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Rolling plan for ICT standardisation (2013)

This document has been prepared in collaboration with the Multi-Stakeholder Platform on ICT Standardisation.

Executive introduction to the EU Rolling Plan for ICT Standardisation

This EU Rolling Plan for ICT Standardisation, henceforth called the Rolling Plan (RP), is a document drafted by the European Commission, in collaboration with the European Multi-Stakeholder Platform on ICT Standardisation, henceforth called "Multi-Stakeholder Platform" or "MSP". The MSP is an advisory group to the European Commission on matters of ICT standardisation policy.

This Rolling Plan provides a multi-annual overview of the needs for preliminary or complementary ICT standardisation activities to undertake in support of the EU policy activities. It is addressed to all ICT Stakeholders and gives a transparent view on how the policies are planned to be practically supported. As such, it is the successor of the 2010-2013 ICT Standardisation Work Programme, and it is a non-binding document.

The Rolling Plan comprises several chapters. The first two chapters provide an introduction to the Rolling Plan, the importance of standardisation and standards in the context of policy making and the instruments that are available for working with standardisation, standards and technical specifications and promoting their uptake.

Chapter 3 is at the heart of this Rolling Plan. It lists all topic areas identified as EU policy priorities where standardisation, standards or ICT technical specifications may play a key role in the implementation of the respective policy. Each policy area is listed in a separate sub-section of chapter 3. Via the table of contents below an easy overview and fast access to the respective sub-sections is given.

All topic areas listed in the sub-sections of chapter 3 are structured in the same way. They provide an overview of the rationale for identifying the respective topic as policy priority. The comments coming from the various stakeholders of the ICT Standardisation Multi-Stakeholder Platform, including the EU Member States, have been integrated into these sub-sections. This also applies to the recommendations for actions which reflect the input from the Commission and the respective stakeholder advice.

Chapter 4 covers technologies of horizontal importance in the contexts of ICT infrastructures and ICT standardisation. It provides an overview of relevant basic horizontal standards and ongoing standardisation activities in various technology areas with relevance across the specific topic areas.

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1. THE STRATEGIC ROLE OF ICT STANDARDISATION IN THE CONTEXT OF EU POLICY MAKING

1.1. Terms, Definitions and Acronyms

Terms	*Definition*
European Standards Organisations (ESO)	The three European Standards Organisations are the organisations listed in the Annex I of the Regulation 1025/2012/EC, i.e., CEN, CENELEC and ETSI. Among other activities, they adopt the European standards.
European Multi-Stakeholder Platform on ICT Standardisation (MSP)	The MSP is an advisory group to the Commission on matters relating to the implementation of ICT Standardisation policy, including its work programme, priority-setting in support of legislation and policies, and identification of specifications developed by global ICT standard development organisations. It is composed of members of the national authorities of Member States and EFTA countries, industry associations, societal stakeholders and organisations representing ICT standardisation stakeholders.
Annual Union Work Programme on European Standardisation (AUWP)	The AUWP is a formal document adopted by the Commission identifying the strategic priorities for European Standardisation, taking into account Union long-term strategies for growth.

1.2. Legal Basis

Regulation 1025/2012/EC

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:316:0012:0033:EN:PDF

This Regulation sets up the general frame for the standardisation. It defines what is a standard, the stakeholder participation in its elaboration, the link to the Annual Union Work Programme for ICT Standardisation and the financial arrangements.

Commission Decision of the 28.11.2011 setting up the European Multi-Stakeholder Platform on ICT Standardisation

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:349:0004:0006:EN:PDF

This Decision describes the role of the European MSP.

Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee of the 1.6.2011. COM(2011) 311. A strategic vision for European Standards: Moving forward to enhance and accelerate the sustainable growth

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0311:FIN:EN:PDF

1.3. EU Policy Making and the Rolling Plan for ICT Standardisation

1.3.1. Why The Rolling Plan ?

Innovation and technology adoption are of high importance for Europe. They drive technology progress and make sure that state-of-the-art technologies get implemented and optimally used. Also, innovation and technology adoption provide critical support for Europe to face the challenges of a global market place, of society and economies. Information and Communication Technologies (ICT) play a focal role in supporting and facilitating innovation not only in ICT specific areas but also as horizontal technologies.

Policy making in Europe makes use of standards and technical specifications in order to reap the benefits of broader, more interoperable markets and systems, and greater network effects for technology that they can bring. The standards adopted by a recognised standards body after a public enquiry procedure can be international, European or national standards, when adopted by international, European or national standardisation bodies. The three European Standards Organisations (ESOs) entitled to produce European standards are CEN, CENELEC and ETSI. The ESOs also produce other technical specifications, so-called European standardisation deliverables, which undergo different development and consensus building processes.

Relevant ICT technical specifications, however, are also developed by global industry-driven ICT fora and consortia. When their development processes meet requirements as laid down in Annex II of the Regulation on European standardisation (1025/2012)[1] they may become common technical specification to be referenced by the public sector in their public procurements and public policies. This is in accordance with Articles 13 and 14 of the Regulation on European standardisation.

The term "standards" is used in this document in a generic way for all such deliverables from both recognised standards organisations and from standardisation fora and consortia – or the terms "standards and technical specifications" are used. Yet, whenever required in this document the terms are specified in a more detailed way drawing on the definitions given in the Regulation on European standardisation (1025/2012/EC).

[1] The exact definition and scope of the terms 'standard' and 'ICT technical specification' are detailed in article 2 of Regulation 1025/2012 (see legal basis). Additional information can be found in public procurement legislation (Directives 2004/17/EC, 2004/18/EC and 2009/81/EC, and Regulation 2342/2002, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:134:0001:0113:en:PDF)

1.3.2. What is the Rolling Plan and what does it provide?

This Rolling Plan identifies EU policy priorities where ICT standardisation and ICT standards should be considered as part of policy making. The Rolling Plan is a strategic document focussing on the support those standards, technical specifications, and standardisation in general can provide in the context of EU policy priorities, in particular to ensure interoperability (including avoidance of technology lock-in) in the ICT domain.

The Rolling Plan looks at the standardisation landscape in relation to the EU policy priorities. It identifies possible areas for action and may go into suggesting a plan or roadmap regarding effective standardisation support. The **detailed recommendations** are addressed in relation to each policy priority individually in chapter 3 of this Rolling Plan.

The Rolling Plan is a living document and does not claim completeness. It aims at covering as much as possible the broad range of standardisation activities, technical specifications and standards relevant for the respective policy objectives and topic areas, but there is no systematic search. The Rolling Plan has been written down on the basis of input from the EU Services and from the EU ICT Standardisation Multi-Stakeholder Platform[2],

The Rolling Plan is regularly reviewed in a collaborative process with the MSP and, on an annual or by-need basis, updated by the Commission. Activities that are missing may be notified to the European Commission which holds the secretariat of the ICT Multi-Stakeholder Platform, at ec-ict-std-rolling-plan@ec.europa.eu.

The Rolling Plan complements the **Annual Union Work Programme for European Standardisation** in the field of ICT.

The Rolling Plan is addressed in particular to public authorities, but also to any other parties interested in ICT standardisation issues. It provides transparent information on the EU policy actions under way and envisaged, and on the corresponding standardisation landscape in Europe and globally. It therefore serves as a source of basic information for stakeholders wishing to contribute to the policy objectives through standards activities. It is a guidance document without legal status.

The Rolling Plan is endorsed by the European Commission, after discussion with, and on the basis of the advice of the MSP.

1.4. Instruments of EU Policy Making

The Rolling Plan covers the broad spectrum of policy instruments where policy makers, mostly the European Commission, may use ICT standard-

[2] Decision of 28 November 2011 setting up the European multi-stakeholder platform on ICT standardisation (2011/C 349/04) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:349:0004:0006:EN:PDF

isation in support of EU policy priorities, i.e. it covers any technical or organisational activity related to ICT standardisation that can support policy and legislation.

As further outlined below the European Commission has different options for making use of standards and technical specifications or triggering activities around standardisation. These options also depend on the level of policy making.

The focus of the Rolling Plan is on the role of ICT standards in supporting policies, and it may reference or complement the New Approach and New Legislative Framework. Under these processes, standards may be referenced in support of legislation, i.e. in the context of EU Regulations or Directives. Harmonised European Standards (hEN) may be used to demonstrate compliance with so-called essential requirements, and thus enable products to be placed on the European market. Standardisation requirements in respect of these issues are covered in the Annual Union Work Programme, and will be the subject of mandates.

Standards may be used in support of industrial or innovation policy, e.g. for driving interoperability and the uptake of new technologies. The Rolling Plan addresses specific technology areas which have been identified as policy priorities and explores the role which standards and technical specifications can play in achieving the policy objectives.

Standards can also play a role in EU funded Research and Innovation (R&I) projects, most notably in the context of the EU Framework Programmes for R&I. The impact of standards on R&I may be on different levels: R&I projects may contribute to standardisation work; standardisation may be a tool for adopting and exploiting new technologies; and standardisation may contribute input to R&I work or R&I activities may build on standardisation work that is available or in progress. Thus some topic areas addressed in Rolling Plan may be identified by Commission as areas with relevance for R&I and taken up in the context of the EU R&I Framework Programme.

Finally, standards take an important role in relation to government internal policies, i.e. such areas, where governments identify procedures for internal information exchange, infrastructure and systems design. These policies may also be addressed on A2A (administration to administration), A2B (administration to business) and A2C (administration to citizen) issues.

Closely linked and often a consequence of government internal policies is public procurement. Where standards and common technical specifications have been identified as important in government internal policies, public procurement will –and should– reference these standards and common technical specifications in the respective calls for tenders when acquiring technologies that are needed to implement the respective policies. In other words: policy making often precedes public procurement, and thus the selection of standards and common technical specifications in policy contexts precedes the referencing of the respective standards in public procurement.

1.5. The relation between the Annual Union Work Programme on European standardisation and the Rolling Plan for ICT standardisation

The European Commission formally adopts an Annual Union Work Programme (AUWP) which covers strategic priorities for European standardisation across all sectors. The AUWP primarily addresses the work where the Commission intends to request European standards and European standardisation deliverables from the ESOs. It also includes objectives for the international dimension of European standardisation, in support of Union legislation and policies. It is drafted in consultation with the Member States, ESOs and stakeholder organisations. The AUWP is addressed to the other Institutions, the ESOs and the public at large. While the AUWP does include topic areas from the ICT sector, it contains limited detail and focuses on those actions where EU mandates are or may be involved.

The Rolling Plan complements the AUWP. The Rolling Plan is exclusively addressed to ICT standardisation. It covers a broader spectrum and identifies in greater detail the topic areas where ICT standards and technical specifications could help achieve policy objectives including through complementary interoperability testing and awareness actions to ensure the effective uptake and implementation of those standards. Recommendations for actions may not only refer to the use of standards and technical specifications or the initiation of standardisation activities, but may also include the development of guidelines, reports and supporting activities.

The Rolling Plan goes well beyond the items listed in the AUWP. The Rolling Plan sets out in detail the policy framework with relevance to ICT standardisation for the benefit of all interested parties in the ICT area. Topic areas that are addressed in the AUWP are also listed in the Rolling Plan if the policy relevance and the suggestions for actions go beyond the work referenced in the AUWP.

1.6. EU Policy Priorities

The Rolling Plan is a tool for the European Commission to collect all standardisation needs to support EU policies. To this end, the Commission services contribute to the Rolling Plan indicating the policy areas where they need primary support from ICT standardisation and set the priorities.

Since policy making is a process, the policy requirements reflected in the Rolling Plan address at a given time different stages of this process. Therefore, a full spectrum of ICT standardisation needs can be considered from preliminary guidance useful for initial policy conception to development of specific standards to support policies fully in place.

1.7. Pan-European consistency

1.7.1. EU Member States and EFTA Countries

The EU Member States as well as the EFTA countries associated with European standardisation participate in the development of the Rolling Plan. They are members of the MSP. For the Rolling Plan they can bring in their respective national interests, e.g. in the form of national strategy papers, standards lists, standardisation work programmes or interoperability frameworks.

The objective of the Rolling Plan in this respect is to integrate the different approaches, interests and policy objectives and to bridge between the various approaches and interests. The Rolling Plan is informative and not prescriptive in any way. The Rolling Plan may identify overlaps with policy objectives on the side of some of the Member States and EFTA countries. It also contains suggestions for new or further activities or policy needs as seen by Member States and EFTA countries. Overall, the Rolling Plan aims at facilitating pan-European consistency on ICT standardisation by providing the necessary information and linkage.

1.7.2. Broad Stakeholder input

The Rolling Plan is based and integrates broad stakeholder input on ICT standardisation topics and strategies. All stakeholders represented in the MSP provide regular input and feedback and thus contribute to the development of a concise picture on ongoing standardisation activities as well as on standardisation needs and market and policy needs in general.

The Rolling Plan does not claim to be comprehensive or complete. It provides a perspective at a given point in time and subject to the contributions received and integrated.

1.8. Development and Maintenance of the Rolling Plan

The Rolling Plan is developed by the European Commission, in a collaborative process with the MSP, based on various inputs from the European Commission services which provides new actions and updates on standardisation needs. The Commission identifies EU policy objectives and priorities as well as ways where ICT standardisation can support the implementation of the respective policies.

The MSP provides comments and derives recommendations, compiling its advice in a consolidated draft.

Once finalised, the Rolling Plan is endorsed by the European Commission and made public.

The Rolling Plan is regularly reviewed and updated by the Commission in collaboration with the MSP, at least once a year, following a similar process.

1.9. Instruments for implementation of the Rolling Plan

1.9.1. General aspects

The Rolling Plan aims to provide a concise picture of the plans and needs in ICT standardisation in the context of EU policy making.

This information is intended for all stakeholders involved in ICT standardisation. This way, the ESOs and any other standards development organisation are given an overview on standardisation needs and the possibilities to contribute to the work.

This high level of transparency is an opportunity to encourage collaborative work among all these standards development organizations, which can coordinate in the MSP.

1.9.2. Financial instruments

The Commission supports the voluntary work by stakeholders concerning standardisation with the following tools:

(1) Standardisation budget. The ESOs have a privileged link with the Commission to apply for action grants, in particular to develop standards and European standardisation deliverables in support to mandated work, but also to develop standards and other European standardisation deliverables in support of EU policies. For ICT standardisation, ESOs can act as coordinator involving different global standards development organisations and including their work.

(2) Research budget. Standardisation organizations and other bodies can apply to EU-financed research programmes in accordance to the rules of the different available calls for proposals. The Commission encourages research projects to feed their results into the standardisation process. Therefore, activities in support of standardisation can be funded via research budget. Coordination and support actions may also provide support to standardisation activities.

2. PROMOTING THE IMPLEMENTATION OF STANDARDS

2.1. The use of standardisation in support of policy making

An important objective of this Rolling Plan is to create awareness of the importance of standards in the context of policy making and to promote the use and uptake of standards in general in order to increase ICT interoperability in those areas that were identified as policy priorities. To this end, the Rolling Plan may look at the full spectrum of available instruments for promoting awareness about standardisation and standards; for identifying standards and kicking off new activities in ICT standardisation; and for making use of standardisation, standards and technical specifications in policies. International cooperation regarding ICT standardisation may also be addressed.

The proposed actions around standardisation in this Rolling Plan may, therefore, directly address public authorities, but they may also be directed to the various stakeholders suggesting some activities which are considered important in the context of specific policy making and of promoting the uptake and implementation of standards.

In some instances standardisation or the availability of standards can be helpful or even a precondition to implement a policy or a piece of legislation. Standards and technical specifications in ICT ensure interoperability and promote open ICT ecosystems. Standardisation may, therefore, play an important role in promoting the uptake of new technologies or the transformation of technologies and systems into new, innovative complex systems including ICT technologies and combining them with other technologies and technology layers. In this respect, the availability of a standard or technical specification may also facilitate legislation enforcement and allow the target users to actually implement the policy.

Once standardisation activities or specific standards or technical specifications have been identified as needed in support of a policy or legislation, it is, however, important that the respective activities or standards are well known and get broadly accepted, used and implemented. Different instruments can be pursued in promotion of the uptake of standards. Some of these instruments are generic, i.e. independent of the standard concerned. Examples are guidance of public procurement on how to ask for standards in general; or conferences to raise awareness on the importance of ICT standards. It may also be important that the respective policy contexts in which specific standards are to be used are highlighted, best with broad stakeholder involvement, and awareness is raised on the importance, benefit and need of using the standards within the policy contexts.

In general, adoption instruments can be classified according to the nature of the instruments (communication/education or mandating/comply or explain/procurement) or to the development phase of the standard (preliminary, creation, drafting, adoption).

Of course, not all instruments are available for all stakeholders and not relevant in all phases of policy making. Obliging standards by law is, for example, only possible for public authorities and only when it concerns an international, European or national standard. Providing free and easy

insight in the specifications documents is up to the standard development organisation (SDO) concerned and is relevant in all development phases of a standard.

In the next sections, instruments that are general in nature are mentioned. Gearing the instruments to the standard involved is up to the specific stake holder(s) who want to have a standard adopted and out of scope of this Rolling Plan.

2.2. Public procurement

Governments can promote the uptake and implementation of standards and specifications via public procurement.

The Rolling Plan moreover builds on the possibility to have relevant global ICT technical specifications available for use in Europe. The Regulation on European Standardisation 1025/2012, which came into force in January 2013, now offers the possibility to identify certain relevant ICT specifications, primarily to enable interoperability, under conditions defined in Articles 13 and 14. Identified ICT technical specifications get the status of common technical specifications and may be referenced by public procurers. The European Commission draws on this possibility with the "Guide for the procurement of standards-based ICT — Elements of Good Practice" (COM(2013) 455 and SWD(2013) 224). The Rolling Plan supports this Guide by identifying available standardisation activities, standards and technical specifications in areas with policy relevance.

This may allow formal identification of various consortia standards that are in practical use at present by various Member States. Several Member States use lists with standards that can be used by public authorities in their public procurement. Some Member States use instruments to help procurement specialists requiring standards. E.g. the Netherlands have made procurements text (general and per standard) to help procurement specialists to ask for standards in a way that is in line with Dutch policy. Other Member States have similar activities in place.

With the "Guide for the procurement of standards-based ICT – Elements of Good Practice" the European Commission also promotes the sharing of best practices among public authorities in order to diminish lock-in.

2.3. Research and Innovation

Research is a rich potential source of new standards or standards components as well as for applying available standards in advanced technology contexts. The new knowledge resulting from publicly funded research and innovation programmes can be included in new or improved standards, contributing both to the implementation of the research outcomes and the usage of standards. Similarly, historically, many European ICT research projects under EU R&D Framework Programmes utilise standards in their design and execution.

Initiatives to link ICT standardisation and ICT R&I appear to be most effective when carried out already at the research planning stage. Standardisation awareness thus needs to be considered early in the research life cycle. Standardisation bodies have partially set up links into research ac-

tivities for facilitating the uptake of standardisation deliverables in research projects as well as the transfer of research results into standardisation. Research Support Actions can also contribute to support standardisation activities, liaison between R&I projects and standardisation organisations, awareness and international cooperation.

Similar programmes have been set up addressing in particular innovative SMEs. The objectives are to promote the use and implementation of standards with SMEs but also to encourage and facilitate the participation of SMEs in the standardisation processes. Failing to support innovative SMEs in the ICT industry in their efforts to influence standards could seriously restrict the market impact of these SMEs, and their long-term growth prospects.

2.4. Testing and quality improvement in standards

If standards are to be successful in terms of widespread deployment, it is necessary to ensure that there are products implementing them and that they are truly interoperable.

Therefore, one of the main aims of European and global standardisation is to enable interoperability in a multi-vendor, multi-network, multi-service environment. Interoperability gives users a much greater choice of products, and enables manufacturers to benefit from the economies of scale of a wider market. There is a broad stakeholder demand in the marketplace to ensure interoperability.

Validation of standards and products through open interoperability events is an example of how to achieve this in a pragmatic and efficient manner. Organizing such events in the earlier phases of the development of standards can give an assurance of a level of quality and facilitates the development of commonly agreed standardised solutions.

Interoperability testing leads not only to better products but to better standards, suited to users' needs and gives stakeholders confidence to implement standards and to release products in a timely manner.

Ongoing relevant activities are:

– Standards bodies, governments and other organisations regularly organise interoperability events, e.g. in the form of plug tests, plug fests, etc. One example is, for instance, the ETSI "Plugtests™ events". Typically these interoperability events gather different vendors (often competitors) in order to check whether their products properly implement standards and are interoperable between them. This approach has proven to be a practical way to boost interoperability further to the development of standards, and has been applied with some success to standards and specifications issued by other organisations, including formal standards bodies as well as industry consortia.

– Some fora and consortia also have internal interoperability and conformance testing requirements applied to specifications as a quality control matter prior to their finalisation as standards.

2.5. New actions

In summary, new standardisation related initiatives to further support the effective take up and implementation of standards in the priority domains identified by the Rolling Plan could cover:

- awareness, promotion, conferences, information and education to all stakeholders including societal stakeholders, paying particular attention to the cooperation with R&I and SMEs involvement
- implementation of field operational tests, pilot projects and interoperability testing
- exchange of good practice between Member States and between Standardisation Organizations, including international cooperation
- guidelines for procurers on how to mention standards
- monitoring the use of standards in IT systems and in IT procurement. Monitoring is an effective way to get insight in the adoption of a standard and makes it possible for standards users to learn from each other (higher ranking countries/organisations could teach others how to get a standard adopted)
- hotline for helping procurers to respect standardisation policy and to report bad practice
- Suppliers manifest. Encouraging major IT suppliers to issue a voluntary manifest promising to implement selected standards in their products.

3. EU POLICY AREAS SUPPORTED BY ICT STANDARDISATION

3.1. Listing and structuring EU policy areas

The topics listed in this chapter are policy priorities where standardisation plays a role in the implementation of the respective policy. The topics were identified by the European Commission and reviewed with the MSP. The topic areas are grouped into four clusters and within the clusters each topic area is covered in a separate sub-section. All topic areas are presented in the same structure as outlined below.

The policy areas are grouped in four **clusters**:

Societal Challenges	**Innovation for the digital single market**
- eHealth - Web Accessibility - Accessibility of ICT products and services - e-Skills and e-Learning - Emergency communications - eCall - Digital Cinema	- e-Procurement, Pre and Post award - e-Invoicing - Card, Mobile and Internet Payments - XBRL - Online Dispute Resolution (ODR)
Sustainable growth	**Key enablers and security**
- Smart Grids and Smart Metering - Technologies and Services for a Smart and Efficient Energy Use - ICT Environmental Impact - EETS (European Electronic Toll Service) - I ntelligent Transport Systems	- Cloud computing - (Open) Data - eGovernment: = DCAT Application profile for data portals in Europe = Metadata on re-usable interoperability assets among national and international repositories = Core Concepts to facilitate the development of interoperable IT solutions - Electronic identification and trust services including e-signatures - RFID - Internet of Things - Network and Information Security - ePrivacy

For all topic areas below the same structure has been chosen to represent both the rationale for proposing the topic area as policy priority as well as the input related to standardisation and standards. The template used for this structure is as follows:

(1.) Policy area title and description

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

(2.2) Additional information on legal documents in Member States if available

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

(3.2) Input from other Stakeholders

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

(4.2) Member States and Stakeholder perspective

(5.) Related ongoing standardisation and research activities

(5.1) At European level

(5.2) Other relevant work

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

(6.2) Proposed other activities around standardisation

The above template has been applied for all policy areas below structuring the information in an identical way. If for some line items of the template no specific further information was required to be listed in addition to what is already well known and available the following phrases are inserted: "For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan." and "No specific or additional input to this Rolling Plan", respectively.

In general, the information which is given in the following sections on each policy reflects the current status of technologies available or in progress as well as the current understanding of the policy needs.

This Rolling Plan does not claim completeness. The information provided by the stakeholders is the one which has explicitly been submitted to this Rolling Plan. Much more information may be available and many more activities may be going on in different stakeholder organisations or within Member States.

It is expected that the various organizations continue to refine their understanding of what work is relevant to which policy areas. Various stakeholders also maintain websites with up-to-date information about their activities - including in relation to the policy areas. The reader is advised to also refer to those web pages for the most up to date information.

3.2. Societal challenges

3.2.1. eHealth

(1.) Policy area title and description

Information and Communication Technologies (ICT) applied to health and healthcare systems can increase their efficiency, improve quality of life and unlock innovation in health markets. However, this promise remains largely unfulfilled. The European Commission has been developing targeted policy initiatives aimed at fostering widespread adoption of eHealth throughout the EU. Member States have dynamically responded by demonstrating a high level of commitment to the eHealth policy agenda, notably through their participation in major large scale pilot projects such as epSOS. The adoption in 2011 of the Directive on the Application of Patients' Rights in Cross Border Healthcare and its Article 14 establishing the eHealth Network, marked a further step towards formal cooperation on eHealth, with the aim to maximise social and economic benefits through interoperability and the implementation of eHealth systems.

Notwithstanding this substantial progress, barriers continue to exist that need to be addressed in order to reap all the benefits from a fully mature and interoperable eHealth system in Europe. One of them is the lack of interoperability between eHealth solutions and the rather poor adoption of standards in eHealth systems.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Directive 2011/24 on patients' rights in cross border care

COM(2010) 245: "A Digital Agenda for Europe", actions 76, 77 and 78.

SWD(2012) 413 final - eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century.

(2.2) Additional information on legal documents in Member States if available

Directory for eHealth policies, World Health Organisation, http://www.who.int/goe/policies/en **Strategy of the Federal Council for an Information Society in Switzerland:** http://www.e-health-suisse.ch/index.html?lang=en

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

The following key aspects should be considered as priorities for work on eHealth:

1. The work on components of identity at the European level must be a priority. For identification data, the position of the eHGI is to try to accommodate the different identification processes implemented by Member States (specific identification mechanisms for health purposes or cross sectoral identification mechanisms);

2: There is a need to implement standardised data for drug identification. This point is important because of the necessity "to achieve interoperability of health services online while respecting for the provision of national health

care legislation in order to protect the patient, including legislation on pharmacies online, and in particular national bans on mail order of medicinal products subject to medical prescription,";

3: Given the evolution of the medical corpus to predictive medicine, standardisation of data relating to the field of biology and biomarkers is a major issue that should be put forward. This topic is especially important because clinical laboratories are subject to a process of accreditation according to ISO 15189 that should be supplemented by standardisation processes in ICT;

4 Given the challenge of the aging population, the standardisation work must also take into account aspects of personal services dedicated to the autonomy including ICT solutions in order to promote secure and harmonised solutions at the European level.

All the standardisation work on e-health should ensure a high level of privacy protection and of security.

Last, one aspect could be added, about interoperability of medical devices, to enable plug-and-play connectivity of devices and services for personal health management and healthcare delivery. This aspect is currently handled by the US initiative Continua Health Alliance. It might be interesting for the EU to take up this subject through the ESOs.

In general, the aspect of healthy aging should also be taken into consideration in the context of eHealth and the proposed work items.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

Interoperability of ICT-enabled solutions and of data exchange is the precondition for better coordination and integration across the entire chain of healthcare delivery and health data exchange, while unlocking the EU eHealth single market.

The use of European and international standards is a way to ensuring the interoperability of ICT solutions in general. In eHealth however, such standards are often not specific enough. With the advice of the eHealth Network, more detailed specifications, which could be used for public procurement, will be identified in the framework of the new EU standardisation regulation, contributing to the technical and semantic levels of the eHealth Interoperability Framework

In addition to European and international standards and specifications, interoperability testing, labelling and certification processes are also essential. Several projects are successfully testing and implementing standards, open and secure architecture, clinical workflows and subsets of terminologies as well as making policy recommendations, to prepare the deployment of eHealth services on a large scale.

It is proposed to boost interoperability by further developing and validating specifications and components, also through the launch of standardisation mandates, if deemed necessary.

(4.2) Member States and Stakeholder perspective

No specific or additional input for this version

(5.) Related ongoing standardisation and research activities

(5.1) At European level

- epSOS – European Patient Smart Open Services[3]
- SemantichHealthNet – Network of excellence in semantic interoperability[4]
- Antilope project - Adoption and take up of standards and profiles for eHealth Interoperability
- Salus project - Scalable, Standard based Interoperability Framework for Sustainable Pro-active Post Market Safety Studies.
- Transform project – Translational Research and Patient Safety in Europe.
- eHealth Governance Initiative – SEHGOVIA - Supporting the European eHealth Governance Initiative and Action
- Eureca - Enabling information re-Use by linking clinical REsearch and Care.
- Linked2Safety - A next-generation, secure linked data medical information space for semantically-interconnecting electronic health records and clinical trials systems advancing patients safety in clinical research.
- CEN Technical Committee 251 – Health Informatics: providing a focal point for standards in this domain, in close collaboration with ISO TC215
- ETSI TC MBAN is addressing telemedicine and new work on Smart Body Area Networks Efforts are being made to develop standards for a dedicated radio technology for Smart Body Area Networks. ETSI is looking to drive innovation in diverse areas, such as improving quality of life through eHealth in the HITCH project and Smart Personal Health (SPH).
- JIC - Joint Initiative on SDO Global Health Informatics standardisation
- PONTE project - Efficient Patient Recruitment for Innovative Clinical Trials of Existing Drugs to other Indications
- eHR4CR project – IMI project with a focus on the use of electronic Health Records for Clinical Research
- European Innovation Partnership on Active and Healthy Ageing. Action Plan B3 Integrated Care[5]; Action plan C2 Independent Living[6].

[3] www.epsos.eu

[4] www.semantichealthnet.eu

[5] European Innovation Partnership on Active and Healthy Ageing, Action Plan B3 Integrated Care < http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/b3_action_plan.pdf#view=fit&pagemode=none>

[6] European Innovation Partnership on Active and Healthy Ageing, Action Plan C2 Independent Living [http://ec.europa.eu/research/innovationunion/pdf/activehealthyageing/c2_action_plan.pdf>

(5.2) Other relevant work

IEEE has many standards in the eHealth technology area, from body area networks to 3D modeling of medical data and personal health device communications. Another area is the IEEE 11073™ family of standards which is a group of standards under Health Informatics/Personal Health Device Communication, for data interoperability and architecture. IEEE 11073 standards are designed to help healthcare product vendors and integrators create devices and systems for disease management, health and fitness and independent living that can help save lives and improve quality of life for people worldwide. For more information about IEEE eHealth activities please see http://standards.ieee.org/develop/msp/ehealth.pdf.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Use case based approach to develop patient summaries and subsets of ontology's in a specific clinical context.

Use case based approach to develop standardised processes in a specific clinical context.

Use case based approach to develop technical and semantic specifications for eHealth Systems, especially cross border.

(6.2) Proposed other activities around standardisation

Ensure the right mechanisms are in place for collaboration and coherence on eHealth standardisation issues at European level.

3.2.2. Accessibility of ICT products and services

(1.) Policy area title and description

Accessibility of ICT products and services

This policy area covers accessibility of ICT products and services, it includes telecommunications, TV and Broadcasting, web accessibility 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[7] 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[8] with the aim of supporting the implementation of the Convention in the EU. According to Regulation 1025/2012[9]

"(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".

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

The Commission announced in the Work programme for 2012[10], Annex I[11], under item 99 the preparation of the European Accessibility Act[12] to improve the functioning of the internal 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 is related to the following documents:

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

8 See http://ec.europa.eu/justice/discrimination/disabilities/disability-strategy/index_en.htm

9 See 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

10 http://ec.europa.eu/atwork/key-documents/index_en.htm

11 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

12 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, the EU commission is expected to publish a proposal in 2013

(1) The Commission's eGovernment Action Plan 2011-2015[13] to develop eGovernment services that ensure inclusiveness and accessibility,

(2) The Disability Strategy 2010-2020[14], and

(3) The UN Convention on the Rights of Persons with Disabilities (UN CRPD)[15].

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.

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

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.

(4.2) Member States and Stakeholder perspective

General

Accessibility needs to be reflected in ICT and many other areas (like emergency communication, digital cinema, health, public transport, tourism, learning) both for users with disabilities in the general public and for staff/entrepreneurs with disabilities in the industry or public administration.

[13] https://ec.europa.eu/digital-agenda/en/european-egovernment-action-plan-2011-2015

[14] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0636:FIN:EN:PDF

[15] http://www.un.org/disabilities/default.asp?id=150

As a consequence, accessibility should ideally be mentioned in all relevant policy areas. As an example, a specific measure was taken in the proposal for the revision of the Public Procurement Directive[16] in Article 40.1 see also section 3.3.1 of this Rolling Plan, which deals with eProcurement issues):

> *The technical specifications as defined in point 1 of Annex VIII shall be set out in the procurement documents. They shall define the characteristics required of a works, service or supply. These characteristics may also refer to the specific process of production or provision of the requested works, supplies or services or of any other stage of its life cycle as referred to in point (22) of Article 2. The technical specifications shall also specify whether the transfer of intellectual property rights will be required. For all procurement the subject of which is intended for use by persons, whether general public or staff of the contracting authority, those technical specifications shall, except in duly justified cases, be drawn up so as to take into account accessibility criteria for people with disabilities or design for all users.*

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

List of standardisation actions needed

The following list, 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:

- Design of ICT that better addresses the needs of persons with cognitive and learning disabilities
- Approaches to addressing the reported intelligibility problems experienced by some people with hearing impairments when using modern networks and equipment
- Mapping of character repertoires on soft, non standard and reduced keypads
- User interfaces to enable a consistent user experience for domains like m-payments.
- Identification of Mobility needs like the usage of mobile devices by people with impaired movements
- Specification of requests for user interface devices including presentation techniques, it may be for bus tickets, access to social and commercial services, not only communications systems:
  - Display requests, in public and private domains
  - Possible usage of RFID to facilitate access
  - Voice recognition for devices control
  - Audio description for control keys
- Specification of Communications systems requests
  - ‘total conversation’ and ‘accessible TV distribution’ transmission needs including how many and which real time voice/audio, video,

[16] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0896:FIN:EN:HTML

text, eventually others synchronized streams are needed to ensure accessibility features like subtitling, messaging, audio description and sign language for all citizens

- standardisation of broadcasters accessible interfaces to IP (and other) systems
- convergence and interoperability of video relay services
- accessible Hybrid TV services
- total conversation including for emergency services

- Specification of requests for translation among languages
  - voice to text like automation of relay services for telephony and capturing/ subtitling TV transmissions
  - interoperability of the most common text transmission techniques like IM – SMS- eMail
  - text to voice like in automatic generated audio description
  - text to sign language like in automatic generated sign language

(5.) Related ongoing standardisation and research activities

(5.1) At European level

General, ICT accessibility standardisation at European level is addressed in Mandate M/376[17]. This Mandate 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[18] is expected to be published by February 2014.

Another ongoing standardisation work under Mandate M/473[19] is aimed to mainstream accessibility in other relevant European standardisation initiatives, as well as to update a number of 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 services 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.

In response to this mandate, CEN has formed a Strategic Advisory Group on Accessibility (SAGA), which will 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.

17 http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=search.detail&id=333#

18 http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=30873

19 http://www.etsi.org/images/files/ECMandates/m473.pdf

Furthermore, 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[20] and recommendations for the design of ICT devices for persons with cognitive disabilities[21]. Initial early investigations are being undertaken into transmission quality and its possible linkage to reported intelligibility problems for some hearing impaired people.

Finally Mandate 420[22] while focusing on accessibility of the built environment, might also include ICT that is used in that context

(5.2) Other relevant work

Relevant IETF work[23] may be found in the RAI area. For instance RFC 3551 identifies the requirements for SIP to support the hearing impaired and RFC4103 defines the RTP payload for text conversation.

RFCs 4103 and 5194 are being referenced in various accessibility regulations being proposed in the US (Section 255/508) and EU (e.g. M376).

(6.) Proposed new standardisation actions

(6.1) Proposed standards developments

New standardisation actions may build on M/376 and M/473

(6.2) Proposed other activities around standardisation

On a more specific level, there have been anecdotal reports that 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. There is an urgent need to better understand how ICT products and services can be designed to meet the needs of persons with cognitive 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.

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-centred terminology (that would include accessibility issues) for existing and upcoming devices and services would

20 http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=35174

21 http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=37153

22 http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=search.detail&id=392#

23 http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform#ICTAccess

provide benefits for all potential users, but would greatly benefit older users and users with learning and cognitive impairments who are currently partly excluded from benefitting from the use of modern ICT.

In the development of the standard to support Mandate M/376 (EN 301 549), supporting public procurement of ICT but also usable for other purposes, it has been necessary to try to define testing procedures that are as objective and repeatable as possible to ensure that comparative assessment of the ICT offered by suppliers is as robust as possible. The Mandate M/376 includes also a technical report on test procedures and award criteria.

3.2.3. Web Accessibility

(1.) Policy area title and description

Web Accessibility.

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.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Action 64 of the Digital Agenda[24] addressing the full accessibility of public sector websites by 2015[25],

Proposal for a Directive on the accessibility of public sector bodies' websites – COM (2012) 721[26]

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

Focus should be put on the following requirements and objectives in the area of web accessibility:

- 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 - international standards are always preferred).

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[24] http://ec.europa.eu/digital-agenda/digital-agenda-europe or

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0245R%2801%29:EN:NOT

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

[26] See http://ec.europa.eu/digital-agenda/en/news/proposal-directive-european-parliament-and-council-accessibility-public-sector-bodies-websites and http://ec.europa.eu/digital-agenda/en/web-accessibility

- Do not restrict new approaches and dedicated, simple or personalised approaches. Do not restrict the access to the market to non-accessible products, but instead 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)

Whatever approach is taken these requirements and objectives should be observed.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

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 harmonised standard to provide presumption of conformity should be built on the outcome of Mandate M/376 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.

There is broad, if not unanimous agreement that the WCAG 2.0 guidelines developed by W3C is the appropriate standard to be used.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

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 is expected to be published by February 2014. In its parts related to web-content, it points to specific parts of the ISO/IEC 40500:2012, thus to specific parts of the WCAG 2.0[27].

Other-identified activities are

[27] See http://www.w3.org/TR/WCAG/

– eAccess+: HUB providing resources notably on standards and guidelines for Web accessibility (CIP ICT PSP)

– Aaliance 2 – Next Generation European Ambient Assisted Living Innovation Alliance (FP7): repository of existing standards

– Atis4All – EU Thematic Network on Assistive Technologies and Inclusive solutions for all: marketplace with a specific section on standards (CIP ICT PSP)

– VERITAS – Virtual and Augmented Environments and Realistic User Interactions To achieve Embedded Accessibility Designs: review of policy and standardisation issues (FP7)

(5.2) Other relevant work

The globally recognised web-accessibility specifications are the "Web-Content Accessibility Guidelines" (WCAG) 2.0 developed by the World Wide Web Consortium (W3C). The WCAG became recently an International Standard: ISO/IEC 40 500:2012.

The W3C Website Accessibility Conformance Evaluation Methodology (WCAG-EM) 1.0[28] is currently at a Working Draft status and addresses some 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. No other initiatives could be identified at present.

Other activities identified are related to:

(1) ISO / IEC JTC1/SWG-A (Special Working Group on Accessibility)

(2) ISO / IEC JTC1/SC35 (User Interfaces)

(3) ITU-T SG16 Q.26 (Accessibility to multimedia systems and services)

(4) ITU-T FG AVA (Audio Visual Accessibility)

The Web Accessibility Initiative (WAI) of W3C is further progressing their activity[29].

(6.) Proposed New standardisation actions

(6.1) Proposed standards developments

Apart from ongoing activities no further work is needed before the clarification suggested in item 6.2 below.

(6.2) Proposed other activities around standardisation

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.

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28 http://www.w3.org/TR/WCAG-EM/

29 http://www.w3.org/WAI/

3.2.4. e-Skills and e-Learning

(1.) Policy area title and description

e-Skills and e-Learning

The development and the promotion of ICT professionalism, ICT skills and e-learning require a strong consensus and cooperation among Member States and stakeholders.

(2) Legislation and policy documents

(2.1) European legislation and policy documents

IP/13/182 "Grand Coalition for Digital Jobs" of 4 March 2013

SWD(2012) 446: "Digital Agenda for Europe - a good start and stakeholder feedback" of 18 December 2012

COM(2012) 173: "Toward a Job-rich Recovery" and SWD(2012) 96: "Exploiting the employment potential of ICTs" of 18 April 2012

COM(2010) 682: "An Agenda for New Skills and Jobs" of 23 November 2010

COM(2010) 546: "Innovation Union" of 6 October 2010

COM(2010) 245: "A Digital Agenda for Europe" of 26 August 2010

COM(2007) 496:"e-Skills in the 21st Century" and Competitiveness

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input for this version

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

Regarding e-skills:

Pan-European e-competences frameworks and tools as well as efficient and interoperable e-learning solutions are indispensable to reduce e-skills shortages, gaps and mismatches. Similar activities are under development in the United States of America, Russia, Japan, Australia, Canada, South Africa and Latin America etc. In the early 2000s the development of national frameworks had already been initiated in the UK, Germany and France etc. In their Council Conclusions of 23 November 2007 Member States supported the Commis-

sion's intention to continue to provide a platform for the exchange of best practices; promote a regular dialogue on e-skills and develop a European e-Competence Framework.

Regarding e-learning:

Efficient and interoperable e-learning solutions are necessary to promote the development of a large e-learning market in Europe.

(4.2) Member States and Stakeholder perspective

Regarding e-skills:

Such a topic is suitable for standardisation for well-documented needs. Fostering ICT professionalism is a challenging task. As new technologies and new areas of application of technologies emerge rapidly, establishing standardised skill sets is a great challenge requiring timely and regular updates. Since the 1990s, this topic has primarily been addressed by Public and Private Partnerships (PPP) with the ICT industry playing a leading role (e.g. Career Space initiative). More recently, standardisation efforts have been launched by many countries in the world. There is a need to maintain a platform at a European level in order to exchange best practices, implement a master plan and coordinate across Europe. The existing structure of the CEN ICT Skills workshop is a good place for such a piece of work – following the already successful development of the e-CF.

The e-skills manifesto also contains contributions from various stakeholders, see http://ec.europa.eu/enterprise/sectors/ict/documents/e-skills/index_en.htm

(5.) Related ongoing standardisation and research activities

(5.1) At European level

Regarding e-skills:

The CEN ICT Skills Workshop is contributing to the implementation of the long-term EU e-skills agenda. Fourteen CEN Workshop Agreements have been approved, in particular on a European e-Competence Framework (e-CF) – see http://www.cen.eu/cen/Sectors/Sectors/ISSS/CWAdownload/Pages/ICT-Skills.aspx. The European e-Competence Framework 3.0 will be available in December 2013.

See http://www.cen.eu/cen/Sectors/Sectors/ISSS/CWAdownload/Pages/ICT-Skills.aspx. At CEN a new Project Committee has been proposed for converting the present e-CF into a European Standard. Following the positive outcome of a vote in August 2013, this Project Committee should be established in the coming months (most probably at the beginning of 2014).

Regarding e-learning:

CEN/TC 353 "Information and Communication Technologies for Learning, Education and Training" and the CEN Learning Technologies Workshop contribute to the development of standards and specifications in this field. The Technical Committee focuses on standards for vocabularies and frameworks, quality and competencies, and the Workshop – which has agreed 26 CWAs - complements these, also ensuring that European requirements are properly addressed by global initiatives.

(5.2) Other relevant work

IEEE has activities in several eLearning areas, including Digital Rights Expression Languages, Computer Managed Instruction, Learning Object Metadata, Resource Aggregation Models for Learning, Education and Training, Competency Data Standards. It coordinates, both formally and informally, with other organizations that produce specifications and standards for learning technologies. For more information about IEEE eLearning activities please see http://standards.ieee.org/develop/msp/elearning.pdf.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Regarding e-skills:

Standardisation proposals must be based on clear and well-defined market needs and be developed in full coherence with multi-stakeholder initiatives and public policies (such as the EU e-skills strategy, the Digital Agenda and the "Grand Coalition for Digital Jobs") aiming at reducing e-skills shortages, gaps and mismatches and at fostering ICT professionalism in Europe.

Regarding e-learning:

European e-learning standards to ensure European harmonisation, usage and implementation. Focus should be on specifications and guidelines for e-learning opportunities, learning outcomes, credit points, assessment and e-portfolios.

(6.2) Proposed other activities around standardisation

Regarding e-skills:The public and private sectors need to collaborate on the following topics :

– E-competences frameworks, job profiles, qualifications and certifications, methods and tools for the development, promotion, implementation and maintenance of the e-Competence Framework with a view in particular to promote ICT professionalism (including international cooperation);

– Curriculum development guidelines and ICT industry training and certifications: development, promotion and implementation of e-competences curriculum guidelines and quality labels to facilitate transparency and the recognition of learning outcomes between formal, non-formal and industry education and training.

Regarding e-learning:

– E-learning courses, content repositories and exchange mechanisms with a focus on metadata, learning design and structure, technical and semantic interoperability supported by agreed protocols, exchange formats and vocabularies. Interoperability should include context-aware, adaptable and mobile/ambient e-learning systems and also cross-domain aspects.

3.2.5. Emergency communications

(1.) Policy area title and description

Emergency communications

The ability to initiate an emergency communication to request help when needed is a right of all citizens, and this ability should be independent of the network and access technologies deployed or the physical and mental abilities of the citizen. The successful outcome of an emergency call could make the difference between life and death.

(2) Legislation and policy documents

(2.1) European legislation and policy documents

Directive 2009/136/EC of the European Parliament and the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws.

Directive 2009/140/EC of the European Parliament and the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services

Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive)

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)

Directive 2002/22/EC of the European Parliament and the Council of 7 March 2002 on universal service and user's rights relating to electronic communications networks and services (Universal Service Directive)

Recommendation 2003/558/EC of the Commission of the European Communities of 25 July 2003 on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from Stakeholders

No specific or additional input for this version

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The lack of commonly agreed standards in support of electronic communications networks for the emergency call service in Europe is a barrier for implementing future proof solutions which fulfil the requirements of the amended Universal Service Directive 2002/22/EC.

Standards for Total Conversation access to 112 are required to fulfil special needs for users' rights as per 2009/136/EC.

(4.2) Member States and Stakeholder perspective

The lack of harmonised values for location accuracy and reliability hampers the development of adequate solutions in Member States.

(5) Related ongoing standardisation and research activities

(5.1) At European level

Mandate M/493 – Standardisation Mandate in support of the Location Enhanced Emergency Call Service. ETSI is performing work in response to this mandate and is currently working on the single functional architecture (draft ES 2013 178) and will then move on to the protocols definition.

ECC PT ES is investigating criteria for location accuracy and reliability.

Work on Total Conversation Access to emergency services is continuing with the finalisation of an ETSI Technical Specification and the development of a user guide.

(5.2) Other relevant work

No specific or additional input to this Rolling Plan.

(6) Proposed new standardisation activities

(6.1) Proposed standards developments

No specific or additional input to this Rolling Plan.

(6.2) Proposed other activities around standardisation

It is necessary to identify the standardisation needs for the deployment of 112 Smartphone applications enhanced with caller location and multimedia features.

Completion of standards in response to mandate M/493 to produce the relevant standards to support the Location Enhanced Emergency Call Service. Global standards bodies are invited to contribute taking into account next generation networks and location accuracy and reliability.

3.2.6. eCall

(1.) Policy area title and description

Intelligent Transport Systems. Emergency Communications. Road Safety. The pan-European in-vehicle emergency call, 'eCall', is an interoperable service to be available in all vehicles in order to reduce fatalities.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2013)0316: Proposal for a Regulation of the European Parliament And Of The Council concerning type-approval requirements for the deployment of the eCall in-vehicle system and amending Directive 2007/46/EC

COM(2013)0315: Proposal for a Decision of the European Parliament and of the Council on the deployment of the interoperable EU-wide eCall

Commission delegated regulation (EU) of 26.11.2012 305/2013 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the harmonised provision for an interoperable EU-wide eCall

COM 2011/750/EU: Commission Recommendation of 8 September 2011 on support for an EU-wide eCall service in electronic communication networks for the transmission of in-vehicle emergency calls based on 112 (eCalls)

Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

COM(2009) 434 final: eCall: Time for Deployment

Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

In the event of an accident, in-vehicle sensors will automatically trigger an eCall. A voice connection is established with the European emergency number 112 and routed to the Public Safety Answering Point (PSAP). At the same time, an emergency message is sent, providing information such as the time,

location and driving direction (Minimum Set of Data). The emergency call can also be triggered manually.

It is required to develop standards for the future generation of eCall service, taking into account the future evolution of the mobile communication networks and the IP environment, in particular LTE and IPv6 networks.

It is also required to analyse the need and develop standards if needed for the extension to other vehicles types and services, such as Heavy Duty Vehicles, Power Two Wheelers or Hazardous Goods tracking.

(4.2) Member States and Stakeholder perspective

eCall aims at issuing an automated call, based on 112, to emergency services, including data such as exact location of the crash site, the identification of the vehicle, the number of passengers, etc., which is called the Minimum Set of Data (MSD). With this information emergency services will be able to provide a faster response.

The EC wants all new vehicle types placed on the market after October 2015 to implement eCall, the PSAPs to be upgraded to handle the eCalls, and is making recommendations to Member States to draw up detailed rules for public mobile network operators operating in their countries on handling eCalls.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

CEN and ETSI have developed several TS, ENs and other deliverables to define the MSD structure and the transfer from the vehicles to the PSAP. The MSD is defined in CEN EN 15722. The transport protocol to send MSD from the Vehicle system to the PSAP, via the GSM/UMTS network has been defined in several ETSI TS along with the service principles.

Under Mandate M/453 (Co-operative systems for Intelligent Transport), CEN and ETSI have developed standards for communications between vehicles and infrastructure, and defined on-board unit functionalities.

ETSI MSG STF 456 is looking at the issue of the migration of the networks.

HeERO (Harmonised eCall European Pilot) pilots are testing the standards in real conditions.

The European eCall Implementation Platform is proposing recommendations to ensure the best operation of the service and to take full advantage of all its possibilities.

(5.2) Other relevant work

No specific or additional input to this Rolling Plan.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Develop technical specification/standards for the implementation of eCall in vehicles of categories other than M1 and N1.

Propose guidelines on certification of eCall systems (in particular for aftermarket in-vehicle devices)

(6.2) Proposed other activities around standardisation

To carry out Plugtest interoperability events (such as the eCall Testfest Interoperability Event which was held in Essen, Germany, in September 2013 – see http://www.ertico.com/2nd-ecall-interoperability-event/).

Actions to collect feedback about the early versions of the standards and their implementation with technical representatives from vendors and implementors.

3.2.7. Digital Cinema

(1) Policy area title and description

Digital Cinema

The digitalisation of film projection means that all cinemas in Europe will have to install digital equipment within a few years. This equipment has to follow the US-developed DCI standard and is very expensive. One possible consequence is that a number of small European cinemas will have to close. This standardisation initiative will explore alternative standards which will allow for more affordable projectors, to secure the diversity of European film and cinema and all the accessibility services that Digital Cinema makes possible.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2010) 0487 Communication from the Commission on opportunities and challenges for European Cinema in the Digital Era[30] - the Digital Cinema Communication

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

As stated in the Digital Cinema Communication, less expensive projectors are presently available to cinema owners providing a high degree of security and a highly transportable device. While they present some disadvantages they could represent an economic solution for smaller arthouse or local European operators with smaller screens both in large multiplexes and single screen theatres. These operators might not afford the projector and equipment following the DCI specifications. The possibility of an alternative specification should be explored.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

[30] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0487:EN:NOT

(5.) Related ongoing standardisation and research activities

(5.1) At European level

No specific or additional input to this Rolling Plan.

(5.2) Other relevant work

The US-led Digital Cinema initiative (DCI) launched in 2002 has resulted in a specification for digital cinema and also the publication of ISO (International Standard Organisation) standard ISO 26428-1:2008 (2048X1080 or 2k) for the digital master. This standard is the one required by Eurimages and some Member States (France, UK, The Netherlands), in the context of their support mechanism to digitisation of cinemas. The DCI specifications were last updated Aug 30th 2012.

3D Digital projection has now been successfully initiated in digitised cinemas and has become very popular, and an important source of revenue for the cinema sector. As indicated in the Digital Cinema Communication, there is no standard for 3D projection yet, but the DCI released a so-called recommended practice on Sept 28th 2012. European Cinemas will need to follow this development closely.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

No actions proposed.

(6.2) Proposed other activities around standardisation

The feasibility of a standard other than the DCI previously referred to should be explored for smaller screens. The Commission will engage in a stakeholder dialogue concerning these matters – also taking into account 3D cinema.

Based on these consultations the Commission will consider the best ways to encourage standardisation activities within this field.

3.3. Innovation for the Digital Single Market

3.3.1. e-Procurement – Pre and Post award

(1.) Policy area title and description

e-Procurement

Public Procurement, modernisation of public procurement in the European Union covering pre-award and post-award, e-Procurement, including procurement of goods, services and works using electronic means. There remains open a question whether some specified data requirements and methods also would or could apply.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2011) 896 final - COM legislative proposals of 20.12.2011 for the revision of Directive 2004/18/EC (public works, supply and service contracts)

COM(2012) 179 final of 20 April 2012 - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a strategy for e-Procurement

COM(2013) 449 of 26 June 2013 - Proposal for a Directive of the European Parliament and of the Council on electronic invoicing in public procurement

SWD(2013) 222 of 26 June 2013 - Impact Assessment accompanying the document `Proposal for a Directive of the European Parliament and of the Council on electronic invoicing in public procurement´

COM(2013) 453 final of 26 June 213 on end-to-end e-Procurement to modernise public administration

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The Commission's legislative proposals aims to make e-Procurement the mainstream method for carrying out public procurement to achieve broader competition (even across borders), increased transparency, value for money on procurement expenditure and savings on procedural costs. The proposals

set out a phased transition to mandatory e-procurement within deadlines that are currently under negotiation by Council and EP (likely to be set between 2015 and 2017). The transition will generalise the use of electronic means of communication to pre-award procurement phases including e-notification (of procurement notices submitted to TED), e-access (to tender documents) and e-submission (of tenders), for all contracting authorities and entities.

The 2012 Communication recognises that the Commission and the member states need to undertake coherent actions at all levels in order to meet the goals underpinning this obligation. Indeed, e-Procurement is bound to become, one way or another, the mainstream procurement method at some point in the future, but, without Community-wide action, scattered developments across the EU would lead to islands of e-procurement operations fragmenting the Internal Market.

The EU e-Procurement internal market is facing several types of barriers, including cross-border interoperability and interfaces complexity.

Cross-border variations in requirements: Specific member state e-Procurement platforms are often built on top of national or regional infrastructures which are optimized for integration with other public services, and for the specific performance and security requirements of that platform's host government. (For example, the commercial law and practices of some member states may require high-security or specific forms of digital signature, while others have more permissive requirements.) As a result, the tools available to access the services provided by one member state's systems may not be available to, or adaptable to the needs of, users in other member states.

Proliferation of platforms. SMEs (and anyone doing business in multiple locations) experience another hindering factor. The proliferation of platforms for e-Tendering (and consequently of user interfaces) makes it difficult for a company to respond to calls for tenders run on multiple platforms. It is estimated that over 300 distinct such platforms are in use across Europe today. A bidder may be required to learn concepts, mechanisms, tools and rules used on each of the different systems concerned. Unfortunately, platforms are far from reaching a common "look-and-feel."

e-Procurement technology interoperability and standardisation is a key strategy to remove technical barriers or extra costs when supplier bid on a plurality of systems. In order to achieve a true single market, bidders including SMEs ideally should be able to communicate and participate, in multiple markets across various systems, through their favourite or a common system.

This is recognised by the legislative proposal itself, which empowers the Commission to adopt delegated acts in a number of specific areas to render mandatory the use of specific technical standards.

The need for standardisation in the e-Procurement domain is strongly reaffirmed by the e-Tendering Expert (eTEG) group (see below), set up by the Commission, as one of the actions planned in the 2012 Communication, to advise on paths to be taken to achieve interoperable, accessible and SME-inclusive systems. The e-TEG report issued its report and operational recommendations in February 2013, and lists a number of standardisation actions to be undertaken as soon as possible.

(*4.2) Member States and Stakeholder perspective*

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

There are a large number of existing mandates, standardisation projects, research projects which are developing/have developed standards or pre-standards at the European and global levels, within formal and non-formal organisations. Standardisation work already underway needs to be reinforced or completed through specific actions.

The PEPPOL (Pan European Public Procurement On-Line project) Large Scale Pilot project, co-funded by the EU's Competitiveness and Innovation Framework Programme, involved over ten European countries: http://www.peppol.eu. PEPPOL developed e-procurement specifications for cross-border transactions, which in the aggregate supply a complete model infrastructure, with all required components for an effective and efficient e-procurement architecture (including open source access point implementations; message transport protocols; PKI trust models and methodology; interoperable profiles for the aggregate use of existing specifications to assemble transactional procurement business documents and messages; and methods for networked discovery of market, service and participant metadata). The project also specified desirable future activities for standardisation. The related, new Large Scale Pilot project e-SENS ("Electronic Simple European Networked Services") will also is expected to include activities to promote the development and use of technical specifications that can lead to standardisation.

It should be noted that the new phase of the CEN WS/BII3 will build on work carried out in the previous years, concentrating on important areas where gaps still have to be filled in the pre-award and post-award domains.

(5.2) Other relevant work

No specific or additional input to this Rolling Plan.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

PEPPOL has provided and eSENS may augment a set of existing specifications and methods sufficient for production implementation of e-Procurement and e-Invoicing business functions. An appropriate long-term community feedback, updating and maintenance structure for these assets is desirable, as any living network of transacting parties will evolve and discover new needs over time.

The Commission's e-TEG group identified the following needs for standardisation:

– e-notification (publication of notices on procurement opportunities, contracts awarded and other legal notifications);

– qualification of suppliers (eAttestations/certificates/Virtual Company Dossier);

– a process model for procurement procedures as specified in the Directives such as negotiated procedures and competitive dialogue;

– system models that may achieve interoperability among and across multiple differing e-tendering platforms without necessarily requiring a business to change its favourite system (For example, see http://www.xvergabe.org);

– tender structures for de-materialisation of tenders. The next-generation e-Procurement platforms are expected to enforce a model in which the platform used by the contracting authority to run a tendering process collaborates with independent "tender response preparation" platforms used by the EO, by sharing a unique view of the process and document structures being exchanged as part of the e-Tendering transactions;

– product/services catalogues and classifications;

– code lists, identification schemes and the responsible agencies;

– accessibility standards for user interfaces (see the separate Section on Web Accessibility, above);

– registration / authentication standards for e-Procurement platforms. Standards in this area would enable to set up federations of e-Tendering platforms sharing company information or even single sign-on services, simplifying the task of economic operators which currently have to go through complex procedures on each platform on which they have to work;

– digital signature and use of public key infrastructure, which may leverage current ETSI work on trusted lists and signature formats;

– data models and processes for e-Tendering performance measurement.

(6.1) Proposed other activities around standardisation

Interested SDOs should enter into dialogue with the Commission concerning the implementation of the eTEG report, to define the specific actions required, noting the eTEG recommendation to develop of European standards based on the CEN WS/BII outputs.

3.3.2. e-Invoicing

(1.) Topic area title and description

eInvoicing

Electronic invoicing, or the exchange of invoices in the form of structured electronic data which allows for their automatic processing, brings numerous benefits to all users (senders and recipients). By automating the relevant business processes, e-invoicing leads to cost savings, increased efficiency, faster payments, and a reduced environmental impact. Its deployment is a strong tool in support of enterprise and financial policies as it renders enterprises more efficient and generates potentially significant savings for Member States' governments. Additionally, it contributes significantly to the EU's Digital Agenda by promoting the development of e-government, and ready accessibility to users with disabilities (see the separate Section on Accessibility of ICT products and services and Web Accessibility, above).

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax.

Council Directive 2010/45/EU of 13 July 2010 amending Directive 2006/112/EC on the common system of value added tax as regards the rules on invoicing.

DG TAXUD Explanatory Notes on e-invoicing[31].

COM(2010) 245: "A Digital Agenda for Europe", which gives a prominent role to achieving a single digital market and calls for removing the regulatory and technical barriers which prevent mass adoption of e-invoicing.

Communication COM(2010)712 "Reaping the benefits of electronic invoicing for Europe" defines a number of actions in different areas, including standardisation, needed to facilitate the deployment of e-invoicing in Europe.

Member States called for measures to promote e-invoicing at the Informal competitiveness Council of February 2012 and in the European Council Conclusions of June 2012.

The European Parliament called for making e-invoicing compulsory in public procurement by 2016 in a resolution adopted in April 2012.

Communication COM(2012)179 "A strategy for e-procurement" states that the ultimate goal is "straight through e-procurement" with all phases of the procedure from notification (e-notification) to payment (e-payment) being conducted electronically.

Communication COM (2013) 449[32], Proposal of Directive on electronic invoicing in public procurement.

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http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/traders/invoicing_rules/explanatory_notes_en.pdf

(2.2) Additional information on legal documents in Member States if available

Danish legal e-Invoice mandate: Executive Order No. 354 of 26 March 2010: http://www.oioubl.info/documents/en/OIOUBLStatute.pdf

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

In the current environment, a vast number of e-invoicing standards, data formats, and usage requirements exist across the EU and globally. However, none of the existing formats has so far achieved dominance, and there is no globally used standard for e-invoicing. Commission policy initially supported the parallel development and planning of multiple suitable systems, by various member states, but has emphasized the need for interoperability and broad access across markets. The diversity of data and usage requirements, and very different approaches to their implementation, increase complexity and cost, and create a risk of market fragmentation.

Electronic invoicing has been used by business for some time already. The earliest form of e-invoicing was based on Electronic Data Interchange (EDI) which is still used by many multinational companies. In the last decade or so, many newer e-invoicing standards/formats have been developed, based for the most part on different versions of XML. Many of these are proprietary formats, and are only used by one multinational company and its suppliers, or embed proprietary unique identifiers that may require licensing from a single source. As member states developed their own national standards, some of these also differed from anything already on the market, resulting in further divergence and a lack of interoperability. As a consequence, market players, such as enterprises or financial and IT service providers need to support multiple formats, necessitating substantial mapping and conversion exercises to cope with data expressed in different syntaxes.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

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32 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0449:FIN:EN:PDF

The situation in terms of e-invoicing standardisation is currently very fragmented, with several European and international standardisation organisations working in this area.

At European level, efforts at standardisation have been ongoing since the middle of the last decade. In November 2009, the Final Report of the Expert Group on e-Invoicing anticipated the use of a common reference semantic data model , as a unifying method of interoperability for e-invoice contents, and recommended that the UN/CEFACT Cross-Industry Invoice (CII) v.2 be adopted. Along these lines, the Communication COM(2010) 712 encouraged all market actors within both the private and public sectors to develop and to implement, or to converge on, solutions that are compliant with the UN/CEFACT CII data model. Moreover, it contained a set of actions in the domain of standardisation, including these:

– CEN was asked to work with standards organizations and sources to promote convergence with, and requirements for the further development of, the CII model (see http://*www.cenbii.eu/*).

– UN/CEFACT was asked to pursue the fast development of e-business messages complementary to the e-invoice.

At the end of 2010, a European Multi-stakeholder Forum on e-Invoicing was set up to address standardisation issues and advise the Commission on specific policy needs. The group came to the conclusion that the convergence towards the CII data model should be considered a long term objective. A recommendation has been adopted in October 2013 on the use of a semantic data model to support interoperability for e-invoicing. The document takes into account recent developments in the field of e-invoicing, such as the growing trend across the EU for the use of the Universal Business Language (UBL) and CEN WS/BII2 as the preferred syntax and implementation guidelines, respectively.

These already serve as the basis of several Member States' e-invoicing systems, and a number of well-advanced Commission co-funded Large Scale Pilot projects such as PEPPOL, co-funded by the EU's Competitiveness and Innovation Framework Programme, which involved over ten European countries. PEPPOL developed e-invoicing specifications with a multilateral interoperability model for cross-border transactions, largely based on the work carried out in the CEN BII workshops. (For more on PEPPOL and its successor program e-SENS, see the separate Section 3.3.1 on e-Procurement, above) and interoperability actions (e.g. e-PRIOR). They have also been endorsed by at least one e-invoicing association. This adopted recommendation will have to be followed up by standardisation work for the adoption of an EN on the core invoice data elements.

Presently, CEN is running the BII3 and eBES Workshops that will address specific e-invoicing implementation issues. Complementary standardisation work will be needed to address the outstanding standardisation issues described in the DG ENTR paper "e-Invoicing standardisation - Overview, issues and conclusions for future actions" published in September 2012: http://ec.europa.eu/enterprise/sectors/ict/files/invoicing/e-invoicing-standardisation-overview-issues-and-conclusions-for-future-actions_en.pdf.

– At international level, UN/CEFACT has developed and is maintaining the CII v.2, and is cooperating with the Organisation for the Advancement of Structured Information Standards (OASIS, which developed UBL, on convergence between the UBL invoice and the CII data model, and with ISO for the integration where appropriate of the CII data model and ISO 20022 financial invoice methodology.

(5.2) Other relevant work

No specific or additional input to this Rolling Plan.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

UN/CEFACT and CEN should carry out remaining work in response to the actions described in the Communication COM(2010)712, or to specific needs that are endorsed by the Commission further to their identification by the European Multi-stakeholder Forum on e-Invoicing.

(6.2) Proposed other activities around standardisation

Overall, the actions should be part of an agreed standardisation strategy shared by the Commission, the ESOs, consortia and standards bodies supplying specifications in use, and member states with active implementations. Commission may launchfurther broad, neutral fact-finding inquiries (perhaps via the MSP) to identify appropriate shared needs and goals. The work may result in the publication of ENs, CWAs, Technical Reports, and Guidelines, or other standardisation deliverables as appropriate. In particular, the recommendation on the use of a semantic data model proposes to formalise the semantic data model for the core section of an electronic invoice. Moreover, the proposed Directive on e-invoicing in public procurement (COM(2013) 449 final) requires the Commission to issue a standardisation mandate to the relevant ESOs.

3.3.3. Card, Internet and Mobile Payments

(1.) Policy area title and description

Card, Internet and Mobile Payments

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.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Directive 2007/64/EC on payment services

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

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

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

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

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(*3.1) Input from Member States*

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

(3.2) Input from other Stakeholders

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.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

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 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 technology 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.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

So far, the development of technical specifications has been undertaken mainly by industry organizations, such as the European Payment Council or the Global Platform (in case of specific solutions such as NFC).

ETSI and CEN are also carrying out standardisations activities relevant for this area, respectively in the TC SCP (Smart Card Platform) and TC 224 (Personal identification, electronic signature and cards and their related systems and operations).

W3C: EPASOrg[33] and EPC[34] currently focus on the protocols for card payment protocols in the Eurozone and aim to replace the current mess of propri-

[33] http://www.epasorg.eu/

[34] http://www.europeanpaymentscouncil.eu/

etary 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.

(5.2) Other relevant work

At international level, there is now a dedicated mobile payments WG - ISO TC68/SC7/WG10

In W3C the 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.

It is critical to keep a level playing field for payment solution providers large and small. Standards will be created for installing payment solutions into the wallet after a device has shipped. It shall also be aimed to allow for device and cloud based solutions, including secure elements and contactless payments. The SysApps and NFC working groups will provide valuable building blocks.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

No concrete proposals before the recommendations under 6.2 below are completed.

(6.2) Proposed other activities around standardisation

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 should be addressed: security, access, management and portability of customer data, transparency.

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

3.3.4. eXtensible Business Reporting Language (XBRL)

(1.) Policy area title and description

eXtensible Business Reporting Language (XBRL)

eBusiness, defined as doing business over the internet, needs unified definitions, identification and codification of business-related information, processes, actors and their roles, and relationships. That includes names, legal form and status, financial information and reports, transactional information, deeds and claims in legal and administrative proceedings used in a variety of commercial, societal and administrative contexts in commerce, taxation, statistics, public procurement, supervision of regulated activities, judicial etc. Once unified, information can then be automatically processed by ICT, published, searched and retrieved from the internet, automatically analysed and used by governments, businesses, consumers and civil society.

XBRL is a set of XML predefined vocabularies and rules, developed and used by financial industries, originating largely with accountancy practices, to report financial position, performance and economic viability of businesses. XBRL permits the publication of financial reports augmented by mark-up according to sets of XBRL tags (called taxonomies) which then may be processed and retrieved by market participants, including analysts, supervisors, enterprise regulators, tax offices, clients, suppliers, creditors and investors.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

The European Parliament resolution of 10 March 2009 on the Small Business Act (2008/2237(INI)) (http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P6-TA-2009-0100)

COM(2011)0684 – C7-0393/2011 – 2011/0308(COD): The European Parliament, Committee of Legal Affairs - Report of 25 September 2012 on the proposal for a directive of the European Parliament and of the Council on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings (http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A7-2012-0278+0+DOC+PDF+V0//EN)

COM(2011)0683 – C7-0380/2011 – 2011/0307(COD): The European Parliament, Committee of Legal Affairs - Report of 27 September 2012 on the proposal for a directive of the European Parliament and of the Council amending Directive 2004/109/EC on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and Commission Directive 2007/14/EC (http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A7-2012-0292+0+DOC+PDF+V0//EN)

(2.2) Additional information on legal documents in Member States if available

The Netherlands Standard Business Reporting (SBR) program, using XBRL taxonomies for government-to-business interactions: http://www.sbr-nl.nl/wat-is-sbr/international/

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

No specific or additional input to this version.

(3.2) Input from other Stakeholders

No specific or additional input to this version.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

No specific or additional input to this version.

(4.2) Member States and Stakeholder perspective

No specific or additional input to this version.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

- XBRL specifications and related resources (http://www.xbrl.org/);
- International Financial Reporting Standards XBRL taxonomies and related resources (http://www.ifrs.org/XBRL/Resources/Pages/Resources.aspx);
- XBRL resources for EU banking and insurance supervision (http://www.eurofiling.info/);
- A CEN Workshop entitled "XBRL - Improving transparency in financial and business reporting" held its kick-off meeting in May 2012, and is currently finalising three CEN Workshop Agreements, expected to be published in 2014:
  - Standard specifications for XBRL attributes ("harmonization topics");
  - A "metadata container" to wrap a submitted XBRL instance document and compliance test;
  - A standardised "roll-out package" that wraps the specifications as defined under previous deliverables.

(5.2) Other relevant work

No specific or additional input to this version.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

No activities proposed.

(6.2) Proposed other activities around standardisation

A basic survey to determine EU member states' initiatives, resources and position on XBRL and its fit to European regulatory accounting practices is one option, depending on the findings from the above CEN workshop. Coordinated EU input to the global XBRL standardisation processes, notably in XBRL and in International Financial Reporting Standards taxonomy, could leverage multilateral efforts leading to transparent financial industries and sound governance in the post-crisis global economy.

3.3.5. Online Dispute Resolution (ODR)

(1.) Policy area title and description

Online Dispute Resolution (ODR)

This action is related to the EU policy on consumer redress and alternative dispute resolution. The European Commission will set up a web-based European Online Dispute Resolution ('ODR') Platform, making it possible for consumers, traders and alternative dispute resolution ('ADR') entities in the EU Member States to communicate with each other online, in all EU official languages and through an accessible website, for the purpose of resolving e-commerce disputes out of court.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Directive 2013/11/EU of the European Parliament and of the Council on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR)*;

Regulation 524/2013 of the European Parliament and of the Council on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR)

(*2.2) Additional information on legal documents in Member States if available*

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this version.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The ODR platform will enable the online submission of complaints to a competent ADR entity. To this end, all ADR entities established in the EU Member States in accordance with the Directive on consumer ADR will be connected electronically to the ODR platform.

The Regulation on consumer ODR sets out the requirement for the ODR platform to ensure the secure interchange of data with ADR entities and to comply with the principles of the European Interoperability Framework adopted pursuant to Decision 2004/387/EC on interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC).

In order for the ODR platform to meet the abovementioned objectives and requirements, it is necessary to allow for a certain degree of standardisation of data exchange and interoperability between the ODR platform and the ODR systems operated by ADR entities at national level.

(4.2) Member States and Stakeholder perspective

(5.) Related ongoing standardisation and research activities

(5.1) At European level

A CEN Workshop Agreement (CWA) was adopted in November 2009 by the CEN Workshop on standardisation of Online Dispute Resolution tools.

(5.2) Other relevant work

At the international level, pre-standardisation activities have been undertaken within the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT).

Relevant work is also going on in IETF – see http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform#ODR.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

The Commission aims to encourage the development of an interoperable framework for data exchange between ODR systems, building in particular on UN/CEFACT international standards and practices, in order to determine the content and format of electronic document exchange and to re-use global business processes for the definition and expression of standard data object types.

Further involvement of European standardisation bodies, including for the establishment of standards at European level, could be considered subject to stakeholder interest, and alignment with UN/CEFACT.

(6.2) Proposed other activities around standardisation

No further activities proposed

3.4. Sustainable growth

3.4.1. Smart Grids and Smart Metering

(1.) Policy area title and description

Smart Grids and Smart Metering

One of the EU's key ambitions is to develop a low-carbon economy. To make this happen, the EU has given policy direction through the comprehensive policy framework proposed in the energy and climate package, including among others the climate and energy targets for 2020:

- A reduction of at least 20% in greenhouse gases (GHG)
- A 20% share of renewable energies in EU energy consumption
- Increase of 20% energy saving compared to 1990 levels

As Smart Grids could be described as an upgraded electricity network to which two-way digital communication between supplier and consumer, intelligent metering and monitoring systems have been added, the growing participation and integration of ICT in the smart electricity grid is evident.

The European Smart Grid Task Force defines smart grids as electricity networks that can efficiently integrate the behaviour and actions of all users connected to it — generators, consumers and those that do both — in order to ensure an economically efficient, sustainable power system with low losses and high quality and security of supply and safety.

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) and 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, assure interoperability and establish a real internal market.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

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

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

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

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

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

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other stakeholders

No specific or additional input for this version

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The deployment of Smart Grids will by crucial to achieve the 20-20-20 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 (chair), CLIMA, ENTR, ENV, CONNECT (co-chairing two of the four expert groups, EG3 and EG4), JUSTICE, JRC, RTD and SANCO.

Policy aspects relating to mandate M/490 are dealt with under the Expert Group 1 (EG1) of the Smart Grids Task Force. EG1 is chaired by DG ENER and CONNECT 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.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

On 1 March 2011 the European Commission issued Mandate 490 - Standardisation Mandate to European Standardisation Organisations (ESOs) to support European Smart Grid deployment. With this mandate CEN, CENELEC, and ETSI were requested to develop a framework to enable European Standardisation Organisations to perform continuous standard enhancement and development in the field of Smart Grids, while maintaining transverse consistency and promote continuous innovation.

Policy aspects relating to mandate M/490 [35]are dealt with under the Expert Group 1 (EG1) of the Smart Grids Task Force. EG1 is chaired by DG ENER and CONNECT is actively participating in this group. EG1 is also monitoring

[35] http://ec.europa.eu/energy/gas_electricity/smartgrids/doc/2011_03_01_mandate_m490_en.pdf, and http://www.cencenelec.eu/standards/Sectors/SmartGrids/Pages/default.aspx

related activities under M/441 (Smart Meters) and M/468 (electric vehicles chargers) to the ESOs. Finally, a joint ESO coordination group between mandates M/490 and M/468 has been launched by ESOs on smart charging.

In order to ensure effective collaboration, the ESOs combined their strategic approach and established in July 2011, together with the relevant stakeholders, the CEN-CENELEC-ETSI Smart Grid Coordination Group (SG-CG), being responsible for coordinating the ESOs reply to M/490.

The SG-CG works closely with other smart grid standards initiatives in other regions, including with NIST in the US and activities in China and Japan.

Concerning smart meters, a separate Co-ordination Group of the three ESOs is managing the standards programme under mandate M/441.

The first set of standards lists more than 400 (available and under development) standards which, for the majority, are ICT related and support information exchange (communication protocols and data models) and the integration of all users into the electric system operation. It is to be noted that the Set of Consistent Standards report does not only list ESO standards but also technical specifications from other bodies. In this context, the CEN-CLC-ETSI Smart Grid Coordination Group would like to encourage the use of existing work.

(5.2) Other relevant work

In specific geographies:

- IST. 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 smartgrid 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/

- Japanese Industrial Standards Committee (JISC) roadmap to international standardisation for smart grid

- 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.

General global work:

- ETSI and the OneM2M Partnership project are active in the area of M2M with some relation to smart grids.

- 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 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, 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 2030(r) spans the three distinct perspectives of power and energy, communications and information technology. For more information about IEEE Smart Grid and Smart Metering activities please see http://standards.ieee.org/develop/msp/smartgrid.pdf.

- ITU-T - Smart Grid Focus Group, which completed its work in December 2012, with adopted deliverables at http://www.itu.int/en/ITU-T/focusgroups/smart/Pages/Default.aspx

- OASIS developed a series of transactive energy standards for smart grid information, energy supply transactions and monitoring, starting in 2009which have been adopted by some regulators as model specifications for open energy markets. (See https://www.oasis-open.org/committees/tc_cat.php?cat=smartgrid and https://www.oasis-open.org/news/pr/oasis-members-form-committee-to-define-transaction-standards-for-smart-grid

(6.) Proposed new standardisation activities

(6.1) Proposed standards development

At the end of 2012, the reference architecture and a first set of standards (including newly delivered technical specifications) were issued by M/490 and are available at: http://www.cencenelec.eu/standards/HotTopics/SmartGrids/Pages/default.aspx.

Clause 3.4 of M/490 states that if needed, the reference architecture, sustainable processes and the set of standards will be subject to further iterations, e.g. yearly period. An iteration of Mandate M/490 for 2013-2014 was agreed by the EC in November 2012.

The work to be carried out during the next two years shall address two main standardisation topics:

I. System interoperability testing methods and a conformance testing map by 2013

II. Implementation of the methodologies developed and second set of standards by the end of 2014.

Other relevant international initiatives have to be taken into account.

(6.2) Proposed other activities around standardisation

No other activities required.

3.4.2. Smart Cities / Technologies and Services for a Smart and Efficient Energy Use

(1.) Policy area title and description

Smart Cities

The construction sector is the highest energy consumer in the EU (about 40%) and main contributor to GHG emissions (about 36% of the EU's total CO2 emissions and for about half of the CO2 emissions which are not covered by the Emission Trading System). In this framework, the building industry will be one of the key enablers of the 2050 decarbonisation goal for the European economy. This goal links two European policies:

The energy policy: scenarios by 2050 show that a 40% to 50% reduction of the building "sector" energy consumption is mandatory by 2050, where fossil fuel heating represents a major share (60%);

The climate policy: scenarios by 2050 show that the building "sector" must target a reduction of about 90% of its CO2 emissions, since accounting for about 1.4 Gtons of CO2 per year.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

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

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

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input for this version

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

At the level of Smart Cities, the interoperability need is stronger than at the level of buildings, - which is in the end a controlled environment -, due to the many players, actors and system owners. This is specially so when it comes to public services. Open data comes along with standardised open data.

It has to link with the public services energy management (i.e. lighting), and buildings energy management (public buildings, offices and businesses and homes).

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. From this point of view, an urban area is a complex system made of smaller systems each consisting of a set of elements which work with each other in a certain way. However, there are many more relationships occurring which cannot be represented as a simple hierarchical structure like a tree but with the more subtle and complex structure of a semi lattice. In practical terms, that means that the energy sector has a) to keep control of the elements comprising it (e.g. to assure coordinated operation between energy transformation plants, transport and distribution systems), and b) to prioritise across socio-economic sectors for the resources needed to perform its tasks.

The core brick in the complex system is the systems controlling the efficient consumption of energy at buildings (BIM , BEMS). It should address the whole lifecycle (design of buildings, optimising energy consumption at operational level) to ensure 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 is preparing a Strategic Implementation Plan (SIP) that will describe a joint vision, a common target and proposals for implementation, which are fully expected to contain standardisation aspects.

The release of the SIP and an EC Communication as well as the kick-off of the implementation phase of the Partnership are under preparation (anticipated for November 2013).

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

SEMANCO, is for the first time developing a Semantic Energy Information Framework (SEIF) to model the energy-related knowledge planners and decision makers need.

For the area of Building Energy Management Systems, a stakeholders group named eeSemantics on Energy Efficient Buildings Data Models has been launched by DG CONNECT, building up from our FP7 and CIP project participants, with a remarkable engagement of the construction industry, together with ICT industry. Activities build on the already universally accepted construction industry standard promoted by the buildingSmart Alliance[36], IFC. It consists mainly of extensions of IFC towards the Facility Management phase and the adding of Energy Efficiency components.Adapt4EE, is in charge of running a series of Vocabulary Camps along 2013 and 2014, to agree with the stakeholders vocabularies addressing specific subareas.

DG Enterprise and Industry has made a tender for a project "Stimulating industrial innovation in the construction sector through smart use of ICT: connecting SMEs in digital value chains". This project will, from 2013 to 2015, provide a market analysis of the construction industry in terms of the current and foresight integration of ICT and eBusiness solutions and systems and develop a framework for digital value networks in the construction sector. This framework will set the principles for interoperability among different business processes and data exchange models in order to allow for seamless digital communication and data flows among business partners along the construction value chain.

A coordination Group on Smart Cities and Communities has been launched in the ESOs.

(5.2) Other relevant work

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).

[36] *www.buildingsmartalliance.org*

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)

In ITU-T, a focus group on smart and sustainable cities has been initiated.

IEEE has 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. For more information about IEEE Smart Cities activities please see http://standards.ieee.org/develop/msp/smartcities.pdf.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

None at this point in time

(6.2) Proposed other activities around standardisation

DG CONNECT Objective ICT-2013.6.4 Optimising Energy Systems in Smart Cities includes a CSA that should identify ICT/Energy vocabularies and ontologies to foster interoperability of Energy Management Systems related to the building and construction domain, and beyond the building into public spaces, neighbourhoods and districts, and analyse their relevance and possible evolution towards formal standards; analyse their potential extension to energy management in industry and commerce.

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.

In addition as regards smart appliances, the ongoing work of CENELEC (noting, for example, EN 50523:2009 ’Household appliances interworking’) and IEC needs to be referenced.

3.4.3. ICT Environmental Impact

(1.) Policy area title and description

ICT Environmental Impact

ICT is currently one of the fastest growing GHG emission and energy management sector.

At the level of ICT multiple methodologies were present to assess the environmental impact of ICT itself but they didn't provide a consistent methodological framework for this assessment. A solution to this is the work developed in various European and International standardisation bodies like ETSI , ITU-T , IEC , ISO and others around methodologies to asses this environmental impact, currently focused on energy management including energy consumption and GHG emissions, in a widely consented way. This work is done together with industry, standardisations bodies and public authorities and it is expected to be extended to water, raw materials and other environmental criteria.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2010) 245: "A Digital Agenda for Europe", key Key Action 12:

1. Assess whether the ICT sector has developed common measurement methodologies
2. Propose legal measures if appropriate

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

A key challenge is in achieving transparency around claims relating to the environmental performance of ICT products and services, and setting an effective basis to drive competition

In parallel the ESOs are working on defining energy efficient KPIs in the framework of mandate M/462 from the EC.

Starting at the level of "Good, networks and Services" both ITU and ETSI have approved methodologies for the assessment of the environmental impact. These will allow to assess in a transparent, qualitative, accurate and consistent

the footprint among others of various products and services that are part of our daily digital live like email, telephone services, laptops, broadband access… As well, companies, public bodies and other organizations will be able to assess and report their own ICT footprint based among others on ITU's "ICT in Organization"

Building on top of the above mentioned two other methodologies are being developed:

- "L.ICT projects" where the enabling effect of ICT projects in reducing the GHG emissions in the ICT and more importantly, non ICT sectors like transport, buildings or smart grid can be assessed.

- "L.Cities methodology": where the footprint of ICT in cities and the city dimension of ICT projects & services are being considered. The European Commission through DG CNECT H5 has been appointed in the important role of Chief editor.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

On top of developing the methodologies the European Commission has concluded, with the support of ICT companies, the piloting of various methodologies for Goods, networks, services & Organizations. Elements like compatibility and workability of different standards have been assessed with a positive outcome regarding these two elements. As an example, ITU & ETSI are going to work together to further align their methodologies around "Goods, networks and services".

Impact and measure of progress: The impact will strongly depend on the uptake of these methodologies and associated regulation if defined. Once this point is clarified the progress could be measured in for instance number of companies reporting their footprint calculated using these methodologies.

Mandate M/462 on efficient energy use in large ICT networks was accepted by the ESOs to provide standards for measurement and monitoring. This mandate is not only limited to networks but extends as well to Data Centers and other ICT nodes.

(5.2) Other relevant work

IEEE has standardisation activities that contribute reducing the environmental impact of ICT. These activities include topics like improving energy efficiency and universal applicability of power adapters. For more information about IEEE ICT Environmental Impact activities please see http://standards.ieee.org/develop/msp/envr.pdf.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Not excluding others, the following standardisation activities might be needed:

- Guidelines for the environmental footprinting of ICT networks, products or services.
- Guidelines for Organizations ICT footprint reporting.
- On Data Centres and other ICT nodes the ongoing standardisation activities are discussed in the following standardisation groups:
- CENELEC: CLC TC215 WG3 and a number of other TCs dealing with specific appliances
- CEN/CENELEC/ETSI Coordination Group Green Data Centres :
- ETSI: TC ATTM and former STF 439 working on the definition of Global KPIs for Energy Management of Data Centres
- ETSI: ETSI Industrial Specification Group Operational Energy efficiency for Users (ISG OEU) gathering ICT Users from the whole industry (all sectors, e.g. aircraft factories, banks, insurances, energy providers) issuing Position Papers and Referential Specifications on Global KPIs and implementation sustainable standardisation. These Position Papers are issued to support the development of needed standards by standardisation technical committees.

It should be noted that the ongoing standardisation activities by CEN/CENELEC/ETSI on Data Centres and other ICT nodes may be considered to be referenced in possible future legislation.

(6.2) Proposed other activities around standardisation

Both the L.ICT Projects and L.Cities methodology are foreseen to be final in 2013.

An impact assessment on how better use the methodologies to contribute to the 20/20/20 objectives will take place in 2013.

Not excluding others, following standardisation activities might be needed:

- Definition of Global KPIs for Energy Management of Fixed and Mobile access, and Core networks
- Guidelines for the use of Global KPIs for Data Centres.
- Guidelines for the definition of Green Data Centres.
- Definition of Global KPIs for Data Services.
- Guidelines for the definition of Green Data Services.
- Definition and guidelines of KPIs for ICT networks.
- Ontologies and vocabularies to foster interoperability of Energy Systems / white goods / brown goods / inside the buildings

3.4.4. European Electronic Toll Service (EETS)

(1.) Policy area title and description

European Electronic Toll Services (EETS)

Intelligent Transport Systems, Continuity of traffic and freight management, and Implementation of the interoperability of electronic road.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Directive 2004/52/EC of the European Parliament and of the Council of 29 April 2004 on the interoperability of electronic road toll systems in the Community;

Commission Decision 2009/750/EC of 6 October 2009 on the definition of the European Electronic Toll Service and its technical elements;

Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport;

COM(2008)886: Action Plan for the Deployment of Intelligent Transport Systems in Europe;

COM(2012)474: Implementation of the European Electronic Toll Service.

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission Perspective

European Electronic Toll Service (EETS), as required by Directive 2004/52/EC, will achieve interoperability of the electronic road toll systems in the European Union1. EETS involve two main stakeholders:

- Toll chargers, which operate either on behalf of the Member State or in the framework of a concession contract with the Member State, manage the infrastructure and levy the tolls for the circulation of vehicles on the network they manage.

- EETS Providers, supplying motorists or road hauliers with the necessary equipment and services to access all EU tolled infrastructures and ensuring the payment to the toll chargers of the fees due for the use of their network.

Directive 2004/52/EC provides that Member States having electronic road toll systems would ensure that operators offer the European Electronic Toll Service to heavy goods vehicles at the latest three years after the entry into force of the decision defining EETS[37] and to all other categories of vehicle at the latest five years after.

It is required to further develop standards allowing (i) to monitor and enforce EETS, in particular for autonomous GNSS-based toll systems (Trusted Recorders); (ii) to exchange information between Service Provision and Toll Charging activities (Interoperable Application Profiles).

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

Under Mandate M/338, CEN and ETSI have developed standards for DSRC- and GNSS-based electronic fee collection systems.

(5.2) Relevant other work

No specific or additional input to this Rolling Plan.

(6.)Proposed new standardisation activities

(6.1) Proposed standards developments

- Develop technical specification and test standards for the secure monitoring of toll systems (Compliance Checking and Trusted Recorders) and for profiles of information exchange between Service Provision and Toll Charging activities.
- Revision of test standards for EN 17575-1/2/3/4, EN 12813 and EN 13141, which form the basis of satellite-based electronic tolling systems, and EN 15509, the profile standard for DSRC-based electronic tolling.

(6.2) Proposed other activities around standardisation

No specific or additional input to this Rolling Plan.

[37] Decision 2009/750/EC defining EETS entered into force the 8 October 2009.

3.4.5. Intelligent Transport Systems (ITS)

(1.)Policy area title and description

Intelligent Transport Systems (ITS)

ITS means applying Information and Communication Technologies (ICT) to the transport sector. ITS services and applications can create clear benefits in terms of transport efficiency, sustainability, accessibility, safety and security, whilst contributing to the EU Internal Market and competitiveness objectives.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

C(2013) 885/2013 final: Commission Delegated Regulation (EU) of 15.5.2013 supplementing ITS Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles

Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

Commission Decision 2008/8455/EC final of 19/12/2008 on the conclusion of an Implementing Arrangement between the European Commission and the Department of Transportation of the United States of America in the field of research on Intelligent Transport Systems and Information and Communication Technologies applications to road transport

COM(2008)886 final: Communication from the Commission "Action Plan for the Deployment of Intelligent Transport Systems in Europe

Directive 2004/52/EC of the European Parliament and of the Council of 29 April 2004 on the interoperability of electronic road toll systems in the Community (OJ L166, 30.4.2004. Corrected version in OJ L200, 7.6.2004)

Commission Decision 2009/750/EC of 6 October 2009 on the definition of the European Electronic Toll Service and its technical elements (notified under document C(2009) 7547)

Commission Decision 2008/671/EC of 5 August 2008 on the harmonised use of radio spectrum in the 5875-5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS)

Recommendation C/2006/7125: Safe and efficient in-vehicle information and communication systems: update of the European statement of principles on human machine interface (EsoP).

(2.1) Additional information on legal documents in Member States if available

Extract from 'ICT Strategy of the German Federal Government: Digital Germany 2015' (TFRP011_DE_ict-strategy-digital-germany-2015.pdf). Measure listed on page 35 'Implementation of Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport'.

Extract from 'ICT for Everyone – A Digital Agenda for Sweden' (TFRP037_SV_ICT_for_Everyone-ADigitalAgendaForSweden.pdf). 'The

Government established a Council for Intelligent Transport Systems (ITS Council) in June 2010. The aim is to make better use of the opportunities to use information and communication technology in the transport system to attain transport and business policy objectives. The Council is to develop forms of cooperation between authorities and the business community, provide advice to and speed up the work of the Swedish Transport Administration and other parties on implementing the action plan for intelligent transport systems and promote greater Swedish action in the EU. A final report is due to be presented by 31 December 2012'.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

Pursuant Directive 2010/40/EU, Member States have submitted to the Commission information on their national activities and projects on national ITS actions. In addition, several Member States gave their agreement to the publication of their initial contributions:

http://ec.europa.eu/transport/themes/its/road/action_plan/its_national_reports_en.htm

(3.1) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

To take full advantage of the benefits that ICT based systems and applications can bring to the transport sector it is necessary to ensure interoperability and continuity of the services among the different systems throughout Europe. The existence of common European standards and technical specifications is paramount to ensure the interoperability of ITS services and applications as well as to accelerate their introduction and impact. International cooperation aiming at global harmonisation is relevant in this area.

(4.2) Member States and Stakeholder perspective

No specific or additional input to this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

Mandate M/453: Co-operative systems for Intelligent Transport in the field of information and communication technologies to support interoperability of co-operative systems for intelligent transport in the European Community (C-ITS).

The standardisation work for Co-operative Intelligent Transport Systems (C-ITS) is well advanced in both CEN (TC 278 WG16) and ETSI (TC ITS) but also other standardisation organisations have provided standards relevant for C-ITS, falling within the scope of Mandate M/453[38]. Evaluation of the appli-

[38] The final status report under mandate M/453 is available at: http://www.etsi.org/images/files/technologies/Final_Joint_Mandate_M453_Report_2013-07-15.pdf

cation of existing standards is an ongoing activity in the standardisation process in the relevant CEN, ISO, SAE, IEEE and ETSI Technical Committees and their Working Groups.

Release 1 is close to finalization – see ETSI TC ITS technical report TR 101 067 with the Release 1 standards and the development of ISO TR 17465-3 with the CEN/ISO Release 1 list provides the status of the initial standardisation for cooperative ITS in Europe. After finalization and publication of the ISO TR 17465-3 a joint document listing Release 1 standards will be developed also including other relevant standards from other SDOs such as SAE and IEEE. This will be done end of 2013/beginning 2014.

http://www.etsi.org/images/files/technologies/Final_Joint_Mandate_M453_Report_2013-07-15.pdf

Cooperation is also ensured through the ITS Standardisation Coordination Group (ITS-CG).

Contacts with stakeholder organizations have been ongoing as indicated in the Response to Mandate M/453 and further stakeholder organizations have been included in the ETSI TC ITS standardisation work such as ERTICO – ITS Europe, the GSM-A organization and the iMobility Forum. To provide detailed information about their standardisation activities ETSI and CEN/TC278 have developed open web sites: www.etsi.org/m453; www.itsstandards.eu and www.tc278.eu. These websites contain information about standardisation activities and important events.

The industry organization Car-2-Car Communication Consortium (C2C-CC) is actively participating in the ETSI TC ITS work providing chairmanship for working groups and the committee itself. The automotive industry is also represented and contributes to the standardisation work in CEN in the relevant working groups. Similarly the COMeSafety2 project strongly supports the standardisation activities within both CEN/ISO and ETSI. The iCar Support project provides the chairman of ETSI TC ITS WG2 on Architecture issues.

The standardisation activities are supported by RTD projects, pilots and field operational tests in the area of C-ITS, in particular contributing to fine-tuning the standards, such as DriveC2X, FOTSIS, PRESERVE, ITSSv6, ComeSafety2, COMPASS4D, iMobilitySupport, SIM-TD, SCORE@F, eCoMove, EasyWay.

Regarding ICT for Electric Vehicles/Electromobility, there are several EU funded projects with possible outcomes relevant for standardisation, such as Mobinet, Mobincity, eCo-FEV; E-DASH, eDAS, SmartV2G, ODIN, COSIVU, SafeAdapt, Smart-LIC - and the pilots ICT4EVEU, MOBI.Europe, MOLECULES, SmartCEM and Green Emotion and the support action Smart EV-VC

(5.2) Other relevant work

Internationally, standardisation activities are taken up by ISO TC 204, with strong cooperation with CEN TC 278, but also by ISO TC 22. ITU has also established a group on ITS.

In addition standardisation relevant to ITS is done by other standardisation bodies like SAE, IEEE or ARIB.

ISO/TS 15638-19:2013 ITS – Framework for collaborative telematics applications for regulated commercial freight vehicles (TARV Part 19). It is at an early stage of development but not mature enough to serve as standard for reservation at that stage.

International cooperation for the development of harmonised global standards is particularly important in these areas. Agreements with the US Department of Transport and with the Japanese Ministry for Land Transport and Industry have been concluded regarding ICT applications to road transport. Cross-regional harmonisation task groups (HTGs) have been established in this area. Currently the CAMP/WIIC and the C2C-CC and Japanese OEM are working to solve coordination requirements for Day 1 deployment expected in 2015 in Europe.

ETSI has cooperation and liaison agreements with relevant standards organizations such as IEEE, SAE, ISO, IETF, and standardisation supporting industry groups like TISA. Additionally ETSI have liaisons and contacts with regional and national standards organizations such as ARIB (Japan), CCSA (China) and TTA (Korea) as well as the Asian Pacific Telecommunication organization (APT).

IEEE has standards activities in many aspects of ITS, such as vehicle communications and networking (IEEE 802 series), vehicle to grid interconnectivity (IEEE P2030.1), addressing applications for electric-sourced vehicles and related support infrastructure and also communication for charging (IEEE 1901). In addition, the IEEE 1609 Family of Standards for Wireless Access in Vehicular Environments (WAVE) define an architecture and a complementary, standardised set of services and interfaces that collectively enable secure vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) wireless communications. These standards are designed to provide the foundation for a broad range of applications in the transportation environment, including vehicle safety, automated tolling, enhanced navigation, traffic management and many others. For more information please see http://standards.ieee.org/develop/msp/its.pdf.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

- Co-operative systems. There is a need to complete the minimum set of standards required to deploy C-ITS systems and application, completing the activities foreseen in the M/453, and achieving the Release 1 and 2 for C-ITS, including inter-vehicle communications (V2V), vehicle to infrastructure and infrastructure to vehicle communications (V2I/I2V) and infrastructure to infrastructure communications (I2I). Plugtest activities for interoperability testing, and guidelines with methods for assessing the conformity of the identified minimum set of standards are also needed.

- In the context of Urban ITS and in the perspective of smart cities, there is a need to ensure that the existing standards are properly adapted for urban environment, notably to ensure a bet-

ter impact on market solutions, via public procurement, building on insights and best practices from Civitas, POSSE and smart cities projects. The objective is to better connect existing networks, foster strong cooperation and creation of interoperable urban-inter-urban interfaces and foster more extensive use of all transport modes. For this, data formats need to be defined (including for new mobility services), as well as exchange protocols which need to be interoperable - mode to mode and intermodal and specify them. It will be considered whether a specific Mandate in this area is needed. This mandate would enable the development of new standards, where appropriate (e.g. in the domain of traffic management, or city logistics) and harmonisation of existing standards (e.g. in the domain of multimodal information and smart ticketing), such as::

- ransmodel, the European Reference Data Model for Public Transport, CEN-TC278 ENV12896;
- FOPT, (CEN/TS 00278207) a CEN Technical Standard defining a data model for the Identification of Fixed Objects in Public Transport (e.g. stop points, stop areas, stations, connection links, entrances, etc.);
- IRI, (CEN/TS 00278181-1 to 5), a European CEN technical standard defining Service Interface for Real-Time Information relating to public transport operations;
- eTEx, a prCEN/ Technical Standard currently in development. It is based on Transmodel, extended with additional concepts from IFOPT and SIRI. NeTEX is divided into three parts: Part 1 - Transport Network and Part 2 - Schedules Part 3 - Fares and data for AVL
- tandards supporting the emerging interoperable fare management (IFM) systems: Public Transport interoperability (IOPTA) standard ISO EN 15320 defining the functional system architecture and the application scenarios; the EN 1545 standard describing the data elements and the ISO EN 24014-1 standard, defining functional system architecture and the application scenarios.
- rban stakeholders should also actively participate.

- Electric Vehicles (EV): Taking into account the C-ITS architecture, ICT related standards to support electric vehicles take-up, in particular vehicle-to-grid (V2G) communication protocols, message datasets, interfaces, and back-office platforms. Regarding in-vehicle systems, integration of EVs communication with car architectures; subsystem partitioning and their interfaces; X-by-wire controls; Testing and management of energy storage systems with on board BMS, metering and certification.

- Open in-vehicle platform architecture: the development, operation and user acceptance of vehicle-based intelligent transport systems and services will benefit from an agreed open in-vehicle platform architecture enabling a

'single platform – multiple services' approach and ensuring interoperability/interconnection with legacy in-vehicle communication networks (CAN-bus) and (generic) infrastructure systems and facilities. The issue so far has been addressed in fragmented way, providing building blocks (e.g., the research projects CVIS, GST, OVERSEE, the eSafety Working Group on SOA and the recommendations of the EeIP Task Force OPEN and the study from the ITS) but an overall logical and cost-effective synthesis seems to be lacking. Prior to launching the Mandate it is necessary to define the precise standardisation requirements needed, taking into consideration latest results from a study launched under the ITS Action plan (action 4.1) focusing on synergies among legal provisions and obligations for HGV.

- Digital Maps: There is a need for standards / specifications to steer and manage the integration of accurate (public) road data in digital maps, and their timely updating. Work should be based on the results of the ROSATTE project (7FP) and subsequent activities carried out by the iMobility Forum 'Digital Maps Working Group', and consider a possible alignment with the INSPIRE technical Framework.

- The development and use of novel ITS services and applications imply guidance and potentially technical specifications to ensure a correct and safe on-board 'Human-Machine-Interaction', enabling safe integration and operation of nomadic devices. Results of the research project AIDE ("Adaptive Integrated Driver vehicle InterfacE"), the conclusions of the Nomadic Device Forum and the European Statement of Principles (ESoP) on safe HMI shall be taken into consideration.

- International cooperation aiming at achieving the necessary global harmonisation of standards is paramount in the field of ITS, in particular with the USA and Japan, with which implementation agreements exist, but may also be extended to other regions.

(6.2) Proposed other activities around standardisation

No specific or additional input to this Rolling Plan.

3.5.Key enablers and security

3.5.1. Cloud computing

(1.)Policy area title and description

Cloud computing

Establishing a coherent framework and conditions for Cloud Computing is one of the key priorities of the newly updated Digital Agenda for Europe. Cloud computing is driving a paradigm shift in the delivery of digital technologies thus enhancing innovation, digital single market and access to content.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2012)529 "Unleashing the Potential of Cloud Computing in Europe"

COM(2012)784 "The Digital Agenda for Europe – Driving European growth digitally"

(2.2) Additional information on legal documents in Member States if available

Extract from 'ICT Strategy of the German Federal Government: Digital Germany 2015' (TFRP011_DE_ict-strategy-digital-germany-2015.pdf). Measure listed on page 10 for Cloud reads 'The new Cloud Computing Action Programme comprises four fields of activity: Harnessing innovation and market potential (research programme for secure Internet services, cloud computing for small and medium-sized enterprises and the public sector - trusted cloud; Creating a pro-innovative framework (security and legal framework, standards, certification); Co-shaping international developments; Providing informational guidance'.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

Coordination with the stakeholders is important. The stakeholders support the Cloud Standards Coordination activity.. Coordination between the different stakeholders' groups is equally important.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

See key action 1 of the EU Cloud Strategy COM(2012)529 "Unleashing the Potential of Cloud Computing in Europe".

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

The Commission has tasked ETSI to coordinate with stakeholders in a transparent and open way to identify by 2013 a detailed map of the necessary standards (inter alia for security, interoperability, data portability and reversibility). For more information see the ETSI Cloud Standards Coordination (CSC) Task Force web site <http://csc.etsi.org>.

(5.2) Other relevant work

The **Cloud Standards Customer Council** is an end user advocacy group dedicated to accelerating cloud's successful adoption, and drilling down into the standards, security and interoperability issues surrounding the transition to the cloud. CSCC provides cloud users with the opportunity to drive client requirements into standards development organizations and deliver materials such as best practices and use cases to assist other enterprises.

http://www.cloud-council.org/

Distributed Management Task Force (DMTF). DMTF's Cloud Management Initiative is focused on developing interoperable cloud infrastructure management standards and promoting adoption of those standards in the industry. The work of DMTF working groups promoted by the Cloud Management Initiative is focused on achieving interoperable cloud infrastructure management between cloud service providers and their consumers and developers.

http://www.dmtf.org/standards/cloud

ETSI - TC CLOUD: The goal of ETSI TC CLOUD (previously TC GRID) is to address issues associated with the convergence between IT (Information Technology) and Telecommunications. The focus is on scenarios where connectivity goes beyond the local network. This includes not only Grid computing but also the emerging commercial trend towards Cloud computing which places particular emphasis on ubiquitous network access to scalable computing and storage resources.

http://www.etsi.org/technologies-clusters/technologies/grid-and-cloud-computing

Global Inter-Cloud Technology Forum (GICTF) is promoting standardization of network protocols and the interfaces through which cloud systems inter-work with each other, to promote international inter-working of cloud systems, to enable global provision of highly reliable, secure and high-quality cloud services, and to contribute to the development Japan’s ICT industry and to the strengthening of its international competitiveness.

http://www.gictf.jp/index_e.html

ISO/IEC - JTC 1/SC 38: Standardization for interoperable Distributed Application Platforms and Services including: Web Services, Service Oriented Architecture (SOA), and Cloud Computing.

http://www.iso.org/iso/jtc1_sc38_home

ISO/IEC JTC 1 / SC 27: Security Techniques: Development of standards for the protection of information and ICT. This includes generic methods, techniques and guidelines to address both security and privacy aspects.

http://www.iso.org/iso/iso_technical_committee?commid=45306

ITU-T SG13: Study Group 13 leads ITU's work on standards for next generation networks (NGN) and future networks and is the primary SG working on Cloud Computing. The Focus Group on Cloud Computing has published a report on cloud computing and has concluded its work.

http://www.itu.int/en/ITU-T/studygroups/2013-2016/13/Pages/default.aspx

The IEEE Intercloud Testbed ("Testbed" for short) creates a global lab - to prove and improve the Intercloud, based on IEEE P2302 Draft Standard for Intercloud Interoperability and Federation. To that end, IEEE is partnering with companies, universities, and research institutions around the world to create a well-connected standards-based platform for the Intercloud. The IEEE Cloud Computing Testbed also could be used to experiment with other IEEE cloud computing products and services such as eLearning education modules.

http://standards.ieee.org/develop/msp/cloudcomputing.pdf.

The IETF has multiple groups working on standards for virtualization techniques, including techniques used in Cloud Computing and Data Centers.

http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform#Cloud.

Open Grid Forum (OGF) is a leading standards development organization operating in the areas of grid, cloud and related forms of advanced distributed computing. The OGF community pursues these topics through an open process for development, creation and promotion of relevant specifications and use cases.

http://www.ogf.org/

Object Management Group (OMG): OMG's focus is always on modeling, and the first specific cloud-related specification efforts have only just begun, focusing on modeling deployment of applications & services on clouds for portability, interoperability & reuse.

http://www.omg.org/

The Open Cloud Consortium (OCC) supports the development of standards for cloud computing and frameworks for interoperating between clouds; develops benchmarks for cloud computing; and supports reference implementations for cloud computing, preferably open source reference implementations.

The OCC has a particular focus in large data clouds. It has developed the MalStone Benchmark for large data clouds and is working on a reference model for large data clouds.

http://opencloudconsortium.org/

OASIS hosts multiple standardisation projects for cloud computing management, interoperability and functionality, including the Cloud Application Management for Platforms (CAMP), a Cloud Authorization project, the OASIS Identity in the Cloud project, the OASIS Open Data Protocol (Odata) Protocol, and the Topology and Orchestration Specification for Cloud Applications (TOSCA). https://www.oasis-open.org/committees/tc_cat.php?cat=cloud

Storage Networking Industry Association (SNIA): The Cloud Work Group exists to create a common understanding among buyers and suppliers of how enterprises of all sizes and scales of operation can include Cloud Computing technology in a safe and secure way in their architectures to realize its significant cost, scalability and agility benefits. It includes some of the industry's leading cloud providers and end-user organizations, collaborating on standard models and frameworks aimed at eliminating vendor lock-in for enterprises looking to benefit from cloud products and services.

http://www.snia.org/cloud

TM Forum: The primary objective of TM Forum's Cloud Services Initiative is to help the industry overcome these barriers and assist in the growth of a vibrant commercial marketplace for cloud based services. The centerpiece of this initiative is an ecosystem of major buyers and sellers who will collaborate to define a range of common approaches, processes, metrics and other key service enablers.

http://www.tmforum.org/DigitalServices/13907/home.html

Security and data protection are important aspects in the context of Cloud computing and are – as far as standardisation is concerned – also addressed in ISO/IEC JTC 1/ SC27.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

The necessary actions will be determined after the coordination with stakeholders.

(6.2) Proposed other activities around standardisation

No specific or additional input to this Rolling Plan.

3.5.2. (Open) Data

(1.)Policy area title and description

(Open)[39] Data

With the continuously growing amount of data (often referred to under the notion big data), interoperability ever more becomes a key issue to leveraging the value of data. Standardisation is essential to enable broad data integration, data exchange and interoperability with the overall goal to foster innovation on the basis of (openly available) data. This refers to all types of types of data as diverse as geospatial data, statistical data, weather data, unstructured (multilingual) data, Public Sector Information (PSI) and especially to the area of Open Data.

(2.)Legislation and policy documents

(2.1) European legislation and policy documents

The policy area of Open Data relates to Directive 2013/37/EU on reuse of public sector information (a revision of the PSI Directive) which has been published in the Official Journal on 27 June and requests Member states to provide their data preferably in machine-readable formats.

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

In light of the goal of increasing the interoperability in the domain of (Open) Data, it is currently not envisioned to impose distinct standards. Instead, the overall application of standards should be encouraged, for example in RDI projects and in the Open Data portals.

(4.2) Member States and Stakeholder perspective

Global standardisation work is ongoing in the area of (Open) Data. This work should primarily be considered.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

[39] Although the main topic of this policy area is Open Data, it should be noted that standardisation efforts related to all types of data are being supported.

Under the call for proposals on objective 2.2.b: Standards for Open Data in the ICT PSP Work Programme 2013, a Thematic Network is currently being negotiated. It has the goal to bring together stakeholders in the reuse of public sector information to agree on standards that enable interoperability and integration of public sector information across Europe and beyond .

The Commission is starting a Data Catalogue Vocabulary project in the scope of the ISA programme (Interoperability solutions for European public administrations). The project aims at creating a semantic agreement on a thin layer of commonly agreed metadata, and supporting code-lists, to describe datasets.

(5.2) Other relevant work

The project MultilingualWeb-LT (funded by the CSA grant LT-WEB) is addressing standardisation and promotion of best practices in language processing, exchange and interoperability of multilingual data, and on multilingual Web content management. The standardisation work is coordinated and managed by W3C Working Group "MultilingualWeb-LT", part of the Internationalization (I18N) Activity of W3C. The standardisation in MultilingualWeb-LT is bottom-up, and based on practical and market- oriented reference implementations, built by companies and universities operating within and having expertise on the field.

http://www.w3.org/International/multilingualweb/lt/

http://www.multilingualweb.eu

The main task and objective of the Internationalisation (I18N) activity at W3C is to implement an Internationalisation Tag Set (ITS), providing a standardized set of metadata for web content and "deep web" content that facilitates its interaction with multilingual technologies and translation/localization processes, ensuring smooth automated multilingual processing of web content. Version 2.0 of ITS is technically complete and expected to be adopted by W3C in autumn 2013.

In the multilingual open data track of the MultilingualWeb initiative, which is driven by the World Wide Web Consortium (W3C), there is an ongoing discussion about the standardisation of multilingual URIs and localisation of URIs, in which a representative of the Commission is involved. Moreover, a W3C special interest group on this topic is expected to be created.

In OASIS the project on OData addresses the querying and sharing of data across disparate applications and multiple stakeholders for re-use in the enterprise, Cloud, and mobile devices. Specification development in the OASIS OData TC builds on the core OData Protocol V3 released in April 2012 and addresses additional requirements identified as extensions in four directional white papers: data aggregation, temporal data, JSON documents, and XML documents as streams. For more information see https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=odata

(6.)Proposed new standardisation activities

(6.1) Proposed standards developments

Currently, the development of new standards in the domain of (Open) Data is not envisioned.

(6.2) Proposed other activities around standardisation

Three main elements of a standardisation strategy are envisioned, i.e. 1) involvement of stakeholders in a dialogue about (Open) Data standards, 2) promotion of standardisation in/via Open Data Portals , especially the Pan-European Open Data Portal proposed by the European Commission as one of the Digital Service Infrastructures under the Connecting Europe Facility, and 3) support of (Open) Data standardisation activities as part of H2020 RDI activities.

3.5.3. E-Government

In all three of the following concepts relevant to eGovernment, care should be taken to ensure compatibility between the public sector and what the private sector can achieve, noting the eSENS conference proceedings and discussions concerning PEPPOL acceptance.

3.5.3.1. DCAT Application profile for data portals in Europe

(1.) Policy area title and description

DCAT Application profile for data portals in Europe

(2.)Legislation and policy documents

(2.1) European legislation and policy documents

Decision No 922/2009/EC on interoperability solutions for public administrations (ISA)

Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information (Public Service Information Directive[40])

COM(2011) 882 on Open data[41]

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The ISA programme (Interoperability between European Public Administrations and Public Sector) supports and facilitates cross-border and cross-sector collaboration of public administrations. It defines, promotes and supports the implementation of interoperability solutions and frameworks for European public administrations. It achieves synergies and promotes the reuse of infrastructure, digital services and software solutions. It translates public administrations' interoperability requirements into specifications and standards for digital services.

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40 http://ec.europa.eu/information_society/policy/psi/rules/eu/index_en.htm

41 http://ec.europa.eu/information_society/policy/psi/docs/pdfs/directive_proposal/2012/open_data.pdf

Studies conducted on behalf of the European Commission[42] show that businesses and citizens still face difficulties in finding and re-using public sector information. In its communication on Open Data[43] of December 12 2011, the European Commission states that *the availability of the information in a machine-readable format as well as a thin layer of commonly agreed metadata could facilitate data cross-reference and interoperability and therefore considerably enhance its value for reuse*.

The aim of the action is to create a common specification for describing public sector data catalogues and datasets and promoting this specification to be used by data portals across Europe. The established working group is led by the Publication Office (PO), as the owner of the EU Open Data Portal. PO already uses DCAT in this portal. By agreeing on a common application profile and promoting this to the MSs, the interoperability amongst data catalogues and the exchange of data between MSs will be substantially improved.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

No specific or additional input to this Rolling Plan.

(5.2) Other relevant work

Development of the DCAT[44] vocabulary at WC3. The DCAT vocabulary has been discussed in the Linked Government Data W3C Working Group for almost two years. Currently, the last call for comments has expired and the plan is for the specification to be shortly available as a W3C Recommendation.

(6.)Proposed new standardisation activities

(6.1) Proposed standards developments

No specific or additional input to this Rolling Plan.

(6.2) Proposed other activities around standardisation

The application profile will be based on the Data Catalogue vocabulary (DCAT). It contains the specifications for metadata records to meet the specific application needs of data portals in Europe while providing semantic interoperability with other applications on the basis of reuse of established con-

42 see http://ec.europa.eu/information_society/policy/psi/docs/pdfs/report/final_version_study_psi.docx for an overview

43 http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opendata2012/open_data_communication/en.pdf

44 http://www.w3.org/TR/vocab-dcat/

trolled vocabularies (e.g. EuroVoc[45]) and mappings to existing metadata vocabularies (e.g. SDMX[46], INSPIRE metadata, Dublin Core, etc.).

The multi-sectoral expert group has already started its work[47]. Experts from international standardisation organisations are invited to participate in the group to ensure the interoperability of the resulting specification and to assist in its standardisation process.

45 http://eurovoc.europa.eu/drupal/

46 http://www.iso.org/iso/catalogue_detail.htm?csnumber=52500

47 https://joinup.ec.europa.eu/asset/dcat_application_profile/asset_release/dcat-application-profile-data-portals-europe-draft-1

3.5.3.2. Exchange of metadata on re-usable interoperability assets (eGovernment)

(1.)Policy area title and description

Exchange of metadata on re-usable interoperability assets

Interoperability between European Public Administrations - Exchange of metadata on re-usable interoperability assets among national and international repositories.

The ISA programme supports and facilitates cross-border and cross-sector collaboration of public administrations. It defines, promotes and supports the implementation of interoperability solutions and frameworks for European public administrations. It achieves synergies and promotes the reuse of infrastructure, digital services and software solutions. It translates public administrations' interoperability requirements into specifications and standards for digital services.

Semantic interoperability is a condition for cross-sector and cross-border interoperability and agreeing on and re-using common semantic interoperability assets across Europe is an important step in facilitating semantic interoperability.

The EU Digital Agenda identifies the lack of semantic interoperability between public administrations as a major obstacle to the Digital Single Market and the provision of cross-border digital public services.

In addition to the multilingual challenge, interoperability is compromised by the lack of commonly agreed and widely used data models, divergent interpretations of the same data and the absence of common reference data (e.g. code-lists, identifiers, taxonomies, references to organisations, geospatial references, license collections, etc.).

The European Commission, in the context of the ISA programme, is undertaking a number of initiatives to reduce semantic interoperability conflicts in Europe.

(2.)Legislation and policy documents

(2.1) European legislation and policy documents

Decision No 922/2009/EC on interoperability solutions for public administrations (ISA)

COM(2010) 245 Digital Agenda

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional information for this version.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

Public administrations, businesses, standardisation bodies and academia are already producing interoperability assets that, if (re)used, can facilitate interoperability among public administrations' services. However, these are not always easy to find. The Asset Description Metadata Schema (ADMS) is a common way to describe semantic interoperability assets making it possible for everyone to search and discover them once shared through the forthcoming federation of asset repositories.

With the intention to facilitate the visibility and re-usability of interoperability assets across borders and sectors, the Commission has made available a large set of semantic interoperability assets described using ADMS, through a federation of asset repositories of Member States, standardisation bodies and other relevant stakeholders. Through this federation – reachable through the Joinup platform), semantic interoperability assets became retrievable and available via a single point of access.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

No specific or additional information for this version.

(5.2) Other relevant work

ADMS[48] specification at the WC3 Linked Government Data Working Group. Currently, work is ongoing[49] to extend the ADMS specification to also be able to describe technical, legal and organisational interoperability assets and thus to facilitate their re-usability.

(6.)Proposed new standardisation activities

(6.1) Proposed standards developments

No specific or additional information for this version.

(6.2) Proposed other activities around standardisation

Assessment of the ADMS specifications and its extensions with regards to their possible implementation into standards

[48] https://dvcs.w3.org/hg/gld/raw-file/default/adms/index.html

[49] https://joinup.ec.europa.eu/asset/adms/event/efir-workshop-2013-take-part-extension-joinups-catalogue-interoperability-assets

3.5.3.3. Core Concepts to facilitate the development of interoperable solutions

(1.)Policy area title and description

Core Concepts to facilitate the development of interoperable solutions

Interoperability between European Public Administrations - Core Concepts to facilitate the development of interoperable IT solutions

The ISA programme supports and facilitates cross-border and cross-sector collaboration of public administrations. It defines, promotes and supports the implementation of interoperability solutions and frameworks for European public administrations. It achieves synergies and promotes the reuse of infrastructure, digital services and software solutions. It translates public administrations' interoperability requirements into specifications and standards for digital services.

Semantics interoperability is a condition for cross-sector and cross-border interoperability and agreeing on and re-using common semantic interoperability assets across Europe is an important step in facilitating semantic interoperability.

The EU Digital Agenda identifies the lack of semantic interoperability between public administrations as a major obstacle to the Digital Single Market and the provision of cross-border digital public services.

In addition to the multilingual challenge, interoperability is compromised by the lack of commonly agreed and widely used data models, divergent interpretations of the same data and the absence of common reference data (e.g. code-lists, identifiers, taxonomies, references to organisations, geospatial references, license collections, etc.).

(2.)Legislation and policy documents

(2.1) European legislation and policy documents

Decision No 922/2009/EC on interoperability solutions for public administrations (ISA)

COM(2010) 245 Digital Agenda

With regards to fundamental core concepts, the Commission has made available three core vocabularies with high re-usability possibilities: the Core Person the Core Business and Core Location Vocabularies.

A fourth core vocabulary describing the Public Service concept is currently under development[50]

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

[50] https://joinup.ec.europa.eu/asset/core_public_service/description

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional information for this version.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The European Commission, in the context of the ISA programme, is undertaking a number of initiatives to reduce semantic interoperability conflicts in Europe.

Definitions should first be agreed on fundamental concepts, where divergent and/or conflicting views can be handled. These concepts are simplified data models that capture the minimal, global characteristics/attributes of an entity in a generic, country- and domain-neutral fashion.

(4.2) Member States and Stakeholder perspective

No specific or additional information for this version.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

No specific or additional information for this version.

(5.2) Other relevant work

The Registered Organization Vocabulary[51] which is based on the Business Core Vocabulary is discussed in the W3C Linked Government Data Working Group.

(6.)Proposed new standardisation activities

(6.1) Proposed standards developments

– Assessment of the Core Person, Core Location and Core Business Vocabularies with regards to their possible implementation into standards.

– The Core Location Vocabulary will be an important input to a new working group that is currently discussed in W3C with the participation of the JRC, INSPIRE team.

– Supporting the development of the Core Public Service Vocabulary and its implementation as standard.

(6.2) Proposed other activities around standardisation

Nothing proposed.

[51] http://www.w3.org/TR/vocab-regorg/

3.5.4. Electronic identification and trust services including e-signatures

(1.)Policy area title and description

Electronic identification and trust services including e-signatures

This relates to the "Digital Agenda for Europe" flagship initiative of "Europe 2020", the Key actions 3 and 16 on electronic identification and trust services for electronic transactions, including electronic signatures.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

Proposal for a Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market, COM(2012)238 of 4.6.2012 (eIDAS Regulation).

Directive 1999/93/EC of the European Parliament and of the Council of 13.12.1999 on a Community framework for electronic signatures (e-signature directive).

(2.1) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

In the context of the e-signatures Directive, in January 2010, the Commission mandated the ESOs to rationalise the standards related to e-signatures and related trust services into a coherent and up-to-date framework (mandate M/460). The bulk of the mandate results are expected in 2014 onwards.

However, in June 2012, the Commission proposed the eIDAS Regulation to replace the e-signatures Directive and to expand its scope to address in one comprehensive legislation, electronic identification, electronic signatures, electronic seals, time stamping, electronic delivery, electronic documents and website certificates as core instruments for electronic transactions. To support the implementation of the forthcoming Regulation which is highly technical, further standardisation work will be needed in particular with regard to the planned secondary legislation which extensively refers to the availability of standards as possible means to meet the regulatory requirements.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

– Under the standardisation mandate M/460 on e-signatures, running until 2014, CEN and ETSI have undertaken to update and rationalise their standards on e-signatures and related trust services (see ETSI SR 001 604).

– Five ongoing grant agreements running till end 2015, are supporting CEN and ETSI to carry out the above rationalisation work. In addition, ETSI is working on Trusted Lists (TS 119 612), Trust Services Status Lists, and enhancements to signatures formats (CAdES, CAdES profile, ASiC, and ASiC profile)

– e-SENS (Electronic Simple European Networked Services) is a Large Scale Pilot launched within the ICT Policy Support Programme (ICT PSP), under the Competitiveness and Innovation Framework Programme (CIP). The aim of the project is to develop an infrastructure for interoperable public services in Europe. It will build upon and consolidate building blocks such as eID, eDocuments, eDelivery, and eSignature etc. from previous pilot projects and integrate them into a pan-European digital platform for cross-sector, interoperable eGovernment services. See http://www.esens.eu/home.html.

– STORK is an EU co-funded project to establish a European eID Interoperability Platform that will allow citizens to establish new e-relations across borders, just by presenting their national eID. See https://www.eid-stork.eu/.

– Scoping the Single European Digital Identity Community –SSEDIC http://www.eid-ssedic.eu

– Future of Identity in the Information Society - FIDIS (http://www.fidis.net)

– Privacy and Identity Management for Europe - PRIME (https://www.prime-project.eu)

(5.2) Relevant other work

OASIS hosts multiple standardisation projects for e-identity and e-signature management and functionality, including standards for Cross-Enterprise Security and Privacy Authorization (XSPA); Digital Signature Services; the eXtensible Access Control Markup Language (XACML, also ITU-T Recommendation X.1122); the Key Management Interoperability Protocol (KMIP); the Security Assertion Markup Language (SAML, also ITU-T Recommendation X.1121); Web Services Federation (WS-Fed); Web Services Trust (WS-Trust); Web Services Secure Exchange (WS-SX), and the Extensible Resource Identifier (XRI) and XRI Data Interchange (XDI) standards. OASIS also hosts standardisation projects on Biometrics device calls and on e-ID credential Trust Elevation methods. See https://www.oasis-open.org/committees/tc_cat.php?cat=security

(6.) Proposed new standardisation actions

(6.1) Proposed standards developments

M/460 topics not yet covered by ongoing activities will need to be addressed: the trust service providers (TSP) providing signature generation services, the TSPs providing signature validation services, and standards for trust application service providers (current work is limited to an ETSI Special Report (to be ETSI SR 003 186), which will propose a rationalised and well organized set of standards for Electronic Delivery Applying Electronic Signatures).

The Commission intends to request the ESOs (for instance via standardisation mandates) and other relevant bodies to update existing standards and to develop additional ones in order to address the new requirements and the novelties of the eIDAS Regulation when it will be adopted by the European Parliament and Council. Alternatively or in complement, ESOs may autonomously submit requests for Commission support to carry out these standardisation activities. Further domains of interest include eIdentification, eDelivery, eDocuments and Website Authentication certificates. In particular regarding eIdentification, the standardisation of STORK specifications may be considered, namely the QAA model (Quality Authenticator Assurance model for eIDs) and the SAML scheme for the exchange of identity attributes, based on OASIS core specification.

Furthermore, in order to promote the strengths of the European approach to electronic trust services at global level and to favour the mutual recognition of trust services with third countries, the "internationalisation" and promotion of related European standards should be favoured.

(6.2) Proposed other activities around standardisation

Support and improve the development of Electronic Signatures interoperable standards by facilitating the organization of a series of Electronic Signature Plugtests (interoperability events) in line with the proposed scheduling of testing events for signature formats in the work plan in draft ETSI SR 003 186.

This anticipates 5 remote interoperability events covering TSL, ASIC, XAdES, PAdES and CAdES. This identifies the critical ENs (which are in preparation) of the Rationalised Framework whose adoption and deployment would largely benefit from interoperability events and the conformity testing tools. It contains the scheduling that ensures first that a reasonable amount of tools are available at the market for being tested, and second, that these tests may actually impact in due time the standardisation process, allowing the ENs to fix any interoperability problem or ambiguity identified by the stakeholders/participants in these events.

Given the technical complexity of electronic trust services, information should be disseminated to raise awareness and promote the take-up of EU related standards, in particular to the industry for the development of new solutions or for the usage of trust services embedded other sector applications.

3.5.5. Radio Frequency Identification (RFID)

(1.)Policy area title and description

Radio Frequency Identification (RFID)

The RFID standardisation mandate M/436 has in the first place the objective to ensure that the deployment of RFID applications takes place in a way compliant to the data protection directive.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

The legal origin is the data protection directive EC 95/46 and the RFID recommendation of May 15 2009 {SEC(2009)585}.

(2.2) *Additional information on legal documents in Member States if available*

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

In the medium term it should be considered which activities are needed to align the work under M/436 within the broader scope of Internet of Things.

(4) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

The RFID standard mandate will deliver a European standard that will uniquely identify the presence of RFID readers and Tags in compliance of the notification principle of the data protection directive.

In addition there will be specifications for the largest RFID application domains (e.g. retail, ticketing, …) that will simplify the process of making the application compliant with the data protection legislation. These standards are also called Privacy Impact Assessment templates.

The RFID standard mandate covers the important domain of privacy and data protection issues in wireless technologies.

(4.2) *Member States and Stakeholder perspective*

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.)Related ongoing standardisation and research activities

(5.1) At European level

CEN TC225 is scheduled to complete the work on phase 2 of mandate M/436 during 2014

(5.2) Other relevant work

No specific or additional input to this Rolling Plan.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Focus is on completion of the RFID standardisation mandate. No further work beyond this is foreseen.

(6.2) Proposed other activities around standardisation

No other activities proposed.

3.5.6. Internet of Things

(1.)Policy area title and description

Internet of Things (IoT)

IoT is a dynamic global network infrastructure with self-configuring capabilities based on communication protocols where physical and virtual "things" have identities, physical attributes and virtual personalities and use intelligent interfaces. Technological developments have made possible to connect these “things” to data networks.

As a consequence a large number of proprietary or semi-closed solutions to address specific problems have emerged, leading to non-interoperable concepts, based on different architectures and protocols. Consequently, the deployments of truly IoT applications, i.e. where information of connectable “things” can be flexibly aggregated and scaled have been limited in scale and in scope, actually limiting the IoT to a set of "intranets of things – or goods".

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

COM(2009)278: "Internet of Things - An action plan for Europe": Standardisation will play an important role in the uptake of IoT, by lowering entry barriers to newcomers and operational costs for users, by being a prerequisite for interoperability and economies of scale and by allowing industry to better compete at international level. IoT standardisation should aim at rationalising some existing standards or developing new ones where needed.

The proposal for a Directive and for a companion regulation reforming data protection to better adapt it to global ICT developments may also be considered as relevant for IoT standardisation.
See: http://ec.europa.eu/justice/data-protection/law/index_en.htm#h2-5

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

There are a number of global activities ongoing in the area of IoT standardisation. In particular there are the oneM2M partnership project to which ETSI contributes; relevant standardisation activities in IEC; a focus group in ISO/IEC JTC 1; the standards project on MQTT (Message Queuing Telemetry Transport) in OASIS.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

It is the intention to follow an approach to standardisation in IoT similar to that followed in the Cloud Computing Strategy (COM (2012) 529 – Unleashing the Potential of Cloud Computing in Europe). As many relevant standards exist already for the IoT domain, a gap analysis would be adequate, taking into account the most promising business models and use cases. This will be organised through a kick off workshop run by a SDO (Standards Development Organisation), ETSI, to federate the main actors. The SDO will subsequently act as a standardisation hub, with further reporting and guidance organised towards the Commission and the appropriate bodies.

As multiple initiatives in the field already exist, it is indeed needed to correctly position IoT standardisation vis-à-vis existing initiatives such as OneM2M, or the ETSI led standardisation activities related to smart meters.

IoT standards will notably support the emergence of business models unleashing the commercial capabilities of systems and devices integrations. Beyond standards identification, it is also important to identify implementation reference models that can be shared by industrial actors. This approach was notably followed under the FI-PPP.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan.

It has to be noted that several Member States have initiated IoT initiatives which should be leveraged to support such a standardisation work. Without being exhaustive, one can mention:

- UK: the KTN (Knowledge Transfer Network) IoT interest group: https://connect.innovateuk.org/web/internet-of-things

- Finland: IoT Cluster supporting investments in IoT: http://www.investinfinland.fi/industries/rd-and-innovation/internet-of-things-in-finland/124

- Sweden: ICT for Sweden: http://www.iva.se/IVA-seminarier/Internet-of-Things-IoT---fran-affarsnytta-till-sensorer/

(5.) Related ongoing standardisation and research activities

(5.1) At European level

There are several projects funded by the European Commission, which are integrated in the Internet of Things Research in Europe Cluster (IERC) that are dealing with aspects of the standardisation in IoT: CALIPSO, GAMBAS, IOT.EST, OPENIOT, UIOT6, SPRINT and PROBE-IT. In particular, OPENIOT deals with standardisation of open source solution for creating utility/cloud based environments of internet-connected objects, SPRINT has an active contribution to W3C (web services), OMG (e.g., on exchange formats, APIs) and OASIS (data exchange formats), PROBE-IT validates standards or pre-standards on European and International Level and perform pre-normative research work on standardisation requirements.

Also, the Future Internet PPP (FI-PPP) deals with some issues connected to the standardization of the IoT.

Other ongoing activities at European level are the oneM2M partnership project to which ETSI contributes; relevant standardisation activities in IEC; a focus group in ISO/IEC JTC 1; and the standards project on MQTT in OASIS.

http://www.iva.se/IVA-seminarier/Internet-of-Things-IoT---fran-affarsnytta-till-sensorer/*(5.2) Other relevant work*

The success of the Internet of Things (IoT) depends strongly on standardisation, which provides interoperability, compatibility, reliability, and effective operations on a global scale. Recognizing the value of IoT to industry and the benefits this technology innovation brings to the public, the IEEE Standards Association (IEEE-SA) has a number of standards, projects and events that are directly related to creating the environment needed for a vibrant IoT. For more information see http://standards.ieee.org/develop/msp/iot.pdf.

The IETF has a number of working groups chartered to develop standards to support the Internet of Things. The 6lowpan working group is developing standards to ensure interoperability between smart object networks and defining the necessary security and management protocols and constructs for building such networks. The roll working group is developing standards to support the routing of communications within low-power and lossy networks. The core working group is specifying protocols that allow applications running in resource-constrained environments to interoperate with each other and the rest of the Internet. For more information see <http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform#IOT>.

OASIS runs a Technical Committee on Message Queuing Telemetry Transport (MQTT). It is is producing a standard for the Message Queuing Telemetry Transport Protocol compatible with MQTT V3.1, together with requirements for enhancements, documented usage examples, best practices, and guidance for use of MQTT topics with commonly available registry and discovery mechanisms.

As an M2M/Internet of Things (IoT) connectivity protocol, MQTT is designed to support messaging transport from remote locations/devices involving small code footprints (e.g., 8-bit, 256KB ram controllers), low power, low bandwidth, high-cost connections, high latency, variable availability, and negotiated delivery guarantees. See https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=mqtt

ITU has a Joint Coordination Activity on IoT: http://www.itu.int/en/itu-t/jca/iot/Pages/default.aspx

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

The main activities identified are related to the mapping of the existing standards leading to the accomplishment of a gap analysis to detect missing standards as well as the corresponding reference implementations for the most promising use cases in the IoT domain. In this regard, although seven use cases have already been identified (Energy, Environment, Open data, People,

Transport, Security and Water management), further investigation should be carried out.

In order to undertake these activities the organization of a workshop via an SDO involving industry and relevant research institutes and universities to frame the issue is considered to be a key starting point.

(6.2) Proposed other activities around standardisation

No specific or additional input to this Rolling Plan.

3.5.7. Network and Information Security

(1.) Policy area title and description

Network and Information Security

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 all stakeholders.

(2.) Legislation and policy documents

(2.1) European legislation and policy documents

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

(2.2) Additional information on legal documents in Member States if available

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

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.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.)Related ongoing standardisation and research activities

(5.1) At European level

Work in network and information security and cyber security standards is extensive and ongoing:

CEN, CENELEC and ETSI have set up a Cyber Security Coordination Group (CSCG).

The CSCG acts as a point of contact between European Standardisation Organisations for pan-European interchange on Cyber Security standardisation, inter alia providing recommendations to the European Commission and Member States herein and regarding the exchange with non-European organizations on a strategic level.

In 2014 the CSCG is to introduce a White Paper "Recommendations for a Strategy on European Cyber Security Standardisation" to enhance efforts to coordinate European ICT standardisation.

The CSCG and the NIS Public-Private Platform will regularly liaise with the MSP to address possible cyber-security standardisation gaps identified.

(5.2) Other relevant work

OASIS hosts the PKCS 11 standardisation project for cryptographic tokens controlling authentication information (such as personal identity), see *https://www.oasis-open.org/committees/pkcs11* , and the Key Management Interoperability Protocol (KMIP) for enterprise encryption key administration and deployment. See https://www.oasis-open.org/committees/kmip

IEEE has standardization activities in the network and information security space, 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. For more information about IEEE IoT activities please see http://standards.ieee.org/develop/msp/nis.pdf.

(6) Proposed new standardisation activities

(6.1) Proposed standards developments

No specific or additional input to this Rolling Plan.

(6.2) Proposed other activities around standardisation

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.

Other new actions depend on the work of the Network and Information Security Public-Private Platform.

3.5.8. ePrivacy

(1.)Policy area title and description

ePrivacy

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 'privacy by design'. Standards may set forth the basic requirements for 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 "privacy by design" compliant, would have to fulfil a set of requirements defined through appropriate EU standards and robust, independent third party certification mechanisms.

The approach of standards-based privacy protection and the possibility of certification is acknowledged in existing legislation and by the proposed Data Protection Regulation.

(2) Legislation and policy documents

(2.1) European legislation and policy documents

The ePrivacy Directive. 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.
- Proposed Data Protection Regulation. Article 23 requires data protection by design and by default[52].
- The 1999/5 RTTE Directive, and as proposed amended in 2012. Article 3(3)(c) of the 1999 wording enables the Commission to decide (which it has not so far) that equipment is constructed to incorporate privacy safeguards. The 2012 proposed amended RTTE (COM (2012) 584) makes privacy safeguards an essential requirement on radio equipment.

[52] 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.

(2.2) Additional information on legal documents in Member States if available

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

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(3.) Member States and Stakeholder input on policy context

(3.1) Input from Member States

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(3.2) Input from other Stakeholders

No specific or additional input to this Rolling Plan.

(4.) Standardisation needs to implement the legislation and policy

(4.1) Commission perspective

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.

(4.2) Member States and Stakeholder perspective

For information available in the Member States please see the documents listed in Annex I to this Rolling Plan. There is no additional information at this point in time for this Rolling Plan.

(5.) Related ongoing standardisation and research activities

(5.1) At European level

Due account should be taken of the activities of the recently-formed DG ENTR Working Group on “Privacy by Design”, which includes standardisation participants as well as other stakeholders.

(5.2) Other relevant work

There are some relevant EU initiatives, including the mandate M/436 on RFID, but none is wholly related to privacy

The W3C has an ongoing 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).: http://www.w3.org/2011/tracking-protection/.

W3C has also an ongoing standardisation initiative to help Internet users to express their agreement or disagreement to be tracked on the Internet.

OASIS hosts multiple specification development projects for privacy functionality, including the Privacy Management Reference Model (PMRM) project: https://www.oasis-open.org/committees/pmrm, and the Privacy by Design Documentation for Software Engineers standards project (PbD-SE): https://www.oasis-open.org/committees/pbd-se

In IETF, the Internet Architecture Board has established a Privacy Program [53] to serve as a forum for synthesizing privacy thinking within the technical standards community and to create privacy design considerations for use within the IETF. A document developing various privacy considerations [54] is under development by the IAB.

(6.) Proposed new standardisation activities

(6.1) Proposed standards developments

Proposed areas to focus on are:

- standardising browser functionalities and defaults and
- standardisation of Do Not Track. Current standardisation initiatives in the area of Do Not Track are not in line with the EU provisions. There is therefore scope for the elaboration of an entirely new European standard that would meet the requirements of the ePrivacy Directive in such field. Doing so would contribute to harmonising concepts and legal provisions.
- location data used by mobile applications
- methodologies for interrogating, testing and assuring privacy functionality.

(6.2) Proposed other activities around standardisation

- No further proposals at this time.

[53] http://www.iab.org/activities/programs/privacy-program/

[54] http://tools.ietf.org/html/draft-iab-privacy-considerations-09

4. TECHNOLOGY AREAS AND STANDARDISATION ACTIVITIES

4.1. Horizontal technologies for ICT infrastructures

On the basic infrastructure for ICT systems work is done in a number of standards organisations that may be applicable to the various policy areas, i.e. of horizontal relevance. This may refer to work done in global open standards organisations which develop standardised technology components that are widely deployed or work done in formally recognised standards organisations including the ESOs. Rather than mapping these standards developed one-to-one to specific policy areas the standards should be considered as building blocks. Metaphorically, one could see these technologies such as lego pieces that can be utilised to build complex architectures.

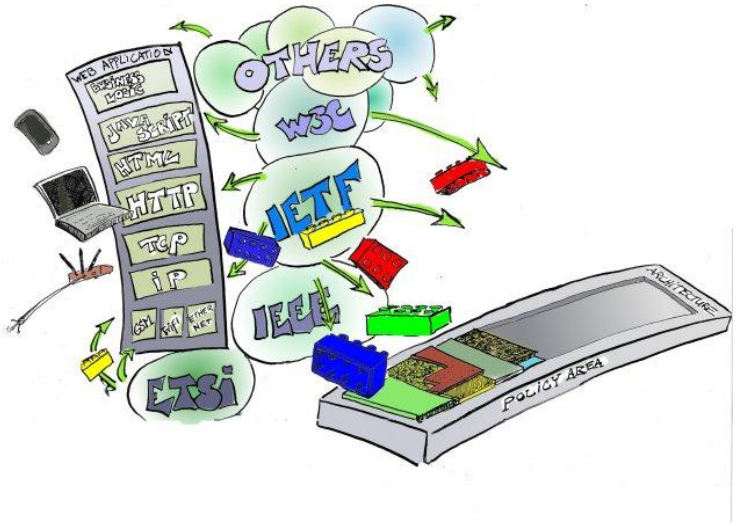
These technologies and the respective standards are not necessarily considered in the specific policy areas listed in chapter 3 of this Rolling Plan. To this end, the sections under chapter 3 are consequently incomplete. Therefore, the relevant aspects will be addressed below in order to draw the attention to these horizontal technologies.

It is quite often the case that technologies standardised and maintained by one of the standards organisations depend on one another. Therefore, in order to specify a standardised solution for a specific policy requirement one might need to use, for example, a scripting standard (ECMA) with specific object security (IETF) to be used within a web service (W3C) that runs on top of a transport layer using specific security architectures (both IETF) which in turn runs on Ethernet (IEEE) and communicates with other systems over wireless networks (IEEE and ETSI).

Utilising relevant specifications will lower the costs of the implementation and reduce specification overhead, thereby significantly lowering costs and risks in reaching results for the key policy goals. It is therefore recommended that. while solutions in these policy areas are being standardised, elements that have been or are being standardised by the respective standards organisation are being considered for use, and that those who partake in developing the solutions bring their requirements and/or solutions to those global open standards development organisations when appropriate.

Architects and implementers are encouraged to seek applicable building blocks and have them submitted for identification if they have not been identified yet

The following drawing illustrates those horizontal technology layers which provide building blocks for ICT infrastructures and systems:



4.2. Technology Areas, Major Building Blocks and Relevant Organisations

The chapter below provides a very high level illustrative outline[55] of the relevant horizontal technology areas.

For each area examples of major technology building blocks that are covered are listed. Moreover those standards development organisations are listed which have major activities ongoing in the respective technology area and which can act as a source for further information as well as for providing relevant specifications.

This section serves to illustrate the wealth of commonly available and globally deployed building blocks without the intention of providing a detailed inventory or roadmap.

Technology area: Physical and Link

Covers technologies that allow devices to connect to other devices, physical and transmission specifications.

[55] In order to achieve better comprehension, the areas are somewhat aligned with the OSI or Internet Layer model, but the mapping is not necessarily exact nor is the positioning of technology blocks in the areas.

Technology blocks covered	Cabling, USB, BUS specifications,, Ethernet, WIFI, GSM, LTE, Signalling and framing specifications
Organisations active in these areas	CENELEC ETSI IEEE ISO/IEC ITU-T JEDEC TIA USB-IF

Technology area: Internet-working technologies

Covers technologies that allow hosts or applications on independent networks to communicate to each other.

Technology blocks covered	IP level technologies. For example, Binding to lower layers, Mobility solutions, Rendez-Vous, Locator/Identifier splits, Home networks, Tunnelling, and DNS, intra and inter domain routing, virtual networking, multi-cast, congestion control mechanism, TCP maintenance, and various traffic optimisation mechanisms
Organisations active in these areas	ETSI IETF ITU-T

Technology Area: Applications

The Applications area covers the session presentation and application layer in the OSI model. The ordering below is somewhat arbitrary.

Applications: Messaging and Media

Covers session protocols and architectures, and Platform technologies.

Technology blocks covered	Application layer protocols. For example, various e-mail standards, HTTP, ldap Internet based telephony (SIP and RTP), internet messaging (XMPP), emergency services, geolocation, and web platform (HTML, Cookies, XML, EcmaScript).
Organisations active in this area	Ecma ETSI IETF IEEE W3C XMS

Applications; Presentation and Interfacing

Covers interfacing and human interaction

Technology blocks covered	Fonts, Internationalization, Audio and Video Codecs, Accessibility standards, Fileformats (jpeg, SVG), APIs, Cascading style sheets
Organisations active in this area	ETSI IETF ITU-T MPEG Unicode W3C

Applications: Business logic

Covers area specific communication aspects that are specific to application areas

Technology blocks covered	XML based document definitions, business semantics, and Modelling Languages (e.g. invoicing standards)
Organisations active in this area	CEN OASIS OMG UN/CEFACT W3C

Technology Area: Security and Privacy:

Description

Security and Privacy is the broadest of the technology areas. It is part of horizontal but also part of the complete vertical stack and, therefore, may be seen as "cross-area". The building blocks herein can be solutions by themselves or be applied as part of solutions.

Technology blocks covered	Internet Public Key Internet infrastructure (x.509 based) web authorization javascript signing and encryption transport layer security mechanism (TLS) Authentication information exchange mechanisms (SAML) Privacy enhancement mechanisms
Organisations active in these areas	CEN ETSI ISO/IEC ITU-T IEEE IETF OASIS W3C

5. CLOSING REMARKS

This is the first version of the Rolling Plan. It has been produced in a consensual and open way, between the Commission and the MSP. For the first time, with this Rolling Plan there is a comprehensive strategy document available covering policy making across different Directorates-General of the European Commission and consolidating their input with the advice given by the MSP based on its broad stakeholder representation.

It will be necessary to gather further experience in the usage and implementation of the Rolling Plan to fine-tune the development process.

In any case, the Rolling Plan is not conceived to be a finalised document ever, but a snapshot reflecting the policy needs and stakeholders' advice reflecting at a given moment and subject to the information that was available to the authors at that point in time.

The Rolling Plan provides the opportunity for policy makers on EU and on national level to move towards closer collaboration and a closer common understanding regarding the objectives of policy making in the various areas. The Rolling Plan aims at giving a concise overview on available standards and ongoing standardisation activities of relevance to the respective policy context. This should facilitate effective policy making by providing information on the global and European standardisation landscape per area. And it shall avoid any duplication of work and at the same time bring global standards into the focus of policy making.

The Rolling Plan is a work plan of the European Commission, a guideline for the implementation of policies supported by standardisation and a source of information for stakeholders about policy priorities and envisaged actions. The Rolling Plan also relies on the willingness of standardisation organisations to take up work which is relevant in specific policy contexts and thus contribute to driving the technologies in the identified policy priorities.

The fast evolution of needs in the ICT field requires an equally fast adaptation of the Rolling Plan, including new topics and updating or even removing the topics already mentioned in the document. Therefore the Rolling Plan will regularly be reviewed by the Commission with the collaboration of the ICT Standardisation Multi-Stakeholder Platform. It will be updated at least once a year.

6. ANNEX I - LIST OF MEMBER STATES' WORK PLANS AND STRATEGIES

This Annex provides a list of links to strategy documents, policies and workplans on ICT standardisation that are available in the Member States, sometimes comprising several links depending on the respective document structuring in Member States. This list is for reference only. It does not claim completeness and only represents a current snap shot.

Denmark
Document on Circa – link missing

France
French digital strategy:
http://www.redressement-productif.gouv.fr/feuille-de-route-pour-le-numerique;
Framework for interoperability and security:
http://references.modernisation.gouv.fr/rgi-interoperabilite

Germany
German ICT Strategy:
http://bmwi.de/EN/Topics/Technology/ict-strategy.html

Netherlands:
Dutch Digital Agenda:
http://www.rijksoverheid.nl/onderwerpen/ict/documenten-en-publicaties/kamerstukken/2011/05/17/digitale-agendanl.html
Standardisation Forum and Board:
https://zoek.officielebekendmakingen.nl/stcrt-2011-23581.html
Documents related to Open Connection:
https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&ved=0CC4QFjAA&url=https%3A%2F%2Fwww.ictu.nl%2Farchief%2Fnoiv.nl%2Ffiles%2F2009%2F12%2FAction_plan_english.pdf&ei=h9VfUu2cNOaq7Qb89YHgAw&usg=AFQjCNFUTfOoXCkDj5jv8RY88gq6mH3UTQ&sig2=c4_dIip0VBnS2ReRDVI-yw
I-Nup:
http://www.rijksoverheid.nl/documenten-en-publicaties/kamerstukken/2011/05/30/aanbiedingsbrief-overheidsbrede-implementatieagenda-voor-dienstverlening-en-e-overheid-i-nup.html
Comply or explain policy for open standards:
https://zoek.officielebekendmakingen.nl/stcrt-2008-837.html

Spain:

Spanish National Interoperability Framework, English version:
http://administracionelectronica.gob.es/pae_Home/dms/pae_Home/documentos/Estrategi-as/pae_Interoperabilidad_Inicio/pae_Esquema_Nacional_de_Interoperabilidad/ENI_INTEROPERABILITY_ENGLISH_3.pdf

Original Spanish version:

http://www.boe.es/boe/dias/2010/01/29/pdfs/BOE-A-2010-1331.pdf)

Strategy on Technical Interoperability Standards:

http://administracionelectronica.gob.es/pae_Home/pae_Estrategias/pae_Interoperabilidad_Inicio/pae_Normas_tecnicas_de_interoperabilidad.html#.UnI2QlPFnzs

Technical Interoperability Standard for the Catalogue of Standards, English version:

http://administracionelectronica.gob.es/pae_Home/dms/pae_Home/documentos/Estrategias/pae_Interoperabilidad_Inicio/LEGISLACION_2012_BOE-A-2012-13501_Catalogue_of_standards_ENI_publicacion_oficial_2012/Catalogue%20of%20Standards%20NIF%20Spain.pdf

Official Spanish version:

http://www.boe.es/diario_boe/txt.php?id=BOE-A-2012-13501 plus
http://www.boe.es/diario_boe/txt.php?id=BOE-A-2013-455

Sweden:

Swedish Digital Agenda:

http://www.government.se/sb/d/2025/a/181914

Swedish strategy for e-government:

http://www.regeringen.se/sb/d/15700/a/206004

Switzerland:

Strategy of the Federal Council for an Information Society in Switzerland 2012:

http://www.bakom.admin.ch/themen/infosociety/index.htm

United Kingdom:

Document on Circa – link needed

7. ANNEX II: LIST OF LINKS TO STANDARDS BODIES' WEB SITES WITH UP-TO-DATE INFORMATION ON ONGOING WORK

This Annex provides a list of links to repositories of standards development organisations where information on projects and ongoing work relevant to the EU policy priorities can be found. The list does not claim completeness and may incrementally be increased.

CEN
http://www.cen.eu/cen/Sectors/Sectors/ISSS/Pages/default.aspx

CENELEC
http://www.cenelec.eu/aboutcenelec/whatwedo/technologysectors/Informationandcommunicationtechnology.html

ETSI
ETSI work programme:
http://www.etsi.org/images/files/WorkProgramme/etsi-work-programme-2013-2014.pdf
http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp

IEEE:
IEEE entry to standardisation activities relevant to the Rolling Plan:
http://standards.ieee.org/develop/msp/index.html

IETF:
IETF entry to standardisation activities relevant to the Rolling Plan:
http://trac.tools.ietf.org/group/iab/trac/wiki/Multi-Stake-Holder-Platform