



The Standards People

Joint Workshop: Internet of Things for Smart Cities & Communities  
Smart City Standardisation - Mapping the Landscape and Capacity

## De-fragmenting IoT (?)

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For: **IoT Week 2019**

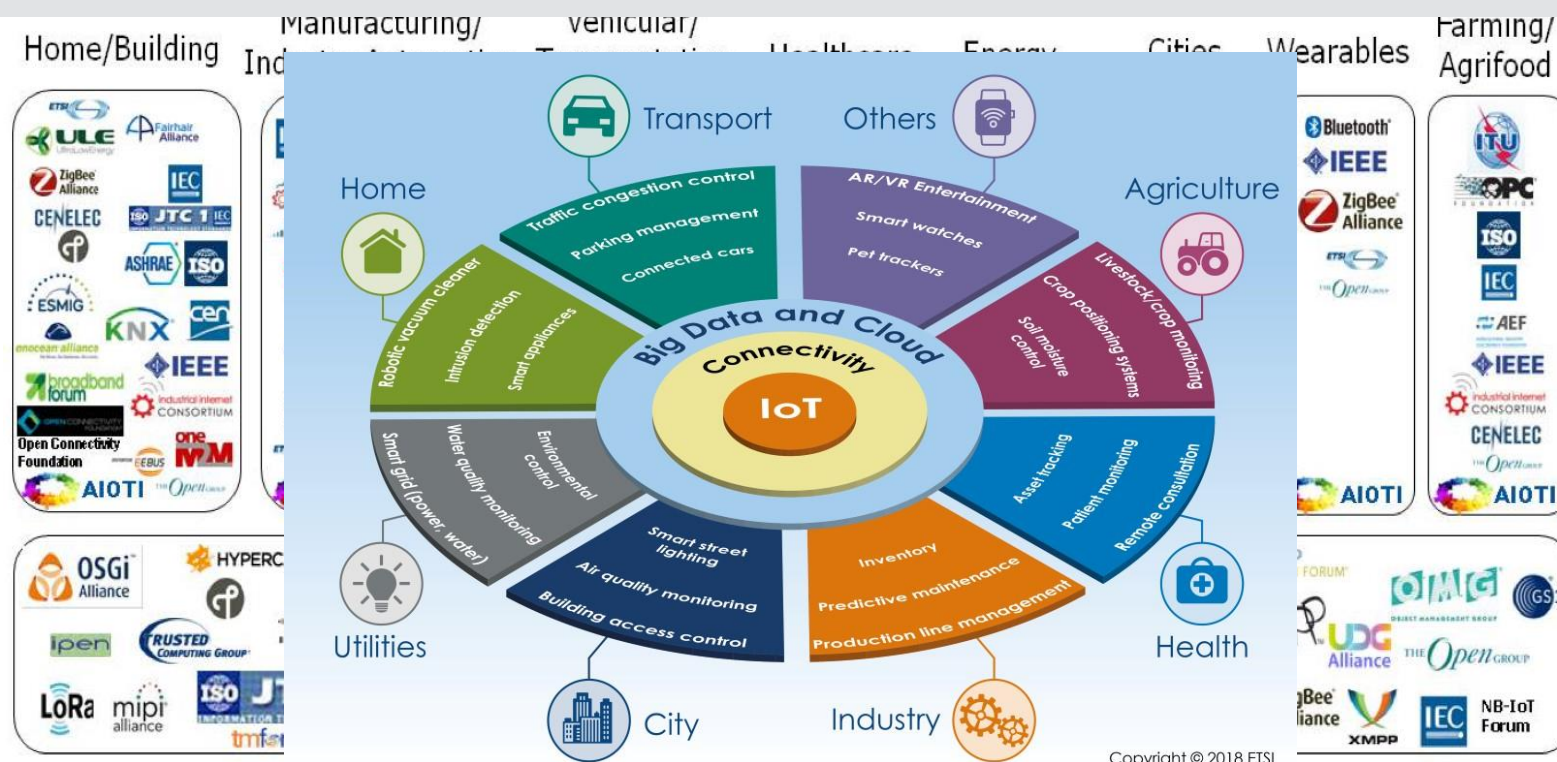
19.06.2019

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# Fragmentation

# The intrinsic complexity of IoT

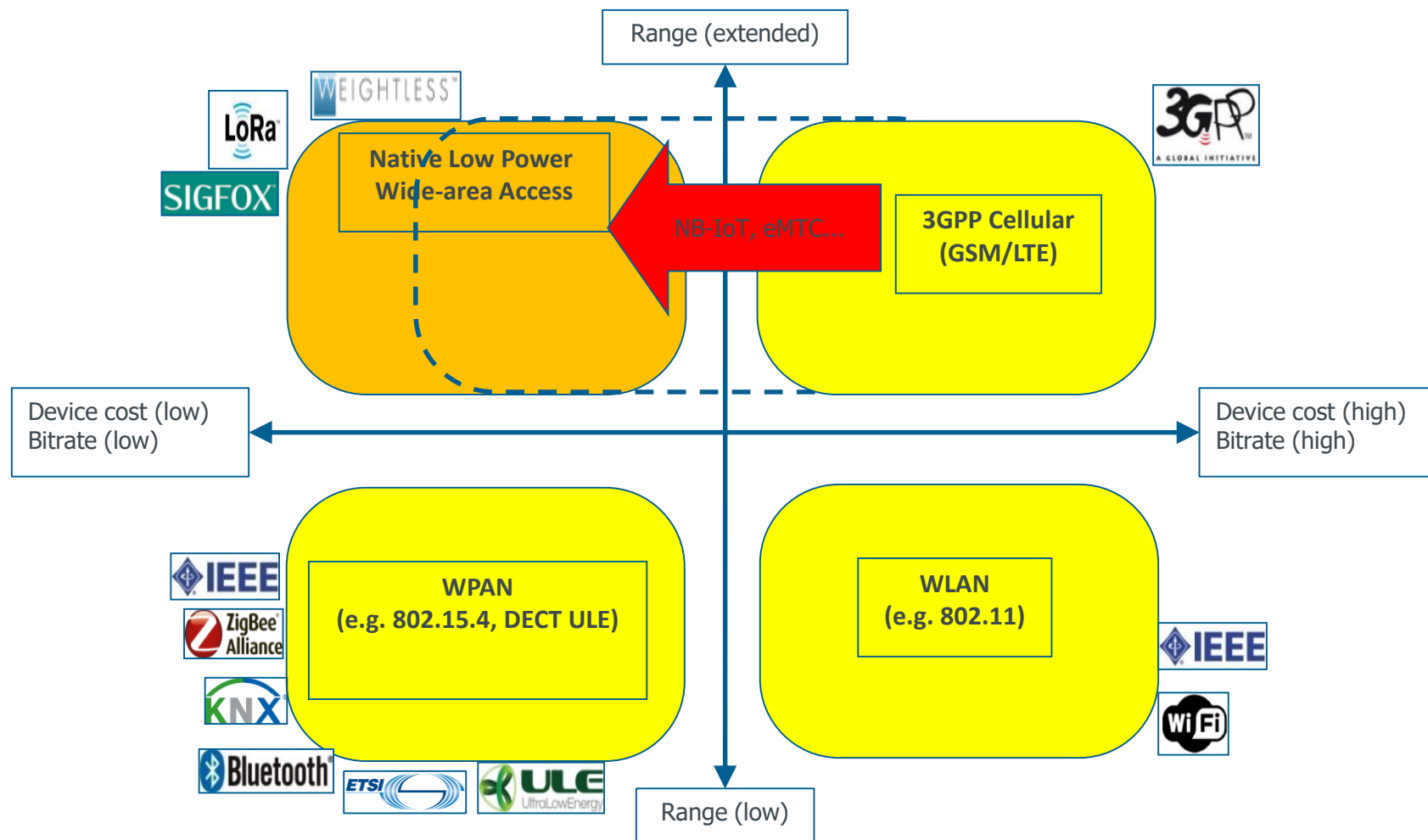
Pervasive ICT technologies, Multiple Point Solutions (e.g. protocols)  
Sector-specific solutions (and silos), Cross-sector system deployment



Source: AIOTI WG3 (IoT Standardisation) – Release 2.8

Fragmentation is inevitable, but should be tamed

# An example amongst many ...

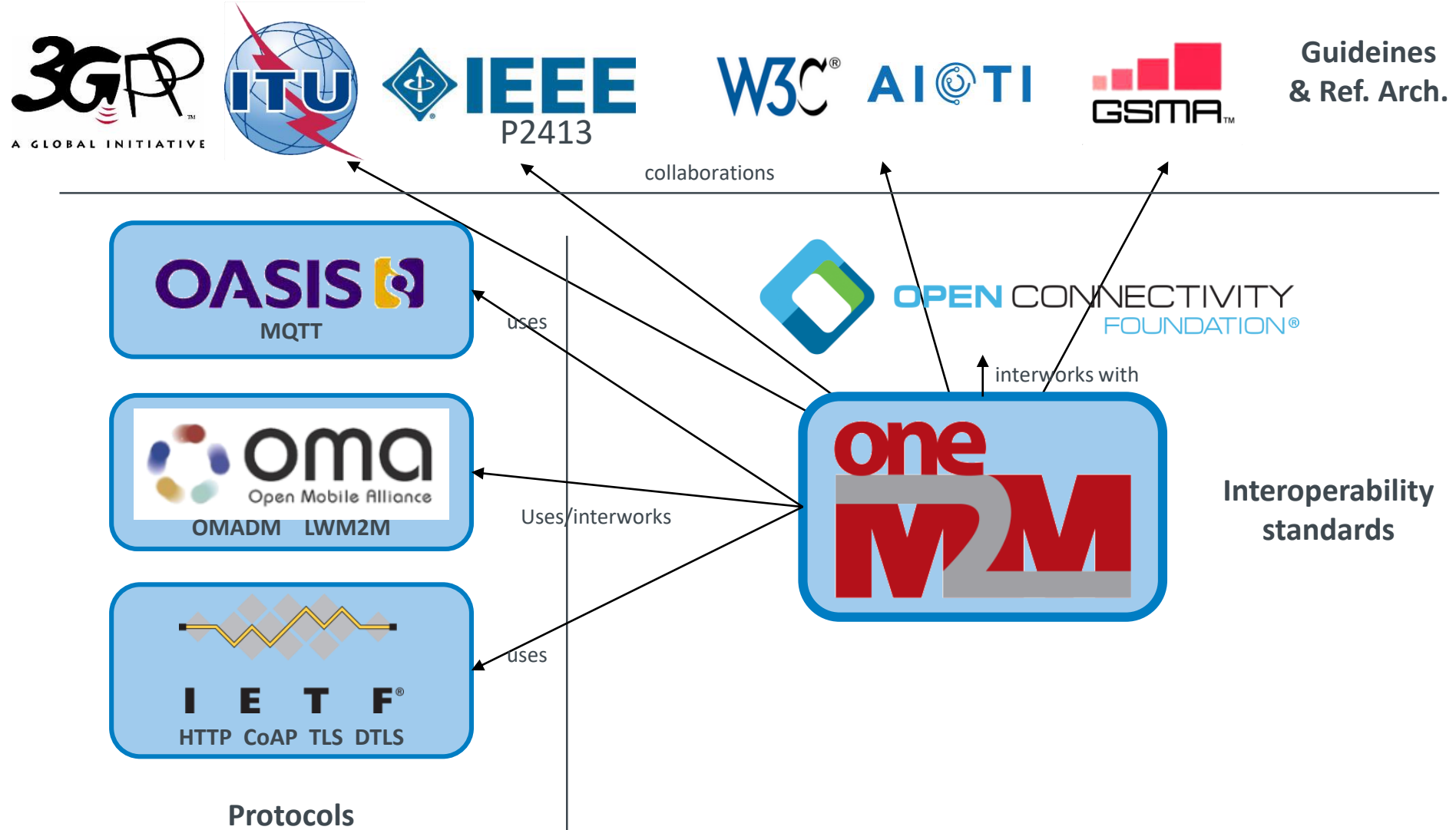


Source AIOTI and Nokia

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## Possible Remedies

# SDO collaboration the example of oneM2M



# Meta Standards

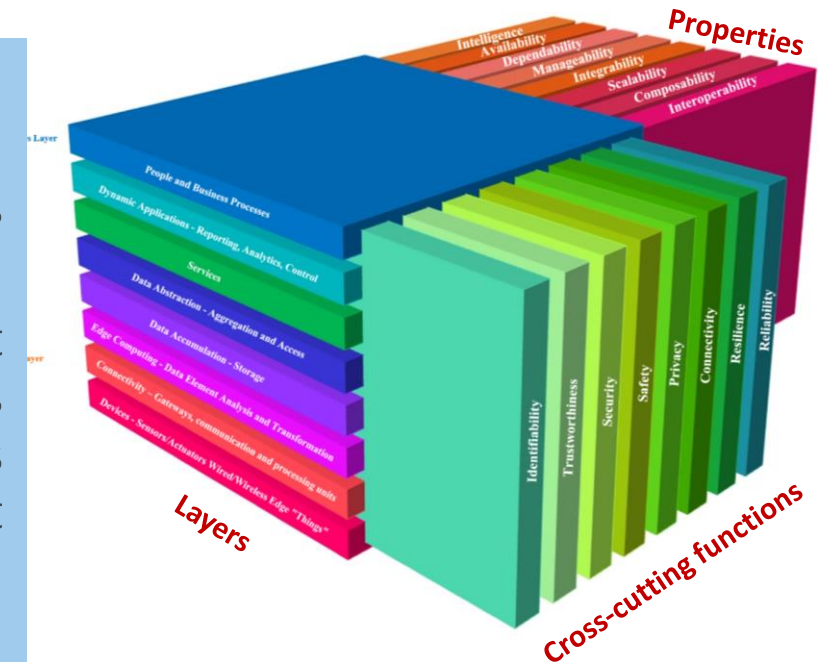
## the example of the Reference Architecture



European  
Large-Scale Pilots  
Programme

The LSP 3D Architecture Model (developed in the LSP Activity Group 02) extends some of the current IoT reference architectures and is aiming at:

- Ensuring a common view of the different layers of the IoT systems from Physical up to Business;
- Providing additional viewpoints to the different stakeholders (not just to the developers) regarding some additional cross systems functions such as security, privacy or safety and the shared analysis of some properties (e.g., integrability) between different stakeholders.



The additional dimension of properties is a new way to discuss the properties of the IoT system between different involved parties (e.g., users, contractors, designers) and identify the elements in support (e.g., functional building blocks, APIs) and those missing.

The 3D Model is meant to be contributed to standardisation (not yet another Reference Architecture)

# Stakeholders guidelines the example of ETSI STF 547



## An holistic approach to IoT Systems

- ✔ A solid standardized architectural framework, addressing interoperability across IoT domains
- ✔ Focusing on major aspects:
  - ✔ (Semantic) Interoperability
  - ✔ A User-centric approach to Privacy
  - ✔ Methods and techniques for Secure IoT

## Whose essential objectives are to

- ✔ Identify guidelines and best practices
- ✔ Build a bridge for potential designers / implementers of IoT systems
- ✔ Provide comprehensive material for information, teaching/learning and demonstration with a very practical usage and implementation perspective

## A Set of Coordinated Deliverables

### An umbrella Special Report

- ✔ Dedicated to all stakeholders
  - ✔ Not just for the technology happy few
- ✔ Based on the analysis of relevant use cases

### Seven Technical Reports

- ✔ Privacy; Standards Landscape and best practices
- ✔ Security; Standards Landscape and best practices
- ✔ Teaching material; Part 1: IoT Security
- ✔ Teaching material; Part 2: IoT Privacy
- ✔ Guidelines for using semantic interoperability in the industry
- ✔ Strategic / technical approach on how to achieve interoperability / interworking of existing standardized IoT Platforms
- ✔ Plugtests™ preparation on Semantic Interoperability



# Citizens involvement

## the example of ETSI STF 561



### The problem

- ✔ How many smart city/community technology initiatives actually mention **citizens and their needs** like accessibility, security, privacy, services that function correctly and listen to them?
- ✔ Projects, research and industry factor in standards – but **how many standards factor in the citizen?**
- ✔ How many cities actually believe standards can help them address citizen needs? And have they been involved in the standardisation process?

### The objective

- ✔ Take a first overview of what the needs of citizens in smart communities are
  - ✔ Relate those needs to standardisation activities, ongoing or foreseen, and assess if they are being met;
  - ✔ If not, make recommendations as to how to rectify this;
- ✔ Lay down some basic principles as to how citizen needs should be addressed
- ✔ Make recommendations to standardisation (not standards)

An open process with stakeholder consultation (see: <https://standards4citizens.etsi.org/>)

# No silver bullet anyway ...

## Today

### A plethora of standards

- ✔ 10 000 standards for Smart Cities
- ✔ Cluttered Communication layer

### A plethora of standards organisations

- ✔ 100+ initiatives for Smart Cities
- ✔ Uncoordinated, sometimes competing

### Unrelated sector silos

- ✔ Specific standards (including ICT ones)
- ✔ Difficult stakeholders communication

## Tomorrow

### A plethora of standards

- ✔ 10000+ standards for Smart Cities
- ✔ Consolidation; automatic adaptation

### A plethora of standards organisations

- ✔ 100+ initiatives for Smart Cities
- ✔ Consolidation; More coordination

### Unrelated sector silos

- ✔ Specific standards
- ✔ Converged vocabularies for users

# Thank you for your attention!

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STF547:                <https://portal.etsi.org/STF/STFs/STFHomePages/STF547>

STF561:                <https://standards4citizens.etsi.org>

CREATE-IoT:           <https://european-iot-pilots.eu/project/create-iot/>