





## EXECUTIVE SUMMARY

The Rolling Plan for ICT Standardisation provides a unique bridge between EU policies and standardisation activities in the field of information and communication technologies (ICT), allowing for increased convergence of standardisation makers' efforts towards European policy goals. This document is the result of a yearly dialogue involving a wide-ranging representation of the major standardisation's interested parties as represented in the multi-stakeholder platform on ICT standardisation. The Rolling Plan focuses on those actions which can support the EU policies and does not seek comprehensiveness as regards to the work programmes of the various standardisation bodies.

The identification of the standardisation actions in support European policies made in this document is complementary to other instruments, in particular to the annual Union work programme (AUWP). The Rolling Plan further details the requirements for ICT standardisation, articulates them in the form of actions and provides a follow-up mechanism for the actions.

The Rolling Plan 2016 identified 162 actions in total, of which 127 have started and 19 are completed by now. A summary of the sections of the Rolling Plan 2017 can be found below organised around four thematic areas: key enablers, societal challenges, innovation for the single market and sustainable growth.

The Commission has identified five priority domains<sup>1</sup>—5G, cloud, cybersecurity, big data and internet of things (IoT)—where ICT standardisation is considered most urgent for the completion of the digital single market (DSM), as well as a number of application domains that will benefit from standard setting in those horizontal technologies, in particular eHealth, intelligent transport systems, smart energy and advanced manufacturing. The Rolling Plan 2017 includes actions in support of the priorities indicated in the Communication.

The Rolling Plan is a living instrument. Compared to the 2016 edition, in the Rolling Plan 2017 some domains have disappeared because of completion of activities (RFID) and new domains have been added (5G, FinTech, Building information modelling and Common information sharing environment (CISE) for the EU maritime domain).

**EUROPEAN COMMISSION**  
**Directorate-General for Internal Market, Industry,**  
**Entrepreneurship and SMEs**

Innovation and Advanced Manufacturing  
KETs, Digital Manufacturing and Interoperability

Design & Printed by **OIB**

<sup>1</sup> Communication on ICT Standardisation Priorities for the Digital Single Market, COM (2016) 176 final.

# KEY ENABLERS

## 5G

5G standards are key to competitiveness and the interoperability of global networks and require collaboration between stakeholders from different standardisation cultures. The Communication on ICT standardisation priorities identifies 5G as priority domain and proposes some actions to foster the emergence and uptake of global 5G standards.

Moreover, The European Commission has adopted a 5G Action Plan and called on Member States and industry to commit to the following objectives:

a standardisation approach that preserves future evolution capabilities and aims at the availability of 5G global standards by end of 2019;

a holistic standardisation approach encompassing both radio access and core networks as coordinated activities within global standardisation bodies, encompassing disruptive use-cases and promoting open innovation;

the establishment of cross-industry partnerships to support timely standard-setting, leveraging on international cooperation partnerships, supporting the digitisation of industry.

## CLOUD COMPUTING

In 2016, the second phase of the cloud standards coordination was completed. It was carried out by ETSI and helped preparing the ICT Standardisation Priorities Communication. The Communication on ICT Standardisation priorities identifies cloud as priority domain and proposes some actions to foster the development and use of cloud standards.

ISO/IEC JTC 1 (SC38) demonstrated significant activity in cloud standardisation with a focus on service level agreements and interoperability aspects. The Commission services in collaboration with standardisation development organisations and open source (OSS) related organisations launched an action to analyse the impact of open source in the cloud standardisation process.

In 2017, an extensive consultation with the stakeholders will be carried out to establish a roadmap for the coming years in the area of cloud standards. This process will be supported by a dedicated working group on cloud standardisation of the cloud special industry group with the first deliverables expected for the second half of 2017.

## PUBLIC SECTOR INFORMATION, OPEN DATA AND BIG DATA

In January 2017, the Commission has adopted a Communication on “Building a European Data Economy” exploring issues such as free flow of data, access and transfer in relation to machine generated data, liability and safety in the context of emerging technologies, portability of non-personal data, interoperability and standards. The Commission has also launched a public consultation.

Under the Horizon 2020 ICT Work Programme 2016-2017 on topic ICT-14 / Big Data PPP, several actions have started on data integration and experimentation (including cross-sectorial and cross-lingual issues), with more expected during 2017.

The DCAT application profile has been developed as a common project to describe public sector data catalogues and data sets and to promote the specification to be used by data portals across Europe. DCAT-AP extensions covering geospatial datasets (GEO/DCAT-AP) and statistical datasets (STAT/DCAT-AP) have been finalised.

In the big data value contractual public-private-partnership, a dedicated subgroup (SG6) of task force 6 has been set up to deal with big data standardisation.

The Communication on ICT Standardisation priorities identifies big data as priority domain and proposes some actions to contribute to global standardisation in the field of data.

## ELECTRONIC IDENTIFICATION AND TRUST SERVICES INCLUDING e-SIGNATURES

Further to the issue of the standardisation mandate M/460 at the end of 2009, CEN and ETSI are working on various standardisation deliverables needed for the completion of the rationalised framework of e-signatures standards.

More recently, CEN and ETSI have extended their activities to cover the standardisation needs that pertain to the implementation of Regulation (EU) 910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS). Several standardisation deliverables resulted or are ongoing, some of which may be referenced in implementing acts of Regulation (EU) 910/2014.

## INTERNET OF THINGS

The internet of things (IoT) is a key priority area of the digital single market. Industry is best placed to develop the technological standards and solutions to reap the benefits of new global IoT ecosystems while addressing the challenges such as security, scalability and interoperability. In this context, the European large scale pilots will support the deployment of IoT solutions by validating their acceptability and enhancing the buy-in from users and the public.

The Communication on ICT standardisation priorities identifies IoT as priority domain and proposes some actions to promote the development and uptake of IoT standards. The alliance for internet of things innovation (AIOTI) will play an important role in this field and help fostering a digital single market for IoT.

## CYBERSECURITY / NETWORK AND INFORMATION SECURITY

The European cybersecurity strategy and the Directive on network and information security adopted in July 2015 provide for action to promote the development and take-up of ICT security standards.

The Communication on ICT Standardisation priorities identifies cybersecurity as a priority domain and proposes actions to accelerate the development of appropriate standards in this field.

### ePRIVACY

In support of the ePrivacy Directive 2002/58/EC and the General Data Protection Regulation 2016/679/EU, and in line with the standardisation request M/530, standardisation actions are needed to ensure privacy in personal data processing and the free movement of such data. In 2016, the CEN-CENELEC joint working group (JWG) 8 "Privacy management in products and services" was set up to execute M/530 and will continue until 2018. The group is in line with the agreed work programme which focuses on standardisation deliverables addressing privacy management in the design and development and in the production and service provision processes of security technologies, with associated guidelines.

2016 was a crucial year for enhancement of privacy rights with the thorough review of the ePrivacy Directive 2002/58/EC<sup>2</sup>.

2 Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications); Official Journal, L 201 , 31/07/2002 P. 0037 – 0047).

The review led to the adoption by the Commission of a proposal for a Regulation on privacy and electronic communications that will replace the old directive and address its flaws<sup>3</sup>. Overall, the proposed Regulation will increase the protection of citizens' electronic communications as all providers of comparable, functionally equivalent services from a consumer's point of view (instant messaging and voice over IP) would be subject to the same set of rules.

## E-INFRASTRUCTURES FOR RESEARCH DATA AND COMPUTING-INTENSIVE SCIENCE

Building on existing EU-funded e-Infrastructures, the European cloud initiative strategy aims at consolidating the efforts to accelerate and support the transition to more effective open science and open innovation in the digital single market. In this context, the implementation of standards and recommendations will be of utmost importance in order to allow for interoperability, avoid fragmentation and improve the efficiency and effectiveness of research.

To take advantage of the capabilities of different scientific fields and of the potential of ICT, this Rolling plan calls standard developing organisations to identify the standardisation needs (action 1) and explore the use of concepts such as digital objects architecture and array databases (actions 2 and 3).

### BROADBAND INFRASTRUCTURE MAPPING

The European Commission has launched a project to map fixed and mobile quality of broadband services in Europe, which is a crucial instrument to assess and monitor the achievement of the new connectivity goals as described in the Communication on "Connectivity for a competitive digital single market – Towards a European Gigabit Society".

To support access for individuals to broadband services with higher quality of service, this Rolling Plan calls for the standard developing organisations to analyse the standardisation landscape taking into account the studies the Commission launched to help mapping broadband infrastructures, services offered, demand status and investments, including the definition of common (fixed and mobile) network performance measurement.

3 Proposal for a Regulation of the European Parliament and of the Council concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications), 10.01.2017, COM (2017)10 final <https://ec.europa.eu/digital-single-market/en/news/proposal-regulation-privacy-and-electronic-communications>

# SOCIETAL CHALLENGES

## eHEALTH AND ACTIVE AND HEALTHY AGEING

In 2016, CEN TC 251 started to work on standardising an international patient summary, drawing from elements of the guidelines developed under the eHealth network. Completion of the standards is expected in 2018. This activity is funded by the Commission and ensures European participation to an international initiative which is expected to enable people to access and share their health data information for emergency or unplanned care anywhere and as needed.

In 2017, it is foreseen to support the development of a European guidance document based on BSI PAS 277 for the use of the eHealth and wellness apps' developers to set out quality criteria and principles to be followed throughout the app development life cycle. This standardisation activity will address some of the concerns related to the apps quality and reliability.

## WEB ACCESSIBILITY AND ACCESSIBILITY

The Directive on making the websites and mobile apps of public sector bodies more accessible was adopted on 26 October 2016. This means that people with disabilities — especially persons with vision or hearing impairments — will have better access to the websites and mobile applications of public services. The Commission is considering to issue a standardisation request in 2017.

On 2 December 2015, the European Commission adopted a proposal of a Directive concerning the harmonisation of accessibility requirements for certain products and services, the so called European Accessibility Act. There is a strong ICT focus among the list of products and services which should be reflected in the standardisation work for 2017.

## e-SKILLS AND e-LEARNING

In support of the objectives set out in the Communications “A New Skills Agenda for Europe”<sup>4</sup>, “A Digital single market strategy for Europe”<sup>5</sup> and “e-Skills for the 21st Century: Fostering Competitiveness, Growth and Jobs”<sup>6</sup>, the Commission is planning to issue in 2017 a standardisation request as announced in the AUWP to develop standards for a comprehensive European framework for the ICT profession which would complement and build on the existing European e-Competence framework.

## EMERGENCY COMMUNICATIONS AND eCALL

In 2017 it is expected the completion of the standards related to location of the emergency calls in accordance with mandate/493, and the development of standards needed to cope with technology advances, such as smart-phone apps and next generation networks.

Standards for next generation networks are also expected in 2017 for eCall, as well as standards for other users than M1 and N1 vehicles (lightweight vehicles for the carriage of goods or passengers), for aftermarket equipment and for integration with the cooperative intelligent transport systems.

## eGOVERNMENT

In 2016, the Commission adopted the ISA<sup>2</sup> work programme to support the development of the digital solutions that enable public administrations, businesses and citizens in Europe to benefit from interoperable cross-border and cross-sector public services. In 2017, standardisation work is expected to support this work programme together with international standardisation bodies, with a focus on ADMS and core vocabularies to increase semantic interoperability. The DCAT Application profile is being implemented in the pan-European data portal and was adopted by several Member States for their own data portals.

4 COM(2016) 381 final  
5 COM(2015) 192 final  
6 COM(2007) 496

# INNOVATION FOR THE DIGITAL SINGLE MARKET

## ePROCUREMENT AND E-INVOICING

Procurement processes, including the invoicing, need to be further digitalised to ensure application of the procurement Directives. This Rolling Plan calls for aligning the CEN/TC440 and TC434 efforts with the ISA core vocabularies to develop a common semantic model for the e-procurement domain. This joint working group is under establishment between the two TCs. This work should build synergies with the ontology being developed by the Publications Office.

## CARD, INTERNET AND MOBILE PAYMENTS

In 2017, the Commission will continue to encourage the cooperation initiatives both at standardisation (ESOs, W3C and others) and strategic level (ERPB). More analysis of the standardisation gaps (action 3) and a precise definition of mobile payments (action 1) are still required in the following years.

## XBRL

This Rolling plan calls for standardisation actions in support of the implementation of business reporting by Member States, in the context of the revised Transparency Directive.

## DIGITAL CINEMA

The Commission is currently evaluating a new action proposed by CEN related to the development of a European Standard and the related guidelines for the preservation of digital films, and to promote awareness (actions 1 and 2).

## FINANCIAL TECHNOLOGIES

The Commission has set up in 2016 an internal task force on financial technologies. Co-chaired by DG FISMA and DG CNECT, the task force brings together services responsible for financial regulation and for the digital single market, along with other colleagues dealing with competition and consumer protection policy. It will further engage outside experts and stakeholders with the aim to formulate policy-oriented recommendations and propose measures in the course of 2017. One of the work streams of the task force will focus on the interoperability and standards.

# SUSTAINABLE GROWTH

## SMART GRIDS AND SMART METERING, SMART AND EFFICIENT ENERGY USE

EG1 of the smart grids task force was re-launched to assess the interoperability, standards and functionalities applied in the large scale rollout of smart metering in Member States and in particular the status of implementation of the required standardised interfaces and of the Commission-recommended functionalities relating to providing information to consumers.

## SMART CITIES AND COMMUNITIES, AGGREGATING SMART SERVICES AND TECHNOLOGIES IN URBAN AREAS

The initial phase of the SSCC-CG work had been completed toward end 2016, and an overview white paper from January 2015 has been published. The work will be continued by the CEN-CENELEC-ETSI sector forum on smart and sustainable cities and communities. DG CNECT is funding H2020 support actions. In 2017, the core standardisation work is expected to develop hand in hand with cities work based on the principles developed in the European innovation partnership (EIC) on smart cities and communities (SCC)'s memorandum of understanding (see action 6).

## ICT ENVIRONMENTAL IMPACT

In 2016, agreement was reached on the work programme related to the standardisation request M/462. ETSI started standardisation work, with the objective to development KPI standards by 2018, possibly for referencing in ecodesign-related implementing measures.

## ELECTRONIC TOLLING SYSTEM

The Commission will review the electronic tolling system Directive, possibly extending its scope in terms of standards to the back office.

## TRANSPORT

The cooperative intelligent transport systems (C-ITS) platform with Member States completed its report in 2016. In particular the working group on security defined new needs for security in cooperative systems (see ITS section, action 16). In 2017, standards for day n applications are expected.

With regard to the standardisation request on Urban ITS via the standardisation mandate 546, work this year was mainly focused on defining and prioritising with stakeholders the standardisation requirements through a pre-study<sup>7</sup>. Based on the proposals submitted to the Commission, work will start in January 2017 on a core set of these proposals to support multimodality, traffic management and urban logistics.

In 2017, work will also start to steer and manage the integration of accurate (public) road data in digital maps with timely updates, based on the ROSATTE project and other activities such as the iMobility Forum.

### **ADVANCED MANUFACTURING**

The Commission will promote the development of interoperability standards and European reference architectures, as well as open cross-sectorial platforms for the digitisation of European industry, including experimentation, validation, interoperability testing facilities and trusted labels and certification schemes.

In the 2017 AUWP, the Commission expressed the intention to possibly start a standardisation request, which could be focused on communication protocols in industrial supply chains and specific KETs related technologies such as additive manufacturing.

### **ROBOTICS AND AUTONOMOUS SYSTEMS**

In 2016 robotics standardisation has continued its work in all fronts. During 2016 ISO has issued two new standards on robotics, namely ISO/TS 15066:2016 “Robots and robotic devices — Collaborative robots”, and ISO 18646-1:2016 “Robotics — Performance criteria and related test methods for service robots — Part 1: Locomotion for wheeled robots”. Work on nine other ISO standards on robotics is ongoing.

In February 2016, SPARC the public private partnership on robotics has issued a new update of the multi-annual road-map. R&D projects on robotics funded by the EU Horizon 2020 have set the scientific basis for new technologies and interoperability. Among them it is worthwhile highlighting the launch of two new projects dealing with robotic operating systems. This Rolling plan calls for increased coordination in the standardisation work led by industrials, notably through the SPARC public-private partnership.

### **CONSTRUCTION**

This new section in the Rolling plan focuses on business information modelling. The Commission is calling on more standardisation work, mainly based on ISO (action 1), to support competitiveness of the architectural, engineering and construction industry, one of the largest in Europe. This Rolling Plan calls for a gap analysis (action 2) and better awareness and support for implementation by the industry (actions 3 to 6).

### **CISE — COMMON INFORMATION SHARING ENVIRONMENT IN THE MARITIME SECTOR**

This new section in the Rolling plan focuses on increasing data exchanges in the maritime sector. In 2017, the EUCISE 2020 FP7 project (CISE pre-operational validation) will develop the CISE components using the CISE data and service model and validate them in a pre-production environment, involving 37 authorities from 13 European countries. The current CISE data and service model may be considered for standardisation in 2017.

The Commission would like to thank all Members of the Multi-Stakeholder Platform on ICT Standardisation for their active collaboration and for making this document possible: the EU Member States, EFTA States, standard setting organisations (ETSI, CEN, CENELEC, ISO, IEEE, IEC, ITU, OMG, IETF/IAB, OASIS, Ecma, W3C/ERCIM, UN/CEFACT), industry associations (Business Europe, Cable Europe, Digital Europe, ECIS, ETNO, EBU, EuroISPA, SBS, OFE, Orgalime) and stakeholder associations (AGE, ANEC, ECOS, EDF, ETUC).

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