

# European Multi-stakeholder Platform on ICT Standardization

## MSP Advice on the Priority ICT Standards Plan

This document is the advice on the identification of the key priority actions and domains for the Priority ICT Standards Plan approved by the European Multi-stakeholder Platform on ICT Standardization (MSP) at its 15<sup>th</sup> plenary meeting of 25th February 2016.

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## 1. INTRODUCTION

The Digital Single Market Strategy<sup>1</sup> adopted by the Commission in May 2015 proposes under Pillar 4 -maximising the growth potential of the digital economy- the adoption of the Priority ICT Standards Plan to identify and define key priorities for standardisation 'with a focus on technologies and domains that are deemed to be critical for the DSM'.

Standardisation has an essential role to play in increasing interoperability and can help steer the development of new technologies within the DSM. While the DSM Communication recognises that the EU Rolling Plan for ICT Standardisation is an essential instrument in this regard, it also considers that an increased effort is needed to ensure that standardisation output keeps pace with changes in technologies.

It is within this context, that The European multi-stakeholder platform on ICT Standardisation was asked to advise<sup>2</sup> the Commission on the identification and definition of a number of priority domains accompanied where possible by proposals for actions, namely development of standards, but also other activities related to standardisation (e.g. certification, gap finding, supporting ecosystem, international cooperation) or accompanying measures to support timely deployment of the standards in a short-mid timeframe.

At its 12th meeting of 11/06/15, the MSP agreed to ask the existing Task Force Rolling Plan to take up a new work item consisting on advising the Commission in the identification of key priority areas for the Priority ICT Standards Plan. For this purpose, with the addition of other MSP members with a key interest in the Priority ICT Standards Plan that have joined the respective Task Force sessions, the enlarged TF (TFRP-PP) prepared a draft advice that was first discussed at the 14<sup>th</sup> MSP meeting on 26 November 2015 and finally approved at the 15<sup>th</sup> MSP meeting of 25th February 2016<sup>3</sup>.

## 2. THE METHOD: CRITERIA & BASIC PRINCIPLES

Seven conference calls of the TFRP-PP and one face-to-face meeting have been organised to discuss and agree on the content of this advice.

### 2.1 Selection Criteria

As a first step, the TF RP-PP agreed on a number of high level criteria that could make the domain a priority and on more concrete criteria that helped the TF members in the final selection of domains and priorities.

The Task Force members agreed that the domains retained should respond to one or more of the following **high level criteria**:

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<sup>1</sup> COM(2015) 192 final

<sup>2</sup> Article 2 of Commission Decision of 28 November 2011 setting-up the European multi-stakeholders platform on ICT standardisation. OJ C 349, 30.11.2011, page 4.

<sup>3</sup> ANEC has stated it cannot support the draft advice. Its views are expressed in its publicly-available position paper responding to the [public consultation](#)

- domains where further standard setting can help steer the development of new technologies; or
- domains where there are missing technological standards that are essential for supporting the digitisation of our industrial and services sector; or
- domains where standardisation will contribute to increase interoperability and boost competitiveness; or
- domains where standard setting has benefits for consumers (i.e. business, patients, drivers, residents, students, home owners etc.).

Moreover the TF members agreed to apply the following **concrete criteria** to make their preferred choice:

- Link to EU policy and how much it contributes to the DSM objectives and actions,
- Potential for increasing competitiveness of the European industries in a global market,
- Maturity of standardisation needs
- Clear and achievable deliverables
- Evidence of market support and stakeholders need
- Potential to produce societal benefits

## 2.2 Basic principles guiding this advice

Prior to the examination of domains and actions, the TF members agreed on a number of basic principles that were present when setting the priorities:

- a) Basic technology specifications may be available in many domains, therefore focus may be more needed on aspects like reference architectures, API and other standardisation deliverables to support vertical innovation in the domain. Technologies continue to evolve and this may necessitate changes to standards.
- b) To be effective, the Plan should focus on a small number of key priorities where actions are required. The priority should be assigned to domains (in principle within the Rolling Plan) that could (within a short-/ mid-term) produce a positive impact in the European recovering economy.
- c) The Plan should contribute to increase the competitiveness of EU industries.
- d) Formulating key (regulatory and technological) requirements and framework conditions clearly and concisely will be more successful than directly specifying the content requirements of standards.
- e) The Plan should be articulated with the ambition to strengthen the position of ESOs and European interests to effectively contribute to, benefit from, and influence the global standardisation landscape. The ultimate goal is to ensure that standardisation activity supports a global market creating opportunities for European businesses and consumers and it is achieved via the most appropriate routes and organisations.
- f) Actions included in the Priority Plan should address how can they influence, leverage or contribute to standardisation in support of achieving EU policy goals, and taking into consideration what extra value doing each action at European level would bring over industry led, global initiatives.

- g) No homogenous solution exists; a spectrum of actions is possible from standards to coordination to leveraging of current work. Depending on the domain, focus may be put on architectures, reference implementation platforms or use cases to support digital transformations; priorities may need to be set based on concrete use cases and by cross-sector building blocks i.e. eID, cyber-security, e-Invoicing; to ensure interoperability focus may be on priorities on the standardisation of interfaces for desired functionalities and not on design of services or equipment.
- h) The Priority Plan should break down the various subjects identified into workable sub-items – with clearly identified use cases when applicable)
- i) Bottom up/voluntary stakeholder driven standardisation continues to be the most successful path for timely and effective standardisation and for broad market uptake and adoption of the standards. Many new innovations in the ICT market come from small companies operating at local level. Input on a bottom-up basis will continue ensuring that potential innovations initially remain possible in local and national markets. In the context of the DSM, with standards as support to policy initiatives, the bottom-up nature of the standardization process should go hand in hand with policy measures in the field of standardization.
- j) Where regulation and policies are concerned, there is a strong need for alignment/matching between the top-down ambition and the bottom-up willingness.
- k) The Plan should avoid duplication of work by not having regional or national standardisation where standards are already available or in progress at global level. This should include use of the standstill principles when appropriate. However, in areas where EU policy requirements are not met by global standards, endorsing standardization activity at EU level on areas where global solutions exist does not mean that we have duplication.
- l) The Plan should create political and policy framework conditions which support the promotion of European ideas and take appropriate actions to support the development of standards on key priorities.
- m) EU may also define a set of actions aimed at facilitating the market conditions for the adoption of standards on those key priority areas.
- n) EC may need to directly contribute to the standardization work in the prioritized policy areas
- o) The Plan should identify how to work with appropriate SDOs (in particular those identified as ICT MSP members) where they are relevant for new technologies in ways that support new developments in a way coherent with European needs and the ESO system.

### **3. THE PROCESS**

The TF members examined a list of 12 domains (9 extracted from the DSM Communication and 3 others proposed by TF members- see annex 1) and were invited to apply the selection

criteria and basic principles to such list as well as to provide arguments both to retain and to not have retained one or another domain.

The TF early-on realised that it was not possible to apply a comprehensive and detailed scientific analysis to justify each choice, due to the limited time available. It was considered in any case that such analysis would likely reach much the same conclusions that would be reached through an empirical process and pragmatic discussion. This is reflected in basic principle b)-:

*“To be effective, the Plan should focus on a small number of priorities where actions are required. The higher priorities should be assigned to domains (in principle within the Rolling Plan) that could (within a short-/ mid-term) produce a higher positive impact in the European recovering economy”.*

Having this principle in mind, and being informed by the work carried out during the revision of the ICT standardisation Rolling Plan (RP) 2016 the TF decided to take forward those areas upon which there was a consensus and to present to the 13<sup>th</sup> MSP meeting of 17 September 2015 a preliminary list of five priority domains to continue the analysis: 5G, Internet of Things, Cloud, Cybersecurity and Digital Manufacturing. Concerning the domains that have not been retained as a priority the TF points out that it does not mean that they are not relevant domains: these domains are included in the ICT Rolling Plan.

The MSP took note of the selection of those 5 domains at the 13<sup>th</sup> meeting and made no objections. This advice contains the concrete actions agreed by the TF by consensus that the MSP recommends for each of those priority domains.

#### **4. STRUCTURING**

The Communication on the Digital Single market proposes launching an 'integrated' standardisation plan to identify and define key priorities for standardisation with a focus on the technologies and domains that are deemed to be critical to the DSM.

Policy making does not take place in a vacuum and naturally a lot of work is going on already in standardisation regarding these key priorities, both within Europe and on a global scale, sometimes driven by Europe and often with strong European involvement. It is important for Europe to contribute to these activities and at the same time take appropriate measures to ensure and review that European requirements are properly and satisfactorily addressed in ongoing work at global level. In addition, Europe needs to identify complementary actions that are required in the market or at policy level and initiate respective activities in the appropriate way following the over-reaching goal of serving the Digital Single Market as well as EU competitiveness at global level.

It has emerged early in the discussions that the standardisation actions will normally not restrict to a single domain, but may have cross-domain implications. The TF proposes the structure below to reflect this context, putting into relation the different layers of technology domains, enablers, services and applications, as well as the possible scope of the different areas of the priority plan.

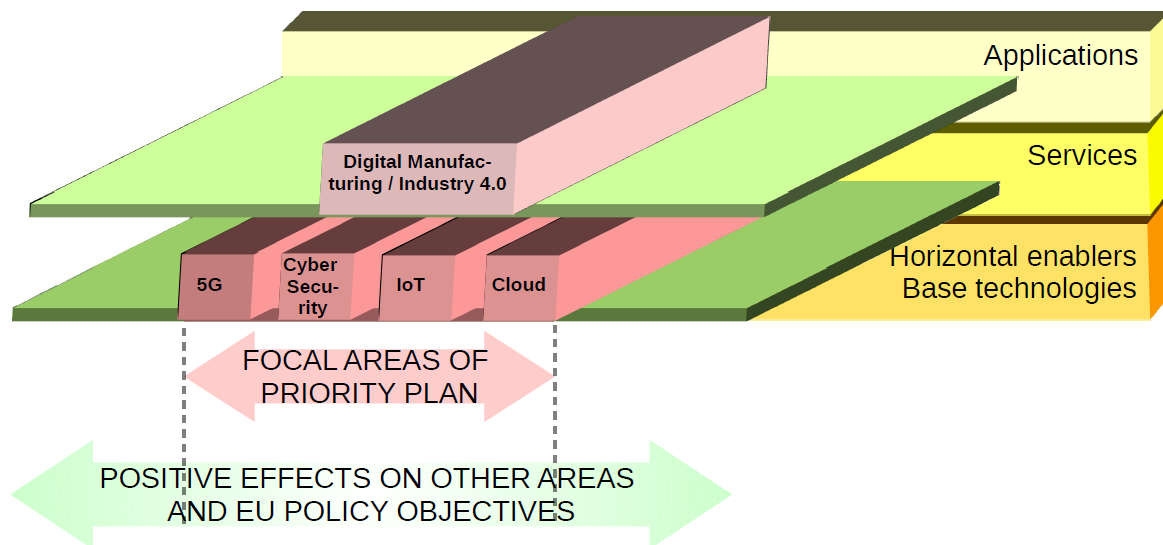


Figure 1: structuring of priority domains

The need for new activities or for consolidation actions is very often less on the level of basic technologies, but more on the level of vertical specific standardisation deliverables. The basic technology standards are largely available and are, in fact, the enablers for the digitisation on a broad scale. It is on the vertical specific level that standardisation activities may be required or a consolidation of ongoing activities may be initiated in order to accelerate technology adoption. These may be process standards, interfaces/APIs, or reference architectures, roadmaps and use cases. Moreover, the promotion of pilot projects, plug-tests, etc. will create valuable show cases and best practices for the implementation of technologies and will provide important input to standardisation regarding possible functional gaps that need to be addressed and closed.

## 5. PRIORITY DOMAINS SELECTED BY THE PLATFORM

While the broad spectrum of policy objectives and how standardisation can support their implementation is defined in the EU Rolling Plan for ICT Standardisation, the MSP advises the Commission to focus the Priority Plan on five key priority domains: **5G, Cloud, Cybersecurity, Digital Manufacturing/Industry 4.0, and Internet of Things (IoT).**

**The MSP considers these five domains to be critical for technology progress, innovation and growth in Europe in the coming years. They are key priorities in the process of digital transformation. Moreover the MSP considers that it is important that Europe takes up leadership in these domains, both for the Digital Single Market but also on a global scale for promoting global competitiveness of industry.**

These five key priorities are, therefore, at the core of the digital transformation and the reinvention of European industry. They are the major areas on which to put special focus in order to boost European economy and in order to create the foundations for the full spectrum of policy objectives to benefit, to drive innovation and progress with highest speed and towards successful market adoption and implementation.

Moreover, as illustrated in figure 1 above, the key priority domains also function as catalysts for the entire spectrum of policy objectives of Europe as a whole. Given the critical nature and the horizontal relevance of these five key priorities, the MSP believes that technology progress and leadership in this five domains will create network effects on other policy objectives which are not listed as key priorities in this advice, but which are nonetheless of major relevance in the context of the digital transformation and the successful path toward the Digital Single Market.

The five domains are presented in alphabetic order, not implying a judgment of relative priority among them.

### 5.1. Priority Domain 1: 5G

Emergence of a single next generation of communication networks- 5G standard is currently an objective of global industries, which represents a clear opportunity to favour global interoperability and to support the Connected continent<sup>4</sup> objectives of pan European consolidated networks with competitive end to end service offers.

Compared to previous generations of standards in communication networks, 5G standards can offer many features such as improved connectivity, low-latency communication, prioritization, energy optimization and greater security. They will also address features of low data rates with very high numbers of terminals for Machine to Machine (M2M) / Internet of Things (IoT) applications. These will in turn make possible novel types of business models, notably for what concerns vertical domains.

The MSP proposes two strands of actions: (1) to support the existing international dialogue towards the elaboration of a coherent set of global 5G standards, and (2) to promote community building on definition of 5G standardisation needs for interoperability of multiple communication platforms.

Concerning **international dialogue**, it is first advised to facilitate the participation of EU firms in international 5G research and standardisation programmes and the exploitation of EU research results into the standardisation phases, leveraging the research activities organised through the 5G Public-Private Partnership (5G PPP), and using the existing international partnerships with Korea, Japan, China, USA, India, etc. In addition, the MSP advises the Commission to further support cooperation/negotiation among SDOs (e.g., ETSI/3GPP, ITU-T), fora and consortia and countries to align 5G standardisation roadmaps. Appropriate work from national MS initiatives should also be brought in, where it is not yet linked to one of the initiatives mentioned

Moreover new requirements of regulatory nature that may result into standards are likely to emerge, i.e. related to the allocation and introduction of new frequency bands. The MSP considers that these requirements should be defined taking account of the results of EU research programmes and the industrial development of 5G technologies. The MSP therefore advises the Commission to support an analysis of needs and requirements based on the

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<sup>4</sup> <https://ec.europa.eu/digital-agenda/en/connected-continent-single-telecom-market-growth-jobs>

existing procedures between the ECC, EU, CEPT and ETSI, supporting the achievement of harmonised radio-spectrum frequency bands allocated to 5G<sup>5</sup>.

As regards the **promotion of community building** on definition of 5G standardisation needs, the MSP considers that 5G standardisation will need to incorporate the requirements and take into account specifics resulting from the business models from vertical sectors (e.g., automotive, health, home automation), which are traditionally not participating in the standards development organisations (e.g., 3GPP, ITU) that have driven the standardisation of previous generation of mobile communication systems. Moreover the MSP considers the European requirements and use cases originated from the vision of the 5G PPP Forums should be incorporated into the work of the SDOs active in this domain.

Within this context, The MSP advises the Commission to promote increased cooperation among relevant stakeholders, in particular SMEs to foster the integration of the needs, aims and way of working of vertical sectors in the definition, scope and requirements of the standards. Moreover the MSP supports the development of standards to provide interoperability for multiple platform / multiple devices underlying 5G including, when relevant, issuing standardisation requests to ESOs.

*Table 1: proposed actions and target date for 5G*

	<b>Action</b>	<b>Time frame</b>
<b>1.1</b>	Support International Dialogue	
	1.1.a - Promotion of international dialogue towards a coherent set of global standards	2016
	1.1.b – Standardisation activities to support harmonised radio spectrum bands	2016-2018
<b>1.2</b>	Promote Community building on definition of 5G standardisation needs for interoperability of multiple communication platforms	
	1.2.a – Integration of Vertical Sectors needs and requirement in the 5G standardisation process	2016
	1.2.b – Supporting the development of standards for the interoperability of multiple communication platforms	2016-2020

*Nota Bene: when a date is provided as single date (e.g., “2016”) it means a target deadline. When two dates are provided, it means a target frame time (e.g. “2016-2018”)*

## **5.2. Priority domain 2: Cloud**

The impact of the cloud on business is expected to further increase in the coming years. Many services, (e.g. web-based email, social networks) are already in the cloud. Cloud has the potential to reduce information technology costs and gives creative businesses the possibility to develop new IT services. However there is a risk that cloud computing develops in a way that lacks interoperability, data portability and reversibility and that different service provision turn out as proprietary ecosystems that are not interoperable. Although there are

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<sup>5</sup> This should follow the usual framework of ITU-R procedures, and related European Radio Spectrum Committee and Radio Spectrum Policy Group (RSC/RSPG).



already many standards and de facto standards for cloud, their maturity and usability depends very much on the model of the cloud computing service provision.

The MSP thinks that any standardisation activity should aim at achieving better interoperability of cloud services to make it possible for users to work across services and to process data from different sources in a coherent and interoperable manner.

The MSP is of the view that a wider use of common standards would help users (especially SMEs and public sector) to get a variety of service offerings. In particular, portability of applications and data between different cloud service providers is essential to avoid lock-in for users and to build trust in and adoption of cloud services. It is also important to identify and encourage the use of standards ensuring secure cloud services with full respect of personal data protection rules.

In this context the MSP proposes three groups of actions: (1) promoting standards to ensure portability for cloud service customers; (2) encouraging collaboration between SDOs and cloud open source communities and (3) fostering cloud standards that support trusted products and services at global level.

First, the MSP considers that **portability for cloud service customers** at all levels (e.g., IaaS, PaaS, SaaS, NaaS<sup>6</sup>) should be the objective. To achieve this, the MSP proposes a twofold action to promote the identification and to encourage the use of existing standards on application portability on the one hand, and to identify and to encourage the use of standards for moving data between service providers (data portability) providing appropriate personal data safeguards on the other hand, in ways that achieve widespread market acceptance.

Second, as regards, the **collaboration between SSOs and cloud open source communities**<sup>7</sup>, In the cloud domain the work done in open source projects is particular relevant to address particular aspects of cloud computing (e.g. OpenStack (IaaS), Cloud Foundry (PaaS) and Docker -Container technology-). The MSP advises the Commission to take the necessary actions to facilitate the dialogue and cross participation and to encourage global standards bodies active in the area of cloud to work together with open source communities with two main objectives: to get full-fledged overview on the role of open source for successful market adoption of cloud technologies and service and to promote when relevant the incorporation of the interfaces developed by open source communities into standardisation deliverables, i.e., by facilitating the dialogue and cross participation between open source communities and standards bodies. This should also include working with concepts that are closely related to Cloud, such as NFV, SDN<sup>8</sup> etc.

Third and last, in order **to promote a trusted cloud framework a global basis**, the MSP recommends promoting the EU's priorities and requirements within SDOs with global scope. Furthermore, the MSP sees the need to promote standards needed in support of legal

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<sup>6</sup> Internet as a Service, Platform as a service, Software as a Service, Network as a Service

<sup>7</sup> Examples for Open Source communities active in the area of Cloud are the OpenStack Foundation, Cloud Foundry and the Eclipse Foundation.

<sup>8</sup> Network Function Virtualisation, Software Defined Networks

measures regarding personal data protection in the cloud. Finally the MSP would suggest the development of standards to ensure the stability of cloud APIs<sup>9</sup>.

*Table 2: proposed actions and target dates for cloud:*

	<b>Action</b>	<b>Time frame</b>
<b>2.1</b>	Promote standards for portability for cloud service customers	
	2.1a Identification and encourage use of standards to ensure application portability	2016
	2.1b Identification and encourage use of standards for moving data between service providers	2017
<b>2.2</b>	Encourage collaboration between SDOs and cloud open source communities	
	2.2a Role of open source for successful market adoption of cloud technologies and service	2016-2018
	2.2b Incorporation of interfaces developed by open source communities into standardisation deliverables	2016-2018
<b>2.3</b>	Promote trusted cloud on a global basis	
	2.3a Promote the EU's priorities and requirements	2016-2018
	2.3b Promote standards for personal data protection in cloud	2016-2018
	2.3c Promote standards to ensure stability of cloud APIs	2016-2018

### **5.3. Priority domain 3: Cybersecurity**

Appropriately addressing the challenges related to the security of networks and ICT based services and software applications is a crucial step in gaining the trust and confidence of enterprises and citizens in the DSM. Standardisation may contribute enormously to ensuring cyber security.

The MSP agrees that cybersecurity requirements should be integrated in the development of all emerging ICT standards including for software and hardware. It is important to encourage industry and SDOs to consider cybersecurity aspects throughout the entire lifecycle of ICT products taking into consideration not only existing cybersecurity threats but, to the extent possible, emerging trends in the threat landscape.

Currently the standardisation landscape in the security area is very diverse with many standards and technical specifications often developed for a specific use. Thus, the MSP opinion is that the development of new standards should not be a priority. Instead, the "mapping" of existing ones in specific areas and the setting up of incentives and guidelines to their use should be promoted. This exercise would require a close cooperation between ESOs and fora & consortia but also the active support of Member States to ensure that the potential of existing security standards will be fully exploited. Building on established and ongoing security standards work would help to avoid further fragmentation and take-up.

In this context the MSP proposes three kind of actions: (1) to develop guidelines and principles for the integration of cybersecurity requirements in ICT standardisation; (2) to

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<sup>9</sup> Application Programming Interfaces

promote implementation, uptake and use of existing technical specifications and (3) to support pilots to ensure articulation of standards with relevant regulations:

**Developing guidelines and principles** would have two main objectives: to ensure cyber security is appropriately addressed in the development of new, or the revision of existing, ICT standards and to identify and encourage the use of open standards for exchanging risk, vulnerability and mitigation information.

**In order to promote the implementation, uptake and use of existing technical specifications**, the MSP encourages the elaboration of flexible, constantly updated guidelines able to adapt to variable cyber-attacks and/or "best practices" at EU level (based on existing standards and guidelines) for approaches to securing networks. Such guidelines or best practises could be based on specificities of sectors and/or the risk profile of the organisations.

Finally, the MSP encourages the Commission to **support implementation pilots** instrumental to assess how regulation, standards and current technology trends will conciliate each other. Such pilots could also be instrumental to provide feedback for the improvement of standards, correction of functional gaps, and promotion of best practices.

*Table 3: proposed actions and target dates for cyber security*

	Action	Time frame
3.1	Develop guidelines and principles for the integration of cybersecurity requirements in ICT standardisation	2016
3.2	Promote implementation, uptake and use of existing technical specifications	2017
3.3	Support pilots to ensure articulation of standards with relevant regulations	2018

#### 5.4. Priority domain 4: Digital manufacturing/Industry 4.0

Manufacturing accounts for 80% of EU exports and has a tremendous potential for increase in competitiveness. Such potential will only be leveraged if the right use of available technologies, like 5G, Internet of Things, additive manufacturing (3-d printing), big data and others is coordinated towards a unique and coherent vision focusing namely on industrial renaissance, smart and clean industry, efficiency and e-skills (industry 4.0). To achieve this, it is essential to have common standards and interoperable solutions throughout the products and services life cycles.

The MSP considers that the Commission could have a key role to play in this field and would recommend a number of actions structured around three blocks, (1) to facilitate the cooperation between European businesses from different sectors and SDOs; (2) to promote standards for interoperability in the manufacturing sector and (3) to promote trusted solutions.

First, as regards the **cooperation between European business from all sectors and SDOs**, the MSP believes that there is a need to facilitate dialogue across sectors, e.g., IT and manufacturing and automation experts, with two main objectives: to incorporate the point of view of the different sectors into the standardisation processes, so that digital manufacturing emerging standards are sector independent, and to identify in advance legal barriers that may

have impact on standardisation activities (e.g. evaluating the appropriate allocation of spectrum bands, noting that spectrum is a common resource that needs to be used equitably).

Second, to **promote interoperability in the manufacturing sectors**, the MSP recommends the promotion of global standards work, ensuring that it embraces all sectors and that it meets the EU needs. The EU Commission could work with leading SSOs and global fora/consortia in order to identify needs linked to smart manufacturing for enhancing internet and web standards for digital manufacturing/Industry 4.0. Further, the MSP considers that high quality and accessible cross-sector standards for hyper connected environments should be promoted, in particular an European/International Reference Architecture Model and standard communication protocols, and standard communication protocols, data formats and interfaces to connect to the network, talk to other digital devices and easy the ability to switch between platforms.

Third, to **promote a trusted solution at global basis**, the MSP recommends supporting pilot projects and cluster building to develop prototype implementation of different scenarios in this area, and to get incremental feedback on possible functional gaps that need to be closed with standardisation. Moreover, the Commission could promote the collection of best practises and encourage the use of standards for trusted solutions. Finally, the MSP would encourage SSOs to collaborate and organise plug-tests in the area of Digital Manufacturing/Industry 4.0 in order to check interoperability and system integration and to provide feedback to standardisation and functionality including possible functional gaps.

*Table 4: proposed actions and target dates for digital manufacturing/industry 4.0*

	Action	Time frame
<b>4.1</b>	Facilitate cooperation between European business from different sectors and participation in Standards Bodies	
	4.1a Facilitate the incorporation of sectoral input into standardisation	2018
	4.1b Identify legal barriers	2018
<b>4.2</b>	Promote interoperability in the manufacturing sector	
	4.2a Promote global standards work ensuring it meets the EU needs	2017
	4.2b Promote high quality, and accessible cross- sector standards for hyper connected environments	2018
<b>4.3</b>	Promote trusted solutions	
	4.3a Support pilot projects and cluster building	2017
	4.3b Promote adoption of best practices	2017
	4.3c Support plug-testing of the standards.	2018

## 5.5. Priority domain 5: Internet of Things

IoT has the potential to connect over 20 billion “things” by 2020 and having them collecting and processing across areas to offer new services (e.g.: wearable and smart cities) or operating together to provide higher levels of automation and intelligence (.e.g.: smart home, smart manufacturing). Everyone agrees that this will offer tremendous opportunities in terms of solving global societal challenges like industrial renaissance, reducing pollution, resource shortage, and ageing societies.

Unfortunately, a large number of proprietary or semi-closed solutions have emerged, leading to non-interoperable concepts, architectures and protocols. Solutions are emerging from industrial silo, with little support for applications cutting across several industrial/application domains. The MSP is of the view that IoT standardisation can facilitate interoperability, compatibility, reliability, security and effective operations at EU and global scale, thus reducing fragmentation risks, stimulating the emergence of new ecosystems, boosting innovation and reinforcing competitiveness.

Having this in mind, The MSP proposes that the Commission supports three types of actions: (1) to promote the integration of vertical sectors (e.g., automotive, health, home automation, industry) in the IoT standardisation activities in ways that support cooperative and widely accepted standards; (2) to strengthen the cooperation between standardisation bodies in this particular domain and (3) to continue promoting pilots and best practices.

The MSP considers that the **integration of vertical sectors** in the standardisation activity will help to overcome the silo solutions in each industrial sector. It will allow the production of cross-cutting standards that integrate the needs and requirements of all the sectors ensuring interoperability. In this context the MSP proposes two actions: first, SDOs in collaboration with the relevant stakeholders should set up the principles for the development of architectures and interfaces<sup>10</sup>. Second, due to the existence of different sectoral semantics that could jeopardise cross-sector interoperability, the MSP believes that the Commission should support actions on the domain of **semantification**, i.e., the identification, coherence and guidance of the different existing sectorial standardised methodology, identity and taxonomy systems.

As regards the need to **reinforce cooperation between the Standards Development Organisations** (SDOs) active in this area, the MSP advises the Commission to take the necessary actions including setting up appropriate links and fostering cooperation with AIOTI and related activities from H2020 projects, e.g., to produce a landscape analysis and gap identification.

Finally the MSP strongly recommends the Commission to continue **supporting pilots** (including PPI/PCP<sup>11</sup>) **for implementation of draft standards and best practices in advanced areas**. Such pilots, with appropriate links to SDOs, are instrumental in providing feedback for the improvement of standards, correction of functional gaps, and promotion of best practices. In addition to this, the MSP considers that it would be important to analyse the dependencies between legal issues and standardisation in order to clarify possible issues or uncertainties on the legal side that may have an impact on standardisation, and to determine what is required for overcoming and resolving these dependencies.

*Table 5: Proposed actions and target dates for IoT*

	Action	Time frame
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<sup>10</sup> taking into account the work of the Alliance for Internet of Things Innovation (AIOTI) and the conclusions of the ongoing analysis being carried out by ETSI in the specialist task force on IoT Standards landscaping and IoT European Large Scale Pilots (LSP) gap analysis

<sup>11</sup> Public Procurement for Innovation / Pre-Commercial Procurement, <https://ec.europa.eu/digital-agenda/en/public-procurement-innovative-solutions>.

<b>5.1</b>	Encourage integration of vertical sectors in the standardisation activities	
	5.1a Standardisation deliverables to ensure integration with vertical sectors	2016
	5.1b Towards coherent Semantification	2016-2018
<b>5.2</b>	Facilitate cooperation of Standards Bodies	2016
<b>5.3</b>	Promotion of pilots and best practices in advanced areas	
	5.3a Ensuring feedback on standardisation functional gaps	2017
	5.3b Clarify dependencies between legal issues and standardisation	2017

## 6. CONCLUSIONS

The MSP recommends that the Priority ICT Standards Plan, once adopted by the Commission, should be used to help inform prioritisation of projects applying for Commission funding where standardisation actions are being considered (e.g. ISA2 and Horizon2020).

To support the Digital Single Market, any standards resulting from the action plan should be developed in as open a way as possible, based on collaboration, transparency, due process, fair access and use, market support and voluntary adoption

## **ANNEX**

A preliminary list of twelve possible priority domains was set by the TF for further analysis. Nine were extracted from those listed in the DSM Communication and three suggested by TF members.

- **5G**
- **IoT**
- **CLOUD**
- **BIG DATA**
- **CYBERSECURITY**
- **ITS**
- **E-HEALTH**
- **DIGITAL MANUFACTURING (EXTENDING TO INDUSTRY 4.0)**
- **SMART CITIES (INCLUDING SMART GRIDS, ENERGY, ENVIRONMENT.**
- **OPEN DATA**
- **BROADBAND**
- **DIGITAL INCLUSION**