



NSAI

ANNUAL REPORT 2020

NSAI TECHNICAL COMMITTEE (TC) 02
ICT STANDARDS CONSULTATIVE COMMITTEE

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1 Chairperson's Statement

Covid -19 and Beyond

2020 was a year like no other; it will be long remembered as the year when the pandemic overturned our world, and we reset to a 'new normal'.

In 2020:

- We witnessed a 5-year 'Digital Transformation' happening in 6 months,
- We learned how interconnected, and interdependent; we really are,
- We learned the power of Data: of exponentials and R numbers and how data underpins everything,
- We acquired a new appreciation of Risk – that low likelihood /high impact risk can happen,
- We came to understand the changing nature of work as an activity not a place, and how our personal and professional lives became interwoven,
- We learned to live and work differently from Zoom meetings to online yoga, from birthday parties to funerals; it remains to be seen the extent to which these changes will persist,
- We came to see ICT as critical infrastructure, like power and water, and its role in sustaining everyday life in healthcare, in education, in Government, in supply chains,
- With the high street closed, we embraced online shopping, while Cash was replaced with card and online banking,
- ICT played an important role in accelerating vaccine development: from genome mapping to testing,
- We came to understand more the merits and drawbacks of social media to keep us connected but also the extent to which reality drives the internet, and increasingly how the internet can also drive our reality.

Despite the challenges presented by Covid-19, our work in the ICT standards Consultative Committee continued almost without interruption; the notable exception being our planned hosting in Ireland of the plenary meetings of ISO/IEC JTC 1 "Information Technology" and of JTC 1/SC 39 "Sustainability, IT & Data Centres" during the summer of 2020. Working virtually, we managed to maintain, and expand our portfolio of activities into the growing domains of IoT and in the area of audio/video technology. We maintained our presence in the key international fora – ISO/IEC JTC 1, and CEN-CENELEC. We expanded our engagement with new stakeholders, with many new experts joining our work following these engagements. JTC 1 has published 3252 ICT standards in the past 30 years, with a further 587 currently under development across all domains

2 Leadership in ICT Standardization

2.1 Overview

Through its terms of reference, NSAI/TC 02 "ICT Standards Consultative Committee" (ICTSCC) enables and supports national stakeholders' engagement in ICT standardization activities at a National, European and International level. Despite the hugely constrained operating environment, 2020 saw NSAI not only maintain but also expand its contribution to European and International standardization programmes. A highlight of the past year was the leadership roles held by NSAI registered experts, and in particular in the newly emerging fields of Data Governance, Blockchain and Artificial Intelligence where NSAI hosts the Secretariat of JTC 1/SC 42/WG 3 Artificial Intelligence – Trustworthiness.

2.2 Meet the Standards Leaders

Artificial Intelligence / Big Data

Dr. David Filip is a Research Fellow at the ADAPT SFI Research Centre for AI-driven Digital Content Technology/ Trinity College Dublin. Since its formation in 2018 David has chaired the ICTSCC subcommittee on Artificial Intelligence.

David has engaged in quite an array of roles in International standardization through his membership of ISO/TC 37 (Language and Terminology) and ISO/IEC JTC 1 (Information Technology). Within JTC 1 David led the advisory group on open source software until its disbandment in 2020. Also, within JTC 1 he has a role as a PAS Mentor (publicly available specification) to a number industry consortia groups liaising with JTC 1, including OMG, NESMA, SMPTE and DMTF. It is

however in his role as Convenor of JTC 1 SC 42/Working Group 3 – Artificial Intelligence – Trustworthiness that David’s leadership and impact is most prominent.

To date JTC 1/SC 42/WG3 has been tasked with the development of eight projects covering the fundamental aspects of trustworthiness in AI which includes such topics as; Ethical and Societal concerns, Bias, Robustness of neural networks, Quality of AI based systems, Risk Management for AI systems.

Under David’s leadership 2020 saw the publication of the first of these projects; ISO/IEC TR 24028:2020 - *Artificial intelligence — Overview of trustworthiness in artificial intelligence*.

Ray Walshe is an Associate Professor at the DCU School of Computing and a funded investigator at the ADAPT SFI Centre for Global Digital Content. He has been an active member of several ICTSCC subcommittees for many years and has recently taken the role as Chair of the subcommittee on IoT and related technologies.

Ray’s engagement in ICT standardization at a European and International level is extensive. He holds leadership positions in a number of organizations and fora including; Chair of Big Data Value Association Standards Task Force, Chair of Network Development @ Gender Responsive Standards at the United Nations Economic Committee for Europe, Chair of the External Advisory Board of Horizon 2020 Project StandICT.eu, Research Partner in StandICT2023.eu and Co-Lead on ELITE-S Fellowship Programme for Emerging Technologies Standardization .

Ray was also appointed to the IEEE European Public Policy Committee on ICT in 2019 and is currently the AI WG Lead for IEEE EPPC. Ray was also appointed to the OECD Network of Experts (ONE AI) in 2020.

Within JTC 1/SC 42, Ray led the development of the International standard ISO/IEC 20547 – 3:2020 - *Big data reference architecture – Part 3*. He was also (co-)Editor on 3 further international reports including ISO/IEC TR 20547-1:2020, ISO/IEC TR 20547-2:2018 and ISO/IEC TR 20547-5:2018.

Blockchain Use Cases

Fiona Delaney is CEO of Irish agri-tech firm Origin Chain Networks and Chair of Blockchain Ireland’s “Start-ups” Working Group. In As a member of the ICTSCC subcommittee on Blockchain, Fiona is an active member and key contributing expert at ISO/TC 307 (Blockchain and Distributed Ledger Technologies).

As a recognised leader of innovation, she has been recognised both nationally and in Europe having received both the NSAI Innovation Award and the EU Standards and Innovation Award in 2020 for her outstanding contribution to emerging global blockchain standards.

Fiona is a contributing expert on the ISO/TC 279 (Innovation Management) and is the Technical Lead at the ISO/TC 307 Blockchain Use Case Lab. Fiona is committed to driving methodologies that capture both technical and business innovation deployed across decentralised technologies. She contributes to emerging blockchain standards across multiple international and regional agencies including CEN-CENLEC, IEEE, ITU_T, ISO, UNCEFACT.

Data Governance

Terry Landers is Microsoft’s Chief Standards officer for Europe Middle East and Africa, working across a wide range of future and emerging technologies in the Information and Communications area, including Cybersecurity, Artificial Intelligence, and Data Governance. Terry has been a very committed and active standards leader for well over a decade. He currently serves as Chair of the ICT standards Consultative committee and the subcommittee on IT Security Techniques. During 2020 Terry departed the NSAI board having served three terms.

During his time on the ICTSCC Terry has undertaken several additional leadership roles including being past Chair of the subcommittee on Cloud computing and distributed platforms. At European and International level Terry serves as head of the Irish delegation at plenary sessions of CEN/CLC JTC 13 (Cybersecurity and Data Protection) and of ISO/IEC JTC 1. Additionally, for many years he has been the flag carrier at plenary meetings of JTC 1/SC 27(Information security, cybersecurity and privacy protection).

As a contributing expert on JTC 1/SC 40 (IT Service management and IT Governance), Terry is the project lead in the development of the International specification ISO/IEC TS 38505-3 *Information technology — Governance of data — Part 3: Guidelines for data classification*.

eInvoicing

Edmund Gray is Chief Technical Architect at Tubbercurry Software Ltd., a family-based Irish SME. He also currently works with the Institute of Technology Sligo on EU funded Irish Government projects supporting the implementation of eInvoicing standards. As a member of the ICTSCC Edmund Chairs the subcommittee on eInvoicing and eProcurement.

Edmund has been part of the management team of CEN/TC 434 (Electronic Invoicing) since its formation where he is Convener of Working Group 7 (Registry Services) and Co-convener of Working Group 3 (Syntax Bindings).

Edmund was a key contributing expert in the development of the EN 16931 series of European Standards for eInvoicing. Published in 2017, implementation of this standard is mandatory for all EU Public Bodies. Also mandated by some countries for private business, EN 16931 is expected to become the predominant method of eInvoicing across the European Union.

During 2020 CEN/TC 434/WG 7 continued to work with the EU Commission to register all national implementations of the standard. This activity supports the ongoing development of the standard through determining the effectiveness of its application.

ICT Professionalism and Digital Competences

Mary Cleary is Secretary General of the Irish Computer Society and Chair of the Irish Digital Skills and Jobs Coalition. As a member of the ICTSCC, Mary Chairs the subcommittee on eCompetance and ICT Professionalism.

As a leader in European standardization Mary is Chair of the CEN/TC 428 (Digital Competences and IT Professionalism). Prior to assuming this role, she Chaired the CEN Workshop on ICT Skills from 2016 until its disbandment on the establishment of CEN/TC 428.

While a member of CEN/TC 428 Mary was a key contributing expert in the development of the European e-Competence Framework, EN 16234 (Parts 1-3). Since assuming the Chair of CEN/TC 428 Chair, Mary has coordinated the successful development of five proposals (below) which are currently under development for funded standardisation projects in support of ICT professionalism and competence.

- EN 16234 “e-CF” User support.
- e-Competence Performance Indicators and Common Metrics.
- Body of knowledge – BoK.
- ICT Curriculum Guidelines for e-Competence and Digital Leadership.
- European Professional Ethics Framework for the ICT Profession (EU ICT Ethics).

3 ICTSCC - Operational Overview

ICTSCC engages in a broad range of standardization activities through its participation in European and International standards committees as listed in Table 1.

Committee Name	Committee Title
ISO/IEC JTC 1	Information Technology
ISO TC 307	Blockchain and distributed ledger technology
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 JTC 13	Cybersecurity and Data Protection
CEN/CENELEC Focus Group on AI	Artificial Intelligence

Table 1 European and International Committees mirrored by NSAI ICTSCC

Internationally 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. These standards rely upon the core infrastructure technologies developed by JTC 1 centers of expertise complemented by specifications developed in other organizations.

Since its formation in 1987, 3252 ISO/IEC standards have been developed and published by committees in JTC 1, which are comprised of some 4500 registered technical experts from around the world. Currently there are 22 active Sub committees of JTC 1, covering the topics set out in figure1.

Membership of ISO/IEC committees are qualified as being that of an observer or a participating member. Figure 1 identifies those JTC 1 subcommittees where NSAI experts are actively engaged as participating members and those subcommittees where our experts are observers.

European standardization work represents a very important activity as many of the standards projects engaged in have been supported by or are directly mandated by the European Commission to facilitate the implementation of policy and legislative instruments. Included in this are the European framework for ICT professionalism and the invoicing directive. Emerging policy and legislative areas covering Cybersecurity, Data Governance and Artificial Intelligence are also similarly being considered through the establishment in 2019 of CEN/CLC JTC 13 and the CEN/CLC Focus Group on Artificial Intelligence.

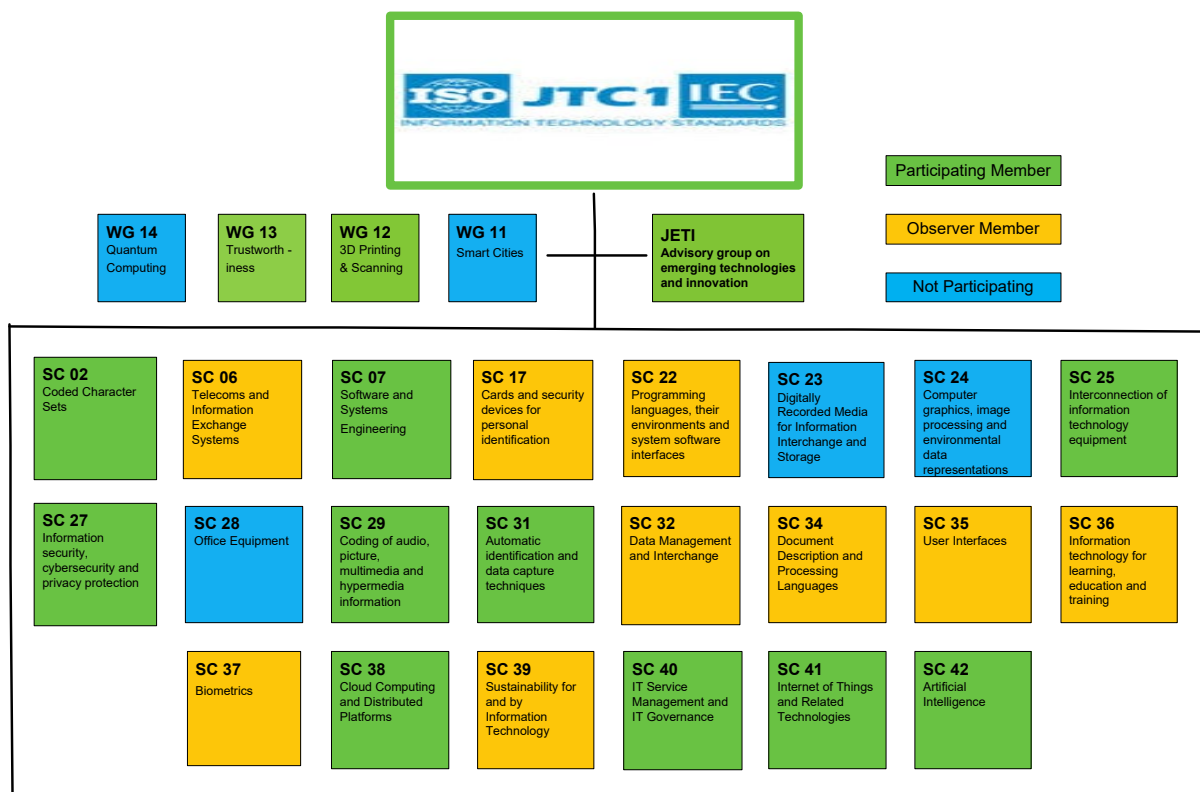


Fig 1 ISO/IEC JTC 1 Working Groups & Subcommittees (Showing Irish membership and expert engagement)

4 ICTSCC Structure and Membership

The structure of the ICTSCC comprises a plenary group (TC 02) and 16 subcommittees which mirror the engagement of NSAI registered experts in European and International standards committees. Table 2 details the current structure and organization of NSAI/TC 02.

NSAI Committee	Committee Name	Mirroring	Chairperson	Membership
TC 02	ICT Standards Consultative Committee	ISO/IEC JTC 1	Mr. Terry Landers / Microsoft	17
TC 02/SC 02	Software Engineering	JTC 1 SC 07	Vacant	2
TC 02/SC 03	Telecommunications, media encoding and green IT	JTC 1 SC 06	Mr. Peter Lonergan /Enterprise Ireland -rtd	3
TC 02/SC 04	Codes, character sets, and internationalization	JTC 1 SC 2	Dr. Michael Everson / Evertyp	2
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	IT Security Techniques	JTC 1 SC 27 / CEN-CLC JTC 13	Mr. Terry Landers / Microsoft	29
TC 02/SC 11	Cloud Computing and Distributed Platforms	JTC 1 SC 38	Dr. Martin Chapman / Oracle	12
TC 02/SC 12	eProcurement	CEN TC's 434 & 440	Mr. Edmund Gray /Tubbercurry Software	15
TC 02/ SC 13	e Competences and ICT Professionalism	JTC 1 SC 36 / CEN TC 428	Ms. Mary Cleary /Irish Computer Society	16
TC 02/SC 14	Document description and processing languages	JTC 1 SC 34	Mr. Eamonn Neylon / Signalarc	2
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 Sahni /National College of Ireland	39
TC 02 / SC 17	Internet of Things and related technologies	JTC 1 SC 41	Mr. Ray Walsh / DCU – School of Computer	24
TC 02 / SC 18	Artificial Intelligence	JTC 1 SC 42	Dr. David Filip / Adapt Centre (TCD)	30
Tc 02 / SC 19	Coding of audio, picture, multimedia and hyper	JTC 1 SC 29	Dr. Flaithrí Neff /Limerick Institute of Technology	16

Table 2 ICTSCC Structure and Organization

5 ICTSCC Summary of Activities - 2020

5.1 NSAI TC 02 Plenary Meetings

ICTSCC subcommittees actively participating in European and International standardization and generally meet at least twice during any given year. Meetings of NSAI/TC 02 generally mirror the plenary meeting schedule of ISO/IEC JTC 1 which holds spring and autumn sessions. Table 3 details the meeting of the ICTSCC plenary group in 2020.

Meeting No.	Date	Minutes Reference
1	May 6 th , 2020	N1347
2	October 28 th , 2020	N1359
3	December 7 th , 2020	N1375

Table 3 – ICTSCC Meetings 2020

5.2 Attendance at International Meetings

Participating membership of an ISO/IEC committee has an obligation on members to attend meetings and participate in projects. During 2020 NSAI experts participated in a huge number of working group and project meetings across the various committees. Table 4 identifies those plenary meetings(only) attended by experts as part of an Irish national delegation.

Committee Name	Location	Date
ISO/IEC JTC 1 Plenary	Virtual	June 2020
ISO/IEC JTC 1 Plenary	Virtual	November 2020
ISO/IEC JTC 1 SC 25	Virtual	November 2020
ISO/IEC JTC 1 SC 27	Virtual	April 2020
ISO/IEC JTC 1 SC 27	Virtual	September 2020
ISO/IEC JTC SC 38	Virtual	March 2020
ISO/IEC JTC SC 38	Virtual	September 2020
ISO/IEC JTC 1 SC 40	Virtual	August 2020
ISO/IEC JTC 1 SC 42	Virtual	April 2020
ISO/IEC JTC 1 SC 42	Virtual	October 2020
ISO TC 307	Virtual	November 2020
CEN TC 428	Virtual	April 2020
CEN TC 428	Virtual	October 2020
CEN TC 434	Virtual	June 2020
CEN TC 434	Virtual	April 2020
CEN/CLC JTC 13	Virtual	March 2020
CEN/CLC JTC 13	Virtual	July 2020
CEN/CLC JTC 13	Virtual	November 2020
CEN/CENELEC Focus Group on AI	Virtual	5 Meetings in 2020

Table 4 – European & International meetings attended in 2020

5.3 Ballots on European and International Standards

An important obligation on the membership of standards committees is engagement in the balloting process. While our national experts are active in this process NSAI also utilizes a default voting policy to ensure all ballots are appropriately addressed. Figure 2 identifies the ballot activity within those NSAI committees which maintain a participating membership of a related CEN and JTC 1 committee.

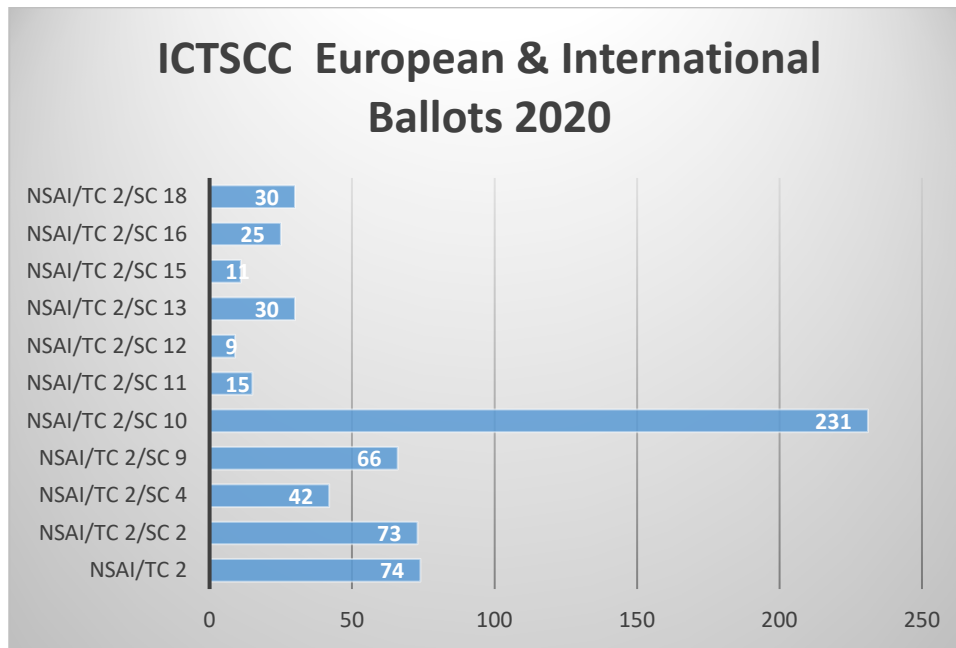


Figure 2 ICTSCC and Subcommittee Ballots 2020

6 Work programme for 2021 and beyond

6.1 Priority Areas (for re-engagement, and future development by ICTSCC)

- Artificial Intelligence
- IoT.
- IT Governance.
- Cybersecurity and Data protection.
- Sustainable ICT.

6.2 Priority Activities (for the further development of ICTSCC)

- Mobilize and expand the community of ICT experts involved in Standards in Ireland.
- Broaden Stakeholder engagement.
- Establish committee presence in new topic areas: IoT, and Sustainability.
- Improve information sharing about the work of ICTSCC to the community of Irish stakeholders.
- Improve ICTSCC effectiveness.
- Develop enhanced strategic focus.