

oneM2M global IoT standard - Overview



Industry Day Workshop: oneM2M Session
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Roland Hechwartner

Chair oneM2M Technical Plenary / Deutsche Telekom

roland.hechwartner@magenta.at

Content

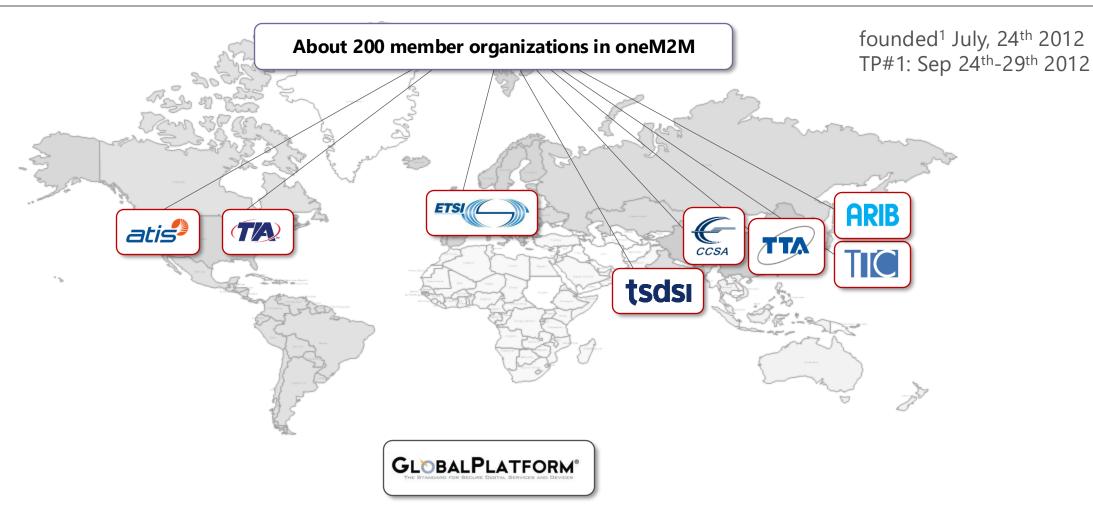


- The oneM2M Partnership Project
- To Overcome the Fragmentation in the IoT Space
- The Common Service Layer Toolkit
- A little bit of history: highlighting key-events
- Insights Learnings from Deployments
- What's Next? Future Features
- Takeaways

oneM2M Partnership Project

one The IoT Standard

https://onem2m.org/

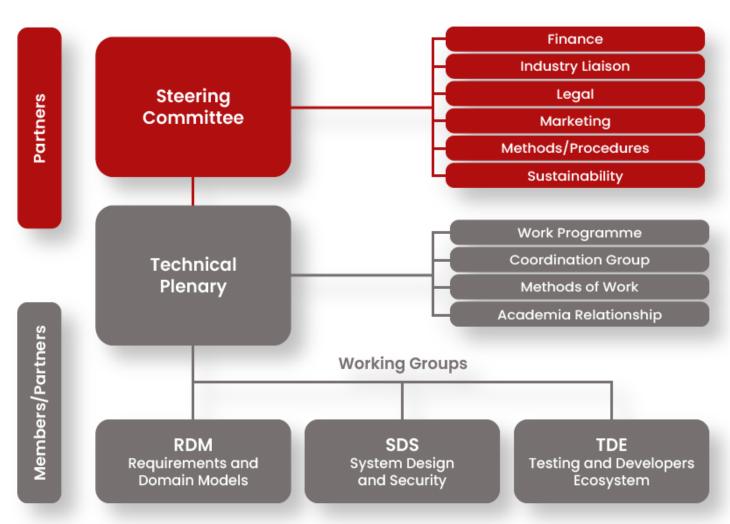


Organization

http://onem2m.org/about-onem2m/organisation-and-structure

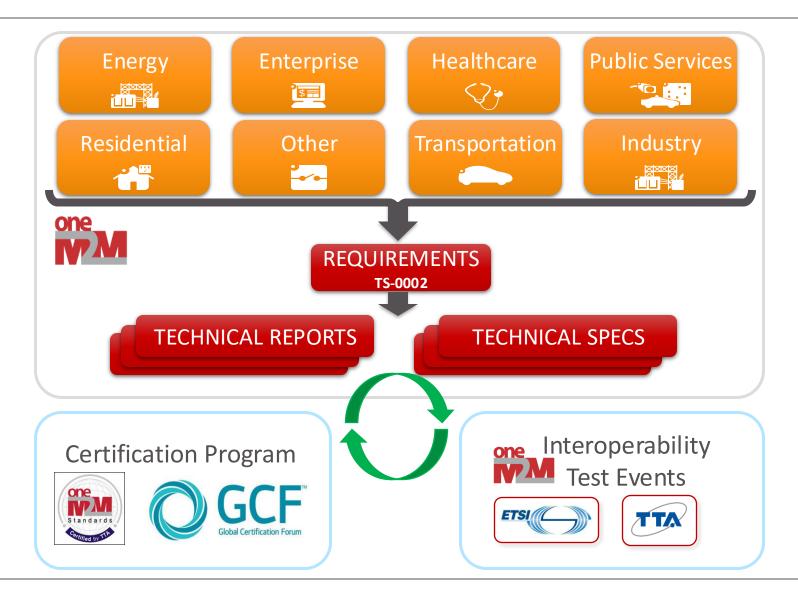






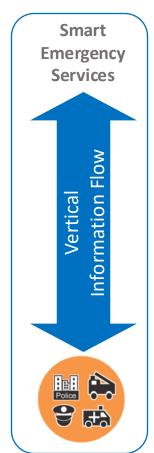
Standard – Testing – Certification Program





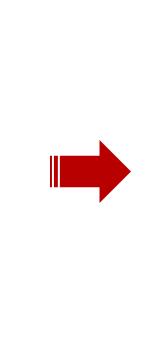
oneM2M Breaks Down the Silos

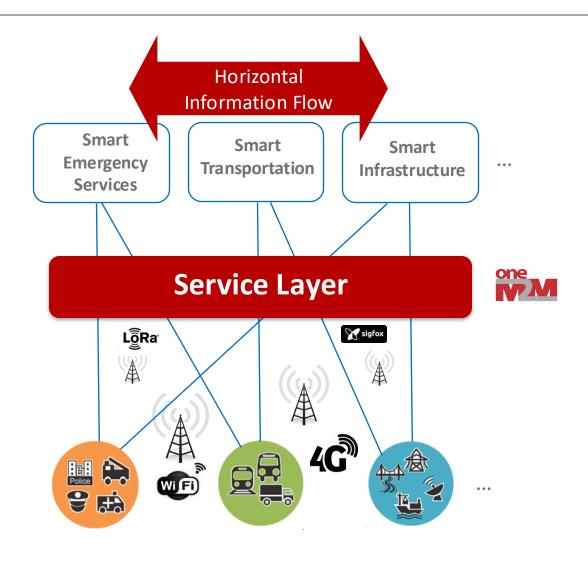








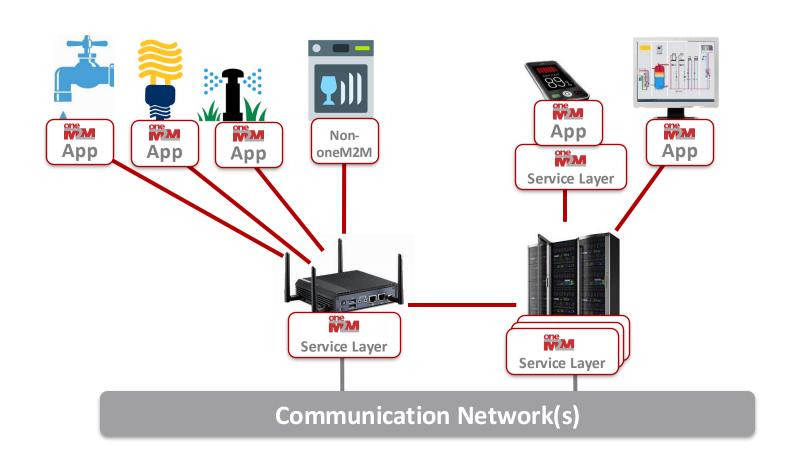




2021 oneM2M

oneM2M is an End-to-End IoT Technology





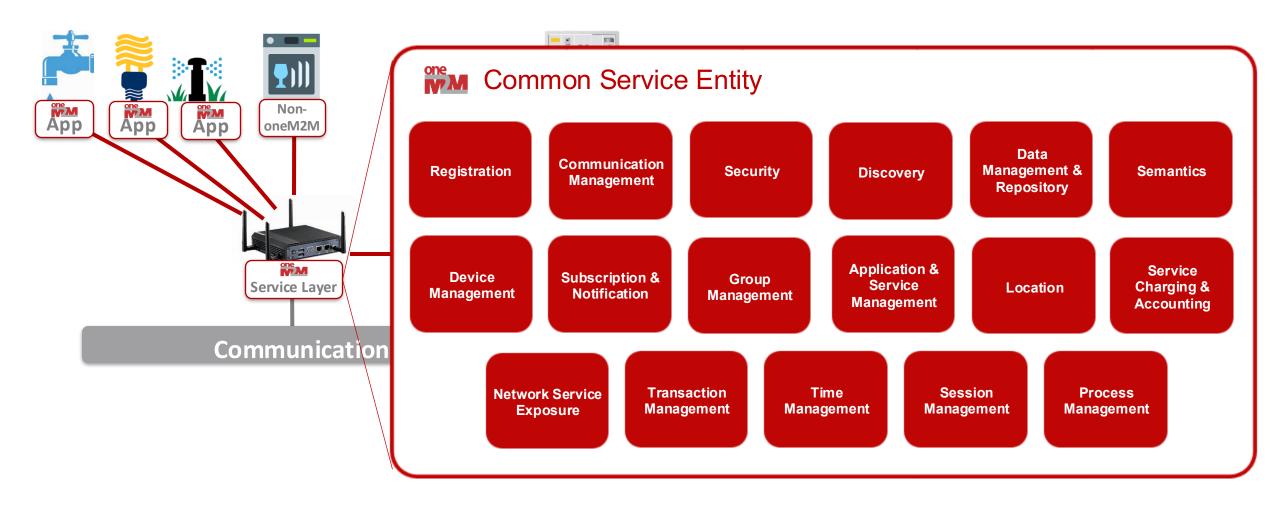
Flexible Deployment Options

- IoT Cloud / Enterprise
- IoT Gateway
- IoT Edge Device
- IoT User Devices

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oneM2M's modular service functions fit into a coherent framework





2021oneM2M 8

oneM2M Feature Summary



Release 1

- Registration
- Discovery
- Security
- Group Management
- Data Mgmt. & Repository
- Subscription & Notification
- Communication Mam
- Communication Mgm
- Network Service Evposure
- **Fundamentals**

Release 2

- + Time Series Data
- + Flexible Resources that can be customized by app developers (flex container)
- + Semantics Description & Discovery
- + Security Enhancements
 - Dynamic Authorization
 - Content Security
 - E2E Security
- + WebSocket Binding

Information Model

- + oneM2M App-ID Registry
- oneM2M Interworking

Enhancements

3GPP Triggering

Release 3

- + Semantic Querying/Mashup
- + 3GPP SCEF Interworking
 - Non-IP Data Delivery
 - UE reachability Monitoring
 - Device triggering
 - Etc.
- + Transaction Management
- + Service Layer routing
- + Common one M2M Interworking Framework
 - OCF
 - OPC-UA
 - OSGi

Profiles

- + Security Enhancement
 - Distributed Authorization
 - **Extensions**

Release 4

SDT 4.0 and the Information Models for Multiple Domains

- + oneM2M Conformance Tests
- + Geo Query
- + Process Management
- Message Primitive Profiles
- + Semantic Reasoning
- + Time Management
- + Enhanced 3GPP Interworking
 - Session QoS
 - Congestion Monitoring
- + Fog/Edge Computing
 - Software Campaigning
 - Resource Synchronization
- Service Subscriber Management
- Group Anycast/Somecast
- + Modbus Interworking
- Discovery Based Operations
- Integrations

Release 5

SDT 4.0 further enhancements

- + Al enablement
- + Support of Data Protection Regulations
- + Support of Data License Management
- + Advanced Semantic Discovery
- + Enablement of IoT in the metaverse
- + Digital Twins Enablement in oneM2M
- Integrating NGSI-LD API in oneM2M
- + Additional Interworking (e.g. OGC's Sensor Thing API)
- + Enhanced Filter and Queries

Enhanced Public Warning Se

Enable

Consolidation

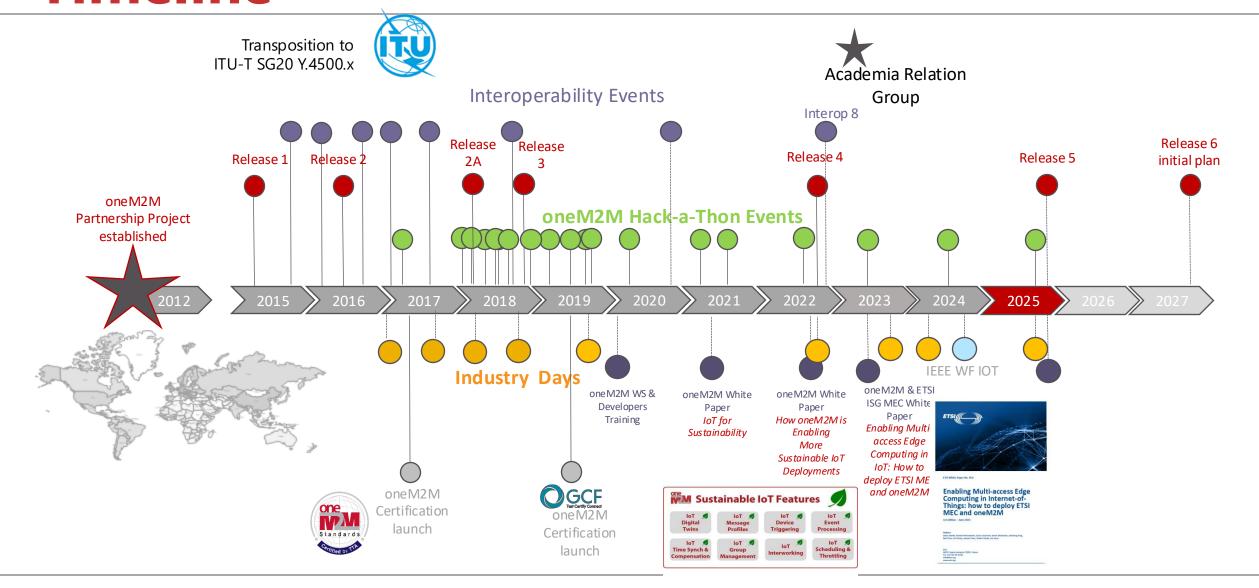
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Enhancements

2015 2016 2018 2020 2025

oneM2M Key-Events Timeline





Insights...





'oneM2M provides a very solid architectural foundation in terms of interfaces and data structures. It is built for interoperability and is very flexible."

Andre Dutra, Deutsche Telekom

"Using oneM2M, our data hub collects and links data for a hundred different services. We plan to export it to other local governments."

Seon-woo Yi, nTels

"oneM2M has been evolving continually and solutions to common problems faced by the IoT industry are incorporated quickly in its specifications."

Anupama Chopra, c-DOT

"We rewrote our proprietary system to use oneM2M's open standard and now operate at scale, meeting over 99% of our customers' reporting metrics and delivering over 3 billion meter reads daily"

Ray Bell, Aetheros

oneM2M Future Feature development



Release 6

Studies, Use Case and Requirements development

- > System enhancements to support AI capabilities
- ➤ Interworking with AI Agents oneM2M and MCP
 - > oneM2M-ROS Interworking
- ➤ Enhancements for Edge Deployment using ETSI MEC
- System enhancements to support Data License Management
 - oneM2M Enhanced Filter and Queries
- ➤ Effective IoT Communication to Protect 3GPP Networks cont'
 - ➤ 3GPP Interworking via NEF N33 API (=> R6)



REQUIREMENTS TS-0002

TECHNICAL SPECS

Takeaways



Join oneM2M

Work closed on oneM2M Release 5

Work commenced on oneM2M Release 6

oneM2M

- is a global open standard, not controlled by a single private company
- specifies a common set of horizontal IoT services
 - architecture, common services functions,
- enables data interoperability
 - Information model, semantics, ontology-based interoperability
- interworks with existing IoT technologies
- has interoperability testing and a certification program
- standardized APIs simplify the life for IoT stakeholders
 - minimize development, deployment & maintenance costs
- is a mature and a commercially deployed technology

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Roland Hechwartner
Chair oneM2M Technical Plenary
Deutsche Telekom
roland.hechwartner@magenta.at