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Prof Ray Walshe

D

@raywalshe /raywalshe

Chair of Expert Advisory Group StandICT.eu





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International Standardisation Activities in ICT

ICT Standardisation areas in need of European intervention: proposals and actions



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A lot Done.. More to do..

Why?

Original standards assessments were incomplete

Multi-Part standards are needed (foundational)

Multi-Part standards are need (technical)

Changes in societies, international policy, governments

Sevolution of application and sectoral areas

Evolution of technology areas

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Gartner Hype Cycle on 'loT Standards & Protocols'

6LoWPAN: IPv6 connectivity over non-IP networking technologies such

that compliant devices can potentially run for years on battery power.

Contiki: an open source OS for low-cost, low-power IoT microcontrollers.

LiteOS: a Unix-like OS for wireless sensor networks.

OneM2M: a Service layer standard focusing on Machine-to-Machine connectivity design & modules.

C RPMA (Random Phase Multiple Access): a proprietary standard for connecting IoT objects.

Sigfox: a proprietary low-power, low-throughput technology for IoT & M2M communications.

Towards Solving the IoT Standards Gap, S Vivek ; Divyanshu Verma ; Prabhakar Krishnan

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Technology gaps : communications models, data patterns or ontologies, or software availability.

Societal gaps :privacy, energy consumption, or ease of use.

Dusiness gaps : applications silos, incomplete value chains, or missing investment.

Nature of the gap	Туре	Criticality
Competing communications and networking technologies	Technical	Medium
Easy standard translation mechanisms for data interoperability	Technical	Med
Standards to interpret the sensor data in an identical manner	Technical	High
across heterogeneous platforms		
APIs to support application portability among	Technical	Medium
devices/terminals		
Fragmentation due to competitive platforms	Business	Medium
Tools to enable ease of installation, configuration,	Technical	High
maintenance, operation of devices, technologies, and platforms		
Easy accessibility and usage to a large non-technical public	Societal	High
Standardized methods to distribute software components to	Technical	Medium
devices across a network		
Unified model/tools for deployment and management of large	Technical	Medium
scale distributed networks of devices		
Global reference for unique and secured naming mechanisms	Technical	Medium
Multiplicity of IoT HLAs, platforms and discovery	Technical	Medium
mechanisms		
Certification mechanisms defining "classes of devices"	Technical	Medium
Data rights management (ownership, storage, sharing, selling,	Technical	Medium
etc.)		
Risk Management Framework and Methodology	Societal	Medium

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Blockchain Standards

Lack of standards gives rise to incompatibilities, which hinder integration.

Service Definition. Collection of necessary service data , handling service dependencies, payment and pricing schemes.

QoS. Smart contracts to specify QoS.



Workflows. Selection of providers, how to split services into tasks and execute them.

Somponents. data structures, privacy, federation, and benchmarking,

Solution Identity and Reputation. methods of reputation assignment, identity portability, reputation portability.

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	∞ Performance supervision	It indicates that cloud consumers should be able to observe the performance of the requested service. [14].
Standardization Gaps in SLA parameters (and their original sources)	∞ Licenses and cures	It deals with 3 main issues, which are service quality protections, third party claims, and cures for loopholes. [14].
	∞ Reservation	Cloud service Customers are supposed to make their orders and requirements clear to the cloud providers. At the same time, cloud providers are supposed to respect these requirements and meet them in the delivery of the service to the cloud consumers. [14].
Also need standards for Cloud Federation	∞ Accountability and Privacy	Accountability and privacy are sub-characteristics of security in ISO/IEC 25010[20]. Based on their definition in this standard, Accountability "is the degree to which the actions of an entity can be traced uniquely to the entity". Privacy of the data is vital for most cloud service consumers. Cloud users usually face privacy issues when they decide to move to the cloud [10].
	∞ Assurance of Service	It identifies that the requested service will work as expected and agreed in the SLA [10].
	∞ Cost	It is one of the most critical Parameters cloud service consumers are looking for. Furthermore, it is vital to know whether moving to the cloud is going to be Cost-effective or not [10].

Extending ISO/IEC 19086 Cloud Computing SLA standards to support cloud service users with the SLA negotiation process Hebatalla Terfas, Witold Suryn, Jonathan Roy, Sara Moazzezi Eftekhar

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Standards strategies for Big Data and Big Data analytics are

under development but gaps still exist

- Standards for data privacy,
- Cross-border data transfer,
- 🕥 personal data,
- big data security,
- Sethical and innovative uses of data
- Sompliance to the General Data Protection Regulation.

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Current and Future Priorities

International Standardization is dynamic and constantly evolving

Cloud and HPC

SoloT, Securely Connected World,

Sig Data, Data Governance, Trustworthiness, Bias, Ethics

Sistributed Ledger Technologies, Blockchain

SArtificial Intelligence, Smart Cities, Smart Transport

Smart textiles
Future of Work
Quantum technology
Digital Twin
CyberSafety

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A lot Done.. More to do

HOW ?

StandICT.eu is a *collaboration* that provides a platform to:

SAccelerate the development of standards

- SIdentify stakeholder needs.
- SEngage standards development organizations,
- Sengage Consortia (national, regional and international)

Engage enterprise, academia; researchers, regulators; and civil society

Create the next generation of Standards Professionals



Thanks and Questions





