ISO/IEC JTC 1 Newsletter No.5 (Q1 2025)

As we step into 2025, we are thrilled to present the first edition of our quarterly newsletters for the year. Below you will find news relating to JTC 1's focus on Metaverse, updates from the recent Foresight workshop, a Cloud computing plenary in Berlin and a trip to the Caribbean for the Data Management plenary, along with an update from SC 43 on the latest Brain Computer interface symposium. And a reminder that some of JTC 1's work reaches back to before JTC 1 was established but is still a critical part of the current work, thanks to a piece on Coded Character sets.

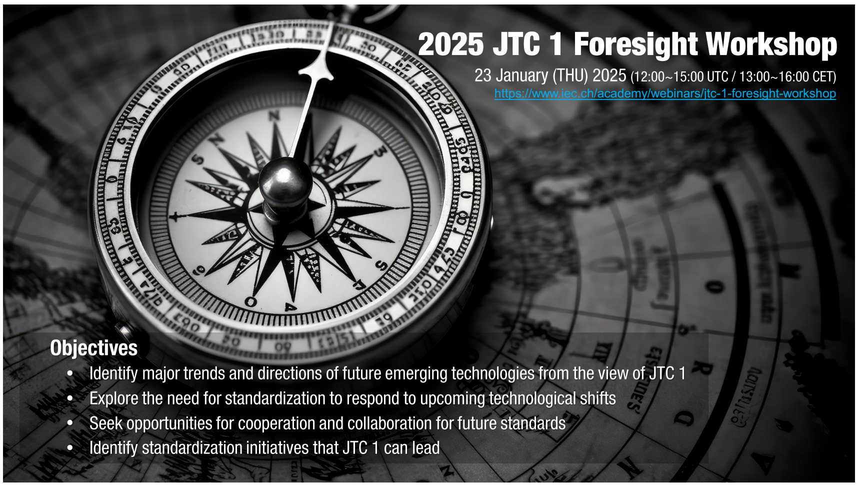
JTC 1 Emerging technologies initiative, Foresight workshop

On January 23rd, 2025, JTC 1 held its first Foresight workshop, intended to look into future technology ideas and discuss what this means. With the help of a team of presenters and panellists over 130 individuals joined the online session focusing on future technology trends and the need for standardization.

Experts presented various technical areas including artificial intelligence (AI), artificial general intelligence (AGI), Cross-border data flows/data free flow with trust (DFFT), and sustainable ICT technologies. The workshop addressed how to respond to technological changes and examined how standardization can be driven by expertise and collaboration from different countries.

The importance of information collection and analysis was emphasized throughout the process, with discussions on the policy implications of artificial intelligence and artificial general intelligence. Attendees had the opportunity to actively participate in discussions about specific technology initiatives and their criteria.

During the panel discussions, in-depth conversations on technology trends and strategic plans took place. Participants were invited to share their views on key issues such as security and sustainability through a survey, which will help set the future direction of JTC 1. Notably, the issue of energy consumption of AI technologies and the need for standardization to address them were highlighted. Both the needs of businesses and the concerns of policymakers were addressed, and strategies to ensure data flow and stability were discussed.



The workshop helped participants understand the latest technology trends, renewed their awareness of upcoming standardization issues, and identified key areas that JTC 1 will need to address in the future. It also provided insights for developing responses within their organizations.

(All materials for the workshop can be found in https://www.iec.ch/academy/webinars/jtc-1-foresight-workshop)

Seung-Yun Lee, Yaeseul Park / JTC 1 AG 2 (JETI)

Moving ahead in the Metaverse

Working groups within JTC 1's subcommittee on Computer graphics, image processing and environmental data representation (SC 24) are making a concerted effort to foster greater interest in Metaverse standards development across JTC 1. They have proposed a series of new opportunities including a set of foundational standards: Framework and Architecture, Use Cases and Reference Models. Additionally they are expanding their work program to include several specific new items.

> **Information Model**: Defining an information model for metaverse service applications, that specifies an information model necessary for providing metaverse services. Semantic and service information and design guidance for application services will be included.
>
> **Metaverse Governance**: Defining a governance reference for the metaverse on how to manage systems, data, and users.
>
> **Visual Security in the Metaverse**: Defining a standard data model for mapping 2D images to 3D avatar faces related to deepfake technology, enabling secure storage and exchange.

If you are interested in participating in this exciting opportunity in SC 24, please contact your national body or the committee manager for SC 24 (Jean.Stride@bsigroup.com)

Myeong Won Lee, Jean Stride

Coded Character Sets

0x44 may not mean much to most readers, even colon, hyphen, capital D could be seen as rather cryptic, however when interpreted it would come as no surprise that :-D = 😃 and has an obvious meaning to people in current society. The fact that you are even able to read this text is a testament to the item that follows.

This is our short story on the importance of the work done by a group of experts in JTC 1 whose work is often overlooked but essential to everyone, on Coded Character Sets. Subcommittee 2 *Coded Character sets* (SC 2) has developed a standard, ISO/IEC 10646 that was originally published over thirty years ago but also has historical ties back over half a century to ECMA's publication in 1971, before the establishment of JTC 1. This standard has gone through eight significant versions since it came to JTC 1, has seen countless updates and amendments since then and is even now under revision again.

Characters have always been needed for any intellectual activities by human beings. Ancient Egyptian Hieroglyph is one good example. To handle the characters on IT equipment, including writing software, encoding of the character is needed. Currently, there is a little under 150,000 documented characters and this number is continuously growing. There was a spike between 2000 and 2003 where the number of documented characters over doubled from 40,000, to just over 100,000. Subsequent to that, SC 2 has seen a steady and reliable increase in the overall numbers to that which we see today. As a result of this large number of individual characters, this standard and the work done by SC 2 is fundamental for information representation in IT.

Characters, which are the subject of encoding, are more complicated than we think. Some characters are comprised of multiple components, some characters have complicated relationship with its phoneme, and some characters have multiple glyphs called variation. In the decades since this standard was first published there have been discussions and many struggles to accommodate the ever-expanding needs of character sets including many new languages and variations. The current version of this standard has a little over 2800 pages and there is no plan to stop the evolution with further revisions.

Whether you need European Latin, Greek, Cyrillic, Old Persian, Chinese, Japanese, Korean or any of the other hundreds of language sets, this standard has them all clearly listed, and we should remind ourselves that this standard represents a fundamental building block for IT equipment everywhere.

Masaru Takechi

Brain-computer Interfaces Symposium, Seongnam-si, Korea

On March 6th 2025, the ISO/IEC JTC 1/SC 43 (BCI) hosted a Brian-computer Interfaces Symposium during their 6th plenary meeting, with the Korean Agency for Technology and Standards (KATS) and Gachon University in Seongnam-si, Korea. The event featured a series of insightful presentations and discussions that highlighted the potential and broader implications of BCI technology for brain health and disabilities in developed and developing countries.

The symposium brought together 7 keynote speakers and 80 international experts, including those of ISO/IEC JTC 1/SC 43, from Korea, Australia, India, and China. It created a valuable platform for attendees to exchange knowledge, encourage international collaboration, and discuss the forefront of BCI standards. Discussions at the symposium focused on technological advancements, product applications, and international standardization.

The symposium underscored the importance of international collaboration and standardization in advancing BCI technology, ensuring that it can be safely and effectively integrated into various applications to benefit society.

Yuntao Yu, Bing Cui

Data management and interchange visits the Caribbean

SC 32 – *Data management and intercha*nge, working group 3 met in Trincity Industrial Estate, Macoya, Tunapuna, Trinidad and Tobago W.I. in March 2025 at the Trinidad and Tobago Bureau of Standards (TTBS).

WG 3 worked with the local national standards organization to present a technical seminar on the SQL and GQL database languages. For the seminar the national standards body TTBS invited outside organizations to participate. The goals of the seminar were both to make WG 3's work more visible and to support the national standards body in making their work more visible.

This workshop had 50 to 60 participants, half in person and half online. The participants came from government, commercial, and academic organizations. Four of the participants joined WG 3 for part of the day on Thursday to experience standards work and how standards are developed.

The TTBS recording of the workshop is available on YouTube:
https://www.youtube.com/live/8qXNAminIW4

TTBS also has a posting on Facebook:

https://www.facebook.com/ttbureauofstandards/posts/pfbid036Vz8iLZRfEbZLTKcSgCLcJ5Cg51jT3V8h7P6PpRGf588b1k7YLpWtEvz246oZezVl

Joern Bartels

Consumer Focus

Consumer voices and perspectives are represented in a variety of ways in JTC 1. If you attended the most recent JTC 1 plenary, you may have noticed that most of the subcommittees (SC) took some extra time to report on consumer involvement in their work. These reports were a clear indication that JTC 1 is mindful of supporting consumer participation in its SCs, and that many of the SCs are likewise aware of making sure that all voices are heard in the process of publishing standards. While most SCs identified at least one area of active consumer involvement, unfortunately, the overall level of consumer representation in JTC 1 is lower than participation from other sectors such as technology companies or government regulators.

To support JTC 1's continuing commitment to consumer participation, *Consumer protection "privacy by design"* (SC 44) is JTC 1's newest committee, however, SC 44 is not created out of thin air. SC 44 was created to continue and expand upon the consumer protection and privacy work conducted by ISO/PC 317 and its publications ISO 31700-1 *Consumer protection — Privacy by design for consumer goods and services, Part 1: High-level requirements*, and ISO/TR 31700-2 *Consumer protection — Privacy by design for consumer goods and services, Part 2: Use cases*.

During the existence of ISO/PC 317, it actively worked with other groups and committees like ISO/COPOLCO and JTC 1's subcommittee on Cybersecurity (SC 27) to holistically address the privacy protection needs of global consumers, while also coordinating itself with the work of other relevant groups. The successful transition from an ISO PC to becoming a JTC 1 SC involved a lot of discussion and analysis about the standardization gaps and overlaps in the work of various committees, with such discussions being deep and detailed for nearly two years. Ultimately, it became clear through such discussions that SC 44, its history, and proposed work, standardizes consumer protection in the field of privacy by design, and this is not an area addressed by other committees or standards. Therefore, SC 44 is here to fill a gap in the standardization of existing and new technology. With all of the recent headlines about AI and a long list of legacy technology issues still requiring attention, SC 44 seems to have arrived just in the nick of time.

Consumer-facing technology is now one of the largest global market sectors, with a market value greater than the GDP of many national economies. The success and continued growth of consumer-facing technology depends on the collaborative energies of consumers working with the organizations that produce and provide technology, alongside the governments and other entities that regulate and monitor technology. The work of SC 44 therefore does and will reflect the variety of factors and perspectives that need to be harmonized and aligned to protect consumers from the privacy-related harms often associated with today's technology. Of course, consumers and organizations alike wish to enjoy the wonderful benefits of different types and applications of technology, and using standards in the design and day-to-day operation of technology is an easy way to achieve this shared enjoyment while reducing risks and harms on all sides.

Overall, the work of SC 44 to standardize consumer protections and privacy practices will be unique within JTC 1. SC 44 explicitly recognizes that consumers, organizations, and governments all work together in a collaborative manner to create and publish standards. This is of course a big part of how standards are able to be documents that gather and harmonize the best practices of a worldwide group of experts, and how published standards ultimately create value and facilitate improved product experiences.

SC 44 and its experts similarly recognize that standards are most valuable to organizations, governments, and consumers alike, when principles like interoperability, freedom of movement, and incorporation of new perspectives are prioritized as keys to success.

Although SC 44 is brand new, many of its experts have already spent years working together in ISO/PC 317, SC 27, ISO/COPOLCO, JTC 1, and in many other places too. Ultimately, SC 44 would be remiss to not mention that its international experts' desire to continue working together, was also a catalyst that helped create SC 44. Experts have openly and explicitly acknowledged that SC 44 feels a bit unique, and that the collaborative and positive working environment created by the human beings on this committee have eased the burdens that come with the territory of drafting international standards. SC 44 is excited to continue the work of ISO/PC 317 and be part of the greater JTC 1 community working hard to positively guide the increasing presence of technology in the lives of all human beings all across the world.

SC 44 Communications

Taking to the streets of Berlin

The Cloud computing and distributed platforms subcommittee (SC 38) gathered on a sunny, Sunday afternoon prior to their March plenary, outside the Brandenburg gate, in Berlin Germany to engage in a fun run and walk through Berlin’s famous Tiergarten. Due to travel limitations and late flight arrivals the numbers taking part were lower than hoped, but five participants made the most of the great weather. SC 38 is looking forward to repeating the fun social event when they next meet in Ireland in September 2025.

JTC 1/SC 38

As always, thanks goes out to all our contributors to this quarter's newsletter, the AG 1 team for getting it ready, and don't forget that you can submit articles to be included in the next quarterly newsletter using the online submission form at JTC1info.org, we'd love to hear from you.

Deadline for the contributions to the next newsletter is June 10th 2025.