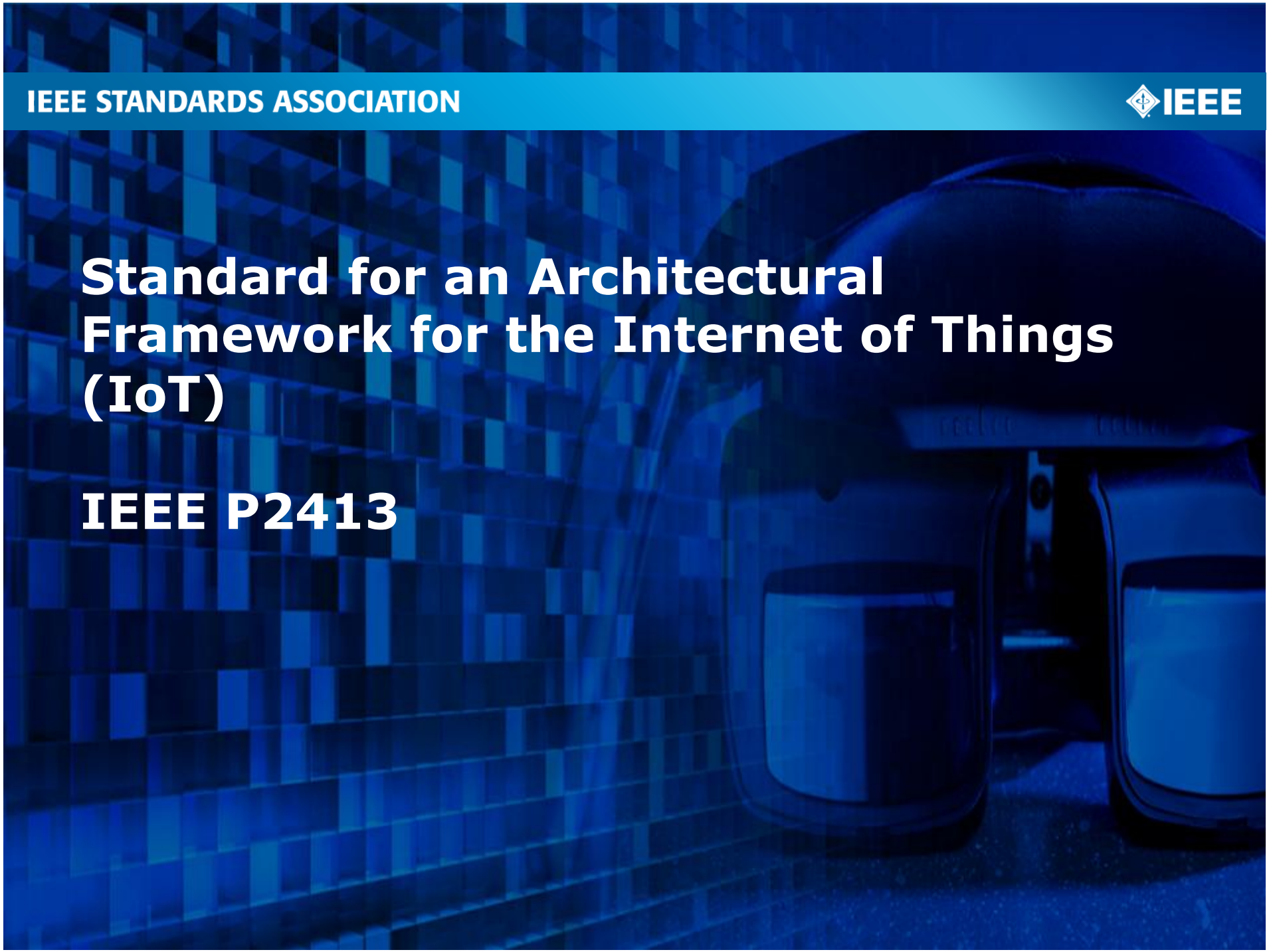
IEEE STANDARDS ASSOCIATION
IEEE
Standard for an Architectural Framework for the Internet of Things (IoT)
IEEE P2413

Webinar Panelists

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- Chuck Adams, Huawei
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Overview

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- Scope
- IoT Pervasiveness
- Markets and Stakeholders
- External Interactions
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- IoT Workshops and Webinars
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IEEE P2413 Purpose and Motivation

- The Internet of Things (IoT) is a key enabler for many emerging and future "smart" applications and technology shifts in various technology markets. This ranges from the Connected Consumer to Smart Home & Buildings, E-Health, Smart Grids, Next Generation Manufacturing and Smart Cities. It is therefore predicted to become one of the most significant drivers of growth in these markets.
- Most current standardization activities are confined to very specific verticals and stakeholder groups. They therefore represent islands of disjointed and often redundant development. The architectural framework defined in this standard will promote cross-domain interaction, aid system interoperability and functional compatibility, and further fuel the growth of the IoT market.

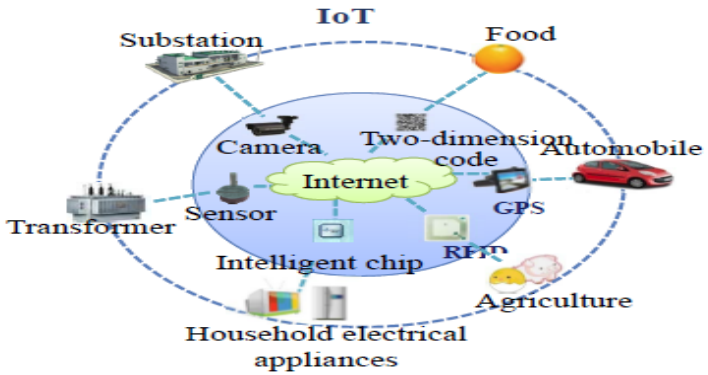
IEEE P2413 Scope

- This standard defines an architectural framework for the IoT, including descriptions of various IoT domains, definitions of IoT domain abstractions, and identification of commonalities between different IoT domains.
- The architectural framework for IoT provides:
  - reference model that defines relationships among various IoT verticals (e.g., transportation, healthcare, etc.) and common architecture elements
  - blueprint for data abstraction and the quality "quadruple" trust that includes protection, security, privacy, and safety.”
- The architectural framework for IoT also provides a reference architecture that:
  - builds upon the reference model
  - defines basic architectural building blocks and their ability to be integrated into multi-tiered systems.
  - addresses how to document and, if desired, mitigate architecture divergence.

IoT Pervasiveness

Concept of IoT

The basic idea of IoT is the pervasive presence around us of a variety of things or objects – like Radio-Frequency Identification tags, sensors, actuators, mobile phones, etc. –which, through information and communication network, are able to exchange information with each other and to be intelligently processed.

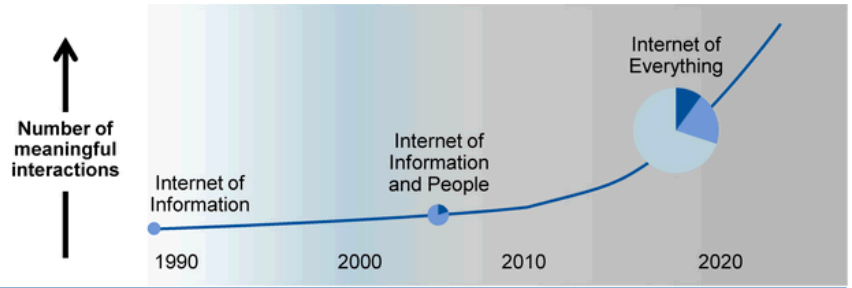


Three-tier architecture

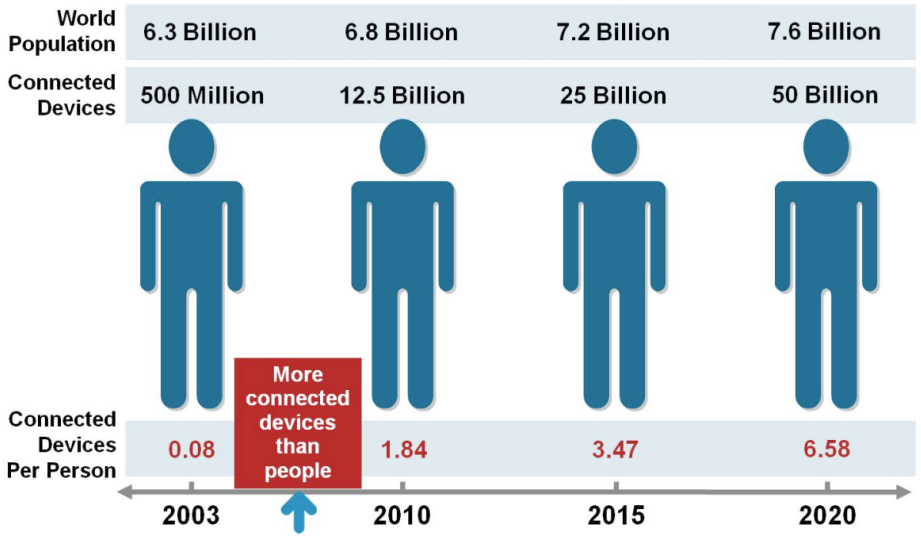
Application layer
Information storage , processing and visualization .

Network layer
Information transfer and routing control .

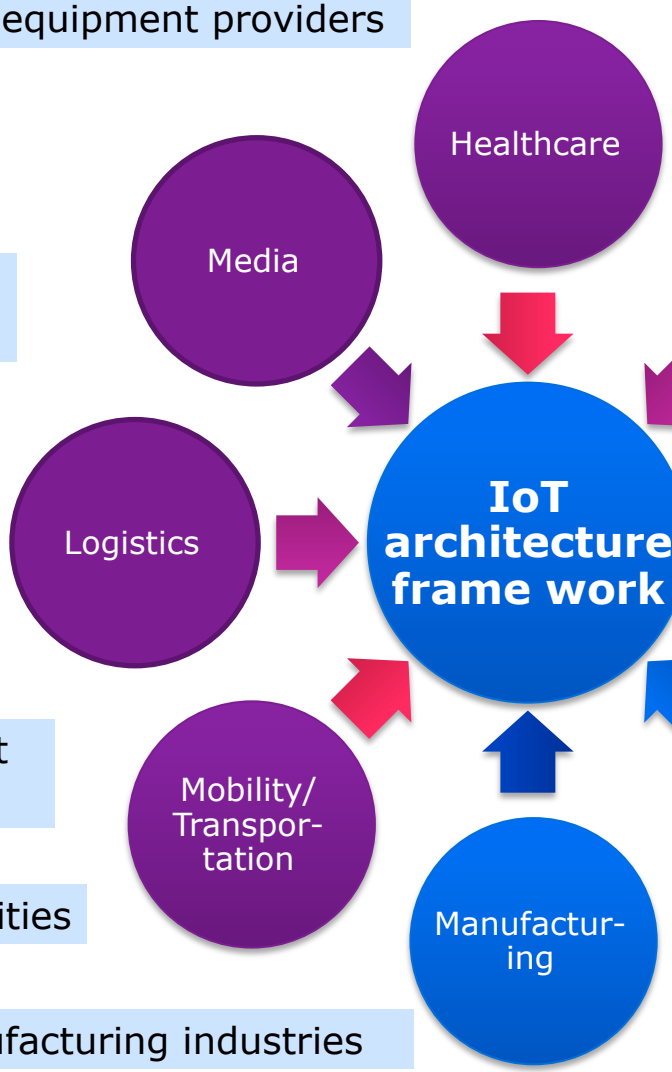
Sensing layer
Intelligence sensing, smart identification and information collection of the physical world.



Key milestones	> 50% of Internet connections are things	Things create more traffic than information and people
Number of permanently Internet-connected devices	> 15 billion	> 30 billion
Number of intermittently Internet-connected devices	> 50 billion	> 200 billion
Volume of traffic from things	Minority	Majority



IoT Markets & Stakeholders*



Consumer equipment providers

Consumers

ICT infrastructure providers

Regulators

Logistics companies

Public transport companies

City authorities

Manufacturing industries

Hospitals & Doctors

Insurance companies

Appliances providers

Facility management

Retail stores

Application developers

Utilities

Automation equipment providers

*due to the wide application area of IoT only selected markets and stakeholders are shown

IEEE P2413 External interactions

- For a unified IoT architecture framework it is essential to interact with standardization activities for IoT-based vertical applications to
  - Cover the various applications, their requirements and specific IoT functionalities in the IoT architecture framework
  - Ensure that the framework can be referenced by these standardization activities as the base for their specific architecture definition
- Besides interactions with standardization activities within IEEE, P2413 will strive to establish liaisons with other standardization bodies like IEC (e.g. Smart Manufacturing, Smart Grid) and ISO (e.g. Intelligent Transportation Systems, e-Health) on IoT matters.

IEEE P2413 Goals

- Define an IoT architecture framework that covers the architectural needs of the various IoT application areas
- Promote cross-domain interaction by increasing system interoperability and functional exchangeability to further fuel the growth of the IoT-based application market
- Increase the transparency of system architectures to support system benchmarking, safety, and security assessments
- Reduce industry fragmentation and create a critical mass of multi-stakeholder activities around the world

IEEE IoT Workshop and Webinars

- IEEE Standards Association (IEEE-SA) Internet of Things (IoT) Workshop
  - 18-19 September 2014
  - Computer History Museum
  - Mountain View, CA USA
- Webinar:
  - Introduction to IEEE P2413
    - 22 May 2014, 10-11am ET.
  - More to follow...

IEEE P2413 First Working Group Meeting

- Proposed Date and Location:
  - 10-11 July 2014
  - Hosted by Siemens in Munich, Germany

Join us!

Join the IEEE P2413 Working Group

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