



Cloud Computing Standards

C-SIG Plenary

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European cloud computing strategy

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

Objective



Cloud Computing faster adoption in all sectors



Cut ICT costs + Boost

productivity
growth
jobs



European cloud computing strategy

Key actions

1. Cutting through the Jungle of Standards
2. Safe and Fair Contract Terms and Conditions
3. Establishing a European Cloud Partnership to drive innovation and growth from the public sector.

Key action 1: Cutting through the Jungle of Standards

- Lock-in vs. Standards
- Customer base vs evaluation of standards
- USA standardisation efforts through NIST

Key action 1: Cutting through the Jungle of Standards

- Trusted and reliable cloud offerings → ETSI
- Recognition of technical specifications at EU-level
- EU-wide voluntary certification schemes → ENISA
- Metrics for water/energy consumption → Industry

ETSI Cloud Standards Coordination

- Two reports
 - **First: December 2013.**
 - **Second: November 2015.**
- Main objectives of CSC Phase 2:
 - **Collect feedback from on CSC Phase 1 findings**
 - **Follow-up of Cloud Computing standards progress**
 - **Ensure the largest possible dissemination**
 - **Interoperability and conformance**
 - **Cloud Computing standards and open source.**

Digital Single Market - initiatives



Digitising European Industry Package

4 Communications adopted on 19 April 2016:

- Digitising European Industry: reaping the full benefits of a Digital Single Market (DEI)
 - Concrete EU-level actions supporting the digitisation of EU Industry
- A European Cloud initiative (ECI)
 - A world-class cloud and data infrastructure in Europe
- Priorities for ICT Standardisation
 - Accelerating industry-driven development of ICT standards
- eGovernment Action Plan 2016-2020
 - Boosting the public sector's role in stimulating demand for digital solutions

European Cloud initiative (ECI)

- European Open Science Cloud
- European Data Infrastructure
- Widening access and building trust



**Promote the use of existing relevant
certifications and standards**

EU standardisation policy

To

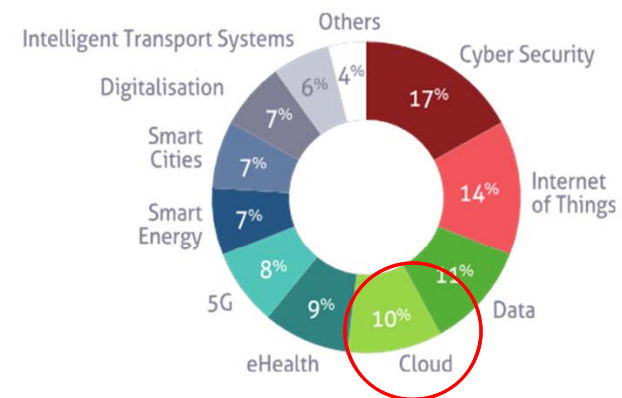
- Reduce fragmentation of the Digital Market
- Increase interoperability of critical technologies
- Support digitisation of EU industrial & services sectors
- Fit market and consumers' needs

How can the EU make it happen?



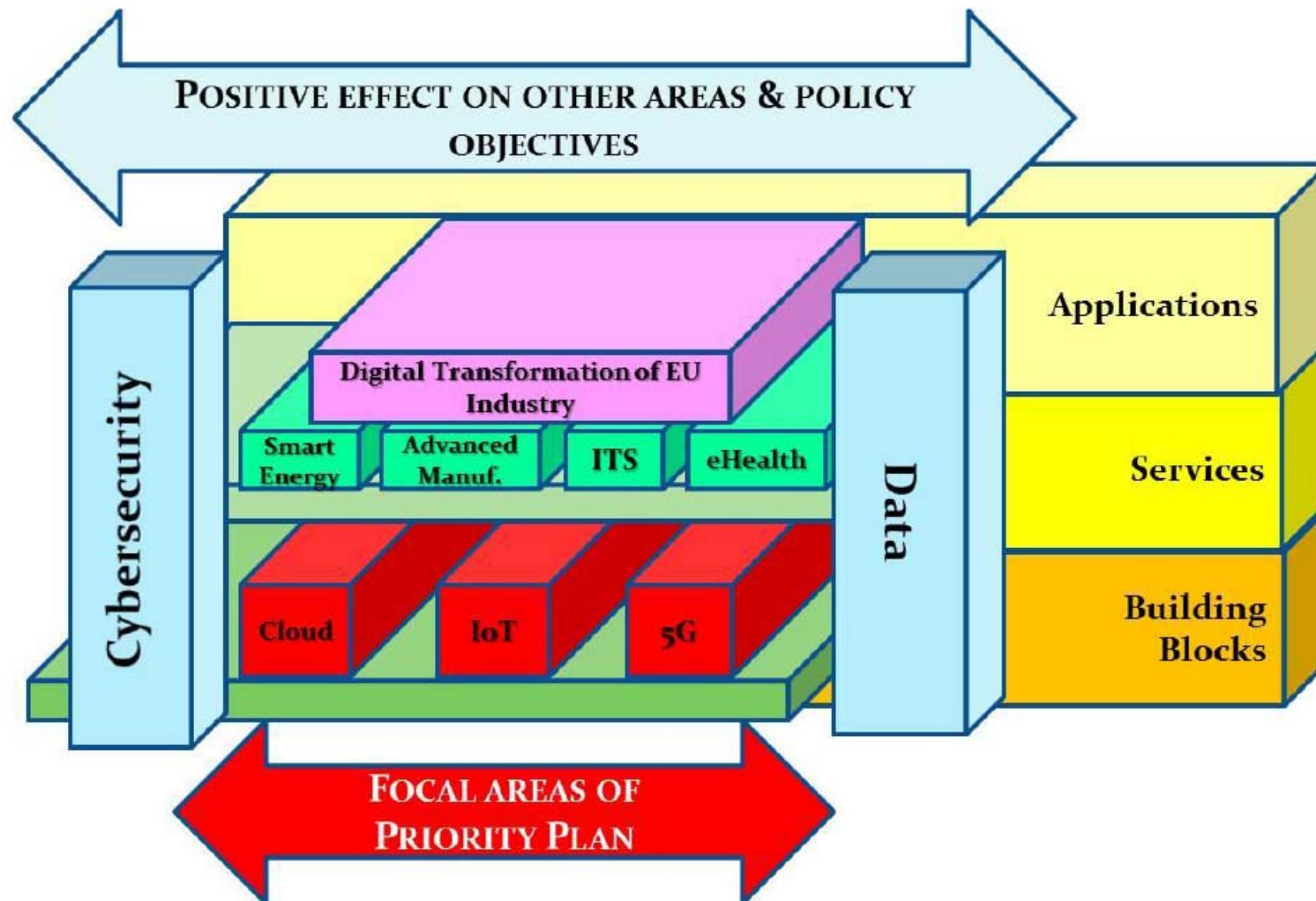
By setting **priorities** and **timetables** Standards' Organisations will better contribute to the **Digital Single Market**

The respondents to the Standards public consultation selected these **priority domains**:



In **April 2016** the **Commission** adopted a Communication **setting priorities** for ICT standardisation

Five priority areas



Priorities for ICT Standardisation: Cloud Computing

- Support funding the development of the ICT standards needed to **improve the interoperability and portability of the cloud**
- Making more use of open source elements by **better integrating open source communities into SDOs' standard setting processes.**
- Facilitate the adoption of cloud computing services by **supporting the finalisation of international standards on service level agreements.**
- Update the **mapping of cloud standards and guidelines** for end users in collaboration with ESOs, International SDOs, cloud providers and end-users

Standards leadership



High-level process to achieve the prioritised actions

1. Validation of priorities and improving the efficiency of the standard-setting process in Europe
2. Regularly **reviewing and monitoring** progress
3. Improving EU support to ICT priority standardisation
4. Ensuring **fair and non-discriminatory** access
5. Strengthening the **EU's presence in international dialogue** and cooperation on ICT standards

EU Catalogue

What problems do we want to solve?

- Public procurers know about policies or use cases to implement, not always about –sometimes- competing ICT standards
- Risk of vendor lock-in with proprietary solutions
- Lack of interoperability of ICT solutions
- Lack of coordination on ICT standards adoption
- National catalogues are developed independently
- Fragmented EU market
- Industry lacks visibility on which standards to adopt



Fragmented DSM
Lack of interoperability



EU Catalogue

What are the needs?

- Guidelines and tools, at EU level, helping public procurers to specify the right ICT Standards addressing their use cases or policies
- Convergent adoption of ICT Standards at EU level ensuring
 - **Interoperability of digital services**
 - **Defragmented digital single market**
 - **Visibility for EU industry of standards to adopt**
- Global standards adoption process at EU level

What would be in the EU catalogue?

- A reference list- of
 - **EU and International standards**
 - **Identified technical specifications and profiles**
 - **Procurement and design guidelines**
- More specifically for cloud:
 - **Security & Privacy**
 - **Service Level Agreements**
 - **Interoperability & Portability**

"Measuring the economic impact of cloud computing in Europe" study

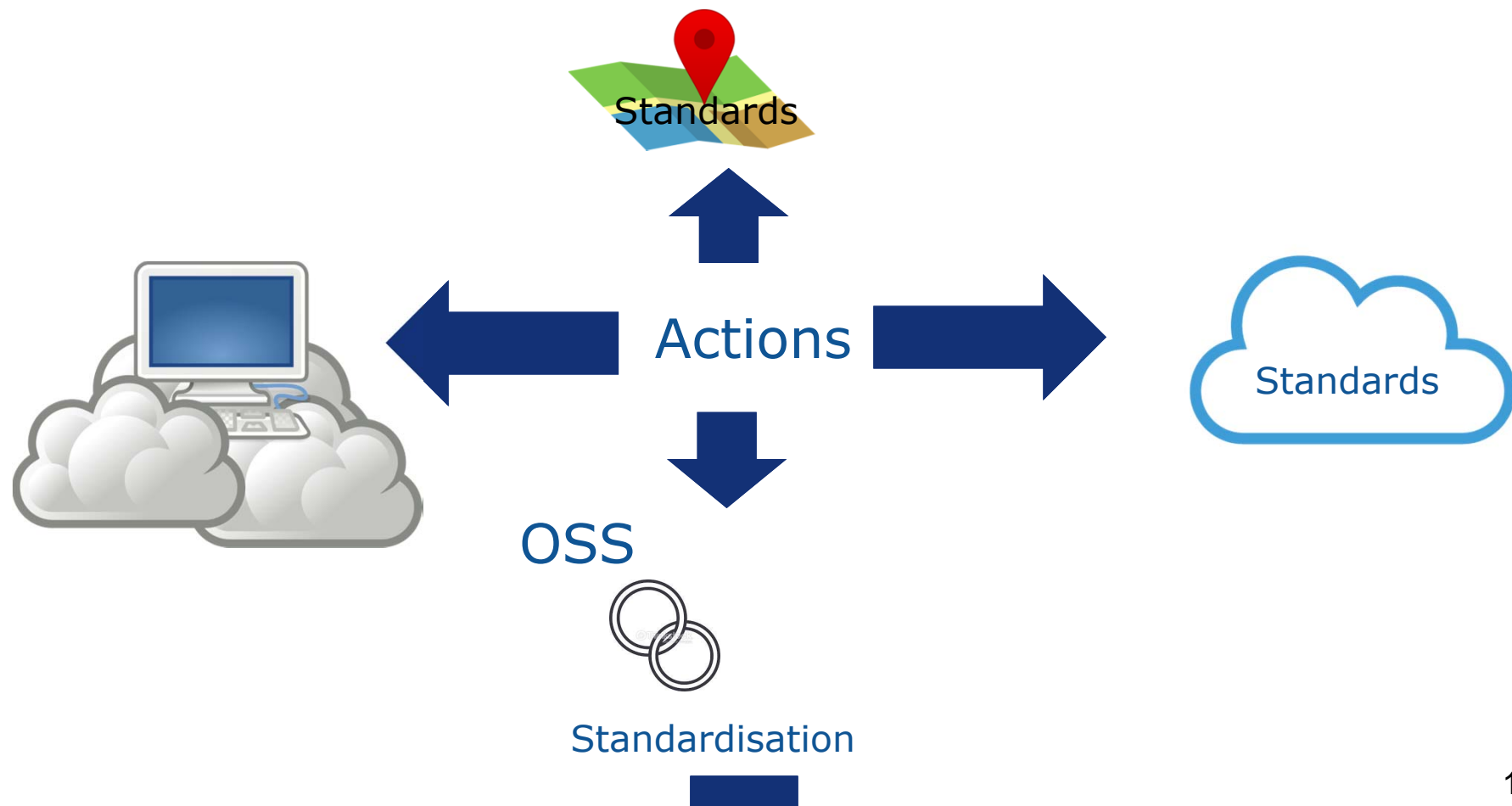
Findings & Recommendations for cloud standards

- Identifying and promoting standards and schemes for trusted and reliable cloud offerings
- Moving from self-regulation to co-regulation through EU trustmarks
- Enhancing trust in cloud computing services through legislative recognition

C-SIG Cloud Standards Working Group Meeting

- The first meeting took place in Brussels on 18 January 2017
- Objectives:
 - **Inform the participants on the actions proposed in the Communication.**
 - **Identify what can be the role of C-SIG in the implementation of the actions.**
 - **Initiate the discussion among different stakeholders and propose to the C-SIG plenary a way of involvement in this process.**

ICT Standardisation priorities



Session 1:

Open Source and Cloud Standardisation

- Open Source vs Standards setting
- Possible practical steps: The Commission could act as
 - **Customer**
 - **Facilitator**
 - **Incubator for R&D**
 - **Policymaker**
- Collaboration exists and is necessary
- Not addressed → IPR

Session 2:

Promoting Cloud standards

- Target: Interoperability, portability and security
- Visions of the inter-Cloud Cluster of H2020
- ISO relevant → ISO27017 Information controls
ISO27018 Code of practice (DP)
- Requirement: in-depth analysis on usability of existing standards
- GDPR will make Cloud privacy a hot topic

Session 3: Cloud SLAs standards

- SLA-Ready project
- Reference models for cloud SLAs → Standards
- SLAs must come from trusted sources
 - **First reference: Common reference models**
- Adoption of well-defined metrics for SLOs
- Machine readable SLAs
 - **IoT!**
 - **But legal challenges ahead!**

Session 4:

Mapping Cloud Standards and Users' guidelines

- Results of Cloudwatch2
- Lack of standards related to containers (OCP)
- Few R&I projects contribute to standardisation
- Need for "Cyber-insurance"
 - **Gap and role of standards and certification crucial**

Leaders of the four actions

1. OSS & Cloud standardisation
 - **Sachiko MUTO (OFE) and Michel DRESCHER (University of Oxford)**
2. Cloud interoperability & portability
 - **Ana JUAN FERRER (ATOS) and Dimitra STEFANATOU (Arthur's legal)**
3. Cloud SLAs
 - **Dimitra STEFANATOU (Arthur's legal) and George KOUSIOURIS (National Technical University of Athens - NTUA)**
4. Cloud Standards mapping and user guidelines
 - **Nicholas FERGUSON (TrustIT) and Michel DRESCHER (University of Oxford)**

