POSITION PAPER

DRAFT ROLLING PLAN FOR ICT STANDARDISATION 2016

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1. Introduction

This position paper expresses ANEC's preliminary views on the draft Rolling Plan for ICT Standardisation for 2016.

As a member of the ICT Multistakeholders Platform, ANEC commented on the previous Rolling Plan for ICT Standardisation[1] and is pleased to have the opportunity to submit its views on the new draft. ANEC is also a member of the Committee of Standards and as such we comment on the Annual Union Standardisation Work Programme.

For ease of reading, we use the European Commission's draft document and express our comments with track-changes on the consumer relevant areas.

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[1] ANEC comments on European Commission Rolling Plan for ICT standardisation (review)

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

Service Industries
Key Enabling Technologies, Manufacturing and Interoperability

Rolling Plan for ICT Standardisation (2016)

Draft

This document reflects the proposals for update of the European Commission, based on the version of 2015

2.3 Accessibility of ICT products and services

(A.) Policy objectives

This policy area covers accessibility of ICT products and services; it includes telecommunications, TV and Broadcasting, web accessibility (treated in the next chapter 3.2.3) and new emerging technologies both from the mainstream side and the assistive technology side.

This area is related to the EU implementation of the UN Convention on the Rights of Persons with Disabilities to which the EU and 25 Member States are a party and the remaining have signed it and express their intention to ratify.

The Commission adopted the European Disability strategy 2010-2020[2] with the aim of supporting the implementation of the Convention in the EU. According to Regulation 1025/2012[3]

> *"(24) The European standardisation system should also fully take into account the United Nations Convention on the Rights of Persons with Disabilities. It is therefore important that organisations representing the interests of consumers sufficiently represent and include the interests of people with disabilities. In addition, the participation of people with disabilities in the standardisation process should be facilitated by all available means".*

(B.) Legislation and policy documents

(B.1) At European level

The Commission announced in the Work programme for 2012 , Annex I[4], under item 99 the preparation[5] of the European Accessibility Act to improve the functioning of the in-

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[2]   http://ec.europa.eu/justice/discrimination/disabilities/disability-strategy/index_en.htm

[3]   http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:316:0012:0033:EN:PDF   or http://ec.europa.eu/enterprise/policies/european-standards/standardisation-policy/#h2-1

[4]   http://ec.europa.eu/atwork/pdf/cwp2012_annex_en.pdf, item 99: European Accessibility Act: improving accessibility of goods and services in the Internal Market

[5]   Public consultation from 12 December 2011 to 29 February 2012, consultation document on http://ec.europa.eu/justice/discrimination/files/2011-12-13_consultation_background_document.pdf

ternal market of accessible goods and services. One of the areas under examination to be covered is the area of ICT goods and services.

Accessibility of ICT relates to the following documents:

1. The Commission's eGovernment Action Plan 2011-2015 to develop eGovernment services that ensure inclusiveness and accessibility
   https://ec.europa.eu/digital-agenda/en/european-egovernment-action-plan-2011-2015

2. The Disability Strategy 2010-2020
   http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0636:FIN:EN:PDF

3. The UN Convention on the Rights of Persons with Disabilities (UN CRPD)

   http://www.un.org/disabilities/convention/conventionfull.shtml or
   http://www.un.org/disabilities/default.asp?navid=14&pid=150

(B.2) Others

The UN Convention establishes accessibility as one of its general principles, which also applies to ICT and systems, including Internet and electronic services, and in article 9 on accessibility, requires the State Parties to take the necessary measures to ensure to persons with disabilities access on an equal basis with others. According to the UN CRPD this includes measures related to all services open or provided to the public.

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

Standardisation needs are twofold. First, the UN Convention requires in Article 9 the development of accessibility standards and in the general obligations the promotion of universal design in the development of standards. Work on this area needs to advance at European level to increase market coherence. Second, accessibility standards might be needed to support the European Accessibility Act.

(C.2) Ongoing standards related developments

Mandated standardisation work

Mandate Title	Short description / Web link
M/376	addresses ICT accessibility standardisation at European level; it takes into consideration relevant national and international standards on accessibility, like those adopted by the US Access Board, W3C WAI and some related ISO work. The resulting standard EN 301 549 and other related deliverables have been published. http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=search.detail&id=333#; http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=30873
M/473	ongoing standardisation work aiming to mainstream accessibility in other (than M/376) relevant European standardisation initiatives; it also exists to update standards in priority areas by addressing accessibility according to 'Design for All' approach; in addition it requires the development of standards that will explain to manufacturers and service providers how to include accessibility following design for all, hence facilitating the implementation of the accessibility clauses in European standards, which will cover the majority of the standardisation work mentioned in this Rolling Plan. http://www.etsi.org/images/files/ECMandates/m473.pdf
M/420	while focusing on accessibility of the built environment, might also include ICT that is used in that context http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=refSearch.search#

Commented [CG1]: Insert "standardisation request' to reflect new terminology.

Commented [CG2]: As the execution of this work is completed, it should not be under "on-going standardisation work".

Standards developments

Title	Short description / Web link
CEN	formed a Strategic Advisory Group on Accessibility (SAGA) to consider how to address accessibility throughout the standardisation process; this group includes representatives of national standards bodies, CENELEC and ETSI, as well as organisations representing disabled and older persons http://www.cencenelec.eu/standards/Sectors/Accessibility/Pages/default.aspx
ETSI	continues producing accessibility standards on specific ICT topics and is planning to produce a guide on user-centred terminology for existing and upcoming devices and services and recommendations for the design of ICT devices for persons with cognitive disabilities;

Ti-tle	Short description Web link
	initial early investigations are being undertaken into transmission quality and its possible linkage to reported intelligibility problems for some hearing impaired people; EG 202 952, Guidelines to identify "Design for All" aspects in ETSI deliverables, was recently published http://www.etsi.org/technologies-clusters/technologies/human-factors/accessibility; http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=35174; http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=37153; http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=35796
IETF	Relevant work may be found in the RAI area, e.g. RFC 3551 identifies the requirements for SIP to support the hearing impaired and RFC 4103 defines the RTP payload for text conversation; RFCs 4103 and 5194 are referenced in various accessibility draft regulations being proposed in the US http://trac.tools.ietf.org/area/rai/; http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform#ICTAccess; http://www.rfc-editor.org/rfc/rfc3551.txt; http://www.rfc-editor.org/rfc/rfc4103.txt; http://www.rfc-editor.org/rfc/rfc5194.txt; http://www.section508.gov/section-508-standards-guide
ISO	ISO/IEC Guide 71, Guidelines for standards developers to address the needs of older persons and persons with disabilities http://www.iso.org/iso/catalogue_detail?csnumber=33987
ITU	produced relevant accessibility and human factors work, a sample of which is found in the ITU Accessibility Portal. Related technical groups include Question 26/16 on accessibility and Question 4/2 on human factors. The checklist in FSTP-TACL on how to prepare ICT standards that include accessibility from their inception is also available, as well as ITU-T F.790. Draft ITU H-series Supplement 17 mirrors the new edition of ISO/IEC Guide 71 in preparation containing guidelines for standards developers to address the needs of older persons and persons with disabilities http://www.itu.int/en/ITU-T/accessibility; http://www.itu.int/rec/T-REC-F.790/recommendation.asp?lang=en&parent=T-REC-F.790-200701-I
W3C	globally recognised web-accessibility specifications are in "Web-Content Accessibility Guidelines" (WCAG) 2.0 that became ISO/IEC 40 500:2012. Website Accessibility Conformance Evaluation Methodology (WCAG-EM) 1.0 is currently at a Working Group Note status, it addresses aspects of website evaluation http://www.w3.org/TR/WCAG; http://www.w3.org/TR/WCAG-EM/;http://www.w3.org/WAI/

(C.3) MSP Members' and Stakeholders' remarks

Accessibility needs to be reflected in ICT and many other areas (like emergency communication, digital cinema, health, public transport, tourism, and learning) both for users with disabilities in the general public and for staff/entrepreneurs with disabilities in industry or public administration. As a consequence, accessibility should ideally be mentioned in all relevant policy areas.

Regarding standardisation needs Member States are aligned with the Commission perspective as characterised above.

The following list, to be seen as a complement to the proposals specified in sub-clause D of the present chapter, derived from views expressed by some Member States and experts in the field, contains possible standards-related actions. This is just an initial list which is intended to trigger further discussion with all stakeholders and should lead, when appropriate, to a gap analysis in different areas:

- Investigating how mobile devices are useful to people with impaired movements and other type of disability when interacting with other ICT products and services; a wider scope (not only mobile devices) guidelines related to diminished motor control e.g. people with advanced Parkinson or similar disorders who can hardly or no longer write is also needed

- Specification of requests for user interface devices including presentation techniques and mapping of character repertoires on soft, non-standard and reduced keypads, in different domains, e.g. m-payments, self-service terminals and public transport, not only communications systems

- Specification of accessible Communications systems

    o 'total conversation' and 'accessible TV distribution' transmission needs including how many and which real time voice/audio, video, text, eventually others synchronized streams are needed to ensure accessibility features like subtitling, messaging, audio description and sign language for all citizens; this should include quality, particularly intelligibility, of the communication to be appropriate to all; this includes emergency and critical communication services.

    o standardisation of broadcasters accessible interfaces to IP (and other) systems.

    o convergence and interoperability of video relay services .

- o accessible Hybrid TV services.

- Specification of requests for translation among languages and text representations, e.g.

  - o voice to text like automation of relay services for telephony and capturing/ subtitling TV transmissions.

  - o interoperability of the most common text transmission techniques like IM – SMS- eMail.

  - o text to voice like in automatic generated audio description.

  - o text to sign language like in automatic generated sign language.

- Identification of accessibility requirements and associated standardization requests related to

  - o analphabetic and dyslexic users; these requirements may turn out to be equally applicable for foreign users unable to understand available user interface languages.

  - o security and privacy features of ICT services and devices as explained below (see also clauses related to security and ePrivacy) .

With the increasing reliance on online services to perform every aspect of everyday life, people are sharing more private information with a wider range of services. Explanations of how private information will be handled are written in technical and legal language and do not address all concerns that are of importance to users. There is an urgent need to provide standards and guidance on how to communicate privacy issues in terms that are meaningful to users, including those with disabilities (e.g. assuring them that a service is "trustworthy"), rather than using language and concepts that are only meaningful to lawyers or technical experts.

Users have to use increasingly complex security procedures to access the services that they rely on. Attempts to increase security frequently include mechanisms that many users, particularly those with physical and cognitive disabilities, are unable to successfully handle without adopting highly insecure strategies such as writing down complex usernames and passwords. There is a need to provide standards and guidance on accessible security mechanisms compatible with human abilities, and appropriate to the type of service being used. In this context the benefit of using of new technologies like biometrics or RFID should be evaluated

(D.) Proposed new standardisation actions

(D.1) Standards developments

Some citizens with hearing impairments are experiencing increasing intelligibility problems with modern networks and devices. It has not yet been possible to identify whether some of these problems are related to factors such as normal age-related hearing deterioration or to the increasing use of mobile phones in noisy public environments (such as airports). Further investigation into the potential causes of the reported problems experienced by hearing impaired people could identify areas where the standard models for predicting speech quality may need to be updated; this should include the definition and realization of dedicated subjective tests needed to develop an objective methodology to assess intelligibility.

Action 1: based on the relevant European projects to produce a report investigating how the quality of communication perceived by people with special needs, particularly intelligibility, to be appropriate to all.
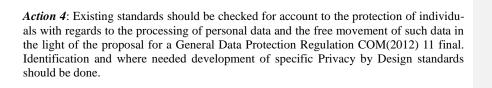
There is an urgent need to better understand how ICT products and services can be designed to meet the needs of persons with cognitive, memory and learning disabilities, including many older users, and then to develop and update standards to ensure that they recommend solutions that are beneficial to this group of users.

Action 2: to produce a report investigating how ICT products and services can be designed to meet the needs of persons with cognitive and learning disabilities; the report should propose enhancements to relevant existing standards and identify needs of further standardisation.

The preponderance of different names for the same ICT features and functions is confusing for all people, but this can be a significantly more important problem for older users or users with learning and cognitive disabilities. This has a negative impact on individual citizens and on the size of the ICT market. The development of a guide on user-centered common and easy terminology in several EU languages for existing and upcoming devices and services. This would provide benefits for all potential users, particularly older users and users with learning and cognitive impairments who are currently partly excluded from benefitting from the use of modern ICT.

Action 3: to produce a guide on user-centred terminology for all potential users in several EU languages, focusing on the benefits for those with learning and cognitive impairments.

Action 4: Existing standards should be checked for account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be done.

2.4   Web Accessibility

(A.) Policy objectives

Within the area of accessibility this specific policy area addresses the proposal for a Directive on the Accessibility of public sector bodies' websites by use of globally agreed web accessibility guidelines.

(B.) Legislation and policy documents

Action 64 of the Digital Agenda[6] aims to make sure that public sector websites (and websites providing basic services to citizens) are fully accessible by 2015. There is a Proposal for a Directive on the accessibility of public sector bodies' websites[7].

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

The Proposal for a Directive on the accessibility of public sector bodies' websites includes a presumption of conformity for the websites concerned which meet the relevant harmonised standards. It also states that a harmonized standard to provide presumption of conformity should be built on the outcome of Mandate M/376[8] for accessibility requirements of products and services in the ICT domain suitable for public procurement purposes. The Commission's proposal also states that a methodology for the monitoring of the conformity of the websites concerned with the requirements for web accessibility will be developed.

On 26 February 2014, the European Parliament Plenary voted on the directive. It brought significant improvements to the Commission's legislative proposal in terms of public websites covered and increased enforcement provisions as well as inclusion of access from a handheld mobile device and mo-

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6   http://ec.europa.eu/digital-agenda/en/pillar-vi-enhancing-digital-literacy-skills-and-inclusion/action-64-ensure-accessibility-public

7   http://ec.europa.eu/digital-agenda/en/web-accessibility

8   http://www.etsi.org/images/files/ECMandates/m376en.pdf

bile applications. Since then, the draft Directive is still awaiting the approval of the Council of Ministers.

(C.2) Ongoing standards developments

Standards Developments

Title	Short description Web links
BSI	BS 8878:2010 is the first British standard to outline a framework for web accessibility when designing or commissioning web products http://www.ihs.com/products/industry-standards/organizations/bsi/index.aspx
ETSI	Mandate 376 of the Commission to the ESOs asks to deliver a European standard setting accessibility requirements for the public procurement of ICT products and services, including web-content. The resulting standard EN 301 549 was published in February 2014 and contains the requirements of WCAG 2.0 Level AA http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=30873
ISO / IEC	JTC1 SWG-A (Special Working Group on Accessibility) and SC35 (User Interfaces) http://www.iso.org/iso/home/standards.htm; http://www.iec.ch/etech/2011/etech_1011/tc-14.htm
ITU	ITU IRG AVA (Audio Visual Accessibility) and ITU-T SG16 Q26 (Accessibility to multimedia systems and services) http://itu.int/en/irg/ava
W3C	globally recognised web-accessibility specifications are in "Web-Content Accessibility Guidelines" (WCAG) 2.0 that became recently ISO/IEC 40 500:2012. W3C is further progressing their activity Website Accessibility Conformance Evaluation Methodology (WCAG-EM) 1.0 is currently at a Working Group Note status and addresses aspects of website evaluation. However it is generally accepted that there are many other aspects of website evaluation about which there is no universally agreed methodology and there is a widespread perception that such an agreed and standardised approach would be of great value

Title	Short description
	Web links
	http://www.w3.org/TR/WCAG; http://www.w3.org/TR/WCAG-EM/; http://www.w3.org/WAI/

Stakeholder groups, technology platforms, research projects

Title	Short description
	Web links
Aaliance2	Next Generation European Ambient Assisted Living Innovation; FP7 repository of existing standards
	http://www.aaliance2.eu/
Atis4All	EU Thematic Network on Assistive Technologies and Inclusive solutions for all: marketplace with a specific section on standards (CIP ICT PSP)
	http://www.atis4all.eu/presentation.aspx
eAccess+	HUB providing resources notably on standards and guidelines for Web accessibility (CIP ICT PSP)
	http://www.eaccessplus.eu/
EIII	European Inclusion Internet Initiative: partners amongst others Dutch, Danish, Italian and Island governments
	http://eiii.eu/
Prosperity4All	Develops the infrastructure and ecosystem that will allow for a ubiquitous auto-personalization of interfaces and materials, based on user needs and preferences, to grow; it builds on the infrastructure provided by Cloud4All in order to create more parts of the GPII
	http://www.prosperity4all.eu; http://www.cloud4all.info/; http://gpii.net/
Raising the Floor Consortium	Mission is to make the web and mobile technologies accessible to everyone with disability, literacy and aging-related barriers, regardless of their economic status
	http://raisingthefloor.org
The Netherlands, 'Just Ac-	Other countries are invited to participate in this initiative which is the first European one involving all relevant stakeholders (government, market par-

Title	Short description / Web links
cessible'	**ties that build websites and market parties that test websites) to work together on continuously improving the accessibility of government websites by supporting both governments and market parties with proper instruments, e.g. accessibility plug-in to support content managers and monitor: accessibility of public websites on organizational and product levels, software conformity to the WCAG standard mismatches with WCAG standard that were found, suggestions to improve compliance** http://www.quirksmode.org/blog/archives/2007/01/new_dutch_acces.html
VERITAS, FP7	**Virtual and Augmented Environments and Realistic User Interactions, including review of policy and standardisation issues to achieve Embedded Accessibility Designs** http://veritas-project.eu/

(C.3) MSP Members' and Stakeholders' remarks

Whatever approach is taken, focus should be put on the following requirements and objectives:

- Enable and incentive improvement on accessibility and supports continued innovation

- Support a global market place (any fragmentation on meeting user needs makes accessible products more expensive as accessible requirements are highly diverse already).

- Do not restrict new and dedicated, simple or personalised approaches; promote accessible products in 'public environments' like in the contexts of public procurement or licenses (e.g. Universal or Mobile Services).

- Do not apply at either the product or a vendor level but operate at a higher level or via targeted sectors to move the overall market provision in meeting accessibility requirements.

- Do not presume appropriate approaches ahead of research (in particular cognitive issues but more generally issues are known where users require alternatives and some areas where technical detail can improve matters).

A broad, open and undetermined discussion with stakeholders should be held on the best way for making the W3C WCAG 2.0 guidelines the base specification for web accessibility and for ensuring conformity with the specifications. Specific discussions and investigations with stakeholders are needed on:

- Evaluation method by which conformity is measured, especially regarding automatic testing. For the improvement of both evaluation methods and automatic testing it is necessary to look at the context in which faults occur. Data from automatic test on websites[9] may be used for further investigation e.g. in cooperation with W3C, CEN and the EIII project.

- A specific discussion and investigation is also needed of the intersection of mobile (devices) and accessibility.

More steps should be taken in terms of the applications, given that the European Parliament position on the Proposal for a Directive on the Accessibility of Public Sector Bodies' Websites include first party apps delivering information or services from the public bodies.

(D.) Proposed new standardisation actions

(D.1) Standards developments

Pointing out areas of web-accessibility where standardisation may be needed, e.g. monitoring methodologies for conformance with most important standards.

Action 1: produce a report listing the relevant aspects to be covered and most important methods to demonstrate compliance with EN 301 549 and WCAG 2.0.

Action 2: Existing standards should be checked for account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be done.

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9   e.g. from 600 Dutch government web sites, 20.000.000 pages tested

3.3 Card, Internet and Mobile Payments

(A.) Policy objectives

While there is no globally accepted definition of mobile payments, payments involving the mobile phone seem to gain importance. Mobile payments can be based on card payments, credit transfers, direct debits, or through pre-funded cards and accounts.

In general, the Commission strives to promote an integrated European market for card, internet and mobile payments for the benefits of consumers and merchants.

(B.) Legislation and policy documents

(B.1) At European level

4. **Directive 2007/64/EC** on payment services

5. **Regulation (EC) 924/2009** on cross-border payments

6. **Regulation (EC) 260/2012** on the SEPA migration end-date

7. **COM(2011) 941 final**: Green Paper "Towards an integrated European market for card, internet and mobile payments"

8. **Cybersecurity Strategy** of the European Union: An Open, Safe and Secure Cyberspace [JOIN(2013) 1 final].

(B.2) Others

French strategy :
http://proxy-pubminefi.diffusion.finances.gouv.fr/pub/document/18/17780.pdf#page=7

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

Objectives and actions are well balanced given standardisation state of the art.

By the end of 2014, the number of mobile connected devices will exceed the number of people on earth, and in February 2014 mobile access to the Internet surpassed fixed access. Whether to shop, move, buy concert tickets, pay bills or access banking services, mobile is becoming the preferred access path to online services.

The market for mobile payments at European level is fragmented. The current landscape is characterised by applications for niche users and by a myriad of pilot projects, mostly at domestic or local level. The advent of an integrated system of mobile payments in the EU is hampered by the lack of cross-border standardised and interoperable technical solutions.

The absence of shared standards, standardisation gaps and the lack of interoperability between the various market players are delaying the mass market adoption of this innovative payment method. While certain solutions, such as Near Field Communication (NFC), seem to emerge as possible lead technologies for proximity mobile payments, common standards for mobile payments at the Point of Sale (POS) do not exist or are in a very early stage of development.

Provided that the market factors are duly taken into account, filling the standardisation gaps will make it easier for payment services providers and merchants alike to reach critical mass by making use of the digital single market and commit to making the necessary investments.

It requires a coordinated and pragmatic approach by the public authorities and by the various players in order to favour the deployment of the service. The cooperation among the players is key, and should be supported by the real willingness and commitment to achieve concrete results.

The European Commission doesn't plan yet to engage into specific legislation since it requires a more mature market. However, it will continue the cooperation and discussion with the institutional players and the ESOs, and will launch/support appropriate standardisation initiatives as soon as gaps and needs are identified. DG GROW will pursue its work on the mapping of the market for mobile payments.

The European Retail Payments Board has created a stakeholder Working Groupto identify and address barriers to an integrated payments~~ùennts~~ market. This should work in cooperation with relevant players that are not represented in the ERPB (e.g. telecom operators), and is expected to deliver a vision that will enhance the consumers' confidence in m-payments.

Future standardisation work in the m-payments domain should pay particular attention to security for apps, access and accessibility, management and portability of customer data, transparency. Certification of equipment and solutions should be addressed as well by the competent bodies.

In order to foster and accelerate innovation and create a level playing field, a certain degree of standardization is imperative to secure compatibility in the mobile payments val-

ue chain. Changing handset (version), OS, card, wallet, provider, or any other service or product in the chain combining into a mobile payments proposition, must be a seamless and secure experience for the consumer.

Standardization could include making a distinction between mobile platforms (e.g. secure element, mobile handset) and their functions/security which are of generic nature and in support to all mobile services / applications and mobile payment applications (running on these platforms).

(C.2) Ongoing standards developments

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Commented [CG3]: We suggest to insert a reference to the EPRB WG work.
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Organisation	Short description and web links
ISO	Mobile payments WG - ISO TC68/SC7/WG10. ISO 12812 will be ready for publication in 2015. It includes five parts: • ISO 12812-1: General Framework • ISO 12812-2: Security and data protection for Mobile Financial Services • ISO 12812-3: Financial Application Management • ISO 12812-4: Mobile Payments to Persons • ISO 12812-5: Mobile Payments to Businesses
ETSI	Following the EC-ETSI jointly organized workshop on m-Payments held in July 2014, ETSI will set up an open and inclusive "Smart Secure Platform" (SSP) that will bring together all relevant players and experts (industry, standards-making, public authorities) and will aim at identifying existing standardisation gaps and needs, bearing in mind the requirements to be set by ERPB. The objective is to define a generic (i.e., technology agnostic) standardized security platform to enable secure and interoperable service delivery of mobile devices for a series of industry sectors. The results of the analysis and the proposed standardisation work will lead to the launch specific and co-ordinated standardisation activities at European and international level.
ITU-T	SG13 approved two Recommendations on mobile payments (ITU-T Y.2740 and Y.2741).

Organisation	Short description and web links
	Focus Group on Digital Financial Services: develop a roadmap for interoperable digital financial services, develop a set of best practices for policy and regulation which will facilitate deployment of digital financial services on a global scale and to assess standardization gaps in digital finance and propose new requirements for technical standards for mobile financial services. http://itu.int/en/ITU-T/focusgroups/dfs
W3C	Web payments CG focuses on specific payment solutions, e.g. Payswarm. The basic idea is for W3C to standardise the API between web apps and the wallet with the browser as an intermediary.
EPASOrg and EPC	EPASOrg and EPC currently focus on the protocols for card payment protocols in the Eurozone and aim to replace the current mess of proprietary protocols. EPC (European Payment Council) are also involved in SEPA (Shared Euro Payment Area) and see themselves as the decision-making and coordination body of the European banking industry in relation to payments.

(C.3) MSP Members' and Stakeholder's remarks

Extract from European Round Table of Industrialists (ERT) summary document:

CASE STUDY: NEAR FIELD COMMUNICATION (NFC) STANDARD

Initiated in 2011, the NFC standard aims at leveraging mobile payment services in Europe by defining the tools to develop a SIM-based NFC ecosystem. This standard is currently developed with a cross-industry approach, involving primarily mobile network operators and handset-manufacturers.

The NFC standardisation process engages over 40 industry players which allows for competition within a standard, contrary to quasi-monopolistic market structures often generated by proprietary platforms. Stakeholder involvement is also crucial to achieve critical mass when launching a new network service, such as NFC mobile wallets.

Given the pace of technologies and the level of global competition in the Telecom sector, it is essential for the NFC success that standardisation is fast and takes the time-to-market of the product into account. To support these needs for coordination and speed, the European Commission as a whole has a key role to ensure that strategic coordination across industries in standard setting is facilitated and promoted.

Other inputs:

In general regarding card, internet and mobile payments, some stakeholders believe that the following issues should in particular be addressed: security, access and accessibility, management and portability of customer data, transparency.

(D.) Proposed new standardisation actions

(D.2) Other activities around standardisation

Action 1: Assess landscape of existing standards. The Commission, in cooperation with the European Central Bank, intends to facilitate the convergence of ongoing standardisation activities in the area of card payments and spur the emergence of pan-European standards for m-payments and Internet payments. As a first step the Commission will invite the ESOs and other relevant bodies such as the SEPA Council to map out business and user requirements and assess existing standardisation gaps. Taking as starting point the requirements of businesses and consumers, there is a need to assess the existing standards, to identify interoperability gaps, and to develop a work programme that will serve to develop missing standards and to fix the existing problems.

In particular the following issues (in particular in the m-payment domain) should be addressed: security for apps, access and accessibility, management and portability of customer data, transparency. Certification of equipment and solutions should be addressed as well by the competent bodies.

A standardisation request to the ESOs to develop standards for m-payments, reflecting consumers' needs, should be issued. Of course, coordination with existing activities should be ensured.

Action 2: Investigate work for W3C. After a successful Workshop, W3C expects the need to charter a new working group on the payment request API and a complementary business group with a broader remit.

Action 3: Standards should take into account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be done.

5.7 Network and Information Security

(A.) Policy objectives

The European Cyber Security Strategy and the accompanying legislative proposal on Network and Information Security foresee actions on the promotion of the development and of the take-up of ICT security standards.

A Network and Information Security Public-Private Platform (NIS Platform) has been implemented by the Commission with representation of various stakeholders.

(B.) Legislation and policy documents

(B.1) At European level

- **Cybersecurity Strategy** of the European Union: An Open, Safe and Secure Cyberspace - JOIN(2013) 1 final - 7/2/2013

- **Proposal for a Directive** of the European Parliament and of the Council concerning measures to ensure a high common level of network and information security across the Union - **COM(2013) 48 final** - 7/2/2013 – EN

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

The focus will be on establishing a number of reference standards and/or specifications relevant to network and information security, including, where relevant, harmonized standards, to serve as a basis for encouraging the coherent adoption of standardisation practises across the Union.

It is important that *all levels of an organization* – in particular the strategic level or the management board room - are aware of the need for standards and frameworks in the field of cyber security. Moreover, between organizations that are partners in (vital) online chains will have to be made clear agreements on the different standards.

Actions should also be planned in the context EC Mandate M/487 to establish security standards. The three priority themes (border security, crisis management and CBRNE) call for a strong ICT related standardization activity. [FN: Cooperation between some relevant partners, such as hospitals and care does not imply that GPs have adopted the standards]

(C.2) Ongoing standards developments

Organisation	Short description and web links
CEN, CENELEC, ETSI	Cyber Security Coordination Group (CSCG). CSCG White Paper "Recommendations for a Strategy on European Cyber Security Standardisation" was published in April 2014. http://www.cscg.focusict.de
OASIS	PKCS 11 standardisation project for cryptographic tokens controlling authentication information (such as personal identity), see https://www.oasis-open.org/committees/pkcs11 Key Management Interoperability Protocol (KMIP) for enterprise encryption key administration and deployment. https://www.oasis-open.org/committees/kmip SAML TC https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=security
ISO/IEC JTC 1	SC 27 work is ongoing on the following work areas 1. Security requirements capture methodology 2. Management of information and ICT security; in particular information security management systems (ISMS), security processes, security controls and services 3. Cryptographic and other security mechanisms, including but not limited to mechanisms for protecting the accountability, availability, integrity and confidentiality of information 4. Security management support documentation including terminology, guidelines as well as procedures for the registration of security components 5. Security aspects of identity management, biometrics and privacy 6. Conformance assessment, accreditation and auditing requirements in the area of information security 7. Security evaluation criteria and methodology http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=45306 ISO 29115 entity authentication framework. http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm? csnumber=45138
ITU-T	SG17: study group on security: standardizes network and information security where numerous ITU-T Recommendations have been developed including the security Recommendations under the ITU-T X-series http://itu.int/ITU-T/go/sg17 http://www.itu.int/en/ITU-T/studygroups/2013-2016/17/Pages/default.aspx

Organisation	Short description and web links
	http://www.itu.int/ITU-T/recommendations/index_sg.aspx?sg=17. SG17 / Q10/17 - Identity management architecture and mechanisms http://www.itu.int/itu-t/workprog/wp_block.aspx?isn=2048
IEEE	Standardization activities in the network and information security space and in anti-malware technologies, including in the encryption, fixed and removable storage, and hard copy devices areas, as well as applications of these technologies and cyber security in smart grids. http://standards.ieee.org/develop/msp/nis.pdf.
ETSI	ETSI TC Cyber has identified a number of areas where work is starting. http://portal.etsi.org/tb.aspx?tbid=824&SubTB=824.

(C.3) MSP Members' and stakeholders' remarks

The Dutch government has selected a group of security standards for its comply or explain regime: DNSSEC, DKIM, SAML, ISO 27001/2, TLS, and is actively using different adoption strategies to get the standards implemented.

(D) **Proposed new standardisation actions**

(D.1) Standards developments

Action 1: Review CSCG action plan and recommendations for standardisation actions. Based on the White Paper and the subsequent consultation with the EU Commission (DG CNECT), CSCG has crafted an action plan with focus on the following topics:

- Common Understanding of "Cyber Security"

- Trust in the European Digital Environment

- European PKI and Cryptographic Capabilities

- High-level European Cyber Security Label for ICT

- European Cyber Security Requirements (Roadmap)

To execute the action plan, the CSCG seeks input from and cooperation with all stakeholders, including all relevant views expressed by the European industry in the area of Cyber Security Standardisation. This includes the work of ISO/IEC JTC 1/SC 27 with its European mirror committees as well as industry consortia. Therefore the CSCG and the NIS Public-Private Platform will regularly liaise with the MSP to address possible cyber-security standardisation gaps identified.

Action 2: Consider privacy aspects. Existing standards should be checked for account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be performed.

(D.2) Other activities around standardisation

Action 3: Investigate on suggestions for further improvements of standards and specifications in the area of Network Security. This may include recommendations regarding the further development of DNSSEC within IETF.

Action 4: Investigate on work addressing issue of malware on personal computers. ENISA (European Union Agency for Network and Information security) has concluded that many personal computers contain malware that is able to monitor (financial) transactions. As we are becoming increasingly dependent on eBusiness and e-transactions, a European initiative should investigate this topic.

In general, further actions may be identified from the work of the Network and Information Security Public-Private Platform.

5.8 ePrivacy

(A.) Policy objectives

The enforcement of the EU data protection and privacy legal framework is made easier if data processing products and processes are designed and built from the beginning with legal requirements in mind. This is referred to 'data protection and privacy by design'. Standards may set forth the basic requirements for data protection and privacy by design for products and processes, minimising the risk of (i) divergent national approaches, with their concomitant risks to freedom of movement of products and services, and (ii) the development of several, potentially conflicting, private de-facto standards.

This could be combined with the emergence of certification services: economic operators wishing to have their products and processes audited as being "data protection and privacy by design" compliant, would have to fulfil a set of requirements defined through appropriate EU standards and robust, independent third party certification mechanisms.

(B) Legislation and policy documents

(B.1) At European level

The following legal instrument should be considered at European level:

- The **ePrivacy Directive**[10]. Article 14(3) provides that "*Where required, measures may be adopted to ensure that terminal equipment is constructed in a way that is compatible with the right of users to protect and control the use of their personal data, in accordance with Directive 1999/5/EC and Council Decision 87/95/EEC of 22 December 1986 on standardisation in the field of information technology and communications)*".

- The **Data Protection Directive** includes provisions which indirectly, in different situations, suggest the implementation of privacy by design. In particular, Article 17 requires that data controllers implement appropriate technical and organization measures to prevent unlawful data processing.

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[10]   Directive 2002/58/EC 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) as amended by Directive 2009/136

- **Proposed Data Protection Regulation**. Article 23 requires data protection by design and by default. [11]

- The **1999/5 RTTE Directive**, and **Directive 2014/53/EU** on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC. Article 3(3)(c) of this Directive requires that *radio equipment within certain categories or classes shall be so constructed that it [...] incorporates safeguards to ensure that the personal data and privacy of the user and of the subscriber are protected.*" The Commission is empowered to adopt <u>delegated acts</u> specifying which categories or classes of radio equipment are concerned by each of the requirements.".

(B.2) Others

The Commission will soon publish a Study on "ePrivacy Directive: assessment of transposition, effectiveness and compatibility with the Proposed Data Protection Regulation, SMART 2013/0071". It contains in-depth analysis of national implementation of several key provisions (namely Article 1 and 3 on the scope, Article 5 on confidentiality of communications, Article 5(3) on cookies and similar technologies, Article 6 and 9 on traffic and location data and Article 13 on commercial communications.

The Internet Architecture Board (IAB) provides a list of the national transpositions of Art 5.3 of the ePrivacy Directive, see http://www.iabeurope.eu/policy/e-privacy.

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

The focus will be on establishing a number of reference standards and/or specifications relevant to privacy in the electronic communications environment, including, where relevant, harmonised standards, to serve as a basis for encouraging the coherent adoption of standardisation practises across the Union.

~~The Commission recently has proposed a mandate to European Standards Organisations seeking to routinely include privacy management methodologies in both the design and production phases of cybersecurity technologies generally.~~

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[11]   Having regard to the state of the art and the cost of implementation, the controller shall, both at the time of the determination of the means for processing and at the time of the processing itself, implement appropriate technical and organisational measures and procedures in such a way that the processing will meet the requirements of this Regulation and ensure the protection of the rights of the data subject."

The European Commission proposed a standardisation request/mandate in support of the implementation of privacy management in the design and development and in the production and service provision processes of security technologies, which was approved in October 2014. The aim of M/530, "Standards for privacy & personal data protection management", is for manufacturers & providers to manage privacy & personal data protection issues through privacy-by-design.

At the beginning of 2015, CEN-CENELEC JWG 8 "Privacy Management in products and services" was set up to execute M/530. A work programme should be elaborated in the second half of 2015 with work foreseen to start in 2016.

(C.2) Ongoing standards development

Various activities are in place, as detailed in the table below. Due account should also be taken of the activities of the DG GROW Working Group on "Privacy by Design", which includes standardisation participants as well as other stakeholders. ~~There are some other relevant EU initiatives, including the mandate M/436 on RFID, but none is wholly related to privacy.~~

Organisation	Short description and Web links
W3C	Initiative to develop specifications by which Internet users may express their permission (or the withholding of their permission) to have their presence and activities on websites tracked (the "Do Not Track" concept), and to help Internet users to express their agreement or disagreement to be tracked on the Internet. http://www.w3.org/2011/tracking-protection/
OASIS	Privacy by Design Documentation for Software Engineers standards project (PbD-SE): https://www.oasis-open.org/committees/pbd-se
OASIS	Privacy Management Reference Model (PMRM) project https://www.oasis-open.org/committees/pmrm,
IETF	IETF's Internet Architecture Board established a Privacy Program to serve as a forum for synthesizing IETF privacy thinking and privacy design considerations

Organisation	Short description and Web links
IETF	http://www.iab.org/activities/programs/privacy-program/ Privacy Considerations http://tools.ietf.org/html/draft-iab-privacy-considerations-09
ISO/IEC JTC1	ISO/IEC Joint Technical Committee 1's Subcommittee 27 on IT Security Technologies published a Code of Practice for protection of personally identifiable information (PII) in public clouds(ISO/IEC 27018:2014), and is developing a draft international standard Privacy Capability Assessment Model (ISO/IEC DIS 29190) http://www.iso.org/iso/iso_technical_committee?commid=45306
ITU-T	ITU, through a variety of activities, is examining issues related to building confidence and security in the use of ICTs, including stability and measures to combat spam, malware, etc., and to protect personal data and privacy (ref. Plenipotentiary Conference, Guadalajara 2010, Resolution 130). ITU-T has been developing ITU-T standards which address protection of personally identifiable information such as in Recommendations ITU-T H.233, H.234, H.235.0, H.235.9, J.93, J.96, J.125, T.807, X.272, X.1081, X.1086, X.1092, X.1142, X.1144, X.1171, X.1250, X.1252, X.1275, X.1580, Y.2720, and Y.2740
ETSI	TC CYBER
CEN-CENELEC	CEN-CENELEC JWG 8 "Privacy Management in products and services" was set up to execute M/530

(C.3) MSP Members' and stakeholders' remarks

Management of controls over the access to data should be considered essential for an effective implementation of privacy measurements.

(D.) Proposed new standardisation activities

(D.1) Standards developments

Action 1: In the light of the accountability and privacy by design principles (as among others formally included in the Commission proposal for a General Data Protection Regulation COM(2012)), ICT standards generally should be created in order to ensure a high level of protection of individuals with regards to the processing of their personal data, and the free movement of such data, and the application of Privacy by Design methodol-

ogies. Privacy and data protection standards should thus be examined, developed or improved as necessary, so as to provide standardised methods that support that review and improvement in due respect of EU data protection rules..

Proposed specific areas on which to focus are:

9. ***Action 2:*** Standardising browser functionalities and defaults to enable users to easily control whether they want to be tracked.

10. ***Action 3:*** location data used by mobile applications. [12].

11. ***Action 4:*** methodologies for interrogating, testing and assuring privacy functionality.

(D.2) Other activities around standardisation

- ***Action 5:*** EU-wide attention to standardization of privacy statements and terms & conditions, given the existing state of mandatory acceptance of diverse, ambiguous and far-reaching online privacy conditions, taking into account the ongoing reform of the Data Protection Directive.

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- ***Action 76:*** further investigation of technical measures apt to make personal data anonymous or pseudonymised (and therefore unintelligible by those who are not authorised to access them) may be warranted.

- ***Action 87:*** Further investigation of standards based on a user-centric approach to privacy & access management may be warranted: see http://www.laceproject.eu/blog/give-students-control-data/.

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[12] Such work should be undertaken in due line with the ePrivacy Directive and GDPR

4.1 Smart Grids and Smart Metering

(A.) Policy objectives

One of the EU's key ambitions is to develop a low-carbon economy. In the 2020 and 2030 framework for climate and energy, the EU committed to lower greenhouse gas emissions by 20% with respect to 1990 and 40% by 2030, to reach a share of renewable energy consumption of at least 20% by 2020 and 27% by 2030, and 27% energy savings by 2030 (compared with the business-as-usual scenario).

In this landscape, the electricity network has a central role to play. In 2012, electricity represented 22% of our final energy consumption with a share of renewables of 24% in the gross production i.e. almost a 3% increase compared to 2011, and . Owing to the increasing number of appliances, of the expected penetration of heat pumps and electric vehicles, this share is expected to rise and the share of renewables could be as high as 50% by 2030 with an important contribution from variable sources. There is therefore a tremendous need for accelerating the smart grids rolling out.Smart grids will be the backbone of the future decarbonised power system. They will enable improved energy efficiency and the integration of vast amounts of Renewable Energy Sources (RES), decentralised generation and new loads such as electric vehicles; provide an opportunity to boost the retail market competitiveness and worldwide technological leadership of EU technology providers, and a platform for traditional energy companies or new market entrants such as ICT companies, including SMEs, to develop new, innovative energy services. That dynamic should enhance competition in the retail market, incentivise reductions in greenhouse gas emissions and provide an opportunity for economic growth.

The use of Smart Grids for future high-tech infrastructures in Europe, such as integration of renewables and energy infrastructure for electric cars, needs to be addressed at European level from a very beginning to create synergies, ensure interoperability and establish a real internal market.

(B.)   Legislation and policy documents

(B.1) At European level

- **Directives 2009/72/EC** and **2009/73/EC**: Internal market in electricity and natural gas

- **Directive 2012/27/EU** on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

- **Regulation (EU) No. 347/2013** on guidelines for trans-European energy infrastructure

- **Directive 2014/94/EU** on the deployment of alternative fuels infrastructure

- **COM(2012) 663**: Communication: Making the internal energy market work

- **Recommendation COM 2012/148/EU** (09.03.2012) on preparations for the roll-out of smart metering systems

- **Recommendation 2014/724/EU** (10.10.2014) on the Data Protection Impact Assessment Template for smart grid and smart metering systems

- **COM(2011) 202** Smart Grids: from innovation to deployment

- **COM(2012) 663** Making the internal energy market work

- **C (2013) 7243** Delivering the internal electricity market and making the most of public intervention; and accompanying **SWD (2013) 442** Incorporating demand side flexibility, in particular demand response, in electricity markets

- **COM(2014) 356** Benchmarking smart metering deployment in the EU-27 with a focus on electricity; and accompanying **SWD(2014) 188** and **SWD(2014) 189**

- **COM(2015) 192**: A Digital Single Market Strategy for Europe

- **COM(2010) 245**: "A Digital Agenda for Europe": actions 71 & 73 address respectively minimum functionalities to promote smart grid interoperability and a common set of functionalities for smart meters and are directly related to the standardisation activities at CEN/CENELEC/ETSI.

- **COM(2009) 111**: Mobilising Information and Communication Technologies to facilitate the transition to an energy-efficient, low-carbon economy

- **COM(2009) 519** final: Investing in the Development of Low Carbon Technologies (SET-Plan)

- **COM(2008) 30** final: 20 20 by 2020, Europe's climate change opportunity

- **COM(2008) 241**: Addressing the challenge of energy efficiency through Information and Communication Technologies

- **COM(2009) 7604**: Recommendation (9.10.2009) on mobilising Information

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

The deployment of Smart Grids will be crucial to achieve the 2020 and the 2030 targets. The implementation of appropriate ICT solutions will also enhance network efficiency and improve overall system operation through better demand response mechanisms and cost savings (remote operation of meters, lower reading costs, avoiding investment in peak generation, etc.), which will also contribute to the implementation of the internal energy market.

Standards are needed to cover the communication needs of the grid management, balancing and interfacing with the millions of new renewable sources, as well as standards for the complex interactions of the new distributed energy market, and in special a transparent Demand Response scheme.

As systems need to be integrated to ensure their coherent operation in response to user's requirements, interoperability is a first and fundamental requirement to be considered. This can be ensured only through an appropriate standardisation activity by reviewing existing standards or, where needed, developing new ones. The majority (estimated at 70%) of the standards needed for the smart grid are ICT related. Of paramount importance is the agreement around data protection and data security related standards.

Communication standards will also be crucial for the deployment of electric cars and the building-up of smart cities. Harmonised communication protocols would provide standard components and interfaces giving 'plug-and-play' capability for any new entrant to the network, such as renewables or electric cars, or the use of open architectures based on global communication standards.

A major difficulty is the choice of stakeholders which need to be brought together to conduct the standardisation work taking into account that between smart grid management (of relevance to utility producers, the utility network operators) and smart consumption (involving the end consumer) a seamless environment should be established where interests are not identical and potentially conflicting.

The main coordination reference for smart grids at European level is the Smart Grids Task Force, which was given the mission to advice the European Commission on policy and regulatory directions at European level and to coordinate the first steps towards the implementation of Smart Grids under the provision of the Third Energy Package. Nine DGs are participating: ENER and CNECT (co-chair), CLIMA, GROW, ENV, JUSTICE, JRC, RTD and SANTE, along with more than thirty associations representing all relevant stakeholders, from both sectors – energy and telecommunications, and more than 350 experts from national regulatory agencies and industrial market actors.

Policy aspects related to the smart grid mandate M/490 were dealt with under the Expert Group 1 (EG1) of the Smart Grids Task Force. The group is chaired by ENER and CNECT is actively participating in this group. EG1 is also monitoring related activities under mandate M/441 (Smart Meters) and M/468 (electric vehicles chargers) to the ESOs.

At present mandate M/490 given to CEN-CENELEC-ETSI by the Commission in March 2011 can be considered as completed; this was equally confirmed by the conclusions of the validation conference the Commission services organised on 26 February 2015 in Brussels, during which industry representatives confirmed their will to take over and implement the results of the EG1 work on standards. Consequently, Expert Group (EG1) of the Smart Grids Task Force was re-launched to assess the interoperability, standards and functionalities applied in the large scale roll out of smart metering in Member States and in particular the status of implementation of the required standardised interfaces and of the EC recommended[13] functionalities related to the provision of energy management services for consumers' benefit.

On the level of technical standardisation and coordination of work, IEEE, OASIS and the ESO Smart Grid Coordination Group are continuing their collaboration including identifying whether there are serious conflicts between their respective standardisation deliverables which may have negative impact on interoperability and market adoption of smart grid solutions.

(C.2) Ongoing standards developments

Standards Developments

Organisation	Short description and Web links
CEN, CENELEC, ETSI	At present, the EC mandate M/490 given to CEN-CENELEC-ETSI by the Commission in March 2011 can be considered as completed; this was equally confirmed by the conclusions of the validation conference the Commission services organised on 26 February 2015 in Brussels, during which industry representatives confirmed their will to take over and implement the results of the EG1 work on standards. The European Standardisation Organisations have agreed to continue their collaboration in relation to Smart Grids following the completion of the work under

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[13] Commission Recommendation 2012/148/EU

Organisation	Short description and Web links
	this mandate, under the Smart Energy Grid Coordination Group. The latter will further develop some details in the work already carried out, follow-up on new developments in the field of Smart Grids, and actively promote the results of its work at European and international levels.

Concerning smart metering, a separate Smart Meters Coordination Group (SM-CG) of the three ESOs is managing the standards work programme still contributing to the development of new and maintenance of existing standards for advanced metering infrastructures in support of the European roll-out of Smart Meters, following the successful completion of the work done under mandate M/441.

Regarding electro-mobility, the work is ongoing under the M/468 mandate. A work programme and a list of relevant standards for the charging of electric vehicles was last updated in November 2014.

Finally, regarding charging points for electric vehicles of interest to the eM-Coordination Group, and in support of the implementation of the alternative fuels infrastructure Directive 2014/94/EU, a new standardization request is expected to be issued to the ESOs in 2015.

ETSI and the oneM2M Partnership project are active in the area of M2M with some relation to smart grids. ETSI is also developing radio technologies for wireless interconnection in Home Automation Networks with applications such as smart metering and energy control in the scope of the technology. |
| IEC | IEC - Strategic Group 3 and multiple activities in numbers of specific TCs, with over 100 relevant standards. A copy of the IEC Smart Grids System Roadmap is available at

http://www.iec.ch/smartgrid/downloads/sg3_roadmap.pdf. |
| IEEE | IEEE has many standards and standards projects in development from the diverse fields of digital information and controls technology, networking, security, reliability, assessment, interconnection of distributed resources including renewable energy sources to the grid, sensors, electric metering, and broadband over power line, and systems engineering. IEEE has developed a guide for smart grid interoperability standardisation, IEEE 2030-2011 IEEE Guide for Smart Grid Interoperability of Energy Technology and Information Technology Operation with the Electric Power System (EPS), End-Use Applications, and Loads. IEEE |

Organisation	Short description and Web links
	2030(r) spans the three distinct perspectives of power and energy, communications and information technology. http://standards.ieee.org/develop/msp/smartgrid.pdf.
ITU-T	The ITU-T Smart Grid Focus Group completed its work in December 2012 and adopted deliverables at http://itu.int/en/ITU-T/focusgroups/smart . The work was taken over by ITU-T SG15, which leads and coordinates this issue within ITU and with other organizations. ITU-T SG15 developed standards on power line communication (PLC, Recommendation ITU-T G.990x-series), which is one of the most important technologies for smart grid. Detailed information is described in the document "Smart Grid Standardization Overview and Work Plan" developed by ITU-T SG15 and available at http://itu.int/en/ITU-T/studygroups/2013-2016/15.
OASIS	OASIS developed a series of transactive energy standards for smart grid information, energy supply transactions and monitoring which have been adopted by some regulators as model specifications for open energy markets. See OASIS Energy Interoperation: https://www.oasis-open.org/committees/energyinterop OASIS Energy Market Information Exchange (eMIX): https://www.oasis-open.org/committees/emix OASIS Web Services Calendar (WS-Calendar): https://www.oasis-open.org/committees/ws-calendar OASIS Open Building Information Exchange (oBIX): https://www.oasis-open.org/committees/obix.

Others (including stakeholder groups, technology platforms, research projects)

Title	Short description and Web links
NIST	The US government sponsored a Smart Grid Interoperability Panel from 2009-2012 to spur cooperative industry and public agency development of open data standards for smart grid functionality: http://www.nist.gov/smartgrid/priority-actions.cfm. In 2013, the management of this project was turned over to industry stakeholders as a continuing standards cooperation project: http://sgip.org/
JISC	Japanese Industrial Standards Committee (JISC) roadmap to international standardisation for smart grid.

Title	Short description and Web links
SGCC	The State Grid Corporation of China (SGCC) Framework. A lot of further national activities and roadmaps could be mentioned as well, such as those of Austria, Spain, the United Kingdom, the Netherlands, France, Korea and others.

(C.3) MSP Members' and Stakeholders' remarks

Security, privacy and management of control of the access to and ownership of data are essential for the development of Smart Grids. Without wide acceptance by commercial users and consumers, the role of Smart Grids would be limited to specific vertical markets only.

A missing element in the Smart Grid applications is negotiations mechanisms that allow users and providers to negotiate optimized usage, including planning and scheduling of availability and use of energy resources.

The part of the grid inside the home domain is also an element that has a significant impact on energy efficiency. Several elements are needed: Local protocols for Home Automation Networks; A multidisciplinary standardized approach covering all aspects of the problem, from application semantics to indoor interconnection wired or wireless technologies; Applications such as lighting and energy control, appliances control, power monitoring, smart metering and buildings energy management; Provision of elements for a global solution on smart appliances and home energy control, such as suitable radio protocols for indoor coverage.

(D.) Proposed new standardisation actions

(D.1) Standards developments

~~**Action 1**: Expert Group (EG1) of the Smart Grids Task Force is working to assess the interoperability, standards and functionalities applied in the large scale roll out of smart metering in Member States and in particular the status of implementation of the required standardised interfaces and the functionalities related to the provision of energy management services for consumers' benefit.~~

EG1 is currently finalising the report following the 'survey regarding Interoperability, Standards and Functionalities applied in the large scale roll out of smart metering, in EU Member States'. The report is expected to be published end of September 2015.

Based on its recommendations, standards should be developed to support the "measuring the success of smart metering deployment from a consumer perspective". This action points is mentioned in the recommendations and concern the success towards enabling consumers to have easy access to information, be

satisfied with the smart meter deployment, to realise benefits from smart metering as well as to participate actively in the energy market.

Action 3: Existing standards should be checked for account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be done.

4.2 Smart Cities / Technologies and Services for a Smart and Efficient Energy Use

(A.) Policy objectives

One of the EU's ambitions is to create sustainable growth through the effective implementation of ICT and built environment technologies in order to cope with increasing pressure on natural resources across the globe. At the same time, the implementation of these technologies must match the necessity for creating new jobs and industries as well as further increasing citizen engagement in the democratic process.

Smart Cities will form the backbone of these initiatives, linking together the evolution of the urban environment with the correct technology frameworks that enable a flourishing ecosystem of large and small companies, citizens and governments uniting to deliver public services in a new way – one that links environmental, social and economic demands together. Bringing a holistic perspective, that will build upon the innovation created by smart cities, creating innovation for SMEs and large corporations, and enabling cheaper public services as well as greater participation in the democratic processes of the EU.

Standardisation forms a critical part of the evolution that Europe's cities need to make over the coming years. While technologies such as IoT, 5G or cloud technologies are opportunities for increased sustainability and effectiveness, they also present a challenge to societies as they face the digital transition. Cities are one of the EU's essential assets, but in order to leverage their potential as drivers of sustainable growth in the digital transition, the more traditional, sectorial approach to technological development must be increasingly complemented and directed with a holistic view on smart cities.

Through the processes of standardizing smart cities, citizens will be guaranteed of the protection of citizen rights in the use of data within cities. This will guarantee the protection of end-user rights, but also provide security for European companies in the development of information value chains.

(B.) Legislation and policy documents

(B.1) At European level

* **Directive 2003/96/EC** of the Council on Energy Taxation

* **Directive 2003/87/EC** of the European Parliament and the Council on EU Trading Scheme

- **Directive 2004/8/EC** of the European Parliament and the Council on Cogeneration

- **Directive 2009/28/EC** of the European Parliament and the Council on the Use of Energy from renewable sources

- **Directives 1992/75/EC** and 2010/30/EU on Labelling and Information

- **Directives 2005/32/EC** and 2009/125/EC on Eco Design of products

- **Directive 2006/32/EC** of the European Parliament and the Council on Energy end-use efficiency and energy services

- **Directive 2010/31/EU** of the European Parliament and the Council on Energy Performance of Buildings

- **Regulation 2013/105/EC**: Mobilising Information and Communications Technologies to facilitate the transition to an energy-efficient, low-carbon economy

- **COM(2012) 4701**: "Smart Cities and Communities - European Innovation Partnership"

(C.) Standardisation needs, ongoing activities and progress report

(C.1) Commission perspective and progress report

At the level of Smart Cities, the interoperability need is stronger than at the level of buildings – it requires interaction between technologies, public authorities and the built environment. This is specially so when it comes to public services. Open data comes along with standardised open data.

From a physical point of view, we can think of the urban environment as a hierarchical system in which, for example, buildings are grouped in neighbourhoods, neighbourhoods in cities, cities in regions, and so on. Urban areas are therefore inherently complex systems, the subsystems of which work together to create the whole.

The core components in such a complex system are the frameworks that assist companies, cities and other actors to provide appropriate solutions that prioritise economic, social and environmental outcomes. Solutions should address the whole lifecycle optimizing environmental, social and economic outcomes through the seamless transfer of information; availability of energy management appliances (sensors, switches) designed as 'plug and play' devices; compatibility with home automation networks.

In Smart Cities, nowadays, ISO standards are all in terms of the building scale, and there are no specific International Standards for energy modelling at the urban scale. However, starting from analysis at the building scale, the ISO standards also can be indirectly applied to urban energy modelling.

The European Commission has created a Smart Cities and Communities European Innovation Partnership (SCC-EIP). This has established a Smart Cities Stakeholder Platform (with ESO participation) and a High Level Group advising the Commission. The High Level Group released in early 2014 a Strategic Implementation Plan (SIP) that describes a joint vision, a common target and proposals for implementation, which contain standardisation aspects. The SIP is available at http://ec.europa.eu/eip/*smartcities*/files/sip_final_en.pdf.

Home Automation Networks is an important domain to be included in any global initiative for improvement in energy efficiency. Applications such as lighting and energy control, appliances control, power monitoring and buildings energy management are part of the Home Automation Networks and have a significant impact on energy efficiency. This complex issue involves multiple domains, from application semantics to specific radio interconnection technologies.

(C.2) Ongoing standards developments

Standards developments

Organisation	Short description and Web links
BSI	BSI's PAS 181:2014 Description: British Smart City Framework. A good practices framework for city leaders to develop, agree and deliver smart city strategies. Uses OASIS TGF (below). http://www.bsigroup.com/en-GB/smart-cities/Smart-Cities-Standards-and-Publication/PAS-181-smart-cities-framework/
BSI, Future Cities	Cities Standards Institute (CSI) is a joint activity to develop a strong network of cities, companies and SMEs to develop the next stage of the BSI's Smart City Catapult Framework
CEN, CENELEC, ETSI	Smart and Sustainable Cities Co-ordination Group (SSCC-CG) (similar activities are also going on national level, e.g. in DIN/DKE, and are linked to this co-ordination group, which includes ESO and national standards bodies, as wellstakeholder representatives). The SSCC-CG has published a report at XXXXXX [insert URL] and is now following up the recommendations, through a series of five specific activities (see sec-

Organisation	Short description and Web links
	tion D.2). The SSCC-CG proposes to act as lead in relation to the European Innovation Partnership Action Cluster on standards.
ETSI/One M2M	SmartM2M Smart Appliances Common Ontology and SmartM2M/oneM2M mapping. The result of the European Commission Study Group on Smart Appliances ontologies will take into account all the interest of the relevant stakeholders. Review the Study and adapt it to the structure of a normative document. Additionally, it will develop the mapping on the SmartM2M and possibly to oneM2M.
ISO, IEC	ISO Technical Committee 268 '"Sustainable development in communities" is directly working on many relevant issues, including management systems and indicators. Energy model terminology is specified in ISO/IEC CD 13273 (Energy efficiency and renewable energy sources), ISO/DTR 16344 (Common terms, definitions and symbols for the overall energy performance rating and certification of buildings), ISO/CD 16346 (Assessment of overall energy performance of buildings), ISO/DIS 12655 (Presentation of real energy use of buildings), ISO/CD 16343 (Methods for expressing energy performance and for energy certification of buildings), and ISO 50001:2011 (Energy management systems – Requirements with guidance for use). ISO/TC 257 General technical rules for determination of energy savings in renovation projects, industrial enterprises and regions" is currently working on a standard on "Energy Efficiency and Savings calculation for Countries, Regions and Cities" (ISO/CD 17742)
~~CENELEC~~	~~Ongoing work includes EN 50523:2009 'Household appliances interworking~~
ITU-T	Report "Sustainable Buildings" which provides technical guidance on environmentally conscious design, maintenance, repair and operating principles and best practices from construction through to lifetime use and de-commissioning. Also, ITU-T developed a number of Recommendations and established,

Organisation	Short description and Web links
	a focus group on smart and sustainable cities that is currently developing technical specifications for smart sustainable cities including on buildings [http://itu.int/en/ITU-T/focusgroups/ssc/]. ITU-T Study Group 5 is also developing a methodology to assess the environmental impact of ICT in cities together with many stakeholders including the European Commission SG13 has three Recommendations on smart energy saving (ITU-T Y.3021, Y.3022 and Y.2064).
IEEE	There are a number of available standards and active standards projects related to Smart Cities through its Smart Grids, IoT, eHealth, and other related topics. These standards and projects cover a broad spectrum of fields, including but not limited to digital information and controls technology, reliability, interconnection of distributed resources including renewable energy sources to the grid, sensors, electric metering, broadband over power line, and systems engineering. http://standards.ieee.org/develop/msp/smartcities.pdf.
OASIS	Transformational Government Framework (TGF) Description: Models and practices for using IT to improve delivery of public services. https://www.oasis-open.org/committees/tgf, https://www.oasis-open.org/news/pr/new-british-smart-cities-specification-uses-oasis-transformational-government-framework
DIN/DKE/VDE	The German Standardization Roadmap Smart City http://www.vde.com/en/dke/std/documents/nr_smart%20city_en_version%201.0.pdf

Others (including stakeholder groups, technology platforms, research projects

Title	Short description and web links
SEMANCO	for the first time developing a Semantic Energy Information Framework (SEIF) to model the energy-related knowledge planners and decision makers need
eeSemantics	Stakeholder group on Energy Efficient Buildings Data Models. Building on the standards promoted by building Smart Alliance.

Title	Short description and web links
	Adapt4EE/Ready4SmartCities are running a series of Vocabulary Camps addressing specific sub-areas.
Project from DG GROW	"Stimulating industrial innovation in the construction sector through smart use of ICT: connecting SMEs in digital value chains" Objectives: 12. provide a market analysis of the construction industry in terms of the current and foresight integration of ICT and eBusiness solutions and systems; 13. develop a framework for digital value networks in the construction sector.
Working group on energy consumption	In the area of smart appliances (white goods, HVAC systems, lighting, etc.) a working group has been established bringing together energy consuming and producing products (EupP) manufacturers and stakeholders with the objective of creating a roadmap towards agreed solutions for interoperability. Focus is communication with smart appliances at information level in smart homes. Long term perspective is M2M solutions in the context of IoT.
Horizon 2020 call SCC-03-2015	Development of system standards for smart cities and communities solutions. The process for developing smart cities and communities standards should ensure interoperability of solutions, i.e. adaptability of solutions to new user requirements and technological change as well as avoidance of entry barriers or vendor lock-in through promoting common meta-data structures and interoperable (open) interfaces instead of proprietary ones; open and consistent data, i.e. making relevant data as widely available as possible – including to third parties for the purpose of applications development – whilst using common, transparent measurement and data collection standards to ensure meaningfulness and comparability of performance/outcome measurements.
Industry Memorandum of Understanding on Urban Plat-	Develop a set of principles and a joint reference architecture framework to enable interoperability, scalability and open interfaces to integrate different solutions. Develop a joint data and service ontol-

Title	Short description and web links
forms	ogy to be used by individual Smart cities. Accelerate the adoption of the developed framework by standardisation bodies.
Open & Agile Smart Cities (OASC)	City-led initiative to create a smart city market which addresses the complex needs of cities in the digital transition, especially interoperability, portability and comparability, in order to avoid vendor lock-in and to support local digital entrepreneurship. OASC consists of three technical mechanisms which are open and free. More than 50 cities have already committed to adopt the OASC principles, encompassing both large, mature cities and smaller towns. The OASC mechanisms are directly linked to the existing standardardisation processes on national, European and international level, including the SSCC-CG.

(C.3) MSP Members' and Stakeholder's remarks

There are already many activities going on around smart cities in various standards development organisations around the globe. Industry, therefore, welcomes that the Commission does not see a need to trigger further standards developments at this point in time but relies on the industry initiatives which have started in organisations around the globe.

Broad coordination both with stakeholders but also with Member States and the Commission is important for making consistent progress in this area which covers a large field of sub-domains.

(D.) Proposed new standardisation actions

(D.1) Standards developments

Action 1: Multidisciplinary standardized approach for Home Automation Networks (HAN). This should cover all aspects of the problem, from application semantics to radio technologies. Applications such as lighting and energy control, appliances control, power monitoring and buildings energy management are part of the Home Automation Networks and have significant impact in energy efficiency. Link to DG Connect initiatives on Smart Cities and Smart Appliances.

> **Commented [CG5]:** These elements are not core to smart cities, they relate more to smart homes/appliances

Action 2: Provision of elements for a global solution on smart appliances and home energy control, such as suitable radio protocols for indoor coverage.

(D.2) Other activities around standardisation

Action 3: The CSA on ICT/Energy vocabularies and ontologies (Ready4SmartCities): DG CONNECT Objective ICT-2013.6.4 will contribute to the standardisation organisations..

Action 4: Privacy issues: Existing standards should be checked for account to the protection of individuals with regards to the processing of personal data and the free movement of such data in the light of the proposal for a General Data Protection Regulation COM(2012) 11 final. Identification and where needed development of specific Privacy by Design standards should be done.

Action 5: Open & Agile Smart Cities (OASC): Launched in March 2015, and going beyond a total of 50 cities in 10 countries in the 2nd wave in September 2015, the OASC initiative is based on three open, existing, free, lightweight mechanisms – a common API, a set of data models and a data platform – which address the core issues of the Digital Single Market strategy, including interoperability, portability and comparability in smart cities. Governed by the OASC Task Force, which is led by the needs of the cities who implement the mechanisms, the OASC initiative has set up an open process in which the mechanisms will be developed further, feeding into standards processes.

Action 6: CEN-CENELEC-ETSI Smart Cities and Communities Co-ordination Group Objectives: The SSCC-CG is working on five main objectives, with a target of up to the end of 2016:

– to promote an enabling framework for smart cities;

– to enlarge partnerships with key stakeholders;

– to develop as a reference point for the co-ordination of consistent smart city standardisation within the ESO context;

– to communicate and promote standards on smart cities;

– to assess smart citizen-related standards (.CEN/CENELEC Technical Report to clarify whether further standardisation is needed on citizen issues related to smart cities (eg: on what, where, when etc.), and to take full account is taken of other standards activities under way. The TR would also support the other recommendations at policy level. Inter alia, as a key issue, the EIP SSC, in implementing the strategic smart city goals, recommends to fully respect consumer privacy (European Innovation Partnership on Smart Cities

and Communities Operational Implementation Plan, page 6). The Commis-
sion and SETIS consider it essential for innovation to build trust, especially
concerning energy data security and privacy (SET Plan, December 2014,
page 7).