴. 2018 was yet another year of unprecedented security breaches both in scope and scale as ever more smart, well-resourced and determined cyberattackers⁵ were encountered, for example;

- Aadhar (India) national record system - 1.1 billion,
- Marriott - 500m,
- Exactis - 340m,
- Facebook data breach impacted 90m customers,
- MyFitnessPal -150 million,
- Sweden took some innovative steps to secure its election, and its democracy,
- Cambridge Analytica Scandal⁶

Beyond data branches, there is additional focus on cybersecurity in the defense area, where cyberspace has emerged as a 5th theatre of war. In a recent US Government Accountability Office report, it was stated that the Pentagon found "mission-critical cyber vulnerabilities in systems" under development.

1.2.3 Artificial Intelligence

AI has emerged as the hottest tech topic of 2018, where it's been forecast to add over \$15.7 trillion to the global economy by 2030⁷. Furthermore, AI has become not just a topic for engineers and enterprises, but also among nation states; in its “*New Generation AI Development Plan*”⁸ China set ambitious targets to become the world leader in AI by 2030.

AI has emerged as a ‘dual use’ technology in the security area - used by both defenders and attackers. This may result in a broader array of complex attack vectors which are finely targeted and difficult to attribute. The main issues on the AI standards agenda in 2018 have been trust, ethics, bias and transparency.

1.2.4 Future and Emerging Technology (FET)

Just as waves of ICT innovation are transforming how we live and work, they are further interacting and modulating to drive even more rapid and significant innovations in areas such as quantum computing, implantable and wearable devices and augmented reality. These developments will also present significant

⁴ <https://www.weforum.org/centre-for-cybersecurity/>

⁵ <https://www.businessinsider.com/data-hacks-breaches-biggest-of-2018-2018-12?r=US&IR=T#3-exactis-340-million-19>

⁶ <https://www.theguardian.com/uk-news/2018/mar/22/cambridge-analytica-scandal-the-biggest-revelations-so-far>

⁷ Source : PWC <https://press.pwc.com/News-releases/ai-to-drive-gdp-gains-of--15.7-trillion-with-productivity--personalisation-improvements/s/3cc702e4-9cac-4a17-85b9-71769fba82a6>

⁸ https://policyncn.com/policy_ticker/next-generation-ai-development-plan-released/

challenges to our legal, policy and regulatory frameworks. Many of these frameworks did not (could not) have foreseen such developments and the ethical, transparency, privacy, and trust issues they pose for the individual and for society.

2 Introduction

NSAI TC 02 “Information and Communications Technology Standards Consultative Committee” (ICTSCC) engages in a broad range of standardization projects through its participation in a number of European and International standardization committees as identified in Table 1.

Committee Name	Committee Title
ISO/IEC JTC 1	Information Technology
ISO TC 307	Blockchain and distributed ledger technologies
CEN TC 225	AIDC Technologies
CEN TC 428	Digital Competence and ICT Professionalism
CEN TC 434	Electronic Invoicing
CEN TC 440	Electronic Public Procurement
CEN/CENELEC TC 08	Privacy Management in Products and Services
CEN/CENELEC TC 13	Cybersecurity and Data Protection

Table 1 ICTSCC participation in European and International Committees

ISO/IEC JTC 1 is a joint technical committee of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). Its purpose 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. Additionally, JTC 1 provides the standards approval environment for integrating diverse and complex ICT technologies. In 2017, JTC 1 celebrated its 30th anniversary. Since its formation 3117 standards have been published by JTC 1, which now comprise some 4500 registered technical experts from around the world. There are 21 active Sub committees of JTC 1, covering topics set out in figure1.

Membership of ISO/IEC JTC1 and its subcommittees can be as an observer or as an active participating member. Figure 1 identifies those JTC 1 subcommittees where NSAI experts are actively engaged as participating members, in addition with those subcommittees where we act as observers. NSAI is also a participating member of ISO TC 307 (Blockchain and distributed ledger technologies) where our ICTSCC subcommittee (SC16) is continuing to attract large numbers of national experts.

NSAI participation in European standardization work represents a key area of interest. Many of the standards projects engaged in by NSAI experts are supported by or are directly mandated by the European Commission in order to facilitate the implementation of policy initiatives including the European framework for ICT professionalism, the eInvoicing directive and the radio equipment directive.

Furthermore, the recent establishment of CEN/CENELEC TC’s 8 and 13 are a direct response to the Commissions identification of key ICT standardization priorities which include cybersecurity and data protection.

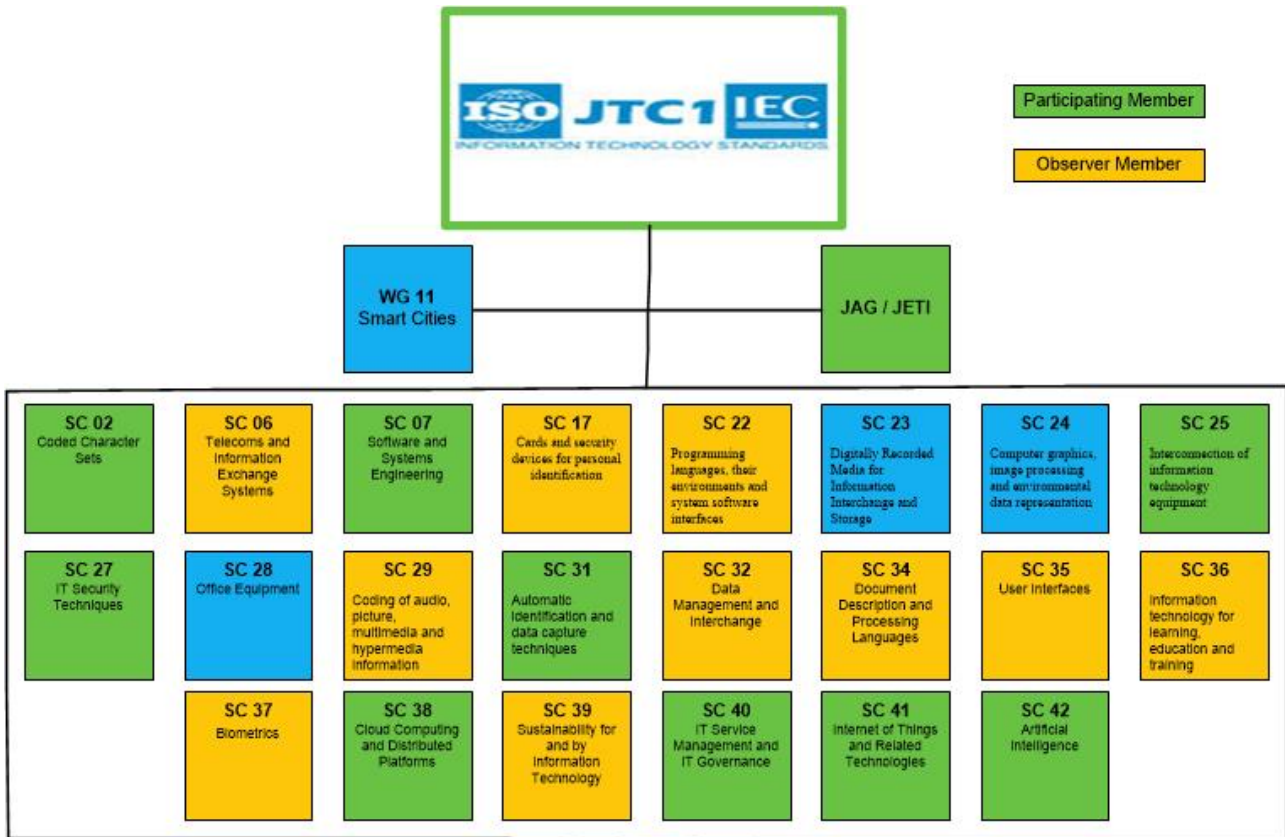


Fig 1 ISO/IEC JTC 1 Working Groups & Subcommittees (also showing NSAI expert engagement)

3 Terms of Reference

The terms of reference of the NSAI TC 02 include;

- To advise NSAI on standardization matters related to information and communications technology,
- To consider European and international information and communications technology standardization programmes and national participation in such programmes,
- To facilitate national stakeholder participation in European and international standardization programmes relating to information and communications technology.

4 Structure and Membership

4.1 Structure

The structure of the ICTSCC comprises a plenary group (TC 2) and 15 subcommittees which directly reflect (mirrors) the engagement of NSAI experts in European and International standardization committees. Table 2 details the current structure and organization of TC 02.

NSAI Committee	Committee Name	Mirroring	Committee Leadership	Membership
TC 02	ICT Standards Consultative Committee	ISO/IEC JTC 1	Mr. Terry Landers Microsoft - Chair Mr. Barry Smith - NSAI - Committee Secretary	17
TC 02/SC 02	Software Engineering	JTC 1 SC 07	Vacant	6
TC 02/SC 03	Telecommunications, media encoding and green IT	JTC 1 SC 06/ SC 29/SC 39	Mr. Peter Lonergan Enterprise Ireland - rtd	5
TC 02/SC 04	Codes, character sets, and internationalization	JTC 1 SC 2	Dr. Michael Everson Evertime	1
TC 02/SC 06	Generic cabling systems	JTC 1 SC 25	Mr. Matias Peluffo Commscope	2
TC 02/SC 08	Biometrics	JTC 1 SC 17 & 37 / CEN TC 224	Dr. Michael Pierce Daon	1
TC 02/ SC 09	Automatic Identification and Datacapture Techniques	JTC 1 SC 31 / CEN TC 225	Mr. Michael McLaughlin Decawave	4
TC 02/SC 10	Security, Cybersecurity and Privacy Protection	JTC 1 SC 27 / CEN CLC JTC 13	Mr. Terry Landers Microsoft	17
TC 02/SC 11	Cloud Computing and Distributed Platforms	JTC 1 SC's 38	Dr. Martin Chapman Oracle	11
TC 02/SC 12	eProcurement	CEN TC's 434 & 440	Mr. Edmund Gray Tubbercurry Software	10
TC 02/ SC 13	e Competences and ICT Professionalism	JTC 1 SC 36 / CEN TC 428	Ms. Mary Cleary Irish Computer Society	11
TC 02/SC 14	Document description and processing languages	JTC 1 SC 34	Mr. Eamonn Neylon Signalarc	3
TC 02/SC 15	IT Service Management and IT Governance	JTC 1 SC 40	Vacant	5
Tc 02/ SC 16	Blockchain and electronic distributed ledger technologies	ISO TC 307	Mr. Vikas Sahnii National College of Ireland	34
TC 02 / SC 17	Internet of Things and related technologies	JTC 1 SC 41	Vacant	8
TC 02 / SC 18	Artificial Intelligence	JTC 1 SC 42	Dr. David Filip Adapt Centre (TCD)	8

Table 2 ICTSCC Structure and Organization

5 Summary of 2018 Activities

5.1 ICTSCC Meetings

From 2018 it is expected that plenary sessions will be held on three occasions annually.

Meeting No.	Date	Meeting Report
1	January 9 th 2018	N1265
2	April 26 th 2018	N1287
3	October 17 th 2018	N1309

Table 3 – ICTSCC Meetings 2018

5.2 Attendance at International Meetings

Participating membership of an ISO/IEC committee has an obligation on members to attend meetings. NSAI experts participate in a variety of meetings throughout the year, both as members of our national delegations (at committee/subcommittee plenary level) and as individual contributing experts engaged in standardization projects at working group level.

Committee Name	Location	Date	NSAI Experts Attending
ISO/IEC JTC 1 Plenary	Stockholm	November 2018	5
ISO/IEC JTC 1 JAG	Takamatsu, Japan	March 2018	1
ISO/IEC JTC 1 JAG	Toronto	August 2018	2
ISO/IEC JTC 1 SC 2	London	June 2018	1
ISO/IEC JTC 1 SC 25 WG3	Paris	Feb 2018	1
ISO/IEC JTC 1 SC 27	Wuhan, China	April 2018	1
ISO/IEC JTC 1 SC 27	Gjøvik, Norway	October 2018	2
ISO / IEC JTC 1 SC 31/WG 4	Online	February 2018	1
ISO/IEC JTC SC 38	Montreal	August 2018	2
ISO/IEC JTC 1 SC 40	Lisbon	June 2018	2
ISO/IEC JTC 1 SC 41	Berlin	May 2018	1
ISO/IEC JTC 1 SC 41	Yokohama, Japan	November 2018	1
ISO/IEC JTC 1 SC 42	Beijing	April 2018	3
ISO/IEC JTC 1 SC 42	Sunnyvale, CA	October 2018	6
ISO/IEC JTC 1 WG 12	Seoul	October 2018	1
ISO TC 307	London	May 2018	5
ISO TC 307	Moscow	November 2018	1
ISO General Assembly	Geneva	September 2018	2
CEN TC 428	Brussels (x2)	February /November 2018	1
CEN TC 434	Cyprus	October 2018	1
CEN/CLC TC 13	Brussels	February 2018	1
CEN/CLC TC 13	Berlin	July 2018	1
CEN/CLC TC 8	Brussels	February 2018	1
CEN/CLC TC 8	Berlin	July 2018	1
CEN/CLC BT WG 06	Online(Various)	2018	1
ETSI TGUWB	Online (various)	2018	1
ETSI STF541	Online (Various)	2018	1
ETSI General Assembly	Sophia Antipolis, France	2018	1

Table 4 – European & International meetings attended in 2018

5.3 Ballots on European and International Standards

Participating membership of standardization committees also requires engagement in the standards balloting process. Figure 2 shows the number of ballots for each of those ICTSCC subcommittees which maintain a participating membership of a European and/or International standardization committee.

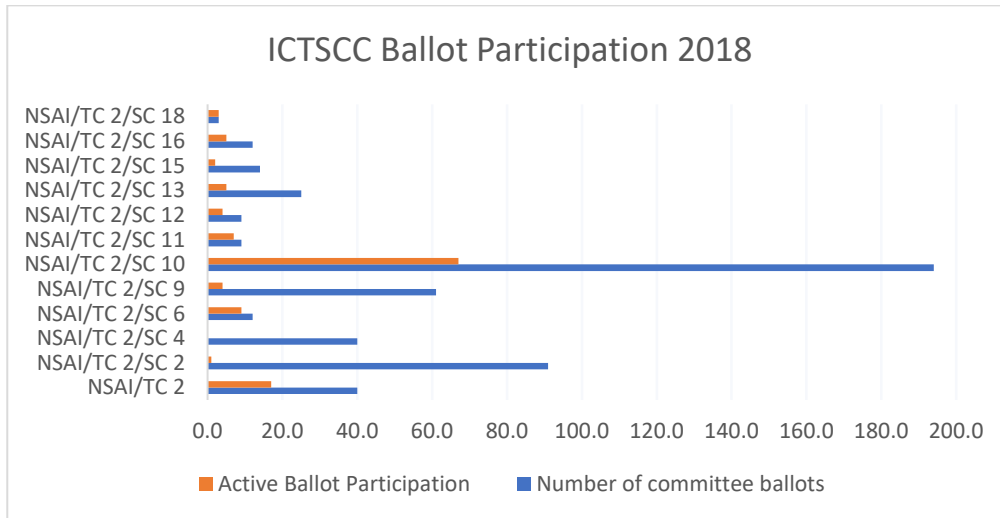


Figure 2 ICTSCC and Subcommittee Ballots 2018

6 Work programme for 2019 and onwards

2019 and onwards will bring several challenges and opportunities. While maintaining current levels of engagement provides a significant challenge, in 2019 we aim to enhance stakeholder engagement by;

- extending our community of technical experts at home,
- engaging new stakeholders including policy-makers and regulators for whom ICT standards may be material to their work, and
- facilitating a greater presence for Ireland in European and International ICT standardization.

2019 will also bring particular focus on those topics of strategic interest to Ireland which include;

- cybersecurity related topics including privacy and data protection,
- IoT, Blockchain and Artificial intelligence.

As part of these ongoing efforts and also in positioning Ireland as a leader in International standardization, ICTSCC will continue to consider the benefits of hosting European and International standardization committees' meetings in Ireland. In support of this objective NSAI will host the following committees in 2019.

- ISO/IEC JTC 1 SC 35 – User Interfaces (February 18th – 22nd)
- ISO/IEC JTC 1 SC 42 – Artificial Intelligence (April 8th – 12th)
- ISO TC 307 – Blockchain and Distributed Ledger Technologies (May 27th – 31st)
- ISO/IEC JTC 1 WG12 – 3D Printing & Scanning (August 27th – 29th)
- CEN TC 434 – Electronic Invoicing (September 17th – 19th)

The coming years will also see efforts to drive initiatives to enhance the performance and governance of our national mirror committees, building on the ICTSCC strategic planning exercise conducted in June 2017.