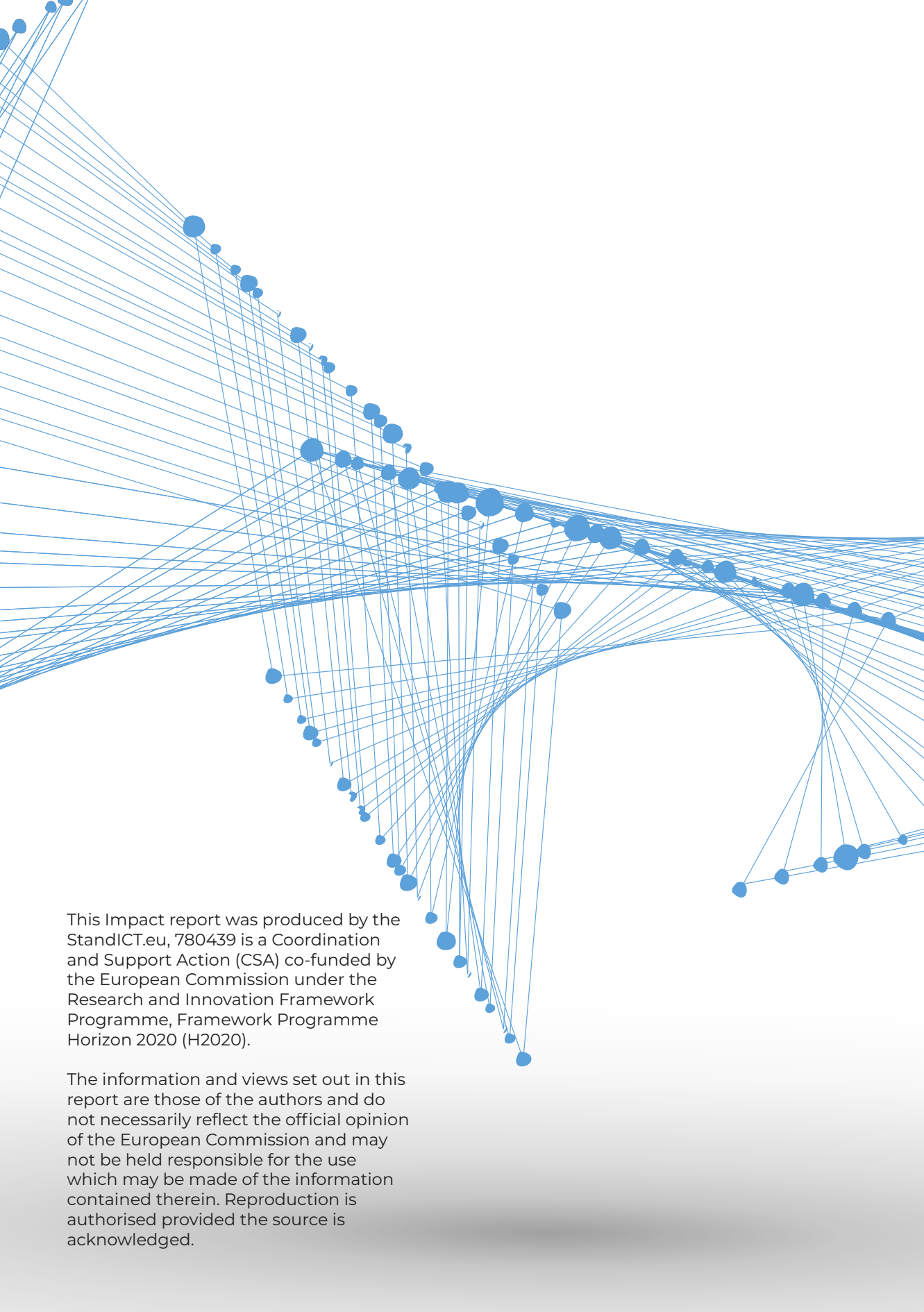# StandICT.eu

Supporting European Experts Presence in
International Standardisation Activities in ICT

Europe's contributions to ICT Standardisation globally

Impacts from StandICT.eu funding

Index

5G

AI

Blockchain

Cloud Computing

Cybersecurity

Data

IoT

Other

Acknowledgements

Future ICT Standardisation Challenges

Digital Technologies, Interoperability and Standardisation work hand in hand in laying the foundation for a true Digital Single Market. We also know that ICT Standardisation has dramatically changed over the last decades. Alongside traditional standardisation organisations, several specialised and mostly global fora and consortia have emerged as world-leading ICT standard development bodies that are formulating the vast majority of standards for the internet, the World Wide Web, and more recently for Cloud computing, Cybersecurity, 5G, Artificial Intelligence (AI), IoT and Blockchain.

In recent years, developing standards which reflect the European perspective for the operation of AI-based systems has become a crucial priority for Standardisation organisations, as also indicated by the increased number of applications on AI Standardisation effort requests.

It is critical to our future to pursue the training of our **next generation of students** in understanding how ICT Standardisation may be used in the most efficient manner. This is why it is important to tap into the knowledge of authoritative individuals who have the standing to bear on identifying novel ICT areas which are maturing significantly enough to warrant investigation as potential standardisation focal points, so that initiatives can be directed towards shaping the right industrial and digital policies to be fed into the SDOs.

Moreover, Standards are increasingly seen as a **bridge between research, innovation, and the market**, and as a means of capturing and disseminating knowledge. With this current report, StandICT.eu has showcased and demonstrated how funding multiple standardisation activities supported a global market, creating opportunities for European businesses and consumers. This is achieved via the most appropriate routes and organisations, contributing to the promotion of European frameworks and projects.

We look forward to welcoming many more **European applicants to support** in the coming years who can provide thought leadership on core ICT topics, that may subsequently circulate back into the community of the European Commission to the Committee on Standards (CoS), through the Multi-Stakeholder Platform (MSP) on ICT standardisation, enhancing an increasingly structural dialogue with Standardisation organisations.

Pēteris Zilgalvis
Head of Unit, Digital Innovation & Blockchain, Digital Single Market
DG CONNECT European Commission

Introduction

Europeans must find ways to sustain European innovative businesses to seek ways to **commercialize standards** and bring them into new value chains. Standards allows us to go **cross boundaries**, to fuse together nature-based solutions, this is why innovation in the climate domain is critical to enable the creation of a genuine design of the ecosystem so profoundly important in today's digital driven society.

Global standardisation has traditionally thrived from open, bottom-up member contributions. Restrictions to fully open research and standardisation related to the Export Administration Regulations (EAR, U.S. Dept. of Commerce) have occurred within the last year, with IEEE issuing a ban (later repealed) on access to scientific publication peer-review. While IEEE was the first to issue such a ban, it is important to note that the relevant EAR clause also cited IETF, ISO, ITU, ETSI, 3GPP, TIA, and GSMA, illustrating the full extent of potential effects of imposing political restrictions to standardisation across the globe, straining already scare resources within the community and especially within industry fora.

Recently in November 2019, the European Commission released the timely report on Industrial policy: recommendations to support and boost Europe's leadership in **six strategic business areas** which looks into the future of the Digital Single Market (DSM) and which recognises the role of **Standards**: "*norms and standards can help reduce uncertainties for industry and avoid fragmentation within the single market*[1]". The strategic areas and future-oriented industrial sectors which are: **connected, clean and autonomous vehicles; Hydrogen technologies and systems; Smart health; Industrial Internet of Things; Low-carbon industry; and Cybersecurity**. This Impact report clearly demonstrates where the areas mentioned above have been prioritised by some of the funded ICT Standardisation applicants which were pushed forward to progressing in 2018 and 2019.

Considering the above elements, this impact report could be seen as a reference document to high-level foresight groups working at the European Commission or within National Standards Associations or National member state offices working on ICT standardization to pinpoint the **novel ICT areas which are maturing significantly** to warrant further investigation as potential standardisation focal points so the project is able to be guided on shaping the right industrial and digital policies in the future.

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1   https://europa.eu/rapid/press-release_IP-19-6204_en.htm

Main Lessons Learned

From the StandICT.eu H2020 Project

We are proud to deliver this impact report as a lasting legacy of StandICT.eu from individual European ICT Standardisation contributions that brings together the complete list of the 178 funded European applicants who have diligently contributed European excellence within Standardisation efforts worldwide, which is crucial if Europe wishes to remain at the leading edge globally. The report offers a deep dive into the **Multiple User Empowered Contributions** which have given a voice to serve European interests in international SDOs, fora and consortia that can serve to support the identification of ICT Standardisation. Researchers and experts from the whole continent have participated with relevant work in topical areas such as blockchain, Internet of Things, 5G, and more.

This report gives a succinct overview of each applicant's contribution, opening multiple windows on future developments and research areas to be addressed in the coming years.

Takeaways from this report in terms of hindsight outputs:
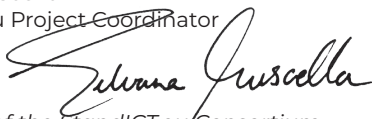
→ The highest impact areas of ICT standards as priorities for the Digital Single Market.

→ Current state of the art in these areas, with testimonials from specialists working on gaps and EU priorities in ICT standardisation.

→ Prioritisation of funding for these areas and prioritisation of which SDOs to support.

→ What the successful applicants from StandICT.eu have achieved and how their contributions are helping to fill gaps and drive forward best practices.

→ Why standards are important, why they should become a priority, and how it can be affordable for more specialists across organisation types and sectors.

→ How standards work hand in hand with Research & Innovation.

→ How standardisation organisations and technical committees can further support SMEs, academia, start-ups, and vertical industries.

In terms of foresight, outputs from this report include:

→ Based on the trend in applications for funding by sector, it is possible to pinpoint areas that warrant future support.

→ Based on current research, standardisation efforts related to the following technologies are expected to have the highest impact in the short to medium term, such as

    → Commercial and government: AI, Governance and Trustworthiness, Procurement.

    → Societal and environmental: Smart "X" (cities, cars, home, health), Tech for UN SDGs (5G, IoT, Cybersecurity, Tech for Gender Responsiveness).

→ Recommendations for issuing future calls for funding based on these observations highlighting engagement at High Level Expert areas like the United Nations.

→ Recommendations around Digital sovereignty as one of the priority topics in the future we may elaborate how Networks, Clouds and IoT to contribute to the ambitions, linking this to standardisation efforts.

We hope you enjoy reading the extracts as much as we have, acknowledging the months of work behind each individual contribution and their impact.

Silvana Muscella
StandICT.eu Project Coordinator

On Behalf of the StandICT.eu Consortium

Infographic at a glance - Who contributed to what

![StandICT.eu logo] StandICT.eu
Supporting European Experts Presence in International Standardisation Activities in ICT

8 OPEN CALLS
RESULTS & POPULAR TOPICS

25
EUROPEAN COUNTRIES

95 → ONE SHOT
130 → SHORT TERM
275 → LONG TERM

250
FUNDED APPLICATIONS
500 ELIGIBLE APPLICATIONS RECEIVED
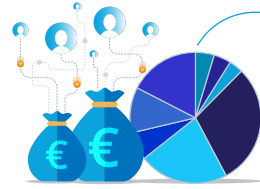
MOST TARGETED TOPICS

5% → AI
4% → BLOCKCHAIN
3% → CLOUD COMPUTING
30% → CYBERSECURITY
22% → BIG DATA
7% → 5G
11% → IoT
17% → Other

GRANTS
ACROSS SDOs

SDOs TOTAL

34,7% ● ISO/IEC
12,7% ● ISO
10% ● ETSI
8,5% ● CEN CENELEC
6,6% ● IETF
5,8% ● W3C
4,2% ● ITU T
2,7% ● IEEE
2,3% ● IEC
2,3% ● 3GPP
*10% ● OTHER

CEN CENELEC

23% ● CEN/CLC/JTC 13
18% ● CEN/TC 278
9% ● CEN/CENELEC/ETSI
9% ● CEN/TC 251
14% ● CEN/CENELEC
27% ● Other

ISO/IEC

3% ● ISO/IEC JTC1-1
6% ● ISO/IEC 27030
7% ● SC 38
27% ● SC 27
24% ● SC 42
2% ● SC 41
2% ● SC 29
1% ● SC 36
7% ● SC 37
1% ● SC 25
4% ● SC 6
4% ● SC 22
1% ● SC 17
4% ● SC 40
1% ● SC 35
4% ● SC 7

ETSI

38% ● Other
23% ● TC Cyber
15% ● 5G
12% ● ETSI ITS
12% ● eHealth

ISO

39% ● TC 307
18% ● TC 46
12% ● PC 317
9% ● TC 299
6% ● TC 37
3% ● TC 261
3% ● TC 215
3% ● TC 68
6% ● TC 204

● *OTHER: OPEN MOBILE ALLIANCE - IRTF - UN/CEFACT - EDPB
IACS - EMSA, EFCA - FHIR - IHE PPC domain - OSGi Alliance

Expert contributions in the field of 5G

Savvas Argyropoulos

Job Title, Organisation: CEO, StreamOwl Private Company
Country: Greece
SDO/WG: ITU

Challenges Addressed

ITU-T Study Group 12 standardisation work targets operational aspects of performance, Quality of Service and Quality of Experience, the end-to-end quality aspects of interoperability, and the development of both subjective and objective quality-assessment methodologies for multimedia services.

My contribution

ITU-T P.1200 series targeted the standardisation of algorithms which provide objective models for non-intrusive monitoring of the quality of video services, addressing both lower and higher resolution applications such as mobile TV and IPTV. The P.NATS phase 2 work item focuses on 4K resolution and new video codecs such as H.265.

EU Priorities & Gaps

Since the majority of standardisation efforts in the area of multimedia stem outside of the EU, it is vital to enhance European efforts to ensure that European companies and academic institutions have an impact on standardised models for the quality assessment of streamed multimedia applications.

Friedbert Berens

Job Title, Organisation: CEO, FBConsulting Sarl
Country: Luxembourg
SDO/WG: ETSI, IEEE

Challenges Addressed

The main challenge was the interaction and cooperation between the standardisation groups. The goal of this application was to streamline the information flow between IEEE and ETSI and the European regulation (CEPT). The schedules of different meetings covering the same or similar topics are not coordinated and occur in very different places. A continuous participation is required.

My contribution

Fbconsulting has mainly contributed to the IEEE 802.11bd development by providing the views of the European automotive industries and of ETSI TC ITS as the European group responsible for the standardisation of cooperative ITS systems. Especially the inclusion of realistic simulation assumption to cover the European specific applications were the focus of the activity.

EU Priorities & Gaps

From the European side a more stable participation in the IEEE standardisation work from vertical industries would be required to guarantee the consideration of specific requirements. The current developments of the communication standards are too much driven by the telecom (5G) and consumer communication (WIFI) industry without the adequate participation of verticals like Rail and Automotive.

Ranganai Chaparadza

Job Title, Organisation: Dr.-Ing/PhD, Altran & IPv6 Forum
Country: Germany
SDO/WG: ETSI

Challenges Addressed

Industry Specifications of APIs defined by Joint SDOs/Fora Standards Harmonisation Initiative's "Integration Framework for ETSI GANA Model, SDN, NFV, Big-Data Analytics & E2E Orchestration as Integrated Enablers for 5G", through the ETSI 5G Proof-Of-Concept. Multi-Domain Federated Knowledge Planes for Autonomic Security Management & Control and Testing ETSI GANA Multi-Layer Autonomics & AI Models.

My contribution

My main contributions cover the following areas & WG: Six 5G PoC (Proof-Of-Concept) Project Technical White Papers by ETSI TC INT/AFI WG; ETSI TR 103 473 V1.1.2; ETSI TS 103 195-2; ITU-T Y.3324; TMForum IG1167 ODA Functional Architecture; TMForum IG1177 ODA Intelligence Management Implementation Guide; 5G E2E Architecture Framework by NGMN. Framework for E2E Federated Knowledge Planes for Autonomic Security Management & Control; Test AI.

EU Priorities & Gaps

The EU should focus its attention in covering the gaps in the following areas: 5G/Emerging Network Technologies; 5G/End-to-end QoS; 5G/High-level Architecture; 5G/IIoT & URLLC; 5G/Mobile front haul and back haul; 5G/Network Softwarization; AI/Robust/Technical robustness and safety; Big data/Use cases; Cybersecurity/Information security; IoT/Service and Application/Platform communications at Service Layer; ETSI GANA in 5G Autonomic (Closed-Loop) Network Automation.

Luis Miguel Contreras Murillo

Job Title, Organisation: Technology Expert, Telefonica
Country: Spain
SDO/WG: IETF

Challenges Addressed

Focused on standardisation of transport network technologies for supporting the requirements of forthcoming 5G services. These services have impact on data plane aspects (such as performance, latency or bandwidth), but also on control plane and management plane issues (programmability, automation, multi-domain interconnection, etc).

My contribution

The scope of IETF is on protocols and networking technologies, with a number of active working groups touching different technological aspects that result complementary for building an overarching strategy around evolutionary transport networks for efficiently support 5G. Data plane, control plane and architectural aspects were the core of my contribution from an operator's perspective.

EU Priorities & Gaps

More cost-efficient networks can help to foster the development of 5G technologies and services in Europe, while at the same time allowing for a sustainable business in the European market. IETF is an SDO with prevalence of non-European manufacturers mainly focused on their home markets. Through the presence of European operators in IETF it is possible to bring there a European "customer" voice.

Jose Costa-Requena

Job Title, Organisation: CEO, Cumucore Oy
Country: Finland
SDO/WG: 3GPP

Challenges Addressed

5G non-IP backhaul: How to distribute time synchronisation between fixed and cellular devices for industrial internet. Cumucore has demonstrated the usage of gPTP between fixed device and cellular device with low delay which ensures end to end synchronisation which is mandatory for usage of 5G in industrial communications.

My contribution

Cumucore is part of the 5G-SMART project (5G PPP, phase 3). The work was presented to the partners to be contributed to 3GPP and 5G-ACIA (5G Alliance for Connected Industry and Automation), and the white paper has been published with the requirements for time synchronisation in Time Sensitive Networks (TSN).

EU Priorities & Gaps

A cost efficient and ultra-reliable system is required to adopt the proposed solution in large-scale deployments with industrial partners. Common strategy with consensus from different vendors is required to support the proposed solution, for it to become a standard to be adopted.

Godred Fairhurst

Job Title, Organisation: Professor, The University Court of the University of Aberdeen
Country: United Kingdom
SDO/WG: IETF

Challenges Addressed

Standardisation activities at the Internet Engineering Task Force (IETF). Contributed to work in the transport area, to assist in travel to organise and chair sessions and support cross-area review of emerging specifications.

My contribution

The study I took part in described implications of applying end-to-end encryption at the transport layer. It identified in-network uses of transport header information and key implications of developing end-to-end transport protocols that use encryption to provide confidentiality.

EU Priorities & Gaps

IETF specifications and best current practice documents are regarded as the core Internet standards. Organisations such as 5G, CableLabs, W3C and IEEE have developed liaisons with the IETF to work on protocols and guidelines that target applications of Internet technology. The work of the IETF depends on the roles of reviewers, including expert review provided by area review teams

David Gonzalez

Job Title, Organisation: Technology Expert, Telefonica
Country: Spain
SDO/WG: 3GPP

Challenges Addressed

Currently we participate in RAN discussions, mainly physical layer aspects (RAN1), and we also follow several discussions related to spectrum and radio frequency aspects (RAN4). Currently, we are concerned with several aspects within the whole V2X (vehicular communications) framework. Specifically: Spectrum requirements, coverage/range aspects, and feasibility of high frequency bands for V2X.

My contribution

Based on the inputs we have given and from the feedback we have received in the meetings, we have carried out some work in the area of millimetre waves, Non-orthogonal multiple access, edge computing, and distributed resource allocation. Thanks to this, we have produced several scientific publications, intellectual property, and getting ready to prepare contributions to the standard.

EU Priorities & Gaps

3GPP is well-aware of the need to close the gap with vertical industries, e.g., automotive sector. In that sense, the SA6 Working Group has recently been created. Through our participation in the standardisation activities, we are also contributing to closing this gap by providing not only direct technical input but also a better picture of requirements and expectations of the automotive sector.

Evangelos Haleplidis

Job Title, Organisation: Electrical and Computer Engineering/Consultant, Evangelos Haleplidis
Country: Greece
SDO: IETF

Challenges Addressed

Control/User plane separation protocol enhancements. Both CUSP (IETF) and CUPS (3GPP) approach to Control/User Plane Separation have the data model tightly coupled within the protocol specification, which hinders new extensions to support new devices and functionalities. The main proposal was to introduce the concepts of IETF's ForCES architecture to possibly influence the future development of CUSP and make the proposed protocol more extensible.

My contribution

IETF contributions are threefold: Mailing list messages, draft/RFC documents, and presentations/comments at the IETF meetings. An updated draft was published in autumn, then starting email contributions, and finally giving a presentation in late November at the RTGWG meeting in IETF 106 in Singapore where a slot has already been reserved.

EU Priorities & Gaps

CUPS is a fundamental piece for 5G, which lies at the core of the separation of the Evolved Packet Core (EPC) into control and data path. The current approach will make the protocol rigid with every change requiring new protocol definition. Since the CUPS concept is important for 5G it is imperative to make the architecture future compatible, using approaches such as the ForCES architecture.

Oliver Holland

Job Title, Organisation: Researcher, King's College London
Country: United Kingdom
SDO/WG: IEEE, ETSI

Challenges Addressed

Completion or publication of the upcoming standards by the associated working groups (such as IEEE 1918.1, IEEE 1918.1.1, IEEE 802.22 revision, IEEE 802.22.3, IEEE 1900.6b). Technical editing of the aforementioned standards and participation in the related meetings.

My contribution

Provided my continued participation in the related working groups, hence the realisation of the associated standards efforts around 5G, Tactile Internet and associated applications, spectrum innovation/efficiency and therefore spectrum availability and wireless communication in general.

EU Priorities & Gaps

Development of 5G standards, spectrum sharing and spectrum availability enhancement standards. For example, the IEEE 1918.1 "Tactile Internet" standards group is strongly related to areas such as Health, Industry 4.0 and enhanced manufacturing, Internet of Things, and other areas. The associated standards efforts play to European strengths.

Alojz Hudobivnik

Job Title, Organisation: Advisor Consultant, AH.TS, telekomunikacijsko svetovanje
Country: Slovenia
SDO/WG: ITU-T

Challenges Addressed

I have 25 years of experience contributing to the work of ITU-T SG13 and other SDOs. The StandICT.eu Grant has allowed me to intensify activities in 2019. SG13 nominated me again as SG13 WP1 vice-chair to coordinate and progress standardisation work in 5G non-radio domain related to evolved and future use cases, network requirements and incorporation of innovative technologies.

My contribution

I have contributed to Y.3072 "Requirements and Capabilities of Name Mapping and Resolution for Information Centric Networking in IMT-2020", Y.3073 "Framework for service function chaining in ICN", based on results of an EU-Japan initiative under Horizon 2020, and now to Publications of IMT-2020, showing the full map of activities, technical domains and achievements of ITU and others in the IMT2020.

EU Priorities & Gaps

It is common interest to have on-time representative global ICT standards, rather than fragmented and uncoordinated standardisation or private monopoly solutions. Europe is a front runner in developing 5G, so good recommendations should be based on EU contributions. The common interest is excellent management to achieve an ambitious plan of a comprehensive set of standards, such as the EU ICT Rolling Plan.

Frank Kowalewski

Job Title, Organisation: Senior Consultant, Nomor Research GmbH
Country: Germany
SDO/WG: 3GPP

Challenges Addressed

For mission critical services it is necessary to provide communication means with very low delays. Mission Critical Push To Talk (MCPTT) includes delay reduction techniques for the air interface. MCPTT does not include delay reduction techniques within the network.

My contribution

I have contributed to 3GPP WGs CT3 and CT4 by submitting 6 input contributions to the respective WG meetings taking place in April 2019. The contributions have been created in coordination with Intel Germany GmbH. These have proposed technical specification text on End-to-End (E2E) delay budget signalling. E2E delay budget signalling is critical for fast MCPTT call set-up.

EU Priorities & Gaps

European companies are not well represented in 3GPP standardisation groups relevant for MCPTT. It is in the interest of European stakeholders to contribute to MCPTT standardisation to be able to influence MCPTT standards. For European MCPTT development it, it is important to educate European companies about MCPTT technology. Corresponding training is rarely available.

Dirk Kutscher

Job Title, Organisation: Professor, University of Applied Sciences Emden/Leer
Country: Germany
SDO/WG: IRTF

Challenges Addressed

Making the Internet work better with respect to security & privacy, performance, integration of computing and networking, communication within networks of constrained devices.

My contribution

I have helped the formation of IRTF Computing in the Networking Research Group (COINRG). I have created the first architectural description for COIN, shaping work on edge computing in IRTF T2TRG. I have co-chaired IRTF ICNRG and DINRG, as ICNRG released key specification RFCS for CCNx this year, and DINRG addressing Internet consolidation/concentration concerns. I have contributed to IAB discussions on centralisation.

EU Priorities & Gaps

Infrastructure development and standards setting is increasingly dominated by big US players, only challenged by China. Policy making and regulation is influenced by these major players, especially in the US, e.g. the current net neutrality debate. Frameworks such as GDPR are viewed critically outside the EU. It is of vital importance to strengthen EU representation in Internet tech development.
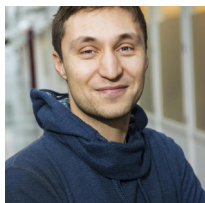
Nicolae Paladi

Job Title, Organisation: Senior Research Scientist, RISE Research Institutes of Sweden
Country: Sweden
SDO/WG: IETF

Challenges Addressed

Trustworthiness assessment is essential and can be done through a remote attestation procedure, often relying on a hardware root of trust implemented in a Trusted Execution Environment. However, this approach is rarely used due to the deployment complexity. Current efforts in the Internet Engineering Task Force aim to develop an architecture for remote attestation procedures for heterogeneous devices.

My contribution

Applications running in TEEs deployed on mobile devices can be leveraged to improve security in payments, 5G communication and IoT. While architectural solutions and concrete implementations have been described in earlier publications, a standardised scalable attestation architecture will allow to create more robust services based on a collection of TEEs on different platforms.

EU Priorities & Gaps

From a European perspective, standardised and interoperable trustworthiness attestation procedures will help create secure services throughout the Digital Single Market, enable secure mobile payments, contribute to more efficient and secure mobile infrastructure for 5G networks, Internet of Things and Cloud Computing. Furthermore, it will enable safe e-health services and will speed up the transition towards smart cities.

Nikolaos Papas

Job Title, Organisation: Associate Professor, Linkoping University, Sweden
Country: Sweden
SDO/WG: IEEE

Challenges Addressed

The main challenge was to develop a generic architecture that can be mapped to any tactile internet application. Among others, we need to have a modular design with flexibility for interworking, computing, caching, intelligence, and other network functions for reliable and responsive service composition.

My contribution

My contribution is related to the Network Architecture of the Tactile Internet. More specifically, I am focusing on defining the required communication interfaces that will enable the entities to interact. Parts of the definition of the interfaces are the requirements for communication, such as reliability, latency, throughput, etc.

EU Priorities & Gaps

The Tactile Internet is a more general realisation of new realms of communication application requiring ultra-high reliability, security, and availability, such as industrial control. Several areas will benefit such as Education and Lifelong Learning, Healthcare, Personal safety, Energy and it can be an enabler for Smart Cities.

Colin Perkins

Job Title, Organisation: Senior Lecturer, University of Glasgow
Country: United Kingdom
SDO/WG: IETF

Challenges Addressed

A key goal of 5G is reducing latency to support novel interactive services and applications. An essential component of this is to improve the transport protocols and avoid head-of-line blocking, adapt to available capacity while avoiding congestion and latency-inducing standing queues, and to make effective use of peer-to-peer paths.

My contribution

I co-chaired the IETF real-time media congestion avoidance techniques working group, which is developing standards that allow interactive multimedia applications to adapt to available capacity while maintaining low latency and avoiding head-of-line blocking. I contributed to the QUIC working group, on requirements for interactive real-time and multiplexing for peer-to-peer applications.

EU Priorities & Gaps

The project began to tackle challenges in full-system latency reduction for 5G systems, considering the transport layer in particular. This relates to making effective use of the 5G infrastructure. There are remaining challenges around deployment of the standards developed, and in ensuring that emerging standards – like QUIC – fully support interactive, low-latency, real-time applications.

Jan Seedorf

Job Title, Organisation: Professor, HFT Stuttgart
Country: Germany
SDO: IETF

Challenges Addressed

European operators have great interest in ALTO extensions, as these are useful for multi-domain network-orchestration, e.g. in 5G. The ALTO extensions will also provide operators with advanced means for Broadband Infrastructure Mapping, a key ICT enabler considered by the EU.

My contribution

By chairing the ALTO WG, I have supervised the pending ALTO extensions, addressing operators' needs for actual ALTO deployments in their networks (for 5G and other use cases) and ensured quick finalisation of the work. I also have advanced an individual contribution in the ALTO WG. Furthermore, I have advanced individual contributions in the IETF ICNRG.

EU Priorities & Gaps

IETF standardises key protocols for 5G, so it must be considered very seriously in the roadmap for EU standardisation also in the future.

Miquel Tarzan

Job Title, Organisation: Senior Researcher, i2CAT
Country: Spain
SDO/WG: ISO/IEC

Challenges Addressed

The challenges addressed are the ones that hinder the current Internet suite and prevent the development of better, more secure, and private applications. It lacks a theoretical framework, and requires protocols that make essentially the same with different scope, and needs over-provisioning of resources to overcome the inefficiencies generated by TCP/IP, e.g. the end-to-end control loop in TCP.

My contribution

My contribution consisted in advancing to the committee drafts, CD, the set of specifications for the protocols that together from the Recursive Inter-Network Architecture, RINA. The CD stage is the one before the draft international standard stage, which is scheduled to start in the next few months. The work carried out included preparation of drafts and gathering of support and advice from other experts.

EU Priorities & Gaps

5G and the networks of the future require major developments in the underlying architectures to achieve the full potential that technology offers. RINA will give Europe the advantage of exploiting the possibilities of networks. The standardisation of RINA is aligned with EU priorities for the digital economy and will allow European companies to tap into new market opportunities.

Sebastian Troia

Job Title, Organisation: PhD candidate, Politecnico di Milano
Country: Italy
SDO/WG: ITU

Challenges Addressed

Try to generalize the type of data to be used in the 5G network, in order to train different types of machine learning algorithms.

My contribution

Identified aspects enabling safe and trusted use of ML frameworks. Reviewed and studied how to train, adapt, compress and exchange ML algorithms in future networks, and how multiple algorithms interact with each other. Identified requirements on network functionality, interfaces and capabilities to use ML. Recognized and highlighted the various perspectives for the future of networks.

EU Priorities & Gaps

Need for adaptation: communications scenarios are often very non-stationary. Distributed learning: the communications scenario significantly differs from classical machine learning settings in that the (training) data is distributed over many clients. Restricted resources. Interoperability: communication systems usually connect many different components.

Francisco José Wilhelmi

Job Title, Organisation: PhD Candidate, Universitat Pompeu Fabra
Country: Spain
SDO/WG: ITU (FG-ML5G)

Challenges Addressed

The integration of Machine Learning (ML) in 5G networks and beyond entails several challenges at different levels (reliability, data handling, security, etc.). My application has focused on the analysis of architectural solutions and the potential integration of simulators to support the main ML operation in networks.

My contribution

Firstly, I have presented a proof-of-concept realisation of the ITU-T's ML-aware architecture for IEEE 802.11 WLANs, with the aim of showing its potential adoption in future networks. Secondly, I have studied the integration of network simulators within the ML operation in future networks (sandbox). Finally, I have participated as a mentor in the student project initiative promoted by the FG-ML5G.

EU Priorities & Gaps

5G is considered a key enabler technology, and its standardisation process is crucial for the competitiveness and the interoperability of global networks. In particular, Machine Learning (ML) is expected to drive the evolution of 5G and 6G networks, and their convergence has not yet been defined. The FG-ML5G group plays a key role in this regard.

Expert contributions in the field of AI

Patrick Bezombes

Job Title, Organisation: AI standardisation coordinator, DGA
Country: France
SDO/WG: ISO/IEC, CEN/CENELEC

Challenges Addressed

Artificial Intelligence is one of the most transformative technologies of the 21st century. This new technology will have to be trusted and therefore requires standardisation for validation and potential certification purposes. Furthermore, ethics will have to be taken into account in the design of AI algorithms.

My contribution

My contribution, as chair of the French SC42 mirror committee, is aiming at building validation and certification process standards for trusted AI, which includes ethics and AI governance implications. In addition, as co-convenor of the CEN-CENELEC AI focus group, I am also contributing to the building of a high-level vision for European AI standardisation and to the identification of European needs.

EU Priorities & Gaps

The gaps addressed relate to AI trustworthiness, covering Ethics, AI robustness, explicability and AI governance implication.

Yoav Evenstein

Job Title, Organisation: Senior Research Analyst, Ramot at Tel Aviv University
Country: Israel
SDO/WG: IEC

Challenges Addressed

AI Ethical issues and Societal concerns. Currently, sustainability is a neglected topic in AI. SC42 has few liaisons with other relevant subcommittees in JTC1 for outreach and collaboration when building standards. There has been no Liaison with SC39 promoting sustainability for and by IT, which will undoubtedly be inclusive to AI technologies in coming years. This activity was aimed at bridging both committees to connect societal concerns around sustainability.

My contribution

I have identified ethical issues and societal concerns relevant to IEC technical activities. I have formulated recommendations to SMB as appropriate. Other contributions include considering any changes needed in the IEC Use Case Template to address ethical issues and societal concerns; setting up fora during IEC General Meetings and inviting other relevant actors on this matter to participate in the discussion, such as academia.

EU Priorities & Gaps

Work related to the priorities of Societal and environmental wellbeing, and Artificial Intelligence Robustness.

David Filip

Job Title, Organisation: Research Fellow, ADAPT Centre Trinity College Dublin
Country: Ireland
SDO/WG: ISO/IEC

Challenges Addressed

Trustworthy AI, Open Source Software (OSS), transparent verifiability, ethical and societal impact of AI and IT

My contribution

Lead Irish delegation at JTC 1/SC 42 AI Plenary, Chair SG 2 Trustworthiness of AI f2f. Convening ISO/IEC JTC 1 AG 3 OSS (JTC 1 OSS survey & strategy). Convening ISO/IEC JTC 1/SC 42/WG 3 AI Trustworthiness (5 projects in various stages). Heading Ireland delegation to ISO/IEC JTC 1/SC 42 AI and SC 38 Cloud Plenaries. Heading numerous ad hoc and CRM meetings at ISO/IEC JTC 1/SC 42 AI. Representing ISO/IEC JTC 1/SC 42 at ISO/IEC JTC 1 AG 7 Trustworthiness. Representing Ireland at JTC 1.

EU Priorities & Gaps

Privacy and personally identifiable data protection; ethical use of AI; multilingualism; transparent interoperability through standardisation.

Ian Marsh

Job Title, Organisation: Researcher, RISE SICS AB
Country: Sweden
SDO/WG: ISO, IEEE

Challenges Addressed

The concept is to deconstruct popular AI algorithms into their simplest or simpler forms. The objective is to rank AI algorithms that can be: Explained (best), Interpreted, Decomposed, Mirrored, Used in parallel with existing solutions (acceptable), None of the above (risky).

My contribution

Initially we implemented insights on algorithms and data processing through papers and seminars with Swedish industry. By linking with such conferences and partners, BDVA and an EU proposal on Explainable AI we brought to the attention of European industries the risks of deploying AI and how to mitigate them.

EU Priorities & Gaps

People gaps: Hiring developers who understand data & models. Exacerbated by the chronic shortage of ML engineers & data scientists. Bad practices: focussing on percentage improvements, but not on the whole picture. Technological depth: needed to understand the algorithms and reduce them to something that is at least interpretable.

Mikael Munck

Job Title, Organisation: CEO/Managing Director, 2021.AI ApS
Country: Denmark
SDO/WG: ISO/IEC

Challenges Addressed

AI applications are numerous and diverse, in a variety of sectors and contexts. Growing demand for AI systems providing insights into problems is fueling growth forecasts. Cognitive and AI spending will grow to $52.2 billion in 2021 achieving a CAGR of 46.2% over the 2016-2021 forecast period (IDC). The "AI ecosystem" should consider the diverse stakeholders involved.

My contribution

I have participated in the development of standards in relation to ISO/IEC/JTC 1/SC 42 working group 3 on Trustworthiness in AI Systems. I was able to share my knowledge from 2021.AI. I also contributed to developing a governance module which can audit models and ensure transparency, explicability, fairness, and accountability.

EU Priorities & Gaps

The EU has issued guidelines for trustworthy AI sparked by increasing regulatory emphasis on privacy. However, there were no solutions supporting this legislation. Creating standards for the way we produce and govern AI is the first important step, which 2021.AI's governance module will help enforce subsequently. The EU has been successful in emphasising long term sustainability in the R&D they engage in.

Fabrice Popineau

Job Title, Organisation: Professor, CentraleSupélec/LRI
Country: France
SDO/WG: ISO

Challenges Addressed

The ISO JTC1/SC42 subcommittee on Artificial intelligence started 2 years ago. Since then 5 WGs and 3 Ad-Hoc Groups have been set up. These WGs and AHG address many aspects of AI, from the most upstream, to applications or societal concerns. I chose to monitor the areas where I could most easily contribute, which are WG1 "Foundational Standards" and WG5 "Computational approaches and computational characteristics of AI systems".

My contribution

I have helped frame some fundamentals aspects of AI, especially sorting out an epic debate about the definition of AI. I have also given insight into the role of agents in AI, and the fact that AI is broader than mere machine learning. Finally, I have contributed to the definition and illustration of several technical terms in 22989 and 23053 projects.

EU Priorities & Gaps

The most divergent agendas between EU priorities and international ones debated in SC42 are certainly the problems about societal concerns and regional concerns. Societal concerns address ethics, privacy and related topics. There are also possible gaps in the defence or military use of AI.

Pekka Qvist

Job Title, Organisation: Educational Games Manager, Neste Engineering Solutions NAPCON
Country: Finland
SDO/WG: CEN/CENELEC

Challenges Addressed

The proposed activity focused on extremely important topics within the standardisation of Artificial Intelligence: ethical aspects of AI, trustworthiness of AI, ethical use of AI and Personal Data for Educational and Training related solutions, involving personally sensitive competence development related data.

My contribution

Attendance to the European Focus Group for Artificial Intelligence, CEN-CLC/AI FG N 028. Networking with relevant parties and individuals from the European Focus Group to get up-speed with the standardisation work at national and EU levels, and within international groups. Strengthened connections within the European Focus Group to allow efficient teleconference work in-between the Face-to-Face meetings.

EU Priorities & Gaps

I would like to see a stronger focus in the areas of Ethical standardisation for AI on data privacy and data security for Artificial Intelligence, as well as on data ownership, data trust, data manipulation. In addition, the EU should also work more on AI and data related misconceptions, ensuring the data quality and algorithm results metrics as part of the transparency of data and algorithms

Meri Seistola

Job Title, Organisation: Executive Director, Mediametka - Finnish Centre for Media Literacy
Country: Finland
SDO/WG: ISO/IEC, CEN/CENELEC, IEEE

Challenges Addressed

Issues on diversity in the development of AI applications, such as taking into account the needs and agency of young users. Commitment of businesses into child friendly AI development.

My contribution

I have invited experts into the Finnish mirror committee, I have been organising events and speaking at meetings promoted by others on how AI affects the lives of young people.

EU Priorities & Gaps

AI and IoT applications are often combined with several overlapping systems, some using AI/neural networks or other autonomous systems. The combination with GDPR requires special attention for European users, especially children and families. It is the European approach on consumer devices that needs to be standardised, certified, or otherwise approved for usage instead of ex-post issues.

Adam Smith

Job Title, Organisation: CTO, Dragonfly
Country: United Kingdom
SDO: ISO/IEC

Challenges Addressed

The purpose of my engagement is to try to drive technical standardisation in a number of areas, where there is clear industry demand. Specifically, the prevention of bias in AI, and AI testing and quality.

My contribution

Held face to face meetings with over thirty experts on ISO/IEC NP TR 24027 Information technology — Artificial Intelligence (AI) — Bias in AI systems and AI aided decision making. Held 1:1 meetings with eight heads of delegation to secure additional international contributions to TR24027. I also helped build consensus across national bodies and working groups on the need to update quality and testing standards for AI.

EU Priorities & Gaps

In serving the EU priorities, I have focused on the gaps required for quality and trustworthiness assessment of AI Systems, and producing standards to aid industry. Whilst there are many "ethical principles" published around AI, there is little technical documentation or standards about the tools and techniques required to actually implement systems.

Daniel Smits

Job Title, Organisation: Owner, Smits Consulting & Projects
Country: Netherlands
SDO/WG: ISO

Challenges Addressed

Governance is an important area for open and big data, blockchain and artificial intelligence. Current IT governance (ITG) standards are largely focused on hard governance (structure, processes). Soft governance (behavior, collaboration) is equally important. The ISO 38500 standard for ITG only describes the principle of human behavior. The challenge is to make it more practical.

My contribution

My research is focused on the elaboration of the human or social element in governance implementations. During a meeting of the ISO committee in September I explained my research and proposed to develop a practical standard for the human behavior principle in the ISO 38500 standard. This proposal was received enthusiastically by the members and we agreed to develop a National standard.

EU Priorities & Gaps

A guideline elaborating the governance principle "Human behavior" contributes to a better success ratio of IT projects. At the beginning of November 2019 the NEN will annouce the development of the standard for the human behavior part of IT governance. The press release will include an application for additional funding, on behalf of NEN.

Emilia Tantar

Job Title, Organisation: Chief Data and Artificial Intelligence Officer, INCERT GIE
Country: Luxembourg
SDO/WG: ISO/IEC

Challenges Addressed

While AI is available for everyone to use, it still represents a wide and complex spectrum of approximation algorithms. Small- and large-scale actors, including European bodies, put their trust in standard organisations such as ISO to provide the relevant requirements and recommendations to implement Responsible/Trustworthy AI. However, European interest needs to be represented in these contexts.

My contribution

I have ensured that the SC 27 and ISO/IEC JTC 1/SC 42, in particular those focusing on AI, were adjusted to the standard through clear and easy to use implementations. I have provided concrete European use cases and mechanisms of addressing challenges. This contribution will consolidate AI audit methodology developed and will be applied on more than 100 AI providers.

EU Priorities & Gaps

In line with the European AI Strategy in building trust in Artificial Intelligence, the proposal contribution focused on providing concrete use cases as examples and metrics to identify, quantify and counter risks associated with Trustworthy AI. The considered contribution on trustworthy AI, consolidated 15 years of European experience and expertise directing applied AI research.

Brian Tranter

Job Title, Organisation: Consultant, ANEC
Country: Belgium
SDO/WG: IEC

Challenges Addressed

Through my involvement in IEC SEG 10, particularly as co-convener of WG1, I contributed to the recommendations and proposals to be made to IEC for how complex ethical issues can be incorporated into new and existing AI-related standards.

My contribution

I have worked directly with convenors to develop a solution for how the ethical characteristics of an AI system may be ranked along with a proposed labelling scheme. Further detailed development is needed, but adoption of the concept within EU/International standards should be a significant benefit to consumers and others who interface with systems that utilise AI.

EU Priorities & Gaps

The activities have addressed aspects of the EU priorities in the AI/Ethical sector, focusing on explicability, fairness, prevention of harm, and respect for human autonomy

Luigi Troiano

Job Title, Organisation: Professor, University of Sannio, Dept. of Engineering
Country: Italy
SDO/WG: ISO/IEC

Challenges Addressed

Identify standardisation opportunities regarding existing/future practices and policies, able to move AI solutions from the exploratory development achieved so far towards a better structured system engineering approach. To conquer this challenge, the involvement of a broader audience of experts becomes fundamental.

My contribution

The "AI Systems Engineering" advisory group has been set up within SC 42 as the conclusion of the Plenary Meeting, held in Tokyo on October 7-11. The group received the mandate of studying the gap between existing practices versus standards. In addition, we are going to create a web community of AI experts from Industry and Accademia and a white paper on challenges for AI systems engineering.

EU Priorities & Gaps

A standard engineering approach for AI solutions. Identify standards that may be impacted (e.g. ISO 12207, ISO 25030, etc.). The AI life cycle as an inner part of the System life cycle. Requirements specification of AI systems. Testing, verification and validation of AI systems. A quality model for AI systems.

Jarkko Vesa

Job Title, Organisation: CEO, Not Innovated Here - Laboratory of Creative Destruction
Country: Finland
SDO/WG: ISO/IEC

Challenges Addressed

Ability to participate in the ISO/IEC JTC1 SC42 Artificial Intelligence standardisation work in Plenary Meetings as the head of the Finnish delegation. StandICT.eu support was particularly important for a representative of a small company. It is crucial that SMEs also have a chance to take part in global standardisation developments of AI, otherwise large corporations, academia and governments dominate.

My contribution

Establishing and ramping up the Finnish mirror committee of ISO/IEC JTC1 SC42 Artificial Intelligence, and introducing Finnish AI experts into various study groups and working groups. Building an overview of the whole work package of SC42, and reporting the work to various stakeholders in Finland.

EU Priorities & Gaps

Several EU member states have been very active in the work of ISO/IEC JTC1 SC42 Artificial Intelligence. However, many member states are still missing, especially in Eastern and Southern Europe. In addition, it would be important to make sure that enough European AI experts have the possibility to take part in the AI standardisation work, in terms of time and funding.

Thomas Zielke

Job Title, Organisation: Professor, Hochschule Düsseldorf
Country: Germany
SDO/WG: ISO/IEC

Challenges Addressed

AI systems cannot be dealt with by conventional technical standard in several aspects. Moreover, several large-scale applications of AI, including applications in mobility and healthcare, will need governmental regulations on a European level. ISO standards are the basis for many technical EU regulations already. For AI systems, there is a gap that has to be filled.

My contribution

I am an active member of the German DIN committee for AI standardisation (NA 043-01-42 AA) and the ISO SC 42 working groups WG 1 "Foundational standards", WG 3 "Trustworthiness", and WG 4 "Use cases and applications". I have contributed several technical proposals to the work of WG 3 on Trustworthiness and WG 4 on Use Cases and Applications. For WG 1, I participate in the discussions and the validation of the draft documents.

EU Priorities & Gaps

From a European perspective, societal concerns with respect to AI applications should be reflected in future standards for AI. However, all aspects of AI applications that may be differently looked at depending on the cultural or political value system, need special attention by the standardisation organisations in Europe. For that, more experts need to be involved.

Expert contributions in the field of Blockchain

Ljupcho Antovski

Job Title, Organisation: Professor of Software Engineering, the FINKI/UKIM Skopje
Country: North Macedonia
SDO/WG: ISO/IEC

Challenges Addressed

Participation in ISO/IEC JTC 001/SC 17 contributes to the planned actions 1-2 from the EC RP especially addressing issues like security for apps, access and accessibility, management and portability of customer data, and transparency. Participation in the Joint ISO/TC 307 - ISO/IEC JTC 1/SC 27 WG can help the EC identify potential standardisation needs.

My contribution

Contribution to at least 5 ballots on standards, sub-standards, resolutions, liaisons in ISO. Attendance and representation on 2 meetings/assemblies, one for ISO/IEC JTC 001/SC 17 and one for Joint ISO/TC 307 - ISO/IEC JTC 1/SC 27 WG.

EU Priorities & Gaps

These topics are in direct relation to the targeted areas in the EC Rolling Plan for Standardisation (EC RP), and to the priority areas in Innovation for the Digital Single Market: Blockchain and Distributed Digital Ledger Technologies; Card, internet and mobile payments.

Ismael Arribas

Job Title, Organisation: Owner, KunFud
Country: Spain
SDO/WG: ITU

Challenges Addressed

Defending European interests in the field of ICT Standardisation. Harmonising the state of the art with the recommendations acquired, which would be useful for the CEN-CENELEC FG and ETSI ISG PDL in the efforts of the industry, market, and society in general.

My contribution

European Standards can evolve more quickly with the alignment of ITU recommendations. As a member of different developing bodies and a credited expert from the mirror committee of Spain, I am a defender of European leadership in this matter, in particular working and contributing with European Bodies as well as relevant associations like INATBA or ALASTRIA.

EU Priorities & Gaps

European interests have to be better represented in the ETSI ISG PDL and CEN CENELEC FGBDLT groups of experts. I have defended European interests and brought EU requirements to ISO and ITU as a representative from the mirror group of UNE.

Julien Bringer

Job Title, Organisation: CEO, Kallistech SAS
Country: France
SDO/WG: ISO/IEC

Challenges Addressed

Supporting the development of standards in the Blockchain and Distributed Ledger area connected to, and consistent with, the existing landscape of security, privacy and identity standards and/or regulations (e.g. GDPR) and ensuring that the added-value for European market is taken into account.

My contribution

Leading as convenor (WG2 "security, identity and privacy" and JWG4 joint working group between TC307 and SC27) several ISO TC307 "Blockchain and distributed ledger technologies" activities. Participation as expert and project leader/co-leader to ISO/IEC JTC1 SC27 cybersecurity/identity/privacy activities. Active connections with various EU stakeholders (e.g. experts, providers, regulators)

EU Priorities & Gaps

Continuing to support better representativeness of EU expertise within SDOs. Avoiding diluting efforts within too many disjointed initiatives. Refining common EU vision and strategy for blockchain development roadmap to increase maturity and identify the missing standards. Cybersecurity assurance of blockchain/DLT systems and decentralised identity management should be part of the EU's priorities.

Paolo Campegiani

Job Title, Organisation: Innovation Strategist, Bit4id
Country: Italy
SDO/WG: ISO, CEN/CENLEC

Challenges Addressed

Defining a standard for blockchain and distributed ledgers that takes into account relevant EU legislation like GDPR, eIDAS, TOOP.

My contribution

I have contributed to the definition of the proposal for the creation of the CEN-CENELEC Technical Committee on Blockchain and Distributed ledger. I have made contributions (comments) for the ISO/TC 302/WG2 TR 23246 "Digital identity and blockchain". I have also taken part in several face to face meetings.

EU Priorities & Gaps

The EU should support CEN-CENELEC in setting up, running and managing the CEN-CENELEC Technical Group on Blockchain and Distributed ledger, providing direct assistance in terms of personnel working on editorial tasks.

Blockchain

Fiona Delaney

Job Title, Organisation: CEO/ Managing Director, Origin Chain Networks
Country: Ireland
SDO/WG: ISO, ITU

Challenges Addressed

Having the most up to date implementations described as Use Cases, categorised by domain, requirements and other factors in published form for both ITU and ISO.

My contribution

As co-editor of a new Technical Report from TC 307 WG6 (Use Cases in blockchain /DLT), StandICT.eu funding was an important opportunity to represent the national body (NSAI), share expertise with world leaders in this field, and to act on behalf of WG6 and its participants. The ITU Geneva meeting was the occasion to finalise the Working Draft of the Technical Report.

EU Priorities & Gaps

Promoting the use of an ISO SMART initiative that sees the development of machine readable standards. This will generate considerable value for end users in that they may implement code directly from the models described in the document. Inclusion of the 17 Sustainable Development Goals will give clear indication to end users about the sustainability merit of new business and technology models.

Yanis Kyriakides

Job Title, Organisation: Independent consultant in Blockchain
Country: Belgium
SDO: ISO

Challenges Addressed

The first challenge was to help prioritise the development of interoperability standards between blockchains. This activity becomes urgent if we want to avoid severe limitations for business and technical developments in line with the digital future of the European Digital Single Market strategy.

My contribution

I represented Belgium at the plenary meeting in India in mid-November and participated in our first interoperability WG meeting. I was also invited to give a university presentation on how blockchain changes business relationship and impacts the supply chain. This testimony is important to demonstrate confirmed interest in this technology in Europe and its current ISO standardisation.

EU Priorities & Gaps

It is clear that there is a need to standardise blockchain initiatives in logistics to ensure transparency and reduce fraud in customs declarations and taxes.

Christophe Ozcan

Job Title, Organisation: CTO, Crypto4all
Country: France
SDO: ISO, CEN/CENELEC

Challenges Addressed

I'm contributing with other international experts to define standards about common terminology and taxonomy/ontology of Distributed Ledger Technology (DLT). The major challenge was to achieve the first granted draft of the terminology documentation which defined new technical terms. The ontology and taxonomy technical document allowed to classify technological DLT components.

My contribution

I have contributed to the ISO/TC307 on the CD2237 terminology documentation and on the WD TS 23258 Taxonomy and Ontology. As a French national body expert (AFNOR), I'm deeply involved in the vote for each new TS or TR document approval.

EU Priorities & Gaps

The EU priority is to ensure that future technical standards will be used by EU industry market players. Blockchain and DLT system are disruptive engineering solutions by design as much as the internet was decades ago from start-ups to large companies, administrations and citizens - enabling decentralised, trusted, transparent, user-centric digital services, and stimulating new and improved business.

Jerome Pons

Job Title, Organisation: CEO, Music won't stop
Country: France
SDO: CEN, CENELEC, ISO

Challenges Addressed

ISO is standardising Blockchain and DLT. As the CEO of Music won't stop, I started contributing to AFNOR and ISO/TC 307 from the start, in 2016 to defend European regulation stakes (e.g. copyright, GDPR, self-sovereign identity). Indeed, there are some risks that reference architecture and data model are limited to cloud computing service and that use cases do not account for European specificities.

My contribution

Music won't stop has chosen to contribute to Terminology (22739), Reference Architecture (23257), Taxonomy and Ontology (23258) and Interoperability (23578), which are key to guarantee widely adopted vocabulary and system openness. Music won't stop is also involved in CEN/CENELEC Focus Group related to Blockchain and DLT to ensure that European specificities are integrated into ISO standards.

EU Priorities & Gaps

Music won't stop strongly recommends keeping European experts in ISO/TC 307 and to develop CEN/CENELEC derivation of ISO/TC 307 to cover European specificities, including GDPR and eIDAS but not restrictively. Indeed, the Copyright Directive should also gain from being covered since JPEG and MPEG working groups are investigating blockchain as rights management solution.

Sebastian Posth

Job Title, Organisation: Chairman of the Board, ISCC Foundation
Country: Netherlands
SDO: ISO

Challenges Addressed

Accessible standard identifiers, which are specifically designed to manage digital content, are a fundamental prerequisite for efficient licensing transactions in a decentralized and increasingly heterogeneous, international media environment. The ISCC (International Standard Content Code) is a proposal for an open, generic identifier designed for digital media content.

My contribution

I have been publicly introducing the ISCC Foundation to rights owners on conferences and interviews, conducted workshops and countless calls with publishers, digital distributors, retailers, library and media organisations, rights and collecting societies and other stakeholders in Europe and around the world. I have participated in the DIN and ISO working groups as an expert.

EU Priorities & Gaps

The ISCC Foundation is regarded as a possible technical solution to tackle one of the major issues of the EU copyright directive. If ISCC is implemented as a standard this will help to unambiguously identify copyright protected content, support rights owners to express the rights to their content and communicate them to platforms and users.

Expert contributions in the field of Cloud Computing

Martin Forsberg

Job Title, Organisation: Consultant, Ecru Consulting
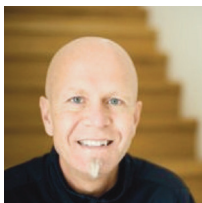*Country: Sweden*
SDO: OASIS

Challenges Addressed

Assessing and finding solutions to comments received during the public review of the new version of OASIS Universal Business Language (UBL) TC standardisation. One important addition was a more flexible way of extending the standard to quickly respond to new legislation or other requirements.

My contribution

I have been able to bring in experiences from a European perspective and legislation. I have close contacts with many implementers and could give practical input from users. Since I've worked with implementation of electronic business on country-scale for the last 15 years, I believe my contributions were welcomed by the committee.

EU Priorities & Gaps

The committee had received several hundred comments during the public review, many coming from European users. Particularly a large amount of comments from the European publication office were assessed and resolved.

Anders Kingstedt

Job Title, Organisation: CEO, Mjukvarukraft
Country: Sweden
SDO/WG: ISO/IEC

Challenges Addressed

ISO/IEC SC38 is responsible for the development and provisioning of fundamental Cloud Computing standards. The use of standards has the potential to eliminate extra work, facilitate Cloud service comparisons and replacement, support accreditation and security frameworks and overall speed up the development and procurement of Cloud Computing services.

My contribution

I attended the Stockholm F2F meeting (September 16-20), my report can be used as a reference point for European and/or National measures regarding the uptake and proliferation of Cloud Computing standards. I hope to assist in the uptake of Cloud Computing standards and Cloud Computing itself. I have completed a report summarizing the current state of play in terms of adoption in Europe and the US.

EU Priorities & Gaps

The adoption of cloud computing standards is still slow across the EU. During the CSC (cloud standards coordination) initiative, the availability and use of standards were identified as critical success factors for the uptake of Cloud Computing as the basis for ITC in a single digital European market.

Tuomas Matti Tapani Nurmela

Job Title, Organisation: Senior Advisor, Tieto Oyj
Country: Finland
SDO: ISO

Challenges Addressed

Emerging and new technology areas can create unrealistic expectations or misunderstandings on the nature and benefits of technology to the adopting organisations. Establishing a common view through development, maintenance and adoption of foundational standards on e.g. terminology and supporting adoption with guidance documentation can help avoid this.

My contribution

I have contributed to foundational and guidance standards workshops, transfer of knowledge to the national body and translation of the standards to local language to support adoption.

EU Priorities & Gaps

EU's effort in supporting standards can help associations change priorities to EP/DG work programmes. As an example, the EU cloud computing strategy ended up producing Cloud SLA guidelines (in 2016), which were aimed at supporting a uniform Digital Single Market. While international standards took input from the guidelines produced (in 2017-2018), there seems to be little to no adoption support

Clemens Portele

Job Title, Organisation: Managing Director, Interactive Instruments GmbH
Country: Germany
SDO: ISO , W3C, ERCIM

Challenges Addressed

Geospatial data is essential for many applications. While the previous standards in this field are powerful and widely used, they are also considered complex, have a steep learning curve, and are based on technologies now considered outdated by many developers. The challenge was to implement a new generation of standards that meets developer expectations and is easier to use by non-experts.

My contribution

I am the main editor of the first of the new generation of OGC API standards, OGC API - Features - Part 1: Core. It was published by OGC in October 2019 (in ISO, it is in DIS ballot). I am also a co-chair of the working groups in OGC and ISO, a co-editor of additional draft modules extending the Core and have promoted the new OGC API standards in various fora.

EU Priorities & Gaps

In Europe, the INSPIRE Directive (2007) provides a framework for creating a EU spatial data infrastructure (SDI), based on the national SDIs, primarily for policies and activities which may have an impact on the environment. The challenges described above are also limiting the use of INSPIRE. INSPIRE groups are monitoring the new standards and are preparing an update of the technical guidelines.

Expert contributions in the field of Cybersecurity

Erik Andersen

Job Title, Organisation: Civil Engineer, Andersen's L-Service
Country: Denmark
SDO/WG: ITU, ISO/IEC, IEC

Challenges Addressed

Adapt public-key infrastructure (PKI) as defined by Rec. ITU-T X.509 | ISO/IEC 9594-8 to smart grid and Internet of Things (IoT). Allow migration to quantum-safe algorithms. Develop strong cyber security standards for the smart grid and protocols for supporting PKI and telebiometrics. Define a blockchain based PKI. Define a data model for complex telebiometrics data structures.

My contribution

The main contribution from my side, has been to participate as an active member and contributor for both IEC TC57 WG17 and TC69 JWG11 – specifically for issues that have cross domain relevance. As an example, a SGAM (Smart Grid Architectural Model) has been developed and harmonised in both groups. One of the main contributions of my work was the development of an information model.

EU Priorities & Gaps

StandICT has sucessfully supported the development of strong cyber security standards. However, this might be done in vain if these standards are not implemented.

There is a worrying tendency that ICT vendors find excuses for not implementing the latest security standards in time, which may involve a substantial risk for European critical infrastructures. The EU should enforce the use of cyber security standards. StandICT has sucessfully supported the development of strong cyber security standards. However, this might be done in vain if these standards are not implemented.

Elzbieta Andrukiewicz

Job Title, Organisation: Head of Cybersecurity, National Institute of Telecommunications
Country: Poland
SDO: CEN/CLC (CENELEC IEC, ISO)

Challenges Addressed

Lack of suitable European standards supporting the implementation of the Cybersecurity Act (EU Regulation 2019/881) on the European Cybersecurity Certification Framework. There is a need to cover all assurance levels (i.e. basic, substantial and high) in ICT products.

My contribution

A NWIP has been submitted to JTC13 NB's as a direct outcome of the Feasibility Study on lightweight cybersecurity evaluation methodologies to which I had contributed. The NWIP was approved by the NB's ballot on October 17th, and the project is now subject to development by the editing group I am a member of.

EU Priorities & Gaps

Trust and security are at the core of the EU Digital Single Market Strategy. On 13 September 2017 the Commission adopted a set of cybersecurity policy measures. The Cybersecurity Act (CSA), which has now entered into force, lies at the centre of these measures. Creating European standards on cybersecurity evaluation is aimed at filling important gaps in efficient implementations of the CSA.

Tomer Ashur

Job Title, Organisation: Post-doc researcher, KU Leuven
Country: Belgium
SDO: ISO, IEC

Challenges Addressed

In an attempt to reduce costs, the security of IoT devices is often overlooked. By ensuring that secure, easy-to-use, lightweight algorithms are available in international standards, companies can cut both risks and costs while maintaining a sufficient level of security.

My contribution

I am co-editor to the following standards: ISO/IEC 29192-7, ISO/IEC 13888-1, ISO/IEC 13888-3, ISO/IEC18014-2, and ISO/IEC 18033-1. I have also served as a rapporteur or co-rapporteur to several study periods and provided comments for many drafts of new standards.

EU Priorities & Gaps

While Europe is well represented in SDOs, the variety of required expertise is prohibitive for ensuring that all fields are represented in standards development. Yet, to be allowed to sell their products in certain countries, companies must often implement standards developed by international bodies.

Alex Cadzow

Job Title, Organisation: Cybersecurity and Human Factors Researcher, Cadzow Communications Ltd
Country: United Kingdom
SDO: ETSI

Challenges Addressed

Expand the focus of cybersecurity standards beyond technology, software and encryption to also include human factors. At the moment, cybersecurity is designed to protect devices and information where the role of the user is often missing or added only when mitigating against bad practices.

My contribution

I have attended ETSI Cyber and QSC Group meetings to enable the continuation of current activities. I have also attended the meeting and developing plans of the ETSI User Group to enable future work proposal(s) to be submitted to the ETSI board and the EC/EFTA.

EU Priorities & Gaps

While current and future standards cover technical topics of cybersecurity very well, there are gaps surrounding the end-user experience and human factors of cybersecurity. It would be worthwhile for this gap to be addressed through work items that result in guidance of best practices when it comes to end-user experience and human factors within cybersecurity.

Stephane Caporali

Job Title, Organisation: Consultant, Caporali Conseil
Country: France
SDO: ISO

Challenges Addressed

Consensus algorithms are some of the main technical blockchain innovations. Industrial issues are important in terms of implementation of a blockchain project. The proposed activity is to support the last and second extension of the SECM (Security Evaluation of Consensus Models) study period until the end of November (Hyderabad meeting).

My contribution

I have been a member of the French national blockchain committee since October 2016, and co-leader of the SECM study period with Patrick Curry (UK) and Siddharth Durbha (India) from May 2018 to November 2019 (Hyderabad meeting). In this period, I have developed specific models of consensus (safety and liveness approach) and the relation between consensus mechanisms and governance.

EU Priorities & Gaps

The text adopted by the European Parliament, entitled "P8_TA-PROV (2018) 0373 Distributed ledger technologies and blockchains: building trust with disintermediation" - "9: Calls for an assessment of governance models within the diverse consensus mechanisms (...)". These priorities are taken into account in the study period of SECM and have been developed in the document.

David Chadwick

Job Title, Organisation: Professor of Information Systems Security, University of Kent
Country: United Kingdom
SDO: W3C

Challenges Addressed

The W3C Verifiable Credentials Data Model defines a new paradigm for identity management, placing the user at the centre of the identity eco-system. The challenges in 2018-19 were to define the data model, specify its various properties, gain consensus in the W3C working group, and progress the W3C Recommendation through all the stages of the W3C standards procedure.

My contribution

During the year I raised 25 issues and 33 PRs in GitHub, participated in >90% of the WG weekly meetings, became a co-author of the Verifiable Credentials Data Model Proposed Recommendation and a co-author of the Implementation Guidelines, attended the WG face to face meeting in Barcelona in March 2019, gave 3 presentations about Verifiable Credentials in the UK, one in Europe and one in Turkey.

EU Priorities & Gaps

Many applications' identity requirements are not solved by today's federated identity management systems. "Insufficient attribute release by IdPs is considered by user communities as the major problem today in the eduGAIN space" EU AARC Del DNA2.4. Verifiable Credentials address this problem and more by placing the user at the centre of the identity ecosystem, giving them full control.

Cybersecurity

Pavel Cuchriajev

Job Title, Organisation: Independent consultant
Country: Lithuania
SDO: ISO/IEC

Challenges Addressed

Key objectives and challenges of the application are to set and enhance industry standards for enabling protection of citizen's privacy, digital identities and interoperability of the different systems that operate with mentioned identities.

My contribution

I have contributed to ISO/IEC 39794 standard development by providing comments on draft standards and working on open source technical implementation. I have also contributed to ISO/IEC DIS 19785-2 with comments on draft standards and work on independent technical open-source implementation.

EU Priorities & Gaps

Activities have led to a standard solution in the field of electronic authentication based on biometrics, as well as enhanced interoperability standards to existing systems. All of this should contribute to enabling and improving sectors such as eGovernment, ePayments and border security.

Mathieu Cunche

Job Title, Organisation: Assistant Professor, INSA Lyon
Country: France
SDO: IEEE

Challenges Addressed

Wireless technologies embedded in consumer devices can expose users to privacy risks (e.g. tracking based on network identifiers). Specification of wireless technologies such as 802.11 do not cover those risks and are thus leaving users exposed to serious threats.

My contribution

Our activities in IEEE 802 take place in the groups dedicated to privacy where we share the latest academic advances such as recently discovered threats and mitigations. We contribute to documents presenting guidelines for the development of 802 standards and pave the way toward the specification of random and changeable addresses.

EU Priorities & Gaps

There is currently little consideration for privacy aspects in IEEE 802 specifications. Given the massive adoption of those technologies, it is necessary to address these privacy issues. This is particularly important from a European perspective in view of the GDPR and the upcoming e-Privacy regulation.

Alain De Greve

Job Title, Organisation: Owner, D.G.A.
Country: Belgium
SDO: ISO/IEC, CEN

Challenges Addressed

Improve development of international standards from a European perspective at either ISO and CEN level with special focus on Cybersecurity and emerging technologies.

My contribution

I have taken part in the international meetings of JTC13(CEN) and SC27(ISO), stressing the Belgian point of view and end user interests. I pointed out several concerns and specific terms which can disturb the national interpretation with a local translation.

EU Priorities & Gaps

Lack of interest from an end user and national level were identified. Some countries like mine are not represented enough at European level to help implement enhancements in cybersecurity at the national level, which would make us more independent from external influences (such as US-oriented influencers and lobbyists). Some new initiatives need to be launched

Björn-Erik Erlandsson

Job Title, Organisation: PhD, Professor, Senior Advisor, KTH Royal Institute of Technology
Country: Sweden
SDO: ISO, CEN

Challenges Addressed

Work started in 2018 on how the standards ISO 13606, ISO 13940 and HL7 FHIR will work together. Europe must go forward in standardisation development, defend and support the differences that occur with the rest of the world. For instance, the International Patient Summary driven by CEN needs to be developed further and become recognised by ISO as well.

My contribution

As convenor of WG1 Architecture, Framework and Models of ISO/TC215, I am responsible for the work agenda at the 32nd WG1 meeting in Daegu, South Korea, November 2019. To this end, I helped facilitate and drive standardisation work, and encouraged better cooperation between standardisation organisations e.g. ISO, CEN and HL7.

EU Priorities & Gaps

Another example that can be mentioned is the ongoing work on Ageing in Community, where the EU's perspective must be taken into account as well as in the work driven by HL7. Reducing the burden on clinicians to make the workplace more efficient. Today we have indication that physicians spend 40-45% of the time on EHR clerical work on the computer

Cybersecurity
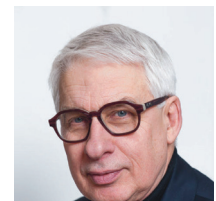
Stephen Farrell

Job Title, Organisation: Researcher, Trinity College Dublin
Country: Ireland
SDO: IETF

Challenges Addressed

Ongoing participation in IETF activities related to security and privacy.

My contribution

I am a member of the IAB, co-chairing the homenet and now lake working groups. I also was a document author in the TLS WG, proposing documents for dnsop and UTA WGs, implementing encrypted SNI (TLS WG draft).

EU Priorities & Gaps

Continuing to keep the IETF focused on security and privacy for businesses but also for people, and starting to help the IETF focus on over-centralisation of the Internet.

Denis Filatov

Job Title, Organisation: Technical Expert, Filatov DV
Country: France
SDO: 3GPP, ETSI

Challenges Addressed

TCover the gap in standardisation, where communication profiles and procedures of certificates and trust information distribution was not specified.

My contribution

I have developed the standard describing communication profiles for Intelligent Transport System trust management communication (ETSI TS 103 601): PICS for the standard; ASN.1 structures.

EU Priorities & Gaps

The ITS Delegated Act or any other directive defining the rules and profiles of ITS deployment in Europe is essential.

Ines Goicoechea Telleria

Job Title, Organisation: PhD Candidate, Universidad Carlos III de Madrid
Country: Spain
SDO: ISO

Challenges Addressed

Accessibility of ICT products and services, as it focuses on the influence of user interaction with biometric devices. It would be useful for eGovernment, e-Invoicing, companies, mobile payments because biometrics plays a big role in these matters, and user interaction assessment is a key player when performing biometric evaluations.

My contribution

This activity has focused on the evaluation of the influence of user interaction on the performance of biometric recognition systems by describing a methodology for testing and reporting that influence. Given that user interaction plays a major role in performance, it was necessary to address this issue through standardisation.

EU Priorities & Gaps

Improving user interfaces is undoubtedly a relevant issue, a proper standard which allows to accurately evaluate the user interaction in biometrics may solve the existing concerns. It could be possible to better compare the user interaction among different biometric solutions. This could benefit any European public administration or private sector that wants to implement any kind of biometric system.

Clement Gorlt

Job Title, Organisation: CyberSecurity & Research Manager, INCERT GIE
Country: Luxembourg
SDO: ISO/IEC

Challenges Addressed

Cybersecurity has become a hot topic in the last few years, as it involves many threats to companies and organisations. The effort on standardisation for cybersecurity is to allow organisations, blue teams, security professional and so on, to share knowledge and work under the same framework to improve the general security level worldwide.

My contribution

I have ensured that standardisation at the international level provides adequate guidance related to security, in order to better secure financial transactions and reduce cyber accidents.

EU Priorities & Gaps

There already is some work being done at the European level (ETSI for PKI and ECSO for cybersecurity). In both domains, there is a need to have interoperable standards worldwide. The same goes for cybersecurity, with the benefit of having a common standard providing interoperability.

Cybersecurity
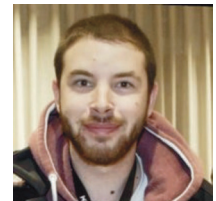
Rusne Juozapaitiene

Job Title, Organisation: Member of the steering Committee, ANEC
Country: Belgium
SDO: ETSI

Challenges Addressed

Consumer IoT products are rapidly growing in popularity. IoT devices generate an unprecedented amount of data, often of a sensitive personal nature. New technologies can also pose risks because, through connectivity, they can be used as a tool to threaten consumers' personal security.

My contribution

I have contributed to ETSI TC CYBER for the development of standards that increase privacy and security for citizens across Europe and worldwide. When systems and processes, as well as products and services, conform to international standards and related accredited certifications or evaluations, consumers / citizens can have confidence that they are safe, secure, reliable and of good quality. ANEC represents consumers in digital standardisation activities, ensuring the safety, accessibility, interoperability and privacy of ICT products.

EU Priorities & Gaps

For citizens and businesses, cybersecurity is the cornerstone of consumer trust in the cyberspace and its underlying digital technologies. There is a lack of co-operation between various standardisation bodies on cybersecurity. Better communication and co-ordination between stakeholders are, the more resilient all of us will be in the face of evolving cyber security threats.

Antonio Kung

Job Title, Organisation: CEO, Trialog
Country: France
SDO: ISO

Challenges Addressed

Cybersecurity and privacy; Privacy engineering; Privacy-by-design; IoT reference architecture; IoT semantic interoperability.

My contribution

I am editor of 27550 (privacy engineering), 27570 (privacy guidelines for smart cities), 27030 (security and privacy in the IoT), 27556 (User-centric framework for the handling of personally identifiable information (PII) based on privacy preferences). Rapporteur of study Impact of AI on privacy. Contributor to 20547-4 (Big data security and privacy), 27101 (guidelines for cybersecurity frameworks).

EU Priorities & Gaps

Lack of EU participation on architecture and vocabulary standards, as well as on process standards.

Tanja Lange

Job Title, Organisation: Professor, Eindhoven University of Technology
Country: Netherlands
SDO: ISO, OASIS, IETF, NIST

Challenges Addressed

Most of my contributions concerned with the challenge of long-term security, preparing standards for post-quantum cryptography. As a secondary issue I have contributed to the implementation of security and secure protocol designs. A recent issue in ISO and IETF was protection against back doors.

My contribution

For the two ISO groups this consisted in contributing to the study period on post-quantum cryptography. I wrote two white papers on code-based cryptography and isogeny-based cryptography, and contributed to the general introduction. I provided information on post-quantum cryptography. For NIST PQC I designed three systems and worked on the security assessment of other submissions.

EU Priorities & Gaps

It is hard for European projects to bring their results all the way to standardisation as funding ceases after three years, barely enough time to push the first results into standardisation. Follow-up funding for projects to bring their results to standardisation would be helpful.
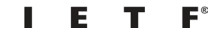
Karen Lauberg Lauritsen

Job Title, Organisation: Managing Director, Lauberg Consulting
Country: Denmark
SDO: ISO/IEC

Challenges Addressed

How to define a common concept of trustworthiness across emerging technologies, IT services, systems and data. Define which subjects of IT governance are an accountable governing body responsible when balancing the value and risks in IT investments in emerging technologies. Application of the ISO/IEC 38500 'Governance of Information Technology' in areas of emerging technologies.

My contribution

I have taken part in the activities of ISO/IEC JTC1 Advisory Group 7 'Trustworthiness'. Co-editor of ISO/IEC 38506 'Application of IT governance to IT-enabled investments'. Technical expert in joint work group ISO/IEC 38507 'Application of 38500 to Artificial Intelligence. Technical expert in relation to ISO/IEC 38508 'Data classifications'.

EU Priorities & Gaps

It is my recommendation that EU prioritises building supplementary competences and skills in IT governance and leadership in order to harvest benefits and value as well as address key risks of digitization and emerging technologies across the EU Digital Single Market.

Maryam Mehrnezhad

Job Title, Organisation: Research Fellow, School of computing, Newcastle University
Country: United Kingdom
SDO: W3C

Challenges Addressed

W3C is responsible for specifying web standards for in-browser access to mobile sensors. I have participated in the annual W3C TPAC meetings, given a one-hour presentation on the overall security and privacy issues of sensors and discussed specific issues of each sensor supported by W3C. The outcome of this collaboration as an invited expert directly benefits current and future standards.

My contribution

Through my collaboration, I influence the current and next versions of sensor related standards for better security and privacy practices. By sharing the results of my research with the community and providing expert views, not only have I collaborated with standardisation bodies, but also reached the implementers of these standards (e.g. Google, Apple, Mozilla, and other mobile/IoT vendors).

EU Priorities & Gaps

The DAS WP formed in 2009, I have been collaborating with them since 2015 and the specifications have improved significantly. Due to the growing nature of the sensor technology, there is still a lack of understanding on the properties of more modern sensors, user interaction with sensors and the exact security and privacy implications.

Victoria Menezes Miller

Job Title, Organisation: Director, CONCEPTIVITY Sarl
Country: Switzerland
SDO: W3C

Challenges Addressed

Address the issue of ICT accessibility (specifically standards) for the global community (including people with different ranges of hearing, movement, sight, cognitive ability), the ultimate goal being a direct impact for the EU Digital Single Market which aims at making ICT services and products accessible to everyone through implementation of the EU Directive on Accessibility.

My contribution

I am making a real contribution to European society through my representation in W3C's Web Accessibility Initiative when working on standards, as well as the related W3C WAI EO activities, which cover a global outreach, including Europe. By implementing the EU Directive, millions of people with disabilities in Europe and worldwide will be able to access websites that may have been inaccessible in the past.

EU Priorities & Gaps

ICT accessibility is a requirement for European business, private and public sectors. With the experience and collaboration of international experts in W3C WAI EO WG, working together on standards development, evolution and implementation, the gaps in accessibility from the European perspective can be addressed more effectively through the knowledge gained, the lessons learned and experience of experts in this WG.

Antonis Michalas

Job Title, Organisation: Assistant Professor, Tempere University of Technology
Country: Finland
SDO: ETSI

Challenges Addressed

The use of novel cryptographic encryption schemes will allow us to improve data security without compromising usability or with an improved usability compared to existing data protection and secure sharing schemes. The proposed activity has a high potential to influence the research community in the field of eHealth and cloud security as well as industry in the healthcare sector.

My contribution

I have studied and analysed the existing works that have been done regarding standardisation activities in the Health ICT domain. More precisely, this study mainly focused on aspects related to the security and privacy of eHealth records as well as on the emerging problem of cross-border data sharing within EU. I have focused on the problem of medical devices security and more precisely on how to perform an integrity check without the need of a specific hardware.

EU Priorities & Gaps

Standardising such a solution can become a powerful enabler for telemedicine since it will allow patients and healthcare professionals to obtain trustworthiness assertions about the devices in use, prior to a telemedicine session.

Mark Miller

Job Title, Organisation: CEO, CONCEPTIVITY Sarl
Country: Switzerland
SDO: ECSO

Challenges Addressed

ECSO Working Group 1 (Cybersecurity Standards / Certification / Supply Chain) intends to provide recommendations to develop the framework of standards for cybersecurity certification in Europe. The objective is to contribute to the development of a harmonised approach toward certification across Europe.

My contribution

I have actively participated in the following meetings: ECSO WG 1 - Cybersecurity Standardisation, Certification, Labelling and Supply Chain, ECSO WG 2 - International Cooperation, ECSO WG 3 - Sectoral, ECSO WG 4, ECSO WG 5 - Educational and HR Standards for Cyber Professionals, and ECSO WG 6 - Strategic Research and Innovation Agenda, ECSO Board of Directors and the Cybersecurity Public Private Partnership Board of Directors.

EU Priorities & Gaps

Multiple ICT standards / certification in cybersecurity and network and information security, since the intention is to look at both harmonisation of standards and certification across the EU so as to address the fragmentation of the European cybersecurity and digital markets. One of the primary goals is to increase competitiveness of the European cybersecurity industry, by contributing to the implementation of a European wide certification framework through active participation in the work of ECSO WG1, ENISA and CEN/CENELEC.

Robert Mueller

Job Title, Organisation: Freelance IT Consultant
Country: Germany
SDO: ISO/IEC

Challenges Addressed

Expert contribution to inter-industry standardisation has declined in recent years. ISO standards are essential in the smart card and biometrics industries to enable interoperability, security, privacy. I was therefore invited to contribute and bring the standards forward in technical areas where I was professionally engaged before.

My contribution

Develop Amendment to ISO/IEC 17839-2:2015, Biometric System-on-Card Physical Characteristics in the role of the editor. This amendment went through national body comments and was promoted to PDAM status. Publication target is November 2020. Create a working draft for ISO/IEC 39794-2 Extensible biometric data interchange formats. Finger minutiae as editor. This was promoted to committee draft.

EU Priorities & Gaps

Biometric smart cards are an important technology where EU countries are leading in development and deployment. Standardisation is essential to bring this solution forward while improving security and privacy for citizens. The typical cycle to develop and publish an international standard is 3-4 years. It is therefore strongly recommended to extend this funding programme.

Abdelkrim Nehari

Job Title, Organisation: Director of IT & Operations, INCERT GIE
Country: Luxembourg
SDO: ISO

Challenges Addressed

The ICAO NTWG requested to SC17 to the development of a standard for the issuance of travel credentials in a digital format in the form of DTC that is meant to temporarily or permanently substitute a conventional passport or any travel document by digital representation of the traveler's identity.

My contribution

The main aspects of my ISO standardisation activities were to contribute ISO standards from digital identity domains, and defend European and national interests by submitting contributions and reaching consensus with others experts..

EU Priorities & Gaps

MRTD standards (developed by SC17 WG3) are considered by the European Commission as a common layer to be referenced in EU Commission implementing decisions related to travel documents (residence permits and passports). As part of the Digital Single Market, some European projects have to be supported in order to become standards.

Marko Niemimaa

Job Title, Organisation: Assistant Professor, University of Jyvaskyla
Country: Finland
SDO: ISO

Challenges Addressed

The well-being of organisations and individuals in Europe depend on information that is securely stored, processed and transmitted. As the security management standards are broadly applicable to any sector or organisation, the impact on European organisations and societies is significant. It is imperative to have strong EU representation in standardisation to ensure that the views of European organisations are taken into account.

My contribution

Influencing the ISO 27000 - family standards (ISO 27001, 27002, 27005), which has significant organisational and societal implications. All these three core standards are in the revision process. The proposed activity on information security management standardisation helped create the foundations for the secure management of information.

EU Priorities & Gaps

ISO 27001, 27002, and 27005 already exist. Thus, the standardisation activities are not addressing a gap per se, but it is important to review existing standardisation to meet the needs of our internetworked world, where new cybersecurity and information security issues emerge on a daily basis. As the current versions of the standards have been adopted as European standards, it is expected that the revised version will also be adopted.

Pascal Paillier

Job Title, Organisation: Senior Security Expert, CryptoExperts
Country: France
SDO: ISO

Challenges Addressed

HE and ABUEA technologies are the object of this standardisation. In ABUEA, the user will only reveal partial information about their attributes instead of their full identity. Technologies like OpenID Connect already provide this feature but only with partial anonymity guarantees, whereas ABUEA is unbreakable in nature. The adoption of these techniques will enforce the data sovereignty principle technically, not just legally with current systems.

My contribution

I have helped standardise security and privacy requirements, so that any particular implementation must fulfil them before being incorporated in authentication services.

EU Priorities & Gaps

Preserving privacy while enabling the same cloud services that we all enjoy every day is very intricate, and the European industry is lacking examples of mechanisms that reconcile these 2 goals. EU industry will not invest in them nor deploy them unless future-proof specifications are standardised. Finalising and publishing ISO/IEC 18033-6 and 27551 standards will eventually unlock a big potential for the EU security industry.

Aljosa Pasic

Job Title, Organisation: Technology Transfer Director, Atos Spain
Country: Spain
SDO: ISO

Challenges Addressed

Identity assurance, a term that often includes or refers to identity proofing and verification, is increasingly offered as a service. These identity assurance providers use various ways to address levels of assurance (LoA), given that the proofing and verification they might be using, rely on biometrics, machine readable data from the card, attributes stored on e-ID, or some combination of the above.

My contribution

Terms of Reference for a Study Period "Use cases for identity assurance" have been updated. The objective of this study is to compile a set of business use cases that require identity assurance, which later influence the review of TS 29003 (probably triggered next year), the alignment of ISO/IEC 29115, and maybe even the future Identity Assurance framework International Standard.

EU Priorities & Gaps

Identity assurance or identity proofing and verification providers are at the same time the relying party for "notified" identity providers (in eIDAS terminology), but also act as (verified) identity provider for home country services. They use different LoA in EU member states, which is sometimes difficult to map to eIDAS defined LoA.

Henrich C. Pöhls

Job Title, Organisation: IT Security Researcher, University of Passau
Country: Germany
SDO: ISO

Challenges Addressed

Modern cryptography offers mechanisms for generating digital signatures that allow subsequent data-protection-compliant deletion (redaction) of parts of the signed data. While practically usable, academic works deviate in terminology and in their security properties. Standardising terminology, security properties and actual mechanisms for "Redaction of authentic data" was the main challenge.

My contribution

I am co-authoring two new standards: ISO/IEC 23264 Part 1 on terminology and security properties, and Part 2 on mechanisms based on asymmetric cryptography. Both started as new standards, but advanced through the various stages and may become published in 2021. The working group on cryptography for new projects like the "redaction of authentic data" needs at least 3-4 years for all stages.

EU Priorities & Gaps

GDPR's principle of data minimisation can be upheld without destroying integrity protection. If data was only signed with a classic signature any removal of sensitive data destroys the remaining data's integrity. With secure redactable signature schemes as proposed in the standard, the EU can enforce its high privacy goals and removal is encouraged as it keeps the security protection of data integrity.

Benoit Poletti

Job Title, Organisation: CEO, INCERT GIE
Country: Luxembourg
SDO: ISO/IEC

Challenges Addressed

Contribute to standards in cybersecurity. I took this one by being editor of three different documents, in all WGs, and by leading the Luxembourgish delegation in SC27, relaying experts' contributions and ensuring consensus over their acceptance. This last point helped me in my second challenge, which was to defend national and European interest.

My contribution

I edited three different ISO documents in three different WGs in SC27, including all the work around it (revised text, editing sessions preparation, disposition of comments, etc.). Moreover, I led the Luxembourgish delegation at each bi-annual SC27 meeting, meaning collecting all the experts' contributions and planning the involvement of each of the attending experts.

EU Priorities & Gaps

European norms are known worldwide, although ISO standards remain the point of reference for information security management systems, cryptography and cloud security. European interests are a priority, which is why adding a European perspective in ISO standards, in particular in the cited domains (including IoT, 5G, AI, etc.), is of paramount importance.

Gaëtan Pradel

Job Title, Organisation: Cryptology and IT Security Officer, INCERT GIE
Country: Luxembourg
SDO: ISO/IEC

Challenges Addressed

The main challenge was to provide expertise in cryptography, in particular for the standardisation process of primitives used in security protocols. I had to initiate the standardisation processes of hot new topics: Quantum Key Distribution and Security in connected vehicles. The most important goal for me was to ensure durable cryptography as a foundation for large-scale cybersecurity.

My contribution

I have led the editing sessions of four standards in WG2 on non-repudiation, time-stamping services and encryption algorithm. I also made contributions to different projects in WG2. In WG3, I took part in the editing session on Quantum Key Distribution as co-editor, and on connected vehicles as co-rapporteur. Finally, I have participated in all votes happening in WG2.

EU Priorities & Gaps

European global strategy on cybersecurity focuses on security and privacy of data and the associated owners. These purposes need genuineness in ICT security techniques which cannot be obtained without trust in the standardisation process. Besides, the large-scale impact of ISO shall be used to give more credibility in an international landscape and perspective in terms of expertise in cybersecurity from Europe.

Cybersecurity

Jose Manuel Pulido Carrillo

Job Title, Organisation: Cybersecurity Consultant, JTSEC BEYOND IT SECURITY
Country: Spain
SDO: ISO/IEC

Challenges Addressed

I have participated in the study period for the application of ISO/IEC 15408 to cybersecurity evaluation of connected vehicles. Common Criteria is the most widely used standard for cybersecurity certification but the problem of connected or smart vehicles is complex and ISO/IEC 15408 is not easily applicable to it. It was necessary to study the problems of its application and design solutions.

My contribution

My participation in the study period consisted in performing a technical analysis of the problem that led to a list of security requirements modelled with the tools and terminology of ISO/IEC 15408. Then I analysed the possible approaches for applying that ISO to this problem, proposing a different solution based in Protection Profiles. Several existing approaches were also discussed.

EU Priorities & Gaps

The growing market of connected vehicles requires the application of a standard that guarantees cybersecurity resilience of smart cars and the infrastructure used for their intercommunication. It is crucial to enable the assurance of their cybersecurity because it affects safety of the drivers and occupants. The study period served to analyse and propose models for application of ISO/IEC 15408.

Jean-Pierre Quemard

Job Title, Organisation: CEO, KAT
Country: France
SDO: ETSI, CEN/CENLEC, ISO/IEC

Challenges Addressed

Certification of products, solutions and services in the frame of the Cybersecurity Act regulations. Certification of industrial automated control systems. Standardisation work has to be made in that domain in particular to improve interoperability, efficiency and resilience to cyber-attacks in Europe, and also create a significant competitive advantage for industry.

My contribution

StandICT.eu project has been a great opportunity to contribute to standardisation bodies and in particular attend meetings to make contributions and participate in discussions with international experts. Some examples: comments on EN 303-645, Proposal of a NWI to CEN-CENELEC JTC13/WG3.

EU Priorities & Gaps

The implementation of the Cybersecurity Act will require the development of standards to support the European certification framework. Up to now, only Sog-IS scheme has started. Hence, there is still a lot to do in particular in lightweight certification, which represents the main part of the market.

Mirko Ross

Job Title, Organisation: CEO, asvin Gmbh
Country: Germany
SDO: IEEE

Challenges Addressed

Security in the Internet of Things (IoT) is a key pillar towards European cybersecurity. New technologies like Distributed Ledger (DLT) and Blockchain are evolving rapidly and have the potential to enhance IoT Cybersecurity strategies. The acceleration in IoT DLT technologies requires more and more standardisation efforts to provide interoperability of IoT cybersecurity solutions.

My contribution

Following efforts of IEEE P2418.1 - Standard for the Framework of Blockchain Use in Internet of Things (IoT) and discuss the Standard in European DLT ecosystem in the AIOTI DLT Working Group: review of the AIOTI publication "DLT/Blockchain and GDPR - best practice", Co-Chair of the DLT Working-Group, contributing discussions at Events such as Open Energy Marketplaces Workshop Brussels and IoT Week.

EU Priorities & Gaps

DLT and Blockchain are relatively young technologies, with high speed development cycles. A large part of the developer community is not collaborating with standardisation bodies (or does not know how to participate), consequently harming the interoperability of DLT.

Jose Franciso Ruiz Gualda

Job Title, Organisation: CTO, jtsec Beyond IT Security
Country: Spain
SDO: CEN/CENELEC

Challenges Addressed

Creation of a cybersecurity evaluation methodology for ICT products within the CEN/CLC JTC 13/WG 3. This methodology will address the needs in relation to the European Cybersecurity Act allowing new certification schemes to use a common evaluation methodology easing the adoption new schemes. This will also help avoid fragmentation across Europe.

My contribution

I have contributed during the study period with several reports. The main one is related to the comparison between the different national schemes. Moreover, I have been preliminary named as editor of the project and have contributed to the creation of the new project called "cybersecurity evaluation methodology for ICT products".

EU Priorities & Gaps

The EU needs a common lightweight certification that will end the current fragmentation. Moreover, good evaluation methodologies are the basis for having strong schemes for different verticals to meet market needs. The EU should invest in standardisation to avoid that the absence of standards slows down the adoption of the Cybersecurity Act.

Cybersecurity

Markus Sabadello

Job Title, Organisation: Founder, Danube Tech
Country: Austria
SDO: W3C

Challenges Addressed

Both blockchain/DLT and digital identity are very hot topics, with new start-ups and initiatives appearing every day. Decentralised Identifiers (DIDs) are the core element of the emerging Self-Sovereign Identity (SSI) community. It is critical to standardise DIDs to promote diversity and interoperability.

My contribution

DIDs are a new type of self-sovereign identifiers for the Internet. In 2019, a W3C Working Group was formed and the standardisation process began. The objective is to arrive at a W3C Recommendation, ready for implementation on a broad scale. As the only European author of the DID specification, I have played a leading role in the development of the standard.

EU Priorities & Gaps

DIDs are an important foundation for the Next Generation Internet as a fundamental value of the Digital Single Market and will likely also play an important role in EU initiatives such as ICT-24-2018 or ICT-13-2018-2019. Concrete PoCs that use DIDs are already happening around Europe. They will likely be integrated with existing data formats and protocols as well as give rise to new Internet protocols for decentralised identity, data sharing, and messaging.

Raul Sanchez-Reillo

Job Title, Organisation: Professor, Universidad Carlos III de Madrid
Country: Spain
SDO: ISO/IEC

Challenges Addressed

In WG11 there was the need to update the information in TR 30117 during the revision process, so as to add new standardisation items relevant for the development of solutions that integrate both smartcards and biometrics. In WG2 there was the need to provide a new specification to the ISO/IEC 30108 (i.e. Biometric Identity Assurance Services), which includes the implementation using REST.

My contribution

In WG11, huge contributions including the change of title and scope, approved in the last WG11 meeting and SC17 Plenary. The revision of TR30117 has advanced to PDTR. In WG2 several contributions have been made, and also the consolidation of those contributions with the ones received from other WG2 experts. The WD is expected to be promoted to CD in January 2020.

EU Priorities & Gaps

Helping the implementation of reliable identification solutions that will improve the acceptability and privacy of end-users, and in particular the citizens targeted by those solutions. Also, EU companies and administrations will benefit from being able to implement this kind of solutions in a robust and trustable manner.

Steffen Schwalm

Job Title, Organisation: Principal, MSG Group
Country: Germany
SDO: ISO
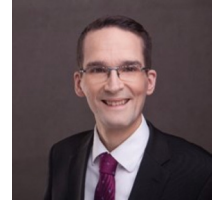
Challenges Addressed

Utilisation of blockchain & DLT for trustworthy digital transactions that must be proven by trustworthy third parties, requirements on records management in DLT, solutions for security issues like rehashing, Proof of Existence and privacy, secure digital identities and long-term preservation in DLT.

My contribution

Delivery of Full Working Draft for ISO TR 24332 as Convenor in TC 46 Sc 11.

EU Priorities & Gaps

Priorities: eIDAS - and GDPR - Compliance of DLT, combination of DLT with secure digital identities and trust services according to eIDAS to ensure trustworthy and reliable digital transactions based on DLT in all DLT-Trust models. Gaps: specification of technical standards for eSignature based on native DLT, rehashing, PoE as well as termination of QTSP providing eSignature based on DLT-Token.

Oscar Serrano

Job Title, Organisation: Senior Scientist, NATO Communications and Information Agency
Country: Netherlands
SDO: OASIS

Challenges Addressed

The need for more fluent cybersecurity information sharing has been recognised for years as a major requirement by the cybersecurity community. Information sharing at present is mostly a slow, inefficient, and manual process that in many cases uses non-structured data sources. Since June of 2015, the CTI TC has been working to create the next generation of STIX and TAXII, with a view to solving these problems.

My contribution

The OASIS Cyber Threat Intelligence (CTI) TC was chartered to define a set of information representations and protocols to meet the need to model, analyse, and share cyber threat intelligence. I have taken part in the STIX and TAXII Subcommittees, where STIX is the one where I focus my work. As a result, in 2019 we have been able to release STIX 2.1 and TAXII 2.1.

EU Priorities & Gaps

The OASIS standards under the development by the CTI TC support the implementation of "The Directive on security of network and information systems (NIS Directive)": supporting the implementation of articles 7, 8, 9, 10, 11 and 13. In these cases, "the preference would be to share data using a format and transfer function as defined for STIX/TAXII/CyBOX ratified within a European SDO".

Cybersecurity

Christophe Stenuit

Job Title, Organisation: Enterprise Security & Infrastructure Architect, Transport service
Country: Belgium
SDO: ISO/IEC

Challenges Addressed

Develop principles and rules for organisations involved with online privacy notices and consent collection. Clarify contexts in which the activity is carried out and establish monitoring processes for PII (personally identifiable information) controllers or any entity processing PII. Recommend that organisations processing PII in online services adhere to controls, or justify the reasons why not to adhere to controls. Suggest how the implementation of these controls can be verified and validated.

My contribution

I have contributed to a better e-privacy control in Europe while supporting other developments on privacy management and conditions for collecting and processing PII, helping the implementation of European GDPR. I have also contributed to controlling e-privacy with growing inter-connectivity and powerful information processing capabilities of wide-ranging information, including PII.

EU Priorities & Gaps

The activity is linked to the development of standards coordinated under SDO ISO/IEC JTC1 SC27 on IT security techniques and within the working group 5 dedicated to identity and privacy technologies. The work item will positively influence the European market by benefiting from international contributions for controlling e-privacy of online services. This activity has helped the DPO (Data Privacy Officer) with governance and requirements for evaluating e-privacy control performance.

Ewelina Szcekocka

Job Title, Organisation: Expert R&D, POLSKI KOMITET NORMALIZACYJNY
Country: Poland
SDO: ISO/IEC, IEC

Challenges Addressed

Representing the European perspective on ICT standards development, having in mind reaching consensus (based on equality of all participants). In particular, taking care of personal data protection (according to GDPR) as well as rules regarding the flow of non-personal data.

My contribution

Involvement in elaboration within the ISO/IEC JTC1 SC38 standards: ISO/IEC 17788 (Cloud Computing Vocabulary), ISO/IEC 17789 (Cloud Computing Functional Architecture), ISO/IEC 19944 (Cloud services and devices: Data flow, data categories and data use), ISO/IEC 19086-1 to 4 (standards concerning SLAs for cloud services). Involvement in CEN/CENELEC Cybersecurity and Data Protection works.

EU Priorities & Gaps

A main goal arising from EU Priorities as well as gaps identified is to take care of the relevance of international standards for European market specifics, as well as legal regulations concerning data protection of citizens (GDPR perspective) and regulations of non-personal data flow, enabling the development of EU market.

Michal Tabor

Job Title, Organisation: Partner, Obserwatorium.biz
Country: Poland
SDO: ETSI-ESI

Challenges Addressed

Secure communication based on Qualified Certificates between Credit institutions (banks) and Payment Service Providers (Third Party Providers) with compliance to PSD2 and its delegated acts. Standard covering common recognition of the certificate and processes covering issuance and revocation.

My contribution

Drafting and maintenance of the standard ETSI TS 119 495. Qualified Certificate Profiles and TSP Policy Requirements under PSD2. I also took part in the activities of the banking industry groups and banking sector supervisory organisations, and made contributions to the ETSI ESI based on feedback from those groups.

EU Priorities & Gaps

Implementation of the Payment Service Directive (PSD2) is one of the priorities of the EU to allow access to banking services through third party services. Common recognition of all banks and all TTS licensed in Europe was a huge challenge, which was addressed by eIDAS qualified certificates. ETSI TS 119495 creates a common profile to recognise all licensed bodies.

Javier Jesús Tallón Guerri

Job Title, Organisation: Technical Director, jtsec Beyond IT Security
Country: Spain
SDO: ISO

Challenges Addressed

The "time to market" has become dramatically shorter in recent years. Hence, certifications need adapting so they take this into account. When a vulnerability is discovered and a product that holds a certification like Common Criteria is updated to patch it, the certificate is no longer valid. This way, we are forcing end users to choose between the certified version and the secure version.

My contribution

Patch management was a hot topic at ISO SC 27. During the last study period, several presentations were carried out about this topic, but it was considered too difficult to accomplish something on this scale in a reasonable time. We have achieved the reopening of a new study period focusing on efforts in guaranteeing that security patches are deployed using a methodology that holds the benefits of certification.

EU Priorities & Gaps

Having a patch management certified methodology will ensure providing a fast and efficient way for the industry to provide certified security updates in a timely and responsive manner, increasing competitiveness. As a side effect this will improve the security of citizens, for example, when using smartcard devices through their electronic identity cards and banking cards.

Cybersecurity

Nick Telford-Reed

Job Title, Organisation: Managing Director, Stormglass Consulting Ltd
Country: United Kingdom
SDO: W3C, ERCIM

Challenges Addressed

A better checkout experience for users, particularly on mobile devices. Streamlined payment flow, which is expected to reduce the percentage of transactions abandoned prior to completion ("shopping cart abandonment"). Easier adoption of payment tools (e.g., related to security) or new payment instruments. Improved authentication for payment system users.

My contribution

Chairing the working group and its task forces, bringing together representatives from more than 70 organisations, including two face-to-face sessions (in California and in Japan), and more than 30 other remote working group meetings. The role of the chair is critical in bridging the gap between browser vendors (like Google, Apple, Mozilla, Samsung), payment industry bodies, and schemes.

EU Priorities & Gaps

Enhanced user experiences for online payment accompanied by better accessibility for service users. Improved access to "push" payment methods like direct credit transfer (such as SEPA). Increased opportunity for strong authentication of payment users. Improved opportunities for competition in payment methods.

Ehsan Toreini

Job Title, Organisation: Research Associate, Newcastle University
Country: United Kingdom
SDO: W3C, ERCIM

Challenges Addressed

The aim of this proposal was to help me take part in and influence the W3C standardisation community on the security and privacy aspects of web-based sensor access. I managed to highlight my point of view to the stakeholders and take part in their discussions, ensuring that they consider security and privacy as a serious component of their standardisation documents.

My contribution

My contributions are implemented in the standardisation draft of W3C sensor document. However, other security and privacy aspects of the standard are addressed in on-going discussions in "the Device and Sensor Working Group" communications, which is publicly available on their GitHub page.

EU Priorities & Gaps

The security aspects of web-based sensor technologies are not fully covered due to dramatic improvements in sensor technologies. We must continue the collaborations to help industry develop a better perspective on secure design and architecture in the future. Such contributions have a direct impact on IoT security aspects as well.

Alpo Värri

Job Title, Organisation: Research Director, Tampere University
Country: Finland
SDO/WG: ISO/TC215, CEN/TC251, IEEE 11073

Challenges Addressed

Healthcare organisations are being attacked by criminals who want to get access to protected private (health) information, blackmail the organisations for ransom money or cause other harm. ISO/TC215 wants to create standards which make it harder to penetrate health information systems. These standards cover manufacturers and hospital organisations.

My contribution

I am involved in a couple of standardisation projects within ISO/TC215 aimed at addressing these problems. The ISO 80001 series is about risk management of IT networks incorporating medical devices. The ISO/IEC 62304 Ed. 2 software development life cycle process standard project brings the 2006 version up to date concerning cybersecurity.

EU Priorities & Gaps

The EU has identified the need to improve cybersecurity and resilience across Europe and many market sectors, including healthcare delivery. Existing standards have not covered current cybersecurity issues sufficiently, and improvements were needed. The standards will mostly be global here, but they have to be confirmed as European standards as well.

Gerard Vidal

Job Title, Organisation: Chief Scientific Officer, Enigmedia
Country: Spain
SDO/WG: ISO/IEC

Challenges Addressed

Establish consensus on the criteria for the submission of cryptographic mechanisms to be included in ISO/IEC. Determine which systems are becoming obsolete and work on which amendments must be made to the current security mechanisms, in order for them to be considered completely safe.

My contribution

I have harmonised all the criteria that technology must comply with to consider a standard as correct. I have defined the SD12 rules. Both actions are targeted at bringing cybersecurity capabilities to the same level of development in all the EU Member States, ensuring that exchanges of information are efficient.

EU Priorities & Gaps

Today, EU standardisation bodies are discussing the new security standards within the Union, based on ISO directives. Monitoring and accessing the details of these new standards, and the discussions around them, will better position EU on the global cybersecurity stage.

Jens Kristian Villadsen

Job Title, Organisation: Board Chairman, HL7 Denmark
Country: Denmark
SDO/WG: HL7

Challenges Addressed

The first cross Nordic health cooperative involving FHIR marked a major step in helping all participants achieve the goal of harmonising data models across Nordic countries. Participants were able to express in which ways the Nordic healthcare data models differ from the rest of the European healthcare data models.

My contribution

The funds received enabled me to meet other specialists and SDOs to share knowledge about how data is best shared across the healthcare domain. If applicable, this shared work will also help other European SDOs in their continuous effort of making healthcare data seamlessly available when needed across different systems.

EU Priorities & Gaps

Addressing the fundamental priority of healthcare interoperability standardisation.

Jean-Pierre Villain

Job Title, Organisation: Senior Digital Accessibility Expert, Access42
Country: France
SDO/WG: W3C

Challenges Addressed

The W3C Accessibility Guidelines Working Group (AGWG) aims at developing guidelines to make Web content accessible for people with disabilities, as well as developing implementation support materials for the Web Content Accessibility Guidelines.

My contribution

I have participated in writing the standards that will make it possible to generate accessible web content, as well as to evaluate its compliance. This is of prime importance for the EU, which must guarantee all citizens full access to information and equivalent citizen participation.

EU Priorities & Gaps

Accessibility requirements for public procurement of ICT products and services in Europe.

Lionel Vodzislawsky

Job Title, Organisation: Independent Cybersecurity Consultant
Country: France
SDO/WG: ISO/IEC

Challenges Addressed

Avoid duplication of work between the ISO/IEC level and at the European level, for several reasons (efficiency, interoperability, compliance with the Vienna Agreement); ensure strong European participation in the work of SC27, next to the strong participation from US, China, and Japan.

My contribution

I have made contributions to the following international standards: 27002 (security controls), 27005 (information security risk management), 27031 (ICT readiness for business continuity), 27035 (information security incident management), 27701 (extension to ISO/IEC 27001 and ISO/IEC 27002 for privacy information management, published in August 2019).

EU Priorities & Gaps

The standards produced by ISO/IEC JTC1 SC27 are one of the main entry points of the work done at the European level through CEN/CENELEC JTC13 and ETSI TC CYBER. Many SC27 standards have already been adopted and will be adopted as European Standards (EN). For example, ISO/IEC 27701, published in August 2019, is about to be adopted as an EN.

Matthias Waehlisch

Job Title, Organisation: Junior Professor, Freie Universität Berlin
Country: Germany
SDO/WG: IETF

Challenges Addressed

Improving security, reliability, and efficiency of current and upcoming Internet communication.

My contribution

I have contributed to technical specifications, the analysis of current deployment, and open source software (such as RIOT or RTRlib).

EU Priorities & Gaps

The Internet is a continuous changing system. Exploring and defining sound standards that power communication need time and financial support for the stakeholders. In particular, researchers lack such backing. StandICT.eu is an excellent example how to improve this situation. We should continue this activity.

Cybersecurity

Jacqueline Zoest

Job Title, Organisation: Barrister specialising in Cybersecurity, Campbell Millar
Country: United Kingdom
SDO/WG: ISO

Challenges Addressed

The provision of a standard for incorporating 'privacy by design' into the development process of internet-connected consumer goods and services to enhance privacy protection for consumers in the context of IoT.

My contribution

Produced an international standard to assist ICT and other IoT developers incorporating 'privacy by design' into the development process in relation to ISO PC317/AHG1. The need for this standard was identified by consumer organisations and reflects consumer concerns surrounding privacy/security of IoT.

EU Priorities & Gaps

Internet of Things, Privacy and Cybersecurity. The new standard aims to provide high-level requirements and key principles for design processes that protect privacy throughout the lifecycles of consumer goods and services. This proposed standard has been approved because of a gap that was identified in existing European and International Standards concerning 'privacy by design'.

Cybersecurity

Expert contributions in the field of Data

Amelia Andersdotter

Job Title, Organisation: Technical consultant, Article 19
Country: Belgium
SDO/WG: ISO, ANEC

Challenges Addressed

Ensure representation of European consumer interests in developing a privacy-by-design standard for goods and services. Compliance with the standard should allow users to make purchases and use services trusting that privacy is taken into account at all levels of the value chain, with no risk of fraud or other forms of privacy invasions or breaches resulting from lost, stolen or mismanaged personal data.

My contribution

I have reviewed the amendments tabled by other delegations on the structure and language of WD1. In the Toronto meeting I defended the joint amendments of Consumer's international and ANEC on WD1, which were aimed at preserving some aspects of WD1. UK and US delegations in the end converged around a new document structure which was accepted by Canada and Germany. The Committee Chair produced a principles document quickly, with more detailed requirements in sub-standards to follow.

EU Priorities & Gaps

Europe has to be a frontrunner in the development of an international standard on privacy-by-design. ISO/PC 317 is an opportunity to develop a standard based on European data protection principles, covering the entire value chain and life cycle of a product. With GDPR now in effect, there is a need to create international guidelines for ensuring consumer privacy is embedded in the design of a product or service. Preventative guidelines should help companies to comply with GDPR and thus avoid major breaches.

Claus Amtrup Andersen

Job Title, Organisation: Manager, EURISCO
Country: Denmark
SDO/WG: IEC

Challenges Addressed

Harmonisation of standards between IEC TC57 (power system management) and IEC TC69 (E-mobility charging infrastructure) was addressed. Electric Vehicles are one of the sources for flexible loads, but also a very challenging one, due to the unpredictable load patterns. When, Where and How much it will charge.

My contribution

The main contribution from my side, has been to participate as an active member and contributor for both IEC TC57 WG17 and TC69 JWG11 – specifically for issues that have cross domain relevance. As an example, a SGAM (Smart Grid Architectural Model) was developed and harmonised in both groups. One of the main contributions of my work was the development of an information model (www.iec63110.dk).

EU Priorities & Gaps

One of the main priorities that I would like to highlight, is the need for coordination between European R&I projects and international standardisation. Some of the best contributions to international standardisation work that I have experienced over more than 15 years in this field have come from EU-funded R&I projects, which had a clear goal and scope for contributions to IEC standardisation.

Data

Peter Baumann

Job Title, Organisation: Full Professor of Computer Science, Jacobs University Bremen
Country: Germany
SDO/WG: ISO/IEC

Challenges Addressed

The objective was to continue the immensely successful standardisation work conducted in EU H2020 EarthServer 1 and 2, which "with no doubt has been shaping the Big Earth Data landscape" (EC). This work has focused on a key Big Data technology: datacubes.

My contribution

Funding this activity allowed for travelling to selected meetings for discussion, presentation of specs, and work on adoption in ISO, Open Geospatial Consortium (OGC), and INSPIRE (the European legal framework for a homogenised spatial data infrastructure). Altogether, this extended the European impact in a critical emerging Big Data sector.

EU Priorities & Gaps

The proposed standardisation activity to advance the state of standards in the field of Big Data and emphasise Europe's contribution in the currently driving bodies (OGC, ISO, INSPIRE).

Oriol Bausa Peris

Job Title, Organisation: CEO, Invinet Sistemes
Country: Spain
SDO/WG: OASIS

Challenges Addressed

In Europe, pre-award has strict rules according to legislation. These rules shall be derived into requirements, that need to be taken into account by standards organisations such as OASIS, and specially for the Universal Business Language Technical Committee (UBL TC) when creating the new set of electronic documents for B2B and B2G. The challenge for this action has been to ensure the EC requirements were included in the new release of UBL TC.

My contribution

My contribution was to work within the UBL TC and the Pre-award Subcommittee (SC) to ensure the requirements from the EC, and specifically from the Publications Offices were added to the Pre-award document models. The work included participating in conference calls, solving issues, drafting models, and travelling to Copenhagen for the F2F meeting where the UBL 2.3 comments were addressed.

EU Priorities & Gaps

EN 16931 on e-Invoicing uses UBL as one of its two syntaxes and the new version of UBL will include also pre-award documents. The action will ensure the consistent use of the UBL document models for the European Commission in the notification and tendering phases for e-Procurement, as they have been implemented for e-Invoicing, having a similar set of document models for the whole eProcurement area.

Data

Shakira Maria Bedoya Sanchez

Job Title, Organisation: Senior Analyst, Danske Bank
Country: Denmark
SDO/WG: ISO

Challenges Addressed

The nexus between Robotic Process Automation and Risk Management and Finance is yet to be comprehensively addressed by ISO standards. My work has assessed potentials and pitfalls of introducing robotic process automation from the perspective of financial risk management. I contributed to the development of standards through the lenses of inter-sectional frictions and emerging solutions.

My contribution

Input at the Joint Working Group 1 "Emerging risk" 31050 and Input to ISO/TC 68 (Financial Services) Best Practices ISO 200022. Participation in the ISO/TC 292 Plenary meeting in Bangkok specifically on ISO 22301 (completed); ISO 22332 and ISO 22317.

EU Priorities & Gaps

One the most pressing issues is the lack of alignment between ISO technical committees that engage in topics related to automation, risk management and financial services. Priorities should include fostering cooperation between committees and the inclusion of technical experts that could potentially develop standards in several interconnected areas.

Arne Berre

Job Title, Organisation: CRS, SINTEF
Country: Norway
SDO/WG: ISO/IEC

Challenges Addressed

The objective of the ISO/IEC JTC1/SG6 Meta Reference Architecture workshop was to gather editors of standards related to reference architectures (RA).

My contribution

My participation in the ISO/IEC JTC1/SG6 Meta Reference Architecture work, with a basis in the European BDVA Reference Model and AIOTI HLA Reference Model harmonisation contributed to enhancing the impact of these approaches in the future international ISO/IEC JTC1/SG6 Meta Reference Architecture results.

EU Priorities & Gaps

The creation of a community of interest among RA related standards editors, increased consensus on the workshop topics. Draft deliverable D1: Analysis of RA related standards, Draft deliverable D2: Convergent RAs, Draft deliverable D3: Roadmap for convergent RAs.

Andrea Caccia

Job Title, Organisation: Standardisation expert, Studio Caccia
Country: Italy
SDO/WG: ISO/IEC

Challenges Addressed

CEN published EN 16931, a multipart e-Invoicing standard to support B2G and B2B transactions, as required by Directive 2014/55/EU. EN 16931 complies with the VAT directive (limited to EU), however it has been used as a basis e.g. in the US and Australia. The challenge is to "internationalise" the European standard to support different legislative frameworks.

My contribution

My contribution was to prepare a proposal to develop an international standard based on the European one and interface with the most relevant initiatives to support my proposal. I identified ISO/IEC JTC 1/SC 32/WG 1 "eBusiness" as the technical body that can tackle this initiative and I am proposing a study period in order to gather contributions from ISO members and propose a new work item.

EU Priorities & Gaps

The proposed work is in line with the EC priority to make electronic invoicing predominant in EU. The proposed activity fills a gap to allow EU companies to support electronic invoicing in international transactions building on Directive 2014/55/EU and its adoption by all EU public authorities by 2020

Giorgio Cangioli

Job Title, Organisation: Senior Consultant, HL7.Inc
Country: Italy
SDO/WG: ISO

Challenges Addressed

The IPS FHIR-based implementation guide is already a reference for many European projects and initiatives for local and cross-border interoperability. The current eHealth Digital Service Infrastructure under the CEF initiative is looking to the HL7 CDA IPS for its future evolution, as well as some national Patient Summary guides. The SNOMED IPS free set has recently been enhanced with eHDSI specific codes for better supporting European needs.

My contribution

I have raised awareness about the need to explicitly address GDPR requirements, highlighting the impact of the GDPR on the HL7 FHIR standard. I have also provided guidance to implementers about the HL7 FHIR support to the GDPR requirements and underscored the lack of documentation in the HL7 FHIR standard.

EU Priorities & Gaps

The HL7 IPS FHIR and CDA Implementation Guides provides the implementable specifications of the CEN 17269 IPS data set. These standards are a reference for many European projects and initiatives for cross-border and local interoperability. The IPS ecosystem of standards is deemed to be relevant for facilitating secure access to electronic health records for the seamless exchange and use of health data in the EU.
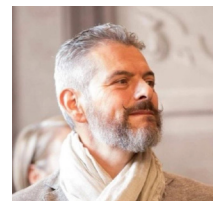
Hakima Chaouchi

Job Title, Organisation: Full Professor of Computer Science, Telecom Sud Paris/ Institut Polytechnique de Paris
Country: France
SDO/WG: ITU

Challenges Addressed

Progress towards harmonised a Data Processing and Management Framework. Work conducted in the ITU-T Study Group 20 on IoT under Focus Group on Data Processing and Management (ITU-T SG20 FG-DPM) has led to the final recommendation document, which can be found on the ITU website. This work covered different aspects, such as IoT and data interoperability, data trust, and the data economy opportunities.

My contribution

Two recommendation documents referenced in ITU-T SG20 FG-DPM. Two presentations of the data processing and management framework requirements and recommendations. Open discussions with ISO, OGC.

EU Priorities & Gaps

In the context of the evolving 5G and beyond, the deployment of IoT for smart cities and the data-based innovations for new services, the EU prioritises building secure, reliable and interoperable solutions. There is a clear standardisation gap in the domain of data sharing, processing and management, and there is a need for standard technological and non-technological solutions.

Oscar Corcho

Job Title, Organisation: Professor, Universidad Politécnica de Madrid
Country: Spain
SDO/WG: W3C/ERCIM

Challenges Addressed

Addressing the lack of standardisation in the open data portals of municipalities in Spain. Data re-users wanting to reutilise data from different municipalities they are forced to adapt their applications or data ingestion pipelines to the specificities and data formats of each municipality, hence reducing opportunities to scale up.

My contribution

My work has focused on supporting existing initiatives for the generation of a catalogue of ontologies that can be used to describe the open data sets that municipalities consider a priority. This work has contributed to many of the GitHub repositories of the OpenCityData initiative (github.com/opencitydata).

EU Priorities & Gaps

The work has contributed to the EU priority on data, especially in the context of Smart Cities. It was based on previous work on standardisation used by the Spanish AENOR organisation for the provision of open data for smart cities.

Marek Domanski

Job Title, Organisation: Professor, Poznan University of Technology, Poznan, Poland
Country: Poland
SDO/WG: ISO/IEC

Challenges Addressed

Efficient video compression for energy reduction by transmission of high-volume video. Today, video traffic is about 80% of all communication traffic and 2-3% of the total energy consumption. Emerging immersive video would result in increased demand for bandwidth and energy. The new standardised technology should reduce this demand.

My contribution

14 contributions to 4 MPEG (ISO/IEC JTC1/SC29/WG11) meetings in 2019 - focused on MPEG-I (immersive video) and JVET (multiview coding). 3 editions of 1 output document. Active participation in all 4 meetings of MPEG in 2019: 125th with JVET, 126th, 127th with SC29, 128th. Preparation of the texts/presentations that promote standardisation.

EU Priorities & Gaps

To become innovative, European industry and academia need people familiar with the latest technologies developed worldwide. MPEG meetings are a window of opportunity in this direction. Nevertheless, benefits are mostly for the active participants. Therefore, it is important to take an active part and to keep track of the standardisation activities of the most advanced ICT technologies.

Erwin Folmer

Job Title, Organisation: Docent, University of Twente and Kadaster
Country: Netherlands
SDO: ISO/IEC

Challenges Addressed

Input to the international ISO/IEC JTC/SC42 Artificial Intelligence Group through participation in the NEN Artificial Intelligence Work Group

My contribution

Within this working group we have focused on technical aspects of AI, but also covered all areas related to society, privacy and legislation.

EU Priorities & Gaps

This work was a perfect match with the key enabler Artificial Intelligence. This area will also contribute to other prioritised topics such as eGovernment, Privacy, eHealth, and others.

Christian Galinski

Job Title, Organisation: Director, International Information Centre for Teminology
Country: Austria
SDO: ISO/IEC, W3C

Challenges Addressed

Laws often refer to standards on accessibility – increasingly on eAccessibility & eInclusion. Assistive technologies (AT) communities with vast experience on manifold individual aspects of human communication (HC) are highly fragmented. Issues around access to standards, even information on standards must be overcome. To this end, it is vital to increase awareness for standards and standardisation amongst AT experts.

My contribution

Spreading results from EU projects concerning eAccessibility & eInclusion, including standardised generic rules for methods, skills, language varieties etc. Stimulating efforts in eBusiness, eHealth, eLearning to improve HC content interoperability and sustainability through standards and coordination of standardisation – e.g. via ITU-ISO-IEC-UN/ECE MoU/MG.

EU Priorities & Gaps

For the sake of eAccessibility & eInclusion, HC modalities beyond spoken and written formats must be integrated and 'content/presentations' of this HC made interoperable, reusable and ready for repurposing across systems and platforms. More AT experts are needed, and more of them should engage in standardisation activities. Standards-based certification schemes, e.g. for AT personnel competences need propagation.
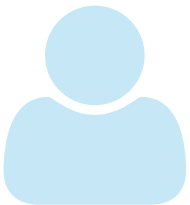
Edmund Gray

Job Title, Organisation: IT Architect, Tubbercurry Software Limited
Country: Ireland
SDO: CEN

Challenges Addressed

Improving interoperability between systems. Development of Core Invoice Usage Specifications (CIUS). Coordinated implementation of e-Invoicing standards between public and private sectors.

My contribution

I have contributed to achieving a European e-Invoice Standard coordination aimed at avoiding conflicting terms of adoption between member states and attaining full interoperability.

EU Priorities & Gaps

Lack of interoperable systems in Europe. Development of an effective Core Invoice Usage Specifications system.

Jonathan Harrod Booth

Job Title, Organisation: Convenor / Managing Director, Harrod Booth Consulting Ltd
Country: United Kingdom
SDO: CEN

Challenges Addressed

As the new convenor of CEN/TC278/WG8, I am responsible for leading progress on the standardisation of the DATEX II (CEN 15167) series of standards which form a fundamental cornerstone of a shared common terminology and means of exchanging data for traffic management purposes across Europe. The DATEX II series of standards is being upgraded to full ENs, and also extended with new Parts.

My contribution

As the new convenor, I have proactively engaged with both WG members and the stakeholder communities to ensure that work items are being progressed, and that stakeholder requirements and concerns are appropriately addressed. The proactive engagement has included participation: the DATEX TMG stakeholder meeting; ISO/TC204/WG9 sister group, and collaboration activities on parking model alignment.

EU Priorities & Gaps

Under the ITS Directive (2010/40/EU), the DATEX II standards form the key technical reference for priority actions (b), (c) and (e). The continued improvement and strengthening of the DATEX II is an important technical baseline for implementation of common services across Europe.

Arnault Ioualalen

Job Title, Organisation: CEO, Numalis
Country: France
SDO: ISO, AFNOR

Challenges Addressed

Assessment of the robustness of neural networks. Currently, we are defining the very first process to assess properly the robustness of a neural network, thus providing guidelines to help every industry adopt this technology.

My contribution

I am the editor of an ISO Technical report on this topic, as well as the editor of the much-awaited international standard that will follow.

EU Priorities & Gaps

This activity is directly aimed at boosting the competitiveness of EU companies of all sizes. The adoption of a neural network is a key step towards allowing the EU market to develop, while in other countries regulation is laxer and may favour businesses instead of public safety.

Witold Jacak

Job Title, Organisation: Prof. dr. habil., Department of Quantum Technologies, Wrocław University of Science and Technology - EITCI Institute
Country: Belgium
SDO: ETSI, ITU, IEEE, IEC

Challenges Addressed

Quantum Random Numbers Generation Standardisation (QRNGS). The main challenge is in supporting quantum technologies roadmapping in the EU Quantum Technology Flagship Program in the area of Quantum Random Numbers Generators (QRNG). Both QKD (Quantum Key Distribution) and QRNG are the most mature and industry-ready quantum technologies. While QKD standards are in development there are no reference drafts and no work groups actively pursuing QRNG standards.

My contribution

Upon grant implementation, 3 request for comments reference QRNG standards documents were drafted in the areas of 1) QRNG definition, key theoretical concepts of true randomness and use cases, 2) QRNG testing and verification schemes (including sustaining secrecy) and 3) QRNG processes, devices and operative parameters with special attention focused on entanglement based QRNGs shared with SDOs.

EU Priorities & Gaps

There is little activity in QIP&C standardisation efforts in the EU. The only institutional effort is by ETSI Industry Specification Group (ETSI KQD ISG), which is working solely on QKD. QRNG standardisation has no dedicated work groups. An identified priority lies in establishing an EU QRNG working group and encouraging expert cooperation using as the starting point the 3 RFC QRNG reference drafts discussion and reiteration.

Pierre-Francois Jullien

Job Title, Organisation: Consultant, Atalane
Country: France
SDO: CEN

Challenges Addressed

Define a standard to exchange construction product data. The proposed standard will establish standardised procedures for construction product data exchanges based on the existing standard EN ISO 16739. This will enable a seamless workflow in the construction industry over the life cycles of the buildings, from the planning phase, over to the building and manufacturing phase and up to the operation phase.

My contribution

Implementing the future standard through the use of the tool ifcdoc. With our standard being a subset of IFC (ISO 16739), it should be documented thanks to ifcdoc. Keeping a technically coordinated approach between our work item and a complementary work item. Coordinating the French CEN team with the French standard body (AFNOR).

EU Priorities & Gaps

EN ISO 16739 (IFC) contains all the necessary components to exchange product data but provides many ways to do so. As a result, its complete implementation by software developers is difficult and interoperability is not achieved. By standardising a subset of EN ISO 16739 dedicated to the exchanges of product data, CEN/TC442/WG2 will ease its implementation and accelerate the deployment of BIM

Robert Kormanak

Job Title, Organisation: Consultant, R.K.C. ltd
Country: Slovakia
SDO: CEN, IEEE, ISO

Challenges Addressed

Adoption of IT standards in national legislation for eGovernment Projects. The application of specific ISO standards relevant for ICT into eGovernment PM Methodology: ISO 20000-1 Service Management System; ISO 27001 Information Security Management System; ISO 12207 Software Life-Cycles Processes; ISO 16085 Risk Management for ICT.

My contribution

Adoption of requirements and recommendations of relevant ICT standards in the Projects Management Methodology for EU IT Projects in Slovakia (eGovernment Projects and Deliverables). Gap analysis of existing rules for IT Projects in Slovakia compared with relevant ISO standards for ICT.

EU Priorities & Gaps

The development of missing national ICT Regulations and eGovernment Regulations in Slovakia on relevant ICT Standards (ISO) and EU Rules. Compliance of national ICT Regulations and eGovernment Regulations in Slovakia with relevant ICT Standards (ISO) and EU Rules

Andreas Kuckartz

Job Title, Organisation: Programme Manager/Project Manager, Stadt Köln
Country: Germany
SDO: W3C Open Government Community

Challenges Addressed

OpenGovLD: The challenge lies in creating a set of state-of-the-art specifications for parliamentary data which can be used globally - first of all by joining forces with other top-class specification projects.

My contribution

Parliamentary data is a part of public sector information and can be made available to everybody in standardised formats. This makes it possible to reuse software for presenting and analysing the data. Using Linked Data technology has made it possible to connect parliamentary data to other topics related to open data.

EU Priorities & Gaps

The research has met the need for a state-of-the-art standard for parliamentary data at the European level

Panos Kudumakis

Job Title, Organisation: Media Research Manager, Queen Mary University of London
Country: United Kingdom
SDO: ISO/IEC

Challenges Addressed

Smart contracts for fair trade of music and media. A standards-based fair and sustainable trade of music and media ecosystem is envisaged, based on widely deployed MPEG technologies (e.g., audio-visual codecs, file formats and streaming protocols), including emerging MPEG IPR Ontologies executed as smart contracts on blockchain environments. Tackling this challenge has the potential to unlock both the semantic web and in turn the creative economy.

My contribution

I have written articles for disseminating MPEG IPR Ontologies developed over the last few years. This has led to the establishment of an MPEG group exploring this challenge: 'From MPEG IPR Ontologies to Smart Contracts and Blockchains', chaired by the author. Achievements include attracting a significant number of industry & academic experts and reviewing first contributions with a publishable working draft is expected in the near future.

EU Priorities & Gaps

Copyright legislation has continuously evolved so that fair, timely and transparent revenues are returned to artists and rights holders, e.g., US Music Modernisation Act and EU Copyright Directive Reform. Meanwhile, several key artists and media companies have turned their hopes for resolving these issues to blockchain, e.g., Open Music Initiative by Berklee in US and Mycelia by Imogen Heap in UK.

Kris McGlinn

Job Title, Organisation: Research Fellow, Trinity College Dublin - Adapt
Country: Ireland
SDO: W3C/ERCIM

Challenges Addressed

Define how building information can best be integrated with other data on the Web; how machines and people can discover that different facts in different datasets relate to the same building. Identify and assess existing methods and tools and then create a set of best practices for their use; complete the standardisation of informal technologies.

My contribution

Through membership of the W3C funded by StandICT.eu, we have put into place all the components necessary for creating a Working Group (WG) for developing a web standard for publishing building data. The Community Group (CG) has a charter, work plan, use case document along with several technical implementations, an ontology and support from several W3C members towards the creation of a WG.

EU Priorities & Gaps

Currently, the main challenge for the delivery of the working group is to have support for academics, to take part in the WG in more than a volunteer basis, and also a strong industrial player willing to take on the challenge of progressing the WG. Several of the CG members are communicating with potential industrial partners, and within the CG there is no shortage of members willing to chair.

Data

Markku Metsamaki

Job Title, Organisation: Project Leader, ISO and CEN
Country: Finland
SDO: ISO/IEC, CEN, CENELEC

Challenges Addressed

EU level government emergency communications biometrics process development. Liaise between emergency communications related European CEN, Europol and biometrics groups. CEN/ISO/IEC/Europol biometrics emergency communications standards harmonised preparation. European emergency communications and public safety related information exchange standardisation.

My contribution

Main contributions as the project leader were significant for the ISO/IEC 39794-16 Information technology -- Extensible biometric data interchange formats -- Part 16: Full body image data, ISO/IEC 39794-17 Information technology -- Extensible biometric data interchange formats -- Part 17: Gait image sequence data, ISO/IEC 24186 Information technology – Full body personal data standards in ISO/IEC.

EU Priorities & Gaps

We need more standardisation in order to harmonize information exchange in emergency communications for human trafficking prevention, disaster victim identification (Interpol DVI) and crime prevention using Europol compatible Disaster Victim Identification data exchange in electronic format.

Radouane Oudrhiri

Job Title, Organisation: CEO, Systonomy Limited
Country: United Kingdom
SDO: ISO
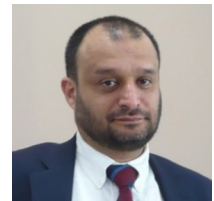
Challenges Addressed

Standardisation of Big Data Science lifecycle management and framework. The development of standard and technical reports will have a wide impact by democratising the underlying technologies and practices. This will accelerate the professionalisation of big data science practices and industry, enhance the applicability and deployability of big data science applications to a wide range of industries and SMEs, and increase the practitioner skills and their employability.

My contribution

Development of a standard and technical reports, providing practical use cases/ guidelines, to practitioners on machine/statistical learning methods and their applications to Big Data science. These standards and reports will accelerate the professionalisation of Big Data science and Analytics.

EU Priorities & Gaps

Standardisation of Data Science lifecycles and architectures. Emphasis on Big Data applications related to verification/validation methods. Standardisation of terminology on learning/modelling methods among software engineering, data science, operational research and AI.

Data

Erlend Øverby

Job Title, Organisation: CEO, Hypatia Learning
Country: Norway
SDO: ISO/IEC

Challenges Addressed

As Chair of ISO/IEC JTC 1 SC 36 Information Technology for Learning Education and Training (ITLET), I am required to participate in ISO/IEC JTC/1 plenaries to represent the committee I chair. As Chair of ISO/IEC JTC 1/SC 36, I am responsible for acting as an international capacity ensuring that the processes of ISO and IEC are met in the development of all standards within the ITLET domain.

My contribution

I have taken part in JTC1 plenaries, representing the view and requirements of ITLET in global standardisation. We have especially argued that there is a global need for a PURL server for hosting identifiers for semantic descriptive elements for global interoperability. We have also worked hard to convince ISO that we need better tools for preparing and maintaining the standards being produced.

EU Priorities & Gaps

Compared to countries in Asia, individuals nominated to leading roles in global standardisation lack the funding and support that some Asian countries receive. This goes for individuals that are Editors of standards, convenors of working groups, and chairs of committees. If the EU wants a more active presence globally, it needs to start recognising and supporting individuals.

Titusz Pan

Job Title, Organisation: CEO, Craft AG
Country: Germany
SDO: ISO

Challenges Addressed

ISCC Content Identifier Standardisation Process. Supporting the new digital content identifier ISCC that has recently been accepted by ISO as a PWI (Preliminary Work Item). The goal was to establish a new standard for algorithmic creation of generic and similarity preserving identifiers for digital media content. The activity has integrated the demands and requirements from stakeholders of various sectors in the media industries.

My contribution

My work has promoted the advantages of a vendor neutral, generic and international digital media identifier standard. A decentralised and widely used content identifier will open up new business opportunities and lower the barriers of entry. It will make it easier for smaller companies and start-ups to enter and efficiently participate in the content ecosystem.

EU Priorities & Gaps

In lack of an international standard and for pragmatic reasons, large corporations have established their own proprietary identifiers to manage content internally and externally. This has created inefficiencies and dependencies, like vendor lock-in. By contrast, ISCC codes support automated content exchange, content deduplication, license management and general interoperability between content management and syndication systems.

Vassilis Papataxiarhis

Job Title, Organisation: Senior Researcher, National and Kapodistrian University of Athens
Country: Greece
SDO: W3C/ERCIM

Challenges Addressed

Extension of the Common Information Sharing Environment (CISE) with Common Integrated Risk Analysis Model (CIRAM). Maritime surveillance and risk analysis for border security are among the EU priorities. Extending the CISE specification to also cover maritime risk analysis will enhance the operational capacity of EU member states in terms of maritime surveillance. It will also allow legacy systems to be easily connected with CISE platform by following existing standards already implemented by Frontex.

My contribution

Extension of the work carried out on the "Common Information Sharing Environment (CISE)" standard, one of the Topic Priorities of the 8th StandICT.eu Open Call. The core mission of CISE specification is to support the EU Maritime Situational Awareness capability through an Information Sharing Environment. I have focused on the extension of existing CISE specifications to the field of maritime risk analysis.

EU Priorities & Gaps

The objective of the Common Integrated Risk Analysis Model (CIRAM) is to establish a conceptual framework to assist Frontex and Member States in the preparation of risk analysis. This is tightly connected with the objectives of the CISE framework for maritime surveillance.

Carlos Luis Parra-Calderon

Job Title, Organisation: Head of Research and Innovation in Biomedical Informatics, Engineering & Health Economy, Virgen del Rocío University Hospital
*Country: Spain*
SDO: ISO, CEN

Challenges Addressed

Improving adherence to treatment plans and supporting integrated care in view of an increasing ageing population and the impact of chronic diseases and polypharmacy, reusing the Electronic Health Record for health research, and supporting decision making by accessing clinical practice guidelines from clinical data.

My contribution

My contributions were to broaden the Snomed clinical terminology to the domain of adherence, to incorporate integrated care into the concepts of ISO 13940 on continuity of care, to extend the functional and interoperability standards of HL7 and CEN to support the reuse of Electronic Health Records for Health Research, and for the interoperability of Clinical Guidelines with clinical data.

EU Priorities & Gaps

Enhanced quality and availability of Health information and Biomedical knowledge to improve health care in the Single Digital Health Market. The gaps are the lack of standards that connect biomedical knowledge with clinical data, the absence of terminological standards in the domain of adherence to treatment and integrated care; and for the reuse of data in health research.

Data
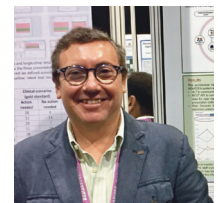
Simon Phipps

Job Title, Organisation: Executive Director, Public Software CIC
Country: United Kingdom
SDO: OASIS

Challenges Addressed

The OpenDocument specification is a substantial and mature standard that was created by industry actors now disinvested in the segment. Maintenance of the full specification has become almost impossible.

My contribution

Public Software CIC worked with The Document Foundation to crowdfund the editing of the ODF 1.3 specification and engaged Francis Cave and Patrick Durusau as editors. The result was the creation and publication of the new ODF specification after a gap of nearly 8 years.

EU Priorities & Gaps

Standards essential to the operation of the European Union, such as ODF, may well become unprofitable to maintain even though still vital for Europe's long-term corporate memory. The EU needs a strategy to fund the collective sustainability of these standards.

Stuart Reid

Job Title, Organisation: CTO, STA Consulting Korea
Country: United Kingdom
SDO: ISO/IEC

Challenges Addressed

Supporting software testing. ISO/IEC JTC1 SC7 WG26 are updating the core software testing standards (parts 1 to 4 of ISO/IEC/IEEE 29119), developing new international standards in Performance Testing and Incident Management, and developing supporting technical reports for Testing in Agile Projects, Model-Based Testing, Games Testing, Testing of AI-Based Systems and Testing of Automotive Systems.

My contribution

I am Project Editor for a new ISO/IEC Technical Report on Software Testing for Automotive Systems. This TR provides guidance for anyone testing automotive software, but especially focused guidance for those who must comply with ISO 26262 and Automotive SPICE standards.

EU Priorities & Gaps

ISO/IEC/IEEE standards covering software testing processes, test design techniques and documentation are now being revised to make them more user-friendly, especially for SMEs. Technical reports showing how these standards can be used in agile development and in specific application areas, such as automotive, model-based testing and for games software are now being developed to encourage wider use of the standards.

Data

Claudia Elizabeth Roessing Rocha

Job Title, Organisation: PhD Student, Dublin City University
Country: Ireland
SDO: ISO/IEC

Challenges Addressed

Information security is crucial to organisations, governments, and citizens. It is necessary to protect and handle data in an effective way. However, there is a lack of research on data classification subjects. Therefore, with my paper, I expect to bring attention to the necessity of mapping data classification standards with a view to assisting organisations to share information and work together.

My contribution

Comparison between the standards. Bringing attention to the necessity of mapping the data classification standards. Suggestions for future work in this area.

EU Priorities & Gaps

Data classification is the starting point for an organisation to protect its most important asset: data. However, there is no equivalent between different classification schemes, making it difficult for an organisation to share its data with a third party, which uses a different classification scheme. I have applied a conceptual model to analyse two different data classification/categorization standards.

Laurent Romary

Job Title, Organisation: Directeur de Recherche, Team ALMAnaCH - Inria
Country: France
SDO: ISO

Challenges Addressed

Providing a comprehensive standard for the representation of lexical data, whether they relate to the digitisation of legacy print dictionaries, or are built to act as components in natural language processing applications. The standard must be thus both resilient for a variety of use cases and applications and allow seamless interchange capabilities.

My contribution

As chairman of ISO TC 37, convener of ISO TC 37/SC 4/WG 4 (lexical resources) and co-editor of ISO 24613-4 (TEI serialisation), I have coordinated and contributed to the work of the multipart standard ISO 24613 (Language resource management - Lexical markup framework). The result is the actual publication of part 1 in June 2019, part 2 at final approval stage (FDIS) and parts 3 and 4 at DIS stage.

EU Priorities & Gaps

Defining a coherent framework for the representation of lexical data is essential for the development of language technology components that truly cover all languages in the European Union and that will serve the deployment of multilingual and multicultural application and services. Such lexical data can be used for teaching and research applications as well as training material for AI applications.

Data

Stephanie Roussel

Job Title, Organisation: Consultant, MINTIKA
Country: France
SDO: ISO

Challenges Addressed

Developing a standard on information governance. As part of the work in ISO/TC46 Ad hoc group 1, a new draft standard was proposed at the annual meeting of Technical Committee 46 in Ottawa. This project was adopted and led to the creation of Working Group No. 13 (WG13), which now has three years to propose a normative text.

My contribution

For this work, I have participated in the reflection on the scope of the standard, the definitions and the development of the draft text, as well as in the negotiations that took place during the meeting of Technical Committee 46 in Ottawa.

EU Priorities & Gaps

From a European perspective, it is important that the future standard takes into account issues related to IT security and personal data protection. In addition, as a European expert, it will be necessary to ensure that the future text is in line with existing regulations.

Volker Skwarek

Job Title, Organisation: Prof. Dr.-Ing, Hamburg University of Applied Sciences
Country: Germany
SDO: ISO, ITU, CEN/CENELEC

Challenges Addressed

Standardisation of interoperability frameworks for legally binding smart contracts and IoT connections. Describing the nature of smart contracts, including terminology, lifecycle and interoperability. This has been published in Technical Report ISO TR 23455. Additionally, a taxonomy for legally binding smart contracts has been initiated to standardise the documentation of legal agreements on a blockchain. This result can also be transferred to other computer science-related disciplines.

My contribution

I was convenor for ISO TC 307 WG 3 - Smart contracts and have started both projects. Additionally, I was part of all official international and European Standardisation initiatives CEN/CENELEC, ISO and ITU with a view to harmonising the individual findings.

EU Priorities & Gaps

The potential of hierachyless, fully distributed software is significantly underestimated - if not misunderstood. This technology is the future internet and connector to a semantic web. No identifier is required to give context to data. Smart contracts can be understood as the object-orientation of the internet, a step from pure numeric data to omnipresent network based access functions on the net.

Jean-Francois Sulzer

Job Title, Organisation: Consultant, JF Sulzer Conseil
Country: France
SDO: CEN/CENELEC

Challenges Addressed

Development of video-surveillance Annex to Privacy by Design standard. CEN/CENELEC JTC 13/WG 5 is developing a generic "Privacy by Design and by Default" (PDD) standard, also in response to DG Home Mandate M530 regarding PDD of security products and services, with a call for an application document dedicated to biometry and video-surveillance (VS).

My contribution

Privacy by Design and by Default is an emerging domain, recently codified by the GDPR. I have contributed to the main body of the PDD standard and am the editor of the VS Specification.

With my security industries background, I have directly contributed to the main standard (to be delivered in Q1 2020) and have led the elaboration of its application document (a Technical Report) dedicated to video-surveillance industry, also due for Q1 2020.

EU Priorities & Gaps

This work relates explicitly to a gap identified by EC Mandate 530. The response proposed defines a methodology which addresses privacy in the life cycle of a product in a way similar to quality management in an organisation, and with an approach similar to ISO 9000 family of standards.

Jacqui Taylor

Job Title, Organisation: CEO, co-Founder, FlyingBinary
Country: United Kingdom
SDO: ISO/IEC

Challenges Addressed

Standardising the Data Economy for the Digital Single Market. Europe has facilitated the move towards the Digital Single Market by enacting the NIS Directive and introducing the GDPR to underpin the changes needed to Privacy and Cyber Security requirements for member states. Current international standardisation activities have begun to recognise the importance of standardisation of data usage to enable a connected economy.

My contribution

I have directly contributed input to a newly formed JTC 1 Advisory Group to scope the opportunities for data usage standardisation. This way we can find out how this might be approached and how international standards might be utilised, adapted or created, in order to support a secure data economy based on European legislation and regulation. We have produced an interim report which articulates the opportunities we should explore.

EU Priorities & Gaps

The priority areas are: data sharing frameworks, sensitivity associated with data sharing and reuse, personal information factors to unlock data use, data for automated decision making. Use cases for illustrating standardisation opportunities have been searched for each priority area. The proposal is to further identify and detail the four standardisation gaps.

Data

Expert contributions in the field of IoT

Konstantinos Marios Angelopoulos

Job Title, Organisation: Principal Academic in Computing, Bournemouth University
Country: United Kingdom
SDO/WG: ITU-T

Challenges Addressed

Standardisation Activities within ITU-T related to IoT and other Emerging Paradigms & Technologies. High adoption rates of smart devices by the general public has led to an abundance of IoT infrastructure. Crowdsourced systems seek to enhance this infrastructure by enabling the creation and augmentation of systems with IoT devices provided by users. This is a new system paradigm, posing different challenges due to its fully decentralised nature as well as the strong presence of the human factor.

My contribution

The activity on the reference architecture for IoT Crowdsourced Systems was the first to provide relevant definitions, as well as to introduce crowd-driven methods in IoT system development. This way, user-driven approaches were introduced in IoT, in line with the notions of prosumer, disintermediation and transparency. This approach has given support to a new market by helping the general public to develop and deploy community-driven IoT systems.

EU Priorities & Gaps

Promoting standardisation activities which follow the concepts of prosumer, a user that doesn't only consume but also provides services & goods (e.g. in smart energy), dis-intermediation (reducing the dependency on a small number of dominant service providers), and circular economy (sustainability via a regenerative economic cycle), within international SDOs at the highest level possible (e.g. ITU) acted in synergy with R&I activities funded by the EC

Alessandro Bassi

Job Title, Organisation: CEO/Managing Director, 4.0 Technologies EU s.r.o.
Country: Czech Republic
SDO: IRTF

Challenges Addressed

AgriForEU. Sustainable agriculture could benefit from concepts coming from the IoT, with a view to developing a stable, large production, close to consumers, with little or no use of chemicals. The absence of a common model makes interoperability between different systems very complex and expensive, if not almost impossible.

My contribution

I have helped develop a standard Reference Architecture for Agri 4.0, specifically by introducing a layered model, the evolution of the IoT-A Functional Model, within the COIN WR of IRTF. This text will outline the main building blocks and the interfaces between layers.

EU Priorities & Gaps

Developing such a standard will allow a number of actors to develop devices and services with common interfaces and boost interoperability between different subsystems. A standard in this area will be very relevant for the industry in general, and it will allow the emergence of innovative SMEs that can focus on specific aspects.

IoT

Angel Boveda

Job Title, Organisation: CEO, Wireless Partners
Country: Spain
SDO: ETSI

Challenges Addressed

Implementing public policy objectives: Digital single market, ICT standardisation and involvement of SMEs. Endorse the activity and participation in standards of SMEs, through the support of the work in ETSI key governance bodies of an SME expert, experienced in several ETSI key technical areas.

My contribution

Established a support program for the participation in ETSI strategic and governance bodies, namely ETSI Board, ETSI GA, Board IoT, Board PROCESS and Board 5G, paying attention to the interests of stakeholders (such as SMEs).

EU Priorities & Gaps

The European Commission has already identified Internet of Things and 5G as key enablers for the Digital Single Market (DSM). ICT standardisation and support to societal stakeholders and SMEs are also well covered in European public policy objectives. ETSI is one of the three formally recognised European SDOs.

Christophe Colinet

Job Title, Organisation: Direction Générale du Numérique et des Systèmes d'Information, BORDEAUX METROPOLE
Country: France
SDO: ETSI

Challenges Addressed

Interoperability, a key issue for cities to roll out Smart City services. Develop the technical interoperability layers according to the needs and expectations of cities, as part of a continuous improvement process for Internet of Things and 5G technologies.

My contribution

We have targeted the interoperability layer between collecting data from sensors located throughout the city's territory and storing this data. This has allowed local authorities to deploy solutions in different fields, such as transport, energy, public lighting, without worrying about adding new fields as they go along. We have accompanied their implementation, according to the emerging needs of local authorities and the evolution of technologies such as NB-IoT and 5G.

EU Priorities & Gaps

The confidence cities have in the sustainability of their investments through the quality of the interoperability layer is the catalyst that will enable the IoT market to take off in public services across Europe. This commitment will consequently enable manufacturers to deploy their solutions much more quickly and to industrialise services and processes by generating value and benefit to the DSM.

IoT

Soumya Kanti Datta

Job Title, Organisation: CEO, Digiotouch.
Country: Estonia
SDO: W3C/ERCIM - Web of Things

Challenges Addressed

The StandICT.eu open call grant has allowed me to develop W3C Web of Things implementation and integrate that with Digiotouch's Cloud based, secure Paradise IoT Platform. Currently, we are testing the new implementation and it will be put into production by early 2020.

My contribution

My contributions were initially on IoT device and service discovery perspective as well as Web of Things architectures. Once these specifications were stable, I focused on developing an Implementation of the architecture which is currently being integrated with Digiotouch's Paradise IoT Platform.

EU Priorities & Gaps

From the EU perspective, lack of interoperability and security of IoT products and services leads to silos. This in turn results in inferior consumer experience and loss of customers for IoT based companies. Additional gaps in the IoT ecosystem include lack of tools to check semantic interoperability.

Luis De la Torre

Job Title, Organisation: Associate Professor, Universidad Nacional de Educacion a Distancia
Country: Spain
SDO: IEEE

Challenges Addressed

Promotion, maintenance, enhancement and dissemination of the "Networked Smart Learning Objects for Online Laboratories" standard. Maintenance of the standard: reviewing it, improving it and adding new or missing parts that could make the definition clearer and/or complete. Promoting its use and diffusion among educational institutions. Presenting the standard to other university teachers in face-to-face meetings. Making the standard known to the general public: i.e. by talking about it on a radio programme.

My contribution

Working and collaborating in the definition of a "use cases" template and providing a particular use case example. The first provides the guidelines to other people or groups using the standard to present their use case application with the standard in a familiar manner. The second showed the implementation of the standard with a control engineering online lab with an inverted pendulum.

EU Priorities & Gaps

Unification in technologies and methods to design, implement and use online laboratories for education. This unification enables the possibility to share easily and comprehensively these experimental educational resources among European and non-European institutions that follow the standard in their online labs.

IoT
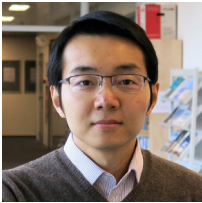
Yi (Aaron) Ding

Job Title, Organisation: Assistant Professor, Delft University of Technology (TU Delft).
Country: Netherlands
SDO: IETF

Challenges Addressed

Enable Trust and Privacy-preserving IoT Edge Computing. Design and standardise edge driven privacy-preserving protocols, dedicated to IoT scenarios. Analyse, design and develop building blocks to enhance trust in distributed IoT edge computing environments. Investigate how to integrate trusted execution environments with lightweight virtualisation technologies.

My contribution

The impact of my work is reflected in two aspects: for standardisation, my engagement in IETF will facilitate interacting with industrial companies, bridging the gap between research and standardisation, accelerating the transfer of my contributions to industry. For the European R&I community, my approach has tackled challenges in IoT trust and privacy through edge computing, complementing existing theoretical and cloud based solutions.

EU Priorities & Gaps

Cloud computing has been the predominant channel for innovation and also with the potential for every computing device (Things) to join the global network. This transformation calls for a thorough investigation, covering system, networking and protocol redesign. Especially for European IoT service deployment, given the introduction of GDPR in 2018, it becomes necessary to investigate the alarming spot in the fast-growing IoT industry, where security and privacy are often overlooked due to the device limitations and budget constraints.

Mieke Gevers

Job Title, Organisation: Performance Engineering Consultant, Aqis bvba
Country: Belgium
SDO: ISO/IEC, CEN, IEEE

Challenges Addressed

With the "Digitalisation Revolution", we expect to see an extensive implementation of several emerging technologies with a high potential for disruptive effects, e.g. performance issues. Performance testing seeks to determine characteristics like responsiveness, stability, resource usage of a component, an application or environment by simulating or creating activity and actions.

My contribution

With the objective of creating a generic industry ISO/IEC/IEEE 29119-10: Performance Testing standard, the StandICT.eu grant has allowed me to participate & contribute to the WG26 meetings and to write the Performance Testing standard crucial chapters. Currently, we have finalised the most important chapters and the Performance Testing standard is out for a first review-round at the WG26 internally.

EU Priorities & Gaps

Slow or not readily available applications supporting key business processes can cause revenue loss and lower customer satisfaction and employee productivity, or damage brand reputation. The advantages of standards for European industry are boundless. Standards help businesses to reduce costs, forecast technical requirements and increase productive and innovative efficiency.

IoT

Catherine Grant

Job Title, Organisation: Advisor/Consultant, J S Grant and C R Grant trading as Nine Tiles
Country: United Kingdom
SDO: IEC

Challenges Addressed

Encouraging European contributions to IEC TC 100 on Accessibility and Active Assisted Living Programme (AAL), leveraging work carried out in in H2020 and other programmes such as AAL.

My contribution

Investigated how mobile devices are useful to people with dexterity problems and other similar disabilities when interacting with other ICT products and services. Applied standardisation of broadcasters' accessible interfaces to IP (and other) systems. Alternate interface modalities such as text to voice, or automatically generated audio description for blind citizens and subtitling TV transmissions for hearing-impaired.

EU Priorities & Gaps

In Active Assisted Living Programme (AAL) environments the smart TV may be linked to health providers and again the work on use cases in IEC SyC-AAL indicates that there will be requirements to provide a range of interfaces or assistive devices to respond to individual needs in such interactions. Changing demographics means allowing the elderly to live independently in their homes for longer is becoming increasingly important in Europe; AAL systems are a specific application of IoT systems.

Johann Groszschaedl

Job Title, Organisation: Researcher, University of Luxembourg
Country: Luxembourg
SDO: NIST, IETF

Challenges Addressed

Cryptography is a building block of all the topic priorities listed under "Key Enablers and Security" in the 8th Open Call. Standardisation bodies have been working on post-quantum cryptosystems and protocols, but most participants are from large American internet companies. Therefore, it is crucial to have a European voice, emphasising the importance of choosing PQC cryptosystems suitable for IoT.

My contribution

There are alternative public-key cryptosystems, such as NTRU, that are believed to remain secure in the era of quantum computing. I have helped develop an open-source prototype implementation of NTRU suitable for resource-constrained IoT devices, consequently presenting this prototype at IETF 106 in Singapore and contributing to the further development of standards for network protocols.

EU Priorities & Gaps

It is necessary to extend the whole public-key infrastructure of the Internet by cryptographic algorithms that are resistant against quantum attacks, which is undoubtedly the biggest transition the Internet has known since the introduction of IPv6. The transition to Post-Quantum Cryptography (PQC) affects not only big Internet companies, but all segments of the industry, including those in which the EU plays a dominating role.

IoT

Antonio Jesus Jara Valera

Job Title, Organisation: CEO, HOP Ubiquitous (HOPU)
Country: Spain
SDO: ETSI, IEEE

Challenges Addressed

From data models and semantic interoperability to data quality a cross-cooperation between ETSI, IEEE and OMA. Emerging standards need to be integrated and federated into a coherent suite that is exploitable by industry in their solutions. For this, several standardisation organisations and activities need to be interconnected. At the same time, key issues like data quality in the IoT domain guarantees the proper use of data but has so far been a missing knowledge key .

My contribution

This contribution has established the IEEE P2510 standard for IoT sensors data quality to boost the process to classify sensors based on their accuracy and reliability. Key sensors as accelerometers, temperature, humidity, gases etc. are being tested, validated, certified and classified. This process is now being determined by IEEE Sensors certification and the IEEE Standards association.

EU Priorities & Gaps

The EU needs to continue making a difference in the marketplace through quality, reliability and high performance. The inclusion of this key information in the virtual representation of IoT devices as part of their data models (OMA LwM2M) and semantics (ETSI SAREF) is a key requirement that IEEE P2510 is focusing on. Thereby, this other data model will include data quality as part of the metadata.

Lasse Kieffer

Job Title, Organisation: Advisor/Consultant, Purple Robotics (Now acquired by OnRobot, 31/8 2018)
Country: Denmark
SDO: ISO

Challenges Addressed

Standard for electrical interface on all robot end-effectors. The collaborative robotics market is growing rapidly. The industry needs not just collaborative robotic arms, but collaborative robot applications: the complete installation including end-effectors (end-of-arm-tooling). This project addresses these end-effectors by initiating a standard for the electrical interface between end-effector and robots, enabling super-fast and safe integration.

My contribution

In this project an initial draft for a standard defining the electrical interface between collaborative robots and off-the-shelf tooling has been written. The document has been explained in a ISO/TC 299 meeting in Australia and in other committee meetings. A proposal for a new standard has been submitted and balloted within ISO/TC 299. I am proud to inform that it was approved.

EU Priorities & Gaps

There seems to be a high correlation between EU companies successful in the global market and their compliance with standards. For new EU companies to be innovative and have fast growth in a global market, contributing to the development of new standards can be essential. More knowledge and awareness of this correlation could highly benefit companies within EU.

IoT

Philipp Krause

Job Title, Organisation: Researcher, Albert-Ludwigs-Universität Freiburg
Country: Germany
SDO: ISO

Challenges Addressed

Most participants in ISO/SC22 WG14 have a background in large systems, such as desktop computers, notebooks and supercomputers. Small devices are typically programmed in C. To ensure the relevance of the C standard, it is important to consider all proposals from the aspect of implementability with very limited resources, such as memory runtime, energy.

My contribution

I have contributed by submitting proposals in the form of N-documents (see e.g. N 2358), reviewing and commenting on documents submitted by others, resulting in improvements (see e.g. N2444); this helped to ensure that C remains suitable and relevant for small devices.

EU Priorities & Gaps

In WG14 (unlike WG21, the C++ committee), there are few participants from the EU, with many coming from the UK. Since meeting participation tends to be higher in easily reachable locations, holding future WG21 meetings in the EU will be beneficial. This requires offers to host them. We intend to hold the spring 2020 meeting in Germany and the spring 2021 meeting in France.

Tom Meany

Job Title, Organisation: Functional safety specialist, Industrial at Analog Devices
Country: Ireland
SDO: IEC (61508), ISO (10218)

Challenges Addressed

If semiconductors cannot be shown to be safe and secure then many planned systems will not reach their potential. Involvement in the basic safety standard and the robot safety standards with a focus on semiconductor aspects is vital. One area in robot safety standards where innovation is being restricted is the requirement that the safety systems should be SIL 2 with a HFT of 1 according to IEC 62061 - PL d/CAT 3 & ISO 13849.

My contribution

IEC 61508 is the basic safety standard for functional safety, from which are derived all the sector specific functional safety standards for automotive, rail, machinery, process control. All modern functional safety systems depend on semiconductors. Within IEC TC 65/SC65A/MT 61508-1/2 I led TG#1 working on the functional safety of integrated circuits.

EU Priorities & Gaps

Integrated circuits are an area where Europe should show leadership. They are at the root of all modern ICT systems. I believe showing European leadership in this area is vital. Within IEC TC 65/SC 65A/MT 61508-1/2 four of the members are from semiconductor manufactures and two of the four are from the USA. Two more US members have promised to join so having European leadership of this group is a success.

IoT

Allan Nielsen

Job Title, Organisation: Consultant, IoT Consult IVS
Country: Denmark
SDO: CENELEC, IEC, IEEE, ISO

Challenges Addressed

Towards a cheaper infrastructure that can provide data communications as well as power to IoT devices. Reducing the use of batteries within Internet of Things end devices through the employment of Single Pair Ethernet.

My contribution

Worked towards implementing a cheaper IoT infrastructure, which will provide both data communication and power to IoT devices, while reducing environmental impact.

EU Priorities & Gaps

The EU Priority for PT 63171, a project team under working group IEC SC48B, is to work on reducing the cost of infrastructure, by only using 1 pair for power feeding and data transmission, whereas current infrastructure systems use 4 pairs.

Octavian Popescu

Job Title, Organisation: Consultant and company owner, EUCOMREGsprl
Country: Belgium
SDO: ETSI

Challenges Addressed

Support revising Guide EG 203 336 so that it helps producing standards with clear, necessary and sufficient requirements. The guide should clarify how the technical details may be stated in the standard so that the harmonised standards produced help SMEs comply with legal EU requirements. To this end, I have proposed standardising the means for location based enabling of the radio interface of devices using radio communications.

My contribution

I have helped introduce elements of the European framework in general, and specific for the Radio Equipment Directive (RED) harmonised norms in the standard text. Moreover, in the context of of new technology for use in the sub 1 GHz spectrum, there are specific legal or quasi-legal requirements that generate band-by-band technical provisions to be included in the European standard.

EU Priorities & Gaps

Essential requirements of the Radio Equipment Directive (Directive 2014/53/EU are high level objectives described in European Directives. The purpose of the Harmonised Standard is to translate such objectives into detailed technical specifications. Manufacturers use the European Norms produced in ETSI to design their products in conformity with EU law. If the standards are not published or are too difficult to follow, this may lead to EU market becoming dysfunctional for ITS and IoT devices.

IoT

Maria Ines Robles

Job Title, Organisation: PhD Candidate, Aalto University Finland
Country: Finland
SDO: IETF

Challenges Addressed

Fulfilling the milestones set by the IoT IETF WGworking group. Defining uses cases covering communication between leafs nodes in RPL domains, as co-author of IETF draft. Defining ways to represent transport protocols with CoAP, as a T2TRG member. Routing directorate and gen-area review team member, providing IoT routing insights in reviews and other SDOs.

My contribution

As co-chair of ROLL (Routing Over Low-power and Lossy Networks) WG, I have led the development of routing features in IPv6 for constrained environments. As co-author of ROLL WG, I have helped define how to use routing extension headers in a data plane. With IETF T2TRG, I have researched a way to represent protocol negotiation with CoAP. As part of the IoT and routing directorate, and gen-area review team I have contributed to reviews of proposed studies.

EU Priorities & Gaps

The IETF ROLL working group defines the Internet protocols for routing topics related to IoT (constrained environments). In Europe, there are several uses cases (e.g. smart home, smart industry, smart city, smart buildings, etc.) covered in research projects, start-ups and academia aiming at using ROLL protocols such as RPL (IPv6 Routing Protocol for Low-Power and Lossy Networks).

Michael Scharf

Job Title, Organisation: Professor at Hochschule Esslingen, University of Applied Sciences
Country: Germany
*SDO: IETF (LWIG and TCPM)*

Challenges Addressed

The focus of this activity is the Transmission Control Protocol (TCP) and its use in IoT, e.g. on small embedded devices. Two examples for gaps in Internet standards are a lack of guidance on how to implement TCP on small devices and how to manage TCP on such IoT devices. In the latter case, the challenge is a lack of standardised data models specified in the YANG language.

My contribution

The first contribution was the completion of the Internet Draft 'TCP Usage Guidance in the Internet of Things (IoT)', which gives guidance on light-weight TCP implementations. The second contribution dealt with YANG models for TCP. A new Internet Draft has been submitted to the TCPM working group and it has been presented twice at IETF meetings, leveraging the support from StandICT.eu.

EU Priorities & Gaps

Core Internet protocols such as the Transmission Control Protocol (TCP) continue to change, and this evolution of the Internet will be relevant for Europe. Hopefully there will be follow-up opportunities for supporting European IETF contributors and chairs of working groups, particularly if they manage working groups that are essential for the Internet.

IoT
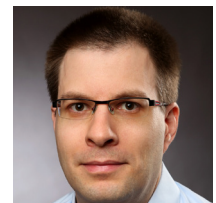
Eric Szymkowiak

Job Title, Organisation: CEO, Pilot Things
Country: France
SDO: oneM2M

Challenges Addressed

As an expert, my objective is to contribute to the TR0036, in order to add value from an industrial perspective with lessons learned from actual deployments.

My contribution

OneM2M has defined a standard platform for IoT that includes legacy system management, data access and management, security and privacy..

EU Priorities & Gaps

I strongly believe there is a standardisation gap in smart cities, which must be filled to foster a European Digital Single Market, especially for energy related applications where many players are involved (producers, consumers). OneM2M will fill this gap by including specific smart city requirements in the next release specifications.

Timo Varkoi

Job Title, Organisation: Senior advisor, Finnish Software Measurement Association - FiSMA
Country: Finland
SDO: ISO/IEC

Challenges Addressed

Sound software and systems engineering practices are essential in developing safe and secure IoT applications and products. Process assessment models can be effectively used to evaluate organisational development capabilities. In this work, the key process assessment standards are developed to match the latest ISO/IEC life cycle process models for software and systems engineering.

My contribution

My contribution as an editor was to develop new generation process assessment models based on ISO/IEC/IEEE 15288 and 12207. These models are the basis of all software and systems engineering, especially in critical applications, and are widely used also in developing IoT applications and products. The new standards will be ISO/IEC 33060 and 33061.

EU Priorities & Gaps

Assessment models support the development of robust and trustworthy systems containing software and can be applied in many domains, including AI, IoT, Systems of Systems, Smart cities and Autonomous systems. Especially SMEs are unaware of the benefits of sound systems engineering guidelines that standards provide.

IoT

RangaRao Venkatesha Prasad

Job Title, Organisation: Associate Professor, Delft University of Technology
Country: Netherlands
SDO: IEEE

Challenges Addressed

The Tactile Internet (TI) is one of the standards dealing with Next Generation Internet applications. This standard is going to be the main driver for most of Industry 4.0 and AR/VR applications. TI addresses the stringent requirements for real-time applications such as remote surgery, remote driving and automation, and even space robotics.

My contribution

I was a founding member of Tactile Internet IEEE P1918.1 standard workgroup. Now I am mentoring the standard activities. My presence in IEEE 1918.1 has helped cement EU participation, leading to more awareness among researchers and industry across member states. Furthermore, I have brought the discussions towards MAC for Tactile Internet at the edges, including AI and ML aspects.

EU Priorities & Gaps

Tactile Internet (TI) was indeed the brainchild of EU researchers. It is important to work in the IEEE 1918.1 standard suite. Unfortunately, there was not much happening in this standard from an EU point of view. IoT research and M2M are the main focus apart from 5G. There is a need for Tactile, AR/VR, remote surgery, and remote driving standardisation efforts from EU considering E2E solutions.

Erik Wilde

Job Title, Organisation: Partner, Good API
Country: Switzerland
SDO: IETF, W3C

Challenges Addressed

Standards in IT are often driven and defined by large organisations. For small organisations and independent researchers, participating in SDOs is often simply too time-consuming and expensive. StandICT.eu helps European experts to participate in relevant SDOs, and thus supports their input into the global standardisation process.

My contribution

My work has been in the Web architecture and API space for most of my career. In this area, the foundational standards are created by IETF and W3C. I have participated in IETF and W3C meetings and thanks to the support of StandICT.eu was able to work on individual contributions and to generally contribute to the standardisation process.

EU Priorities & Gaps

APIs are the glue for digital transformation, and anything that helps drive the API space forward also aides the EU to use digitalisation to bring people closer together and to provide them with information and services. Foundational Web and API standards are one essential enabler of today's digital transformation, and these activities help in moving the standards landscape forward

IoT

Expert contributions in other fields

Helen Carnevale

Job Title, Organisation: Committee Manager, UNINFO
Country: Italy
SDO: UNI, UNINFO and CEN

Challenges Addressed

CEN/TC 353 is the reference in Europe for the eLearning field, and it was dormant until February 2019. To reactivate its connections, create a new and improved network of collaborations it is necessary to promote CEN/TC 353 in an international landscape.

My contribution

I have set the ground for actions aimed at spreading the European approach to the international market. We established a long-lasting collaboration with JTC1, through the plenary in New Delhi. I contributed to creating a cooperation with SC 36 (ITLET) and other JTC1 SCs, through the creation of an effective communication channel between them and CEN/TC 353.

EU Priorities & Gaps

This proposal intends to respond to the requirements and actions mentioned in the Rolling Plan in the section on eLearning. The need to extend the offer to respond to comprehensive user requirements is stated in particular in section 2; concerns about competing relations with international SSOs and SDOs is expressed in "additional information".

Detlev Fischer

Job Title, Organisation: Team Usability Project Manager, DIAS GmbH
Country: Germany
SDO: W3C, ERCIM

Challenges Addressed

Today, more web pages are viewed on mobile devices than on the desktop. One of the aims of the latest updates of the Web Content Accessibility Guidelines is capturing new requirements of people with disabilities, especially around touch and speech input methods. For example, alternative means of input must be available and working for those who cannot perform touch gestures.

My contribution

I have contributed to the development of new Success Criteria and Techniques for Version 2.1 of the Web Content Accessibility Guidelines, bringing in practical feedback from a number of people active in the web accessibility evaluation context.

EU Priorities & Gaps

One important priority, reflected in the EU Directive 2016/2102 mandating the accessibility of public web sites and apps, is to work towards a more inclusive society. IT services shall no longer exclude people with disabilities. Well-designed web sites and applications are fully accessible and can be used without vision, with low vision, with motor impairments etc.

Other

Jose Daniel Garcia Sanchez

Job Title, Organisation: Director of Master in Informatics Engineering, Universidad Carlos III de Madrid
Country: Spain
SDO: ISO/IEC

Challenges Addressed

The main challenge is the introduction of contract based programming to the C++ programming language. In explanation, the explicit support of preconditions, postconditions and assertions. The introduction of contracts to C++ will result in improving correctness of software components.

My contribution

I have worked on the introduction of contracts. The feature was introduced in the standard draft in 2019. However, in July of 2019 the emergence of different viewpoints on the priorities of the feature led to the decision of removing contracts for the C++20 standard and deferring it to the next standard C++23. I actively participate in the special group that was formed.

EU Priorities & Gaps

Programming languages standardisation is still not a major priority for the EU agenda. However, almost any IT technology in development highly depends on a programming language. Participation of European actors in the standardisation of programming languages (and C++ in particular) is low with a high dominance of the USA.

Stijn Grove

Job Title, Organisation: Managing Director, Dutch Data Center Association
Country: Netherlands
SDO: CENELEC, ISO

Challenges Addressed

Promoting standardisation in the Dutch and European data centre industry. Standards are vital for the success of digital transformation, especially combined with the energy transition that is moving at the same pace. Understanding the digital industry and constant change in technologies is making it hard to maintain an overview. Within the industry it is already difficult to know what is happening. By publishing a guide of all relevant standards, we seek to spread knowledge about these topics.

My contribution

We are finishing an open publication about the current standards in the data centre industry. Not only focusing on completeness, but mainly on structured views. For instance, we present summarised standards and group them by the planning phase, the building phase and operating phase (Plan, Build, Run), also including all relevant standards for sustainability, accountability, security, etc.

EU Priorities & Gaps

There is a big gap on IT energy efficiency. While WG38 is all about IT, there is nothing mentioned about energy efficiency. WG 39 is about efficiency but it only represents data centre operators who are managing cooling and power but not IT as these are their customers. There are no large EU IT equipment vendors or EU Public Cloud operators that can help with creating standards.

Other

Jens Gustedt

Job Title, Organisation: Senior researcher, INRIA
Country: France
SDO: ISO

Challenges Addressed

Under the surface of the most visible big players, there is a large community of small to medium size players that provide compilers, libraries and runtimes for small devices, many of whom have a base written in C. This is compiled with a compiler that is mostly specific for a relatively small set of CPU and use a C library and runtime that is much more constrained than those for general purpose hardware.

My contribution

Through my continued involvement in ISO JTC1/SC22 WG14, C programming language, and WG21, C++, I have improved the existing C standard, also on the level of the document itself, as co-editor of ISO/IEC-9889, as on the level of the programming semantics.

EU Priorities & Gaps

C is an important foundation of nearly all software and hardware architecture descriptions in the world. For decades it has been in the top two programming languages used worldwide. It is of crucial importance for Europe to take part in this normalisation effort, avoiding the deadlocks of previous decades that were caused by lobbying of some major players from the US.

Noel Harrison

Job Title, Organisation: Lecturer in Mechanical Engineering, National University of Ireland Galway
Country: Ireland
SDO: ASTM, ISO

Challenges Addressed

This group is an international collaboration between ASTM and ISO for the co-development of standards for Additive Manufacturing (3D Printing), covering process technology, operational parameters, testing, material handling, design etc.

My contribution

I have attended and contributed to 2 joint meetings and plenary meetings (US and Sweden). I am also an active member in the ISO-ASTM Joint Group 67 on Functional Graded Materials.

EU Priorities & Gaps

Advanced materials; Advanced manufacturing and processing; Sustainable Materials.

Other

Klaus-Peter Hoeckner

Job Title, Organisation: CEO, Austrian Association Supporting the Blind and Visually Impaired
Country: Austria
SDO/WG: CEN/CENELEC

Challenges Addressed

To bring the interests of Persons with Disabilities into standardisation, especially regarding emerging technologies and the needs of vulnerable groups.

My contribution

Proposed involvement of all the interested groups of society into the design process, through universal design thinking.

EU Priorities & Gaps

Common policy on involvement of all parts of the society, especially DPOs in the process of standardisation.

Joao Manuel Leitao Quintas

Job Title, Organisation: Principal Researcher, Instituto Pedro Nunes - Laboratory for Automation and Systems
Country: Portugal
SDO: IEEE

Challenges Addressed

Knowledge models are the basic component of knowledge-based approaches in fields such as AI and robotics. Multiple challenges must be addressed, including solving the problems of semantic heterogeneity of information in decision-making systems, using knowledge in perception and actuation including human-robot interaction, manipulation of objects, navigation, etc.

My contribution

I have specifically contributed to the dissemination, discussion and implementation of resources aimed at increasing the adoption of the standard (e.g. implementation of simulations using artificial social companions in use scenarios for AAL). In particular, integrating a Context-based Human-Machine Interaction Ontology as part of IEEE 1872.2.

EU Priorities & Gaps

Filling EU Priorities & Gaps will benefit from the work conducted include Sustainable Growth, Robotics and autonomous systems and Societal Challenges, eHealth, healthy living and ageing. This is because the purpose of the standard is to ensure a unified way of representing Autonomous Robotics system architectures across different R&A domains.

Other

Judith Liu-Jimenez

Job Title, Organisation: Researcher, University Carlos III Madrid
Country: Spain
SDO: CEN

Challenges Addressed

Requirements for the interoperable deployment of biometric solutions / Harmonization of biometric enrolment and verification across EU countries and scenario. Big efforts have been made by different parties to create standards and recommendations in biometrics. However, there is a lack of harmonisation and interoperability among the recommendations developed by many international and European standards. The objective is to create a European Technical Report (TR) which can be used as a starting point for proposing new or revisions in standards.

My contribution

I have analysed the state of the art in biometrics standardisation, its use, and the identification of gaps between all the relevant standards used in different environments. Additionally, in this technical report detected gaps were identified, in order to promote the modification of the standards on biometrics and the generation of new standards in Europe.

EU Priorities & Gaps

This TR will be focused on interoperability problems, which have become a major issue for the EU. The report with gather information from various entities on different uses of biometrics. This report meets the need for improving the specifications for the implementation and deployment of biometric systems, with a particular focus on travel documents within the European Union.

Audrey Maniez

Job Title, Organisation: Experte accessibilité web, Access42
Country: France
SDO: W3C

Challenges Addressed

Accessibility conformance tests. The W3C Auto-WCAG community group is in charge of writing evaluation rules for guidelines based on the Accessibility Conformance Testing rules format. Participation in writing these rules by reviewing those written by other members of the group, suggesting new rules to write and writing some myself. Also, participation in the elaboration of the framework used as a basis to write rules.

My contribution

I have helped write and review rules in the ACT Rules CG, especially contributing to some rule reviews, bringing my knowledge of the French referential (RGAA) and its interpretation of the WCAG in the elaboration of these rules, which tend to standardise interpretations.

EU Priorities & Gaps

The directive 2016/2102 of the European Parliament about the accessibility of websites and mobile applications in public sector bodies is now transposed into Member States legislations. It requires that Member States build up a large monitoring of public websites and mobile applications. It also gives a standard format to follow to deliver results to the European commission. Having a unified set of rules to check is essential so that evaluation can be compared easily between Member States.

Other

Conor McGinn

Job Title, Organisation: Assistant Professor, Trinity College Dublin
Country: Ireland
SDO: ISO, IEEE

Challenges Addressed

Standard development in the area of care robot design and ethical robotics practice. This activity concerns the development of two distinct standards involving service robots. The first standard development activity of relevance concerns the technical development of robot technology, with special emphasis on robot safety. The second activity concerns the development of ethical standards relating to the design and use of robot technology.

My contribution

I have gained vital domain knowledge that can be shared and leveraged in Europe to enable more developers to achieve the standard. This has enabled me to acquire the ISO standard for a commercial robot being developed, leading to potential highly positive societal benefits, due to notable applications in healthcare.

EU Priorities & Gaps

There is a need for more European involvement in standard development around robot-assisted care. Compared with Japan, there are few robots that possess the ISO standard for care robots (ISO 13482). With robotics and automation set to radically disrupt the European workforce, ethical standard development activities also have high importance in an EU context.

Ilkka Rinne

Job Title, Organisation: Head of Customer Experience and Interoperability, Founder, Spatineo Inc.
Country: Finland
SDO: ISO

Challenges Addressed

Revision of the ISO 19156 Observations and measurements (O&M) standard. The latest revision of ISO 19156 standard is from 2010, and it needs revising to accommodate technical issues discovered in various standard implementations and harmonisation with recent W3C/OGC standardisation work on sensor network terminology and concepts.

My contribution

I have revised the Observations and measurements data model and the data encoding standards, with a big impact on making both the achieved and the near real-time environmental monitoring and prediction data more accessible. The use cases include, but were not limited to weather, air quality, urban traffic, water management, emergency response and disaster management.

EU Priorities & Gaps

The ISO 19156 "Observations and measurements" standard defines at the conceptual level the data model for these datasets. Both the Observations and Measurements data model and its standardised XML encodings are used extensively in the EU INSPIRE Directive Data specifications and Technical guidance. The lack of technical standardisation of the O&M encodings for modern Web APIs had become a bottleneck in exploiting the INSPIRE investments made in the EU Member States.

Other

Heico Sandee

Job Title, Organisation: Managing Director and founder, Smart Robotics
Country: Netherlands
SDO: ISO

Challenges Addressed

Wide and safe use of collaborative robotics. Robots without fences, so-called cobots, are sold in large numbers at an increasing pace. In contrast to normal industrial robots, they are often applied by end users, and not by an experienced integrator. This brings huge challenges for safety and functionality, for which ISO standards need to be updated, and usage advocating.

My contribution

Currently, ISO standard 10218 is being updated to also include collaborative robots. Through TC 299, I have gathered and fed in national input. Furthermore, I have given presentations and written publications on these topics to raise more general awareness of these developments.

EU Priorities & Gaps

The relevant robotics norms are quite mature, though lacking on the aspects of collaborative operation. A team of worldwide experts is working on this in ISO TC 299, including all relevant stakeholders. Therefore, the first existing gap has been filled in with the ongoing work. We are planning to publish this updated norm in early 2021.

Jan Schallaböck

Job Title, Organisation: Advisor/Consultant, iRights.Law Rechtsanwälte
Country: Germany
SDO: ISO/IEC

Challenges Addressed

Management of International and European Privacy Standardisation (SMIEPS). Supporting the effective transitioning of international privacy standards to European standards and triggering the necessary stakeholder involvement and discussions based on my activities as Vice-convener of ISO/IEC JTC 1/SC 27/WG 5: Identity Management and Privacy Technologies.

My contribution

I have supported the exchange with European standardisation activities as well as the management of WG 5 before and during the meeting as a vice-convener, thus sustaining a good quality of results of the standardisation work. The impact lies in the development of international standards, supporting European Privacy legislation at the same time, a logical next step after the GDPR.

EU Priorities & Gaps

Public debate shows that there is a dire need for the development and establishment of standards in the field of privacy, and that even the activities mentioned above are far from sufficient to fill the current demands and gaps in the interpretation of the GDPR. WG 5, established 2006, is tasked with the development of standards addressing privacy. Currently, it has more than 500 registered experts from over 20 National Bodies. WG 5 covers a plenitude of areas from big data, smart cities and Blockchain and Distributed Digital Ledger Technologies.

Other

Svante Schubert

Job Title, Organisation: Freelancer
Country: Germany
SDO: CEN

Challenges Addressed

Machine Readable Specifications on the example of EN16931 (e-Invoice). Currently, CEN Standards, including those for software artefacts like EN16931 (e-Invoice), are provided to end-users as PDF or paper. This means that implementers of the standard to manually copy the relevant information into their system. This process is time-consuming, error-prone and overall boring. For example, EN16931-3 provides over 200 pages of table data to be manually copied.

My contribution

In the above case, the data of each PDF table was proposed to the WG convenors to be added as embedded XML files within the PDF. The XML will contain the data of the 200 pages of EN16931-3 tables in a structured form. In addition, an OpenSource tool has been created to extract the data and automatically test if each normative & redundant informative specification table has equivalent consistent data.

EU Priorities & Gaps

An EU priority should be to support easy adoption of the standard and its high quality, but the process slows down when the structure of relevant data is getting lost on its way to the end-user by handing out paper and PDF as specifications. Relevant data of Standards, especially those for software, should be automatically readable to be embedded into the software release process (CI/CD).

Martin Uecker

Job Title, Organisation: University Professor, Georg-August University of Göttingen
Country: Germany
SDO: ISO

Challenges Addressed

C Programming Language for Compute-Intensive Science. The C programming language is a key technology, underpinning most of today's IT-enabled society. It is the basis for operating systems, networking software, internet servers and clients, high-performance computing, medical software, etc. The specification of the C language is not fully precise, which makes formal analysis and proof of correctness difficult.

My contribution

I have worked as part of the memory object model study group of the C working group, towards formulating a more precise definition of the semantics of the C programming language. Precise semantics for some parts of the language have been defined and are currently being discussed with the compiler developers and the C and C++ working groups.

EU Priorities & Gaps

The EU should have a vested interest in improving reliability, safety, security of the underlying IT society. It is also important to have more representatives from the EU actively taking part in ISO committees, so as not to leave decisions about the standardisation of important key technologies only to representatives from other parts of the world

Other

Dolf van der Haven

Job Title, Organisation: Advisor/Consultant, Powerful Answers
Country: Netherlands
SDO: IEC, ISO

Challenges Addressed

Service Management is a relatively unknown area in Europe, especially the ISO/IEC 20000 standard. Moreover, the application of ISO/IEC 20000 to non-IT services is uncommon and deserves more attention. Contributing to standardisation activities will make the standard better known and contribute to more general adoption of it in various industries.

My contribution

Participation in the development of the ISO/IEC 20000 series of standards has helped define common standards for service management globally, and of course in the EU. Through standardisation activities, more awareness can be created about the relevant standards that improve the delivery and quality of services.

EU Priorities & Gaps

A greater promotion of the use of the ISO/IEC 20000 standard for services in Europe will lead to more reliable and secure services that provide more value to customers and consumers.

Michelle Wetterwald

Job Title, Organisation: ITS Expert, Netellany SASU
Country: France
SDO: ETSI

Challenges Addressed

Intelligent Transport Systems. Leverage current participation, experience and expertise of the beneficiary to add an extra brick to this convergence mechanism. Envisioned approach is aimed at raising awareness about IoT standardisation in ETSI ITS Technical Committee.

My contribution

The activities have fostered a better knowledge of oneM2M activities for ETSI ITS TC stakeholders. Discussions with oneM2M delegates have helped increase understanding of the role of ETSI TC ITS, especially for non-European members of this Partnership Project.

EU Priorities & Gaps

Addressing relevant overlaps of standardisation activities.

Other

Robert Williams

Job Title, Organisation: Group Senior Consultant, CSI UK Ltd
Country: United Kingdom
SDO: CEN

Challenges Addressed

Support for the management and operation of CEN TC278 WG15 (eSafety/eCall). To further develop technical specifications which will enable the migration to new communications technologies for all categories of vehicles.

My contribution

Completion of approval process for deliverables to extend eCall to all categories of vehicles. Completion of approval process for deliverables to extend eCall to packet switched communications & satellite communications. Identification of steps needed by EC to update the regulatory framework for new categories and communications means. eCall for CCAM/automated/autonomous vehicles.

EU Priorities & Gaps

This works has allowed the continuation of the evolution and development of eCall standards deliverables and their alignment with EC regulations and objectives for eCall.

Suno Wood

Job Title, Organisation: Chair, ETSI EP eHEALTH
*Country: United Kingdom*
SDO: ETSI

Challenges Addressed

Development of eHealth standards. Complete a standard for Use Cases which will unify and enhance other technical standards in the field of eHealth. Develop discussion and contributions in the creation of a new standard for Data Sharing in the health environment. Both challenges need new contributors and participants for the process in our group.

My contribution

As Chair, I have managed a complex environment for the writing of these new standards. I have dealt with broad issues of healthy living and ageing as well as focused technical issues, such as security, confidentiality and interoperability. This StandICT.eu grant has enabled me to attend more face-to-face meetings, and was essential to the success of our work.

EU Priorities & Gaps

We are studying the EU priorities and gaps in fields of eHealth, Healthy Living and Ageing. The complexity of the issues means that standardisation remains the only cost-effective key to the enhanced delivery of services to patients, doctors and healthcare providers. We have also identified technical standards as an effective means of improving cost-effective procurement in the medical market.

Other
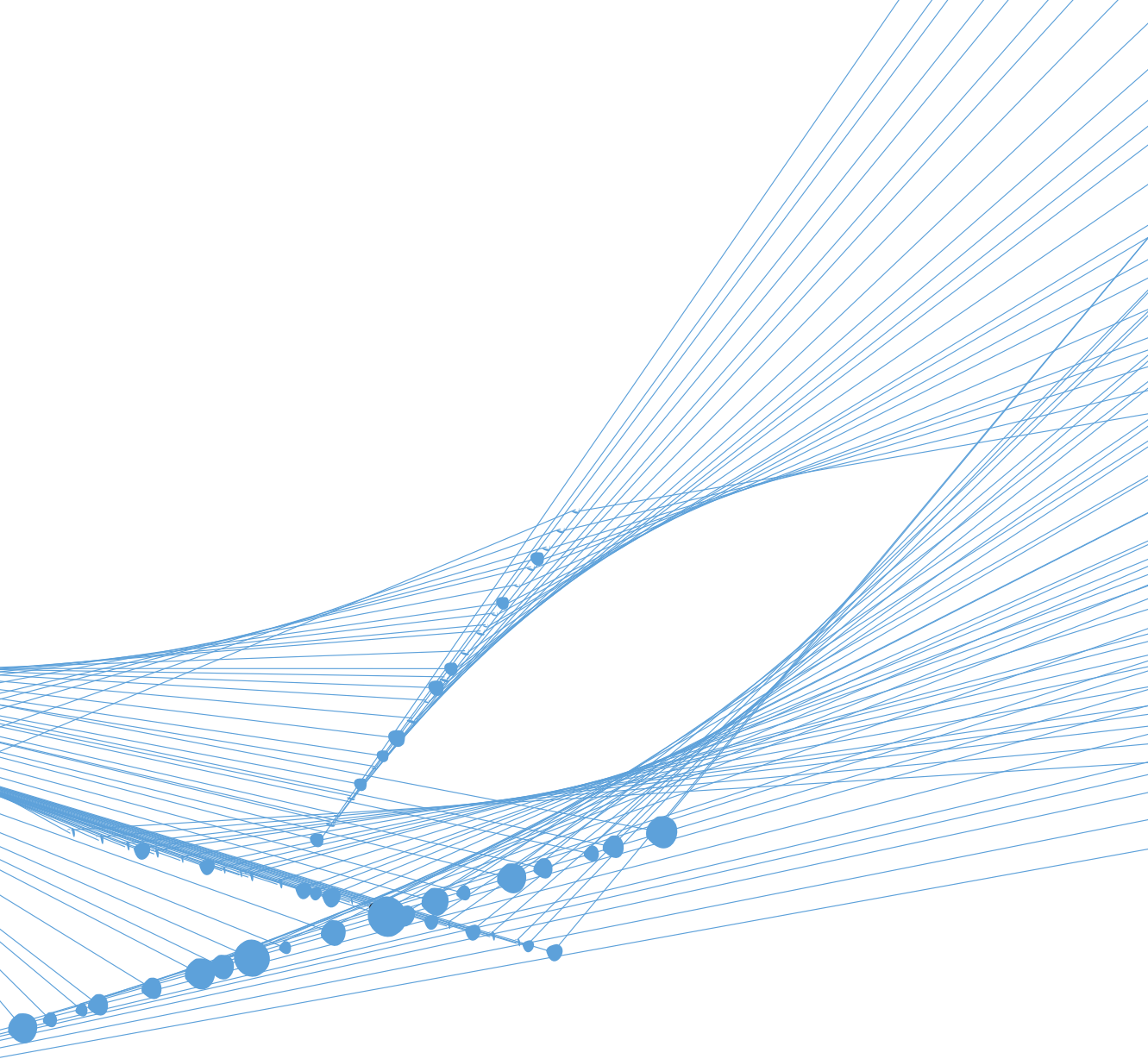
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