oneM2M Marcom Activity report

2021

Report contents

1. Summary of completed activities
2. Press releases
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Overview > Completed activities

- **4** press releases published + **5** news launched on website
- **22** editorial and podcast opportunities secured and published in leading industry publications to position oneM2M as an industry thought leader
- **6** speaker opportunities secured and completed at global technology events
- **4** speaker opportunities secured for 2022
- **2** media alerts distributed to support oneM2M's speaking opportunities
- More than **250** pieces of coverage secured throughout the year
- **First** white paper and Webinar on sustainability
- **13** Executive Interviews published
- LinkedIn: 1,156 followers **(+12%),** 108 posts
- Twitter: 1,393 **(+6%),** 416 tweets
- All Monthly MARCOM conference calls hold excepting (n 101 cancelled)

Press releases > Coverage highlights

Press releases > Overview

Date (2021)	Title
8 February	Surge in oneM2M membership by Indian entities following national adoption of its standards
20 April	oneM2M launches new initiative to promote sustainability via IoT technologies and open-standard systems
28 July	oneM2M invites contributions on future roadmap for standards based IoT systems
30 September	oneM2M publishes whitepaper on IoT and sustainability to promote responsible design principles

Press releases > Highlights

PRESS RELEASE

oneM2M boosts Indian membership following national adoption of standards for Internet of Things (IoT) systems

Sophia Antipolis, France, 04 February 2021: Increasing appetite for IoT market opportunities in India has led to a surge in membership for global standards initiative oneM2M. 50 organisations, including nine Indian Institutes of Technology, Cisco India, Tata Communications and WIPRO joined the initiative, during their highly successful 49th Technical Plenary meeting.

The new members, also associated with the Telecommunications Standards Development Society India (TDSI), registered strong interest in participating in future standardisation and implementation activities with oneM2M. They represent a spectrum of large to small-and-medium sized entities spanning several segments including mobile network operators, network equipment vendors, systems integrators, technology institutes and professional service providers.

"We are extremely pleased that the recent TSDSI transposition of oneM2M standards and their outreach to local organisations has stimulated interest in developing and promoting a global, technology- and vendor-neutral approach for IoT systems. We look forward to working with these new additions to oneM2M's member base," said Enrico Scarrone, Steering Committee Chair at oneM2M.

As India strives to deliver over 100 smart cities across the country, standards-based deployments will ensure interoperability and security while providing a foundation for multi-vendor deployments. This sets the stage to bring India closer to becoming 'Digital India' and catalyses growth for the Indian IoT market and software industry, mobilising the participation of the entire Indian technology and innovation ecosystem.

"Adoption of these standards helps establish the much-needed standardised technology framework for providing Machine to Machine (M2M) services in India," said Pamela Kumar Director-General at TSDSI. "It enables users and application service providers in various vertical domains to use "vertical agnostic" platforms for end-to-end IoT systems, with well-defined common service functionalities. This is expected to accelerate multi-vendor deployment of IoT services across verticals, providing a level playing field to Indian innovators

PRESS RELEASE

and start-ups and facilitate optimal and interoperable use of communications networks and IoT data."

The oneM2M standard results from a global collaborative effort that began in 2012 and is currently approaching its Release 4 milestone. TSDSI transposedoneM2M technical specifications following a multi-agency, national review process in 2020. The national adoption of oneM2M standards highlights the importance of collaboration, testing and certification within the development of IoT devices and software.

Building on the contributions of more than 250 members organisations, oneM2M specifications provide a framework to support end-to-end IoT systems, applications, and services. The horizontal architecture and framework for oneM2M technical specifications has been developed in an open and collaborative environment, with a clear governance framework. These factors facilitate trust in its specifications, cross-vendor interoperability tests and certification efforts.

For more information on oneM2M's current work, visit: www.oneM2M.org

ENDS

About oneM2M
oneM2M is the global standards initiative that covers requirements, architecture, API specifications, security solutions and interoperability for Machine-to-Machine and IoT technologies. oneM2M was formed in 2012 and consists of eight of the world's preeminent standards development organizations: ARIB (Japan), ATIS (U.S.), CCSA (China), ETSI (Europe), TIA (U.S.), TSDSI (India), TTA (Korea), and TTC (Japan), together with industry fora or consortia (GlobalPlatform) and over 200 member organizations. oneM2M specifications provide a framework to support applications and services such as the smart grid, connected car, home automation, public safety, and health. oneM2M actively encourages industry associations and forums with specific application requirements to participate in oneM2M, in order to ensure that the solutions developed support their specific needs. For more information, including how to join and participate in oneM2M, see: www.onem2m.org

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total telecom

TP TELCO PROFESSIONALS Your Opinions Online

A press release on the surge in oneM2M membership was distributed in February 2021

Audience breakdown:
Global – 52%
Europe – 13%
North America – 22%
Asia Pacific – 13%

Telecom Ramblings

IT News Online

Press releases > Highlights

PRESS RELEASE

oneM2M launches new initiative to promote sustainability via IoT technologies and open-standard systems

Sophia Antipolis, France, 20 April 2021:

The industrial Internet of Things (IoT) can add $14 trillion of economic value to the global economy by 2030 according to the World Economic Forum's "Guidelines for Sustainability". However, while technology driven change can be a tremendous driver for value creation, some of its side effects, including wasteful usage patterns and throwaway technology, can undermine total gains. This highlights why organizations need to factor first- and second-order sustainability principles in their technology and design choices.

Since 2012, oneM2M has been leading a multi-national, open, and collaborative approach to create an extensible standard for IoT systems. From the outset, oneM2M participants recognized the importance of defining a general-purpose architecture applicable to a wide range of application domains. The intention was to avoid competing standardization efforts, at the technical and national levels. oneM2M also encourages interoperability by helping developers to re-use existing and established technologies, some of which are specific to individual industry domains. oneM2M's principles align with well-accepted sustainability objectives that seek to minimize duplicative efforts while prolonging the usefulness of legacy investments and fostering economies of scale.

oneM2M is now launching an industry facing initiative on sustainability. It aims to promote the beneficial impact of IoT systems, the importance of open-standard solutions and the significant role that the oneM2M standard has in improving the sustainability of IoT deployments.

Dale Seed, convenor of oneM2M's sustainability initiative from Interdigital and Convida Wireless, noted that "The concept received strong cross-member support when first discussed and reflects the priority that corporations are putting on this issue. By launching this initiative, we want to help businesses build sustainability using IoT systems. We also want to show them how to choose sustainable technologies and prepare for the new innovation possibilities that these technologies enable."

On top of its member base, participation in oneM2M's sustainability initiative is open to the wider technology and software services communities. This is because most IoT systems rely

PRESS RELEASE

on partnerships among suppliers along business and operational value chains. Since the IoT and associated technologies such as AI, cloud computing and mobile internet are enablers of digital transformation, the oneM2M initiative also aims to work across industry domains.

"Mobile networks and IoT technologies are among the topmost candidates for enabling sustainability in the way that organizations manage their environmental footprint. This new initiative offers a way to help organizations build IoT systems based on an open standards framework that is scalable and minimizes waste by re-using established technologies and legacy systems", said Enrico Scarrone, Steering Committee Chair at oneM2M.

Building on the contributions of more than 250 members organisations, oneM2M specifications provide a framework to support end-to-end IoT systems, applications, and services. The horizontal architecture and framework for oneM2M technical specifications has been developed in an open and collaborative environment, with a clear governance framework. These factors facilitate trust in its specifications, cross-vendor interoperability tests and certification efforts.

The first meeting of the new oneM2M Sustainability Sub-Committee will take place on the 20th April 2021. For more information on oneM2M's current work, visit: www.oneM2M.org...

ENDS

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A press release on the new sustainability initiative was distributed in April 2021

Audience breakdown:
Global – 79%
Europe – 10%
North America – 3%
Asia Pacific – 5%
Africa – 3%

AUSTRALIA IT Brief

FUTUREIOT Delivering Connected Intelligence

Press releases > Highlights

PRESS RELEASE

oneM2M invites contributions on future roadmap for standards based IoT systems

Sophia Antipolis, France, 28 July 2021: oneM2M is currently finalizing a set of specifications for Release 4 of the standard while conducting parallel work on features to include in Release 5. Some of the new features under discussion include the topics of AI for Internet of Things (IoT) systems, tools for data licensing and, controls to guarantee adherence to privacy regulation such as GDPR and PIPA (Korea). Participation in oneM2M's technical standardization activities is open to organizations across the world and provides a forum to exchange knowledge and discuss emerging trends that will drive future IoT innovation.

The new developments come at a time when the IoT market is maturing as industry groups focus on innovative and repeatable solutions for smart buildings, smart city, and smart home domains, among others. These build on earlier efforts to engineer low-cost hardware and connectivity services for IoT data. Now, the availability of data is spurring the IoT industry to identify new opportunities and sources of value. Data sharing and technologies that enable privacy controls are two new frontiers for IoT systems. They represent new requirements for building interoperable, scalable, and more sophisticated IoT solutions.

"oneM2M's standards release cycle provides a framework to improve existing specifications based on interoperability testing events. The framework also helps to address new use cases and industry requirements while providing a roadmap for implementation and commercialization purposes. As we embark on planning for Release 5, we welcome industry contributions at our next technical plenaries from August 30 to September 17 (virtual format) and November 29 to December 3 (hybrid format)", said Roland Hechwartner, Chair of the oneM2M Technical Plenary.

Building on the contributions of more than 250 member organisations, oneM2M specifications provide a technical framework to support end-to-end IoT systems, applications, and services. These have been developed in an open and collaborative environment, with a clear governance framework. oneM2M's general-purpose architecture and family of developer tools are applicable across a wide range of application domains. oneM2M avoids competing standardization efforts, both at the technical and geographic-market levels. In combination with cross-vendor interoperability testing and a global certification framework, these factors foster

PRESS RELEASE

trust in oneM2M specifications. In addition, all oneM2M Technical Specifications and reports are accessible in the public domain and at no charge.

For more information on oneM2M's current work, visit: www.oneM2M.org.

ENDS

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A press release on release 4 and 5 of the standard was distributed in July 2021

Audience breakdown:
Global – 87%
Europe – 5%
North America – 5%
Asia Pacific – 2%
Africa – 1%

Press releases > Highlights

PRESS RELEASE

oneM2M publishes whitepaper on IoT and sustainability to promote responsible design principles

Sophia Antipolis, France, 30 September 2021:

oneM2M has today announced the release of its first whitepaper on IoT sustainability. Co-written by diverse industrial stakeholders, it describes the sustainability landscape, surveys potential demand for sustainability solutions and shows how different organizations are pursuing sustainability objectives. It illustrates the potential of IoT systems, while identifying a set of design principles for achieving sustainability goals more consistently across different industries. These principles emphasize the value of designing for interoperability, modularity, re-use, and scalability. Aided by the use of open standards, these principles can broaden adoption, trigger innovative uses of IoT for sustainability, and deliver affordability through economies of scale.

According to studies by Climate Watch and the World Resources Institute, greenhouse gas emissions of around 50 billion tonnes annually are one measure of the environmental aspects of sustainability. Almost three quarters of this total is due to fuel emissions in the transportation sector and energy consumption in industrial processes and residential and commercial buildings. IoT for industrial systems, smart buildings, smart cities, and intelligent transportation systems map to the main contributors of GHG emissions.

There are other aspects to sustainability in the form of governance models and social equity. Business leaders and politicians are responding to the different sustainability challenges through a mix of policy interventions, new reporting frameworks, circular-economy strategies, and technological solutions. A common theme is the use of information to improve decision making and to make better use of resources. In this regard, mobile networks and IoT technologies are among the topmost candidates for enabling sustainability. Moreover, four IoT capabilities – remote connectivity, low-power and low-cost devices, IoT data and, cross-silo applications – can help organizations to manage their environmental footprint and to tackle different facets of the UN's Sustainability Development Goals.

In keeping with oneM2M's inclusive approach to standardization, organizations from different parts of the industry ecosystem and across the world contributed to this whitepaper. They include ADVA Optical Networking, the Alliance for Internet of Things Innovation (AIOTI),

PRESS RELEASE

Centre for Development of Telematics (India), Convida Wireless, Deutsche Telekom, Huawei, More-with-Mobile, Orange and Tata Consultancy Services (TCS).

Dale Seed, Vice-Chair of oneM2M's Technical Plenary, convenor of oneM2M's sustainability initiative, and a representative of Convida Wireless, noted that "This whitepaper contains an informative collection of ideas on an important topic from a diverse set of companies and stakeholders taking part in the oneM2M sustainability initiative. Our intention is to inform commercial, policy, sustainability and technology audiences in two ways. The first is to demonstrate how IoT technologies can help society address sustainability challenges and meet sustainability goals. The second is to encourage IoT stakeholders to apply responsible IoT system design and deployment principles."

Building on the contributions of more than 250 members organisations, oneM2M specifications provide a framework to support end-to-end IoT systems, applications, and services. oneM2M's horizontal architecture and technical specifications have been developed in an open and collaborative environment, with a clear governance framework. These factors facilitate trust in its specifications, cross-vendor interoperability tests and certification efforts.

Participation in oneM2M's sustainability initiative is open to the wider technology and software services communities because IoT systems rely on partnerships among suppliers along business and operational value chains.

To access oneM2M sustainable IoT whitepaper, follow this link.

ENDS

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A press release on the oneM2M IoT and sustainability whitepaper was distributed in September 2021

Audience breakdown:
Global – 92%
Europe – 4%
North America – 4%

Editorial > Feature coverage

IoT Now is based in the UK
but covers a global audience.

IoTNOW
HOW TO RUN AN IoT ENABLED BUSINESS

Hamburg deploys oneM2M smart city standards to go greener

Whether one is dealing with a manufacturing plant or a smart city, the architecture of a distributed Internet of Things (IoT) system depends on several design considerations, says Ingo Freise, software architect at **Deutsche Telekom**.

One is the ability to combine legacy sub-systems, such as a final-assembly cell, with greenfield deployments such as an image processing system for quality control. Another design consideration relates to the challenge of combining multiple connectivity and data management technologies, with the added complication that these are sourced from multiple vendors.

Deutsche Telekom dealt with such issues when working on the MySMARTLife project in a consortium with the cities of Nantes, Hamburg, and Helsinki. Naturally, our involvement in the project focused on the city of Hamburg.

A feature on using oneM2M architecture for smart cities was published on IoT Now.

TecNoticias

IoT Noticias

Hamburgo implementa los estándares de ciudad inteligente oneM2M para ser más ecológico

Erica Flores • 24 February, 2021

Ya sea que se trate de una planta de fabricación o una ciudad inteligente, la arquitectura de un sistema distribuido de Internet de las
de diseño, dice Ingo Freise, arquitecto de software en **Deutsche Telekom**.

Una es la capacidad de combinar subsistemas heredados, como una celda de ensamblaje final, con implementaciones nuevas, como
el control de calidad. Otra consideración de diseño se relaciona con el desafío de combinar múltiples tecnologías de conectividad y a
adicional de que se obtienen de múltiples proveedores.

Deutsche Telekom se ocupó de estos problemas cuando trabajaba en el proyecto MySMARTLife en un consorcio con las ciudades de
nuestra participación en el proyecto se centró en la ciudad de Hamburgo.

La plataforma de la ciudad, basada en un estándar desarrollado por Open Geospatial Consortium (OGC), es un punto de partida com
geolocalización, la planificación de la superficie y las actividades que las agencias municipales realizan en el día a día.

Estándares abiertos y marco interoperable

La ciudad de Hamburgo opera bajo una ley de transparencia que requiere que se publiquen todos los datos de fuentes públicas. Esto
datos estáticos, como los horarios de apertura de las escuelas, hasta transmisiones de datos en vivo. Un ejemplo de esto último es el
las estaciones de carga de vehículos eléctricos.

The IoT Now article was also published in Spanish on TechNoticias

ARCHITECTURE &GOVERNANCE magazine

Architecture & Governance is based in Texas, US, but covers a global audience.

An Architectural Framework for End-to-End IoT Systems

March 22, 2021 Dale Seed Applications & Technology, Applications & Technology

Smart phone with Internet of things (IoT) word and objects icon,Internet networking concept.

Article Contribution

Many Internet of Things (IoT) applications begin as experiments. This might involve the systematic collection of data from remote sensors or connected machines. Alternatively, the experiment might involve remote monitoring and control of a device to control traffic or the flow of wastewater. Such experiments often yield operational insights or, more efficient ways to support remote operations.

An early example is the connected vending machine, typically found at railway stations and gyms. Remote connectivity allows suppliers of canned drinks to keep track of inventory and to gauge demand for different types of snacks and beverages. Better information creates the basis for optimizing capacity allocated to popular drinks and to replenish vending machines more dynamically, so avoiding the prospect of disappointed customers.

A feature on IoT infrastructure was published in Architecture & Governance Magazine

Editorial > Feature coverage

ARCHITECTURE &GOVERNANCE magazine

Architecture & Governance is based in Texas, US, but covers a global audience.

Interoperability Releases the Full Value of IoT Data

March 24, 2021 | Dr. Shane He | Applications & Technology, Applications & Technology

Article Contribution

Frequent flyer and supermarket loyalty schemes are two examples of systems for collecting and analyzing user behavior. They generate significant value and have evolved over a few decades to provide benefits to the customer as well as strategic and operational insights for the organizations managing the schemes. Now, there is scope to replicate their benefits in the industrial sector, through the application of Internet of Things (IoT) technologies allied to Artificial Intelligence (AI) and Digital Twin capabilities.

A Valuable Resource in IoT Data

Collections of data are frequently compared to valuable resources such as oil or, as an asset under the ownership of an individual. These analogies do not stand up to scrutiny. For example, there can be many copies of a data record whereas a barrel of oil cannot exist in more than one place at any given moment in time. In practice, it is the flow of data, from devices to applications, and the sharing of data, across operational and organizational boundaries, that is the true driver of value. This is where interoperability matters.

A feature on IoT data was published in Architecture & Governance Magazine

CIE COMPONENTS IN ELECTRONICS

CIE is based in the UK but has a global audience. A double-page advertorial in CIE Magazine would cost £4,725

Sharing IoT data sustainably

Look beneath the surface of any city or large business organisation and you will see a patchwork of administrative and operational systems. These may involve geographic zones or different departments, each associated with a variety of customer services. In technical terms, there is likely to be a range of IT systems and telecommunications networks to handle the organisation's information technology and communications needs.

While these characteristics are common to all cities, each is unique in terms of its priorities. Increasingly, however, businesses and cities are committing to environmentally friendly policies. This may involve the creation of open spaces, improvements in the transportation infrastructure or measures to reduce carbon emissions. These kinds of sustainability goals were central to the EU funded Horizon 2020 project, MySMARTLife, which involved the cities of Nantes, Hamburg, and Helsinki. T-Labs, which is DT's arm for Research & Innovation activities, became involved in this project and worked closely with Hamburg to address its situation and objectives.

Infrastructure for managing city data

The city of Hamburg operates under a transparency law that requires all data from public sources to be published. The data spectrum is both broad and multi-faceted. It includes static data, such as the opening times of schools. There are also live data streams such as the operational status of electric vehicle charging stations.

Data formats also differ, ranging from public notices in electronic form to streams of data from connected sensors. One objective of the MySMARTLife project was to gather a broad spectrum of data from many different sources. T-Labs' role was to develop the infrastructure to gather and publish data so that third party firms could use them in analytics or service applications, for example.

We did not have the luxury of starting from a blank sheet of paper. Like many other cities, the municipal authorities in Hamburg operate many systems for different aspects of a city. Hamburg had built its own platform based on a standard developed by the Open Geospatial Consortium (OGC). This is a common and logical starting point for many cities because it fits in with geo-location, surface planning and measurement activities that municipal agencies deal with on a day-to-day basis. This is a typical 'brownfield' scenario, involving data from legacy assets and built as silo systems.

The T-Labs solution addressed two issues. One was the issue of sourcing and publishing city data, going beyond geo-spatial sources. Consider this as a step to source and share data across operational boundaries in ways that improve efficiency and innovation. The second issue was to make it easy for data users to access data through an API. While the existing Hamburg system included an API, our analysis identified the need for an enhanced API. New features would enable a system administrator to assign access policies to end-point devices and data sources. An enhanced API would empower data providers to manage access and security at a granular level with different types of data consumer.

Open standards approach

Since our team focuses on applied innovation, we searched for a standardised architecture rather than developing something one-off or new. We considered FIWARE and oneM2M specifications, preferring oneM2M which also aligns with our Java expertise and Scrum organising methodology.

oneM2M is a middleware technology for end-to-end systems. It sits between IoT applications on the upper level and a lower level of connected devices and other data sources. oneM2M defines a standard set of tools for building IoT systems. Examples include device management, subscription management and security, among others.

The oneM2M framework meant that we only needed to implement a subset of oneM2M's common service functions. We began with connectivity and data management, confident that we could implement additional capabilities in the future.

Platform for digital transformation

The Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), built a server to collect city data from parking lots and traffic lights. My team developed a oneM2M data management platform to gather data from other sources and to publish it to third party users. We combined the two, effectively building a bridge, using oneM2M standardized interworking proxy entity (IPE). This architecture allows us to gather city data from many different sources and to combine with the primarily geospatial data from Hamburg's in-house data platform. That is valuable for data users who now have a single way to access a wide and growing range of city data.

As cities and their service partners embark on smart city and digital transformation initiatives, it will become critical for service providers, system integrators and IT departments to plan for interoperable and extensible architectures using open standards, such as oneM2M, to interwork seamlessly with new and legacy systems that support different elements of their operations.

onem2m.org

A feature on sharing IoT data was published in CIE Magazine

RadioResource MissionCritical COMMUNICATIONS

Mission Critical Communications began in North America, is now an international publication.

The Public-Safety Benefits of oneM2M IoT Standards

By Ken Figueredo

Tuesday, April 13, 2021 | Comments

In public safety and emergency situations, there are different priorities for people and connected things to communicate with each other and to trigger actions accordingly. This is a complex technical and operational challenge, partly because the scope of connected sensors, automated plant and information display devices varies widely, leading to a large number of integration points. As a result, many public-safety systems focus on single-purpose solutions, missing opportunities to design for cross-silo and interoperable services.

A further complication is that many different parties, and their respective systems, can be involved. This is true even in simple scenarios. A road traffic incident, for example, might trigger an alert from a traffic flow sensor. Other alerts might come from closed circuit television (CCTV) monitors, from in-vehicle emergency call systems and through social media reports from the traveling public. Each reporting channel belongs to a different service provider. From an organizational perspective, these reports come from systems managed by road transport agencies, vehicle telematics service providers, emergency services and social media platforms.

RELATED STORIES

- The Difference Between Capacity Requirements for Commercial, Public-Safety Broadband
- San Francisco In-Building System Deployments Offer Lessons Learned
- Public Safety, Critical Infrastructure Highlight Importance of Backup Power in Disasters

This scenario points to the need for standardized communications and interactions between internet of things (IoT) applications. These involve many types of endpoint devices, gateways or edge nodes and servers supplied by different developers and manufacturers and operating over multiple communications networks.

A Framework for Distributed Reporting Systems

In 2012, a group of national standardization bodies launched the oneM2M Partnership Project (oneM2M) to establish a standard for end-to-end and interoperable IoT systems. This would avoid regional variations and promote a global IoT market on par with the cellular industry.

The oneM2M standard addresses situations where one or more IoT applications consume data from devices and sensors associated with each application. Some of these are managed via a gateway, or edge-processing device, over a local network. Others involve direct communications between devices and applications through an intermediary platform.

A feature on IoT standards for public safety communications was published in Mission Critical Communications

Editorial > Feature coverage

IoT Now is based in the UK but covers a global audience.
Read in more than 100 countries, IoT Now has become the leading global publication dedicated to IoT-enabled business.

IoT NOW
HOW TO RUN AN IoT ENABLED BUSINESS

Does the world need another IoT standard?

Ken Figueredo of oneM2M

Webcomic #927 on the **xkcd.com** site typifies the dilemma around standardisation. It makes a joke about two people wanting to create a new standard when fourteen already exist, says Ken Figueredo of **oneM2M**.

While the subtext shines a light on rivalry between different organisations or schools of thought, the issue remains when it comes to standardisation for the Internet of Things (IoT) market. With growing market awareness around IoT standards, such as CoAP, MQTT, LWM2M and NB-IoT, does the world need another standard? The answer to this question depends on the definition of an IoT system.

IoT as a systems challenge

IoT systems consist of several elements. A basic technology stack includes devices and sensors, local- and wide-area connectivity networks, gateway or cloud-server platforms for managing communications and, other platforms to enable applications.

Then, there are different approaches for transporting small data payloads. And there are different schemes for representing data and information models for the purposes of data interoperability. This combination of elements represents a system of sub-systems. That is before any discussion of technologies and standards to enable cross-silo interoperability between individual IoT applications.

A feature on IoT standards was published on IoT Now

The Business Insider is based in New York but has over 7.45 million monthly global online visitors.

BUSINESS REPORTER

Automatic for the people

We live in an age of updating, upgrading, upskilling and upheaval. But if businesses are to truly benefit, they need to understand that the fourth industrial revolution is only getting started – and that its effects will be felt far beyond just our working lives. Nick Martindale investigates

starting to be adopted in a more strategic fashion. "A few years ago, many of these technologies were applied individually, as pilots or for high-impact, operational systems," says Ken Figueredo, senior representative at oneM2M, the international standards body for machine-to-machine and the internet of things (IoT). "Now they are central to the business agenda of most organisations. Users and solution providers also recognise that the components are complementary and self-reinforcing.

"For example, industrial IoT technologies enable connectivity and supply data to AI or machine learning algorithms which, in turn, enable better insights and consistent decision-making. This has an impact on change management, operational staffing and the need to recruit personnel with different skills. The resulting efficiency gains, engineering innovation and commercial incentives trigger a further round of investments in AI, machine learning and industrial IoT enablers."

Comments from oneM2M on Industrial IoT were published in The Business Reporter

Editorial > Feature coverage

Architecture & Governance is based in Texas, US, but covers a global audience.

ARCHITECTURE &GOVERNANCE magazine

A Functional Roadmap for IoT Security

March 25, 2021 | Rana Kamill | Applications & Technology, Applications & Technology

Article Contribution

Security for the Internet of Things (IoT) covers a wide range of issues because there are so many components that contribute to an IoT system. These include connected devices, gateways, platforms to manage IoT deployments and data-consuming endpoints in the form of applications and visualisation displays. The task of collecting and communicating data between these elements using an array of proprietary and standardized data protocols illustrates the permutations and complexity of IoT systems.

As a consequence, the issue of IoT security is not as straightforward as encrypting the transmission of data between a sensor and an application. Deployed IoT systems are much more complex. Many involve large numbers of connected devices and sensors. Communications paths might involve multiple hopes via intermediate gateways, for example.

Beyond the technical level, there are operational issues of remotely managing field devices in a secure manner. There may also be requirements to integrate equipment supplied by different vendors and their chosen technology protocols.

A feature on IoT security was published in Architecture & Governance Magazine

IEEE Communications Magazine is comprised of 29,000+ members in 142 countries across the world.

IEEE COMMUNICATIONS MAGAZINE

Bridging Standards for Smart Cities

Ingo Friese, Deutsche Telekom (oneM2M member)

The construction of end-to-end IoT systems integrates a range of elements, from endpoints to gateways and cloud platforms.

They also rely upon many different technologies, for connectivity, data syntax and security, up and down the solution stack. As a result, developers face many choices, often mixing and matching proprietary and open standard components.

It follows that IoT systems, and especially smart city deployments, will not succeed because of any one standard. In practice, smart city systems will involve heterogenous architectures. These will combine the capabilities and strengths of many different standards. Therefore, interworking capabilities that connect elements between different standards becomes more important for future smart city infrastructures.

Building from a Geospatial Legacy: The starting point for smart city systems begins with the processes in place to support everyday operations. These involve activities such as the cataloging the location of city assets, charting of property zones, and provision of map data. Many large cities support these operations using systems based on Open Geospatial Consortium (OGC) standards. In the case of connected devices and sensors, the OGC's SensorThings API (STA) provides an open and unified framework to interconnect sensing IoT devices, data, and applications over the Internet.

oneM2M Interworking: An interworking capability between OGC/STA platforms with oneM2M systems broadens the reach of those platforms. This is because OGC/STA-based platforms can be connected with one or more oneM2M-based Sensor or Actuator Systems, effectively creating a bridging function between silo systems.

A feature on smart city standards was published in IEEE Communications Standards Magazine

ARCHITECTURE &GOVERNANCE magazine

Architecture & Governance is based in Texas, US, but covers a global audience.

Using IoT to Promote Sustainability

May 26, 2021 | Ken Figueredo | Applications & Technology

During April 2021, 80 percent of vineyards in France's primary wine growing areas experienced an unusually severe frost. The destruction to vines could reduce yields by 25 percent to 50 percent in some regions with significant commercial consequences. Less sudden but equally devastating changes in weather patterns present new challenges for society at large. Politicians, city authorities and citizens are looking for better ways to interact with their surroundings and embrace solutions that lead to a more sustainable environment.

In Berlin, for example, shifts in rainfall patterns and pollution levels affect the way that trees need to be watered. Fortunately, the combination of Internet of Things (IoT) technologies with better approaches to data management offers a pathway to a sustainable solution. One initiative, run by an experimental laboratory for the city of the future, involves the tagging of trees for ease of identification, to monitor their status and, to involve citizens in taking care of trees close to where they live. Individuals can adopt one or more trees, for example, and obtain information about correct watering needs. They can then report on when they irrigate their adopted trees. That helps city authorities to maintain a historical record and publish a visualization dashboard of which trees are under care. These activities also simplify the task of neighbourhood coordination and alleviate requirements on the municipality's fleet of watering trucks.

A feature on the topic of IoT and sustainability was published in Architecture & Governance Magazine

Editorial > Feature coverage

IoT For All is based in Maryland, US, but has a global readership.

Building IoT Systems with Reusable Tools

oneM2M - June 4, 2021

Illustration: © IoT For All

Many Internet of Things (IoT) systems tackle a single problem, focusing on issues that are particular to any industry vertical. General-purpose solutions are unusual. One reason for this is because organizations are under pressure to show quick results. As a result, developers find it easier to adapt an existing system.

The most straightforward approach begins with the addition of connectivity to a sensor or machine to enable remote access and data gathering. The next step is to connect to a cloud-based data management system for analytics and visualization purposes. This design approach does not help in anticipating how such a system might evolve or how it might be supported over its life cycle. Nor does it encourage a strategy of reusing design

A feature on IoT systems was published on IoT for All

Architecture & Governance is based in Texas, US, but covers a global audience.

Sustainability Done Sustainably

June 14, 2021 Dale Seed Applications & Technology, Applications & Technology, Uncategorized

With ever growing interest in the topic of sustainability the IoT market research firm, Transforma Insights, recently published a study that quantified the impact of IoT technologies on key sustainability metrics. By 2030, according to their projections, potential savings are expected to be more than eight times the energy that IoT systems consume. There is also the scope to make reductions of one gigaton in CO_2 emissions. In addition, water usage can be reduced by 230 billion cubic meters through the use of smart water grids and IoT-enabled agricultural applications.

The proliferation of IoT devices and sensors is fundamental to the new applications and services that enable sustainability. Their effectiveness, of course, relies on complementary technologies including mobile network connectivity, digital twins and applications of artificial intelligence and machine learning. While these are energy and resource consuming technologies, Transforma Insight's analysis identifies net-positive sustainability benefits to justify their use.

How IoT Enables Sustainability

The United Nations' Environment Program (UNEP) monitors progress on a range of metrics associated with each of the UN's seventeen Sustainable Development Goals (SDGs). Almost half of these goals contain requirements that can be addressed through the use IoT technologies and systems.

A feature on sustainability was published in Architecture & Governance Magazine

Pipeline is based in Michigan, US but has a global audience. A ½ size embedded interactive article advertising placement is £3,995.

Advancing Public Safety with IoT Interoperability

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1 2

By: Ken Figueredo

Many Internet of Things (IoT) systems solve a single problem. They are designed as standalone or one-off solutions because organizations are often under pressure to deploy a solution quickly. As a result, it is easier to adapt an existing system by bolting on the components that enable connectivity, for remote access and data gathering, and linking to a cloud-based data management system for analytics and visualization purposes. During the design phase, it is also easy to overlook how such a system might evolve or be supported in a lifecycle sense.

By way of example, take the case of a public safety scenario that involves the dispatch of alerts to citizens and business organizations. This may involve routine warnings about air-quality issues or disruptions to public transport services. There may also be highly localized emergency alerts, triggered by gunshot or ground-tremor sensors. The mix of information types and urgency of alerts presents a complex technical and operational challenge. One reason is due to the variety of connected sensors, automated equipment, and information display devices. Each of these represents an integration point to bridge proprietary technologies or to combine equipment from different vendors. It is therefore not surprising that many public-safety systems focus on single-purpose solutions, missing opportunities to design for cross-silo collaboration and interoperable services.

A feature on IoT in public safety communications was published in Pipeline

Editorial > Feature coverage

IoT For All is based in Maryland, US, but has a global readership.

IoT Communications: Size Matters

oneM2M - August 31, 2021

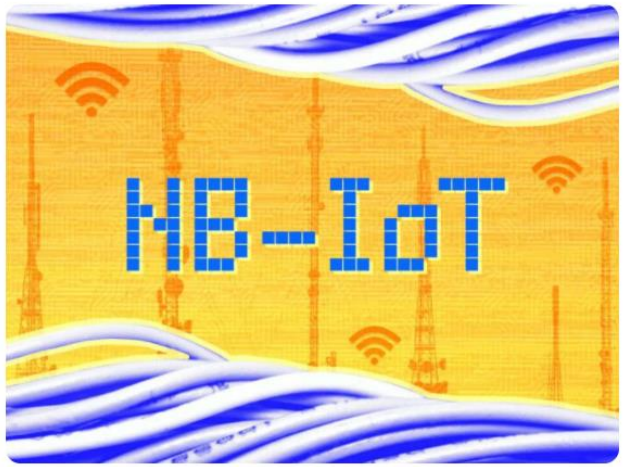

Illustration: © IoT For All

Narrow-band IoT (NB-IoT) is one of several technologies that promise to expand the market for low-power, connected devices, and sensors. This class of devices exposes new application opportunities. They are associated with long service life, small data payloads, and infrequent communications. The size of the market opportunity is set to grow even further with innovative technologies related to 5G's Internet of Everything and new aspirations for 6G.

A feature on IoT communications was published on IoT for All

Critical Comms is based in New South Wales, Australia but has a global audience.
A full-page advertorial in Critical Comms magazine is $4,300.

Enabling collaboration in public safety services

oneM2M
Friday, 24 September, 2021

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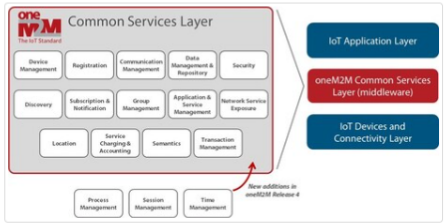
In an incident, diverse information input needs to be collated and filtered according to the receiver.



The handling of public safety situations to greatest effect requires a coordinated approach between different agencies and the local population. This is challenging when each agency operates with different priorities and uses different technologies. Coordination suffers when responders and connected things cannot easily communicate with each other.

For example, a road traffic incident might trigger an alert from a traffic flow sensor. There may be other alerts from closed circuit television (CCTV) monitors, from in-vehicle emergency call systems or via social media reports from eyewitnesses. Each reporting channel belongs to a different service provider, whether it is a road transport agency, vehicle telematics service provider, emergency service or social media platform. Standardisation of communications and interactions between Internet of Things (IoT) applications represents a pathway to closer coordination.

Standard for distributed IoT systems

In 2012, a group of national standardisation bodies launched the oneM2M initiative to establish a standard for end-to-end and interoperable IoT systems. The standard addresses situations where one or more IoT applications consume data from devices and sensors that are potentially sourced from different vendors.

Communications might involve a gateway, or edge-processing device, operating over a local network. Another possibility involves communications between devices and applications, going through an intermediary IoT platform.

Systems built on oneM2M technical specifications include policy controls for data sharing. These benefit data suppliers and data consumers collaborating across service provider silos and mixed vendor solutions.

A feature on IoT in public safety services was published in Critical Comms

Architecture & Governance is based in Texas, US, but covers a global audience.

IoT Sensors for IoT Systems – What You Need to Know

October 18, 2021 Ravi Pragada Applications & Technology, Applications & Technology

The advent of 5G communications networks is driving a new wave of ideas and opportunities in the IoT community. Broadly speaking, three application categories are emerging. One applies to the market for 'massive IoT' which covers use-cases that rely on massive numbers of low-cost devices, each contributing small data payloads. Example use cases can be found in the areas of agriculture, smart utilities, smart cities, and smart buildings. The second, referred to as 'critical IoT', involves systems that support real-time control of machinery, robot interactions and intelligent transport systems. The final category, 'Broadband IoT', involves relatively higher throughput applications associated with larger data volumes and the need for lower latency. Example applications in this category include wearable devise, industrial sensors, and video surveillance.

The range of application opportunities and functional capabilities presents several challenges for IoT sensors. Many of these are being addressed through standardization in 3GPP, the global standards development organization for mobile telecommunication technologies. Respective standards for each of the three categories above include NB-IoT and LTE-M, New Radio Ultra Reliable Low Latency Communications (NR URLLC) and, New Radio Reduced Capacity (NR RedCap).

A feature on IoT sensors was published in Architecture & Governance Magazine

Editorial > Feature coverage

IoT For All is based in Maryland, US, but has a global readership.

Greening by ICT: IoT Sustainability by Design

oneM2M - October 22, 2021

Illustration: © IoT For All

"Greening by ICT" is a term that is often used to illustrate how information and communications technologies (ICT) can enable sustainability. In the case of IoT applications, access to operational data via remote monitoring technologies can be a massive boon to facilities managers. They can track the status of mission-critical machinery or dispatch supplies when chemical-treatment stock levels in unattended, remote sites are close to depletion.

A feature on IoT sustainability was published on IoT for All

CIE is based in the UK but has a global audience. A double-page advertorial in CIE Magazine would cost £4,725

Why IoT systems need global and extensible standards

By Ken Figueredo, senior representative at oneM2M

IoT TECHNOLOGY STACK

STANDARDS BASED 'TOOLS FOR TECHNOLOGY'

Application
Gateway/Server
Connectivity
Modem
Device Application
Ontologies
Security
Networks
Service & Management
Content Serialization
Transport
Application
oneM2M Common Services Layer
Device Application

www.onem2m.org

A feature on IoT systems was published in CIE Magazine

Waste Advantage is based in Florida, US but has over 50,000+ global digital subscribers.

De-risking Multi-Vendor Procurement for Smart City Services

Cities are homes to a wide range of connected assets supplied by many different vendors. This is a challenging setting for deploying IoT-based smart city services without locking into proprietary technologies or the data governance contracts associated with single-vendor platforms. Municipal agencies need a strategy to phase procurement so that legacy systems can work with new infrastructure.

By Ken Figueredo

EMERGING FROM PANDEMIC CONDITIONS, MANY municipal bodies are emphasizing investments in sustainability and citizen-centered services, subject to spending constraints. The pandemic has demonstrated the capacity for organizations and operational procedures to change abruptly and to deploy city resources more responsively. Internet of Things (IoT) technologies are set to play an important role in making this a self-sustaining dynamic. That is because of the value they deliver through remote connectivity and access to continuous-time data, which allow for data-enabled insights and better-informed decision making. Implementation practicalities, however, are not so straightforward.

Legacy Systems and New Suppliers

Over a period of many years, cities have accumulated numerous assets across their municipal footprint. Among others, these include streetlights, public buildings, waste bins, and vehicle fleets for repair and welfare services. These are typical of the legacy assets that require connectivity for remote monitoring and control purposes.

There is also a need to deploy new equipment, either replacing old items or complementing long service life ones. Cities also need to develop ways of adding new service providers that can help in delivering new and data-intensive services.

These requirements call for an approach that preserves the value of legacy assets while making it easy to add new capabilities and bring in new service-provider partners. As pioneering experiments in North American cities have demonstrated, procurement should minimize the risks of locking into proprietary technologies and single-vendor platforms that centralize city data and its governance.

Phased Procurement and Interoperability

The procurement challenge breaks down into several phases. The first involves selecting a vendor to enable connectivity in existing assets. Then, there is a need to send a signal to the wider vendor community concerning the scope to add new assets over time. This must be on the condition that new equipment can interoperate with the installed base and support data sharing with operational applications—most likely provided by third-parties or the municipality's IT department.

Through such an approach, a municipality can phase large-scale investments over several spending cycles. One benefit is that it does not need to commit the full budget for a given project to a single supplier. This is where standardization is important because it allows other, standards-compliant vendors to compete for later stage deployments.

A waste collection example illustrates both the procurement and technical complexities in a relatively simple scenario and the value of standardization. Consider an opening situation where a municipality attaches sensors to waste bins to monitor fill levels. It can use data from these sensors to implement a waste collection service that comprises timed collections and occasional trips for fast-filling bins that might result in spillages and litter.

Over time, city planners might collect data about litter hot spots from social media reports or the need for additional waste collection in streets that are experiencing a higher footfall. The city might procure a less expensive waste bin from a different vendor to install in these locations. In some locations, they might wish to procure waste bins with built-in digital displays, for advertising and public announcement purposes, from a third vendor.

A feature on procurement for smart city services was published in Waste Advantage Magazine

Editorial > Feature coverage

Pipeline is based in Michigan, US but has a global audience. A ½ size embedded interactive article advertising placement is £3,995.

Pipeline

A feature on semantic interoperability has been published in Pipeline.

IN THIS ISSUE

- Insights: SCTE Cable-Tec Expo
- Solving Smartphone Security
- Infrastructure Trends to Watch
- Assessing Digital Provenance
- Hiring in the Great Resignation
- Keys for CSPs in 2022
- Upleveling the Virtual Workplace

The Technology Roadmap to Enable IoT-Data Conversations

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1 2 ▶

By: Ken Figueredo, Joachim Koss

When attending a cocktail party or similar social event, a person can expect to meet old friends. They might also make completely new acquaintances via friends of friends or the host's introductions. Some of these new acquaintances might be people from out of town. Others might speak in a different language, requiring a translator or third language for communication.

There is no reason why this human-centered scenario should not apply to connected devices, sensors and IoT applications. In the case of consumer IoT components, the equivalent of the party gathering might be a home. Other environments might be office buildings, cities, factories, and even transportation networks. In each of these places, the growing proliferation of IoT applications and devices creates new opportunities for cross-silo applications. Like the party host, there is also the potential to economize on hardware and communications costs by using one IoT sensor to serve data to multiple applications.

Two factors are involved in enabling 'conversations' between IoT devices and applications. The first is a common framework that allows different IoT devices and applications to communicate with one another. This is generally one of the functions of an IoT platform. The second requirement is a shared set of rules that allows devices, sensors, and applications to exchange IoT data. This comes under the discipline of

Editorial > Podcast coverage

IoT and Sustainability

THE PEGGY SMEDLEY SHOW

IoT and Sustainability

30↺ 00:00:00 / 00:14:07 ↻30

Jun 9, 2021

Peggy and Dale Seed, principal engineer, Interdigital, talk about deploying the IoT (Internet of Things) technology and sustainability. He says just because you have good ideas and rolling out technology in different ways doesn't mean it is all for the good of mankind. In rolling out technology, there is also responsibility that goes along with it.

They also discuss:

- Standards and the work that still needs to be done.
- What amazing things can happen with standards—and the politics that can get in the way.
- The good things that have come as a result of the pandemic in the technology industry.

interdigital.com

(06.08.21 - #723)

IoT, Internet of Things, Peggy Smedley, artificial intelligence, machine learning, big data, digital transformation, cybersecurity, blockchain, 5G cloud, sustainability, future of work, podcast

The Peggy Smedley Show is based in Illinois, US. The podcast averages 115,000 listeners and is ranked as the No. 1 IoT and digital transformation podcast.

THE PEGGY SMEDLEY SHOW

An interview opportunity was secured and completed on The Peggy Smedley Show. Dale Seed recorded the interview on the topic of IoT standards and oneM2M's sustainability initiative.

Editorial > Podcast coverage

Podcast 13: Tech can learn a lot from the Natural World

Posted on 25 May 2021

Whether it's starlings teaching us about high speed, resilient networks, or training IoT execs by Horsepower, **Gilli Coston and Ken Figueredo show that the world of technology has much to learn from Nature.** It's also Human Nature to make fantastically bad decisions – and **Trending Tech Podcast** hears how technology can bail you out if you decide to post a friend home from Australia. Listen, people do! Plus the SEC says Blockchain is more than a question of trust ... it's also about iced tea. And finally, Jeremy Cowan gets an eyeful of upcoming news in Augmented Reality.

trendingtech.

Expert analysis of the new technology impacting global businesses

A podcast opportunity was completed on the Trending Tech podcast. Ken Figueredo recorded the podcast on the topic of what technology can learn from the natural world.

Editorial > Monitoring for coverage

Digitalisation World is based in the UK but reaches over 37,000 subscribers with a geographical breakdown:
UK – 24%
Germany – 18%
France – 13%
Nordic & Benelux regions – 22%
Italy – 9%
Spain – 7%
South Africa – 2%
Middle East – 4%
Rest of the World – 1%

DIGITALISATION WORLD

IoT for Sustainability

By Dale Seed, oneM2M Technical Plenary Vice-Chair and Convida Wireless

The concept of sustainability, in all its facets, is becoming increasingly important for companies across all industries. There are several reasons for this. Abrupt changes in environmental conditions are being experienced at first-had by the day. Society is also concerned about the loss of biodiversity and damaging measures that are often used in the extraction of scare resources. As a result, consumer expectations and the likelihood of regulatory intervention are putting pressure on companies to operate sustainably.

End customers are also beginning to express clear preferences for sustainable products and services. This desire is not only relevant in the B2C sector, but runs through the entire market, and is also noticeable in the B2B environment. For example, companies select their partners and suppliers on the basis of their commitment to sustainability any to avoid any negative impact on themselves. This process is turning into a priority with businesses devoting greater efforts to reassess the sustainability and resilience of their supply chains.

A Critical Role for IoT Data

The typical use case for IoT systems involves the application of data from one or more connected devices and sensors to inform business or operational decision making. These decisions are all about improving efficiency and optimizing how resources are consumed. In extended supply chains, IoT data is also useful in reducing wastage and ensuring distribution-chain resiliency.

A feature on IoT and sustainability has been submitted to Digitalisation World. Currently monitoring for coverage for 2022.

AI

AI Magazine is a digital community for the global technology industry that connects the world's largest Artificial Intelligence brands and their most senior executives with the latest trends as the industries around the world pivots towards technology and digital transformation.

oneM2M Contribution to AI Magazine

Ken Figueredo, Senior Representative at oneM2M

10 December 2021

1. What benefits does IIoT bring to the manufacturing industry?

IIoT involves the application of IoT technologies in industrial settings. This allows manufacturing organizations and their supply-chain partners to connect many types of industrial assets (i.e., machines, control systems and sensors) to data-collection systems and then on to decision-making applications on a systematic basis. That makes remote monitoring and control ubiquitous.

Among the many benefits of IIoT are the ability to use data to optimize processes and to monitor for equipment wear and tear. This allows organizations to improve maintenance schedules and to use data in predicting the onset of costly and potentially disruptive failures. With widespread adoption, IIoT technologies will usher in a discipline of reasoning based on data that is both more available and granular in resolution.

An additional benefit is to encourage data sharing across sources that might be controlled by different organizations. This can support comparative benchmarking across manufacturing sites, for example. Normalizing of shared data will also make it easier for facilities managers to evaluate the performance of machines supplied by different vendors. Insights derived from usage data can be used for warranty purposes or shared with upstream designers to improve design engineering activities.

Comments on IIoT have been submitted to AI Magazine. Currently monitoring for coverage for 2022.

Events > Speaking opportunities

Ken Figueredo represented oneM2M on the panel *IoT Networks – the Considerations & Solutions for Staying Connected* at IoT Tech Expo Virtual event in March 2021

Ken Figueredo joined the panel *Does the World Need Another IoT Standard?* at the 5th IoT Global Innovation Forum in July 2021

Andreas Neubacher joined the panel *Integrating IoT Connectivity* at IoT Tech Expo Global in September 2021 on behalf of oneM2M

Events > Speaking opportunities

Shane He represented oneM2M on the panel *The importance of interoperability* at the Future of Communication Conference in September 2021

Rana Kamill joined the panel *IoT Security – Acting Ahead of the Threat* at IoT Tech Expo Europe in November 2021

Bob Flynn joined the panel *Integrating IoT Connectivity* at IoT Tech Expo North America in September 2021 on behalf of oneM2M

Events > Media alerts

"oneM2M's open-standards define the roadmap for successful IoT connectivity and deployment"

WHAT?

The Internet of Things (IoT) is hugely popular among enterprises for its power to enable smarter decisions, to revolutionise operations and to improve supply-chain sustainability. However, with IoT deployments set to hit 30 billion device connections by 2025, it is critical businesses have the infrastructure necessary to take advantage of the digital transformation opportunities that IoT allows.

As part of the live *"IoT Networks: The Considerations and Solutions For Staying Connected"* panel, Ken Figueredo, of Convida Wireless and oneM2M, will explain the importance of oneM2M standards when it comes to interoperability and the evolution of connectivity technologies. The success of IoT applications across multiple industries, from smart cities to healthcare, relies on the ability to collect IoT data from multiple sources in order to serve multiple applications and third-party data consumers. oneM2M standards define a horizontal architecture and middleware capabilities for managing IoT devices and applications. oneM2M's standardisation framework provides the technology roadmap for security and privacy control functions, the capability to integrate products from different vendors, and tools to facilitate data monetisation.

Through implementation references, Figueredo will illustrate how enterprises should integrate oneM2M standards for highly successful IoT deployments. This will include approaches to integrate legacy and new-build systems to capitalise on earlier investments, while ensuring their infrastructure can address emerging IoT needs.

A media invitation was drafted to support Ken Figueredo's speaking opportunity on behalf of oneM2M

Integrating IoT connectivity with oneM2M at IoT Tech Expo Global 2021

WHAT AND WHY?

Join global IoT standards initiative oneM2M at the upcoming virtual IoT Tech Expo Global event to find out just how interoperable current network services are, and how standardisation can secure the full line of interoperability beyond connectivity.

As part of the Integrating IoT Connectivity panel on 15th September, Andreas Neubacher, Senior Representative at oneM2M and leader of IoT standardisation at Deutsche Telekom Group, will be discussing how IoT will become an efficient integration business, with access to network services as just one element of a whole IoT solution. Attendees can learn about already standardised connectivity solutions, the gaps of those connectivity standards and what are missing standardized elements to create scalable-, reusable- and interoperable IoT Applications and solutions. Today many functions e.g. usually provided by smart phone operating systems out of the box need to be or being developed as individual IT solution instead of relying on already standardized capabilities. oneM2M as such a standardized solution already provides such functionality out of the box, common and ready to use for many IoT solutions across different verticals.

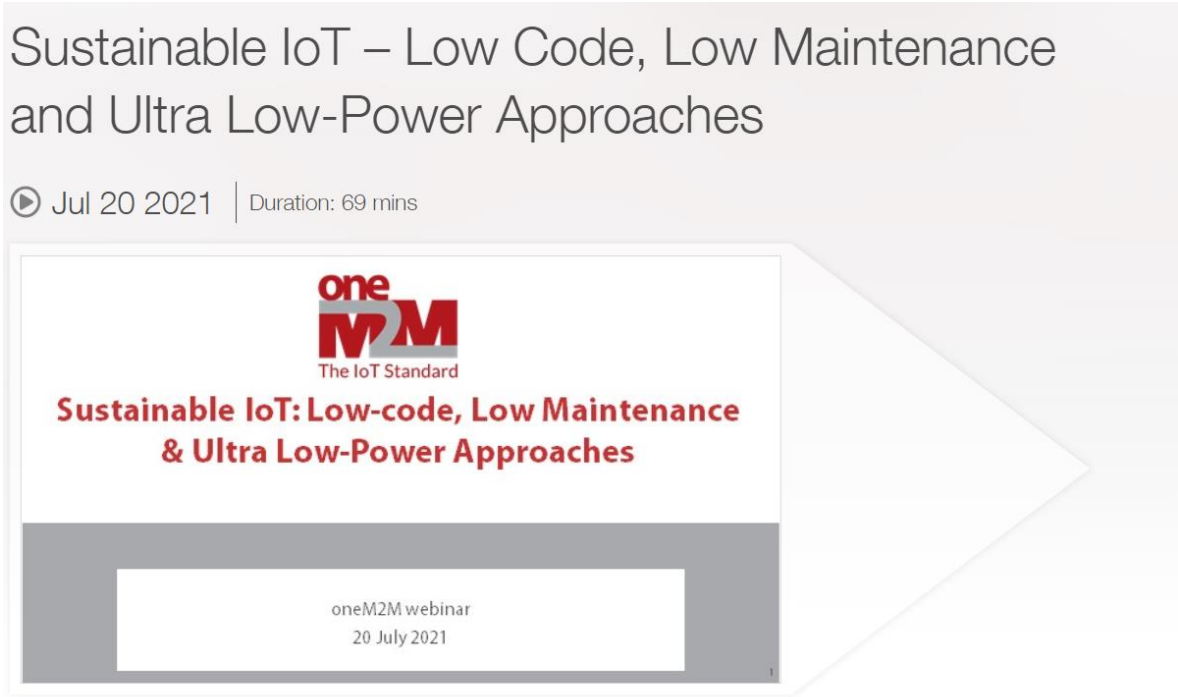
Andreas will explain how a standardised abstraction of connectivity technologies towards applications enables a successful IoT eco-system

A media invitation was drafted to support Andreas Neubacher's speaking opportunity on behalf of oneM2M

Thought leadership - Webinar

Sustainable IoT – Low Code, Low Maintenance and Ultra Low-Power Approaches - 20 July 2021,

Presented by Dale Seed (Convida Wireless), Andreas Kraft (Deutsche Telekom), Ravikumar Pragada (InterDigital Inc.)



Thought leadership - Whitepaper

The release of its first whitepaper on IoT sustainability. Co-written by diverse industrial stakeholders, it describes the sustainability landscape, surveys potential demand for sustainability solutions and shows how different organizations are pursuing sustainability objectives.

13 Executive Interviews published

1. TP48 featured discussions for Release 5 capabilities…Published: 5 January 2021 - **Roland Hechwartner**
2. Our team focuses on applied innovation… Published: 2 February 2021, **Ingo Friese (DT**)
3. At TP49, we saw the impact of India's adoption of oneM2M standards … Published: 17 February 2021 - **Roland Hechwartner**
4. oneM2M standards address the common requirements…Published: 10 March 2021, **Marianne Mohali (Orange)**
5. oneM2M promotes interoperability, scalability, modularity … Published: 6 May 2021, **Dale Seed (COnvida Wireless)**
6. IoT standardization would help us to reuse a common platform… Published: 18 May 2021, **Girish Ramachandran (TCS)**
7. In addition to improved marketing of oneM2M…- Published: 11 June 2021 - **Roland Hechwartner**
8. All organizations need to embrace sustainability…Published: 21 June 2021, **Klaus Grobe (ADVA)**
9. oneM2M adds value by integrating different IoT technologies … Published: 6 July 2021, **Poornima Shandilya (C-DOT)**
10. Businesses should use technology …Published: 3 August 2021, **Professor Désirée M. van Gorp (Nyenrode Business University)**
11. Interoperability bridges borders between IoT domains … Published: 21 September 2021, **Joachim Koss (JK Consulting)**
12. This TP shows how oneM2M is a dynamic standard… Published: 8 OCtober 2021 - **Roland Hechwartner**
13. Businesses need to protect their IoT investments… Published: 10 November 2021, **Bob Flynn (Exacta GS)**

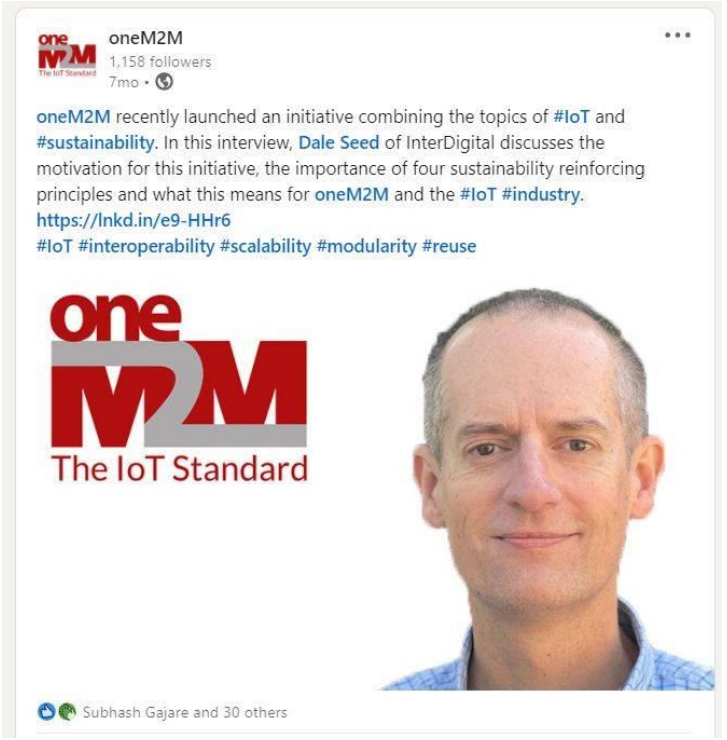
oneM2M Social media

- LinkedIn: 1,156 followers **(+12%),** 108 posts
- Twitter: 1,393 **(+6%),** 416 tweets

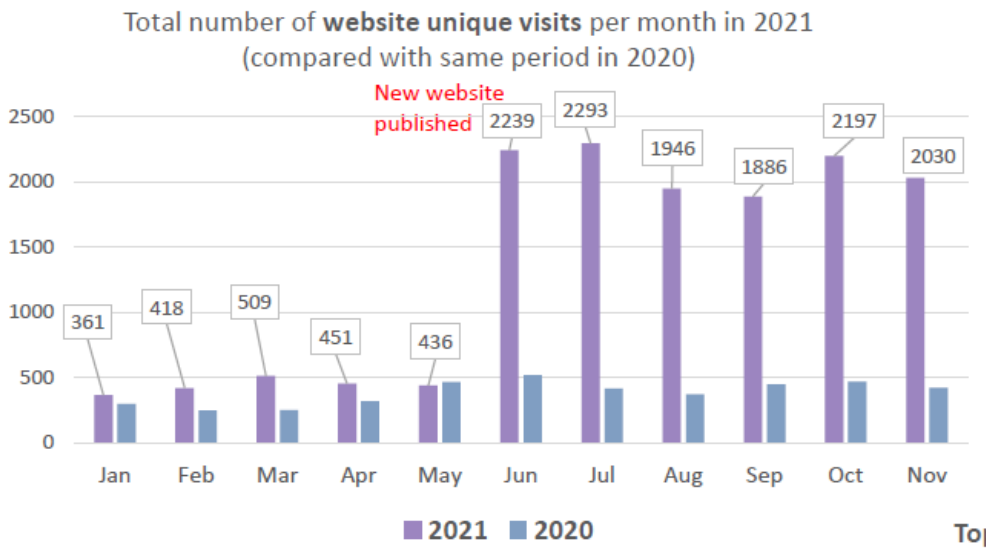
Tweet activity

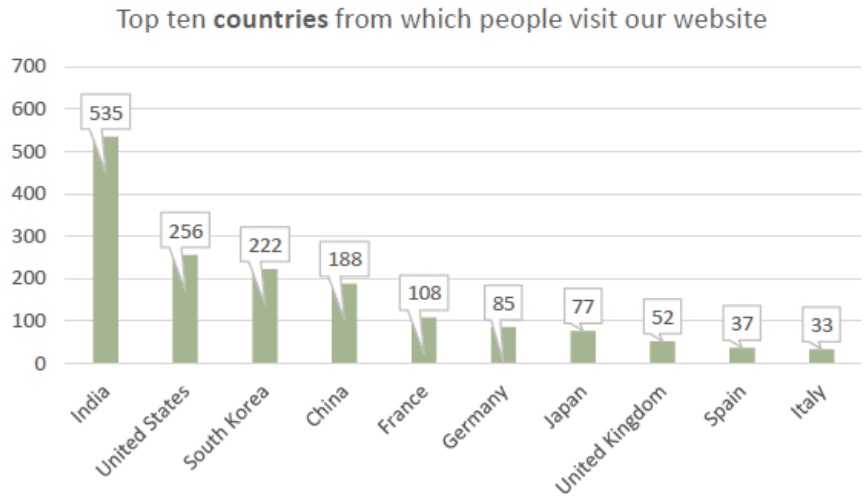
oneM2M @oneM2M
@KirkDBorne Beyond the application of **#IoT** in **#sustainability** use cases, there additional factors in designing inherently **#sustainable** IoT systems https://onem2m.org/iot-news/676-onem2m-launches-new-initiative-to-promote-sustainability-via-iot-technologies-and-open-standard-systems …

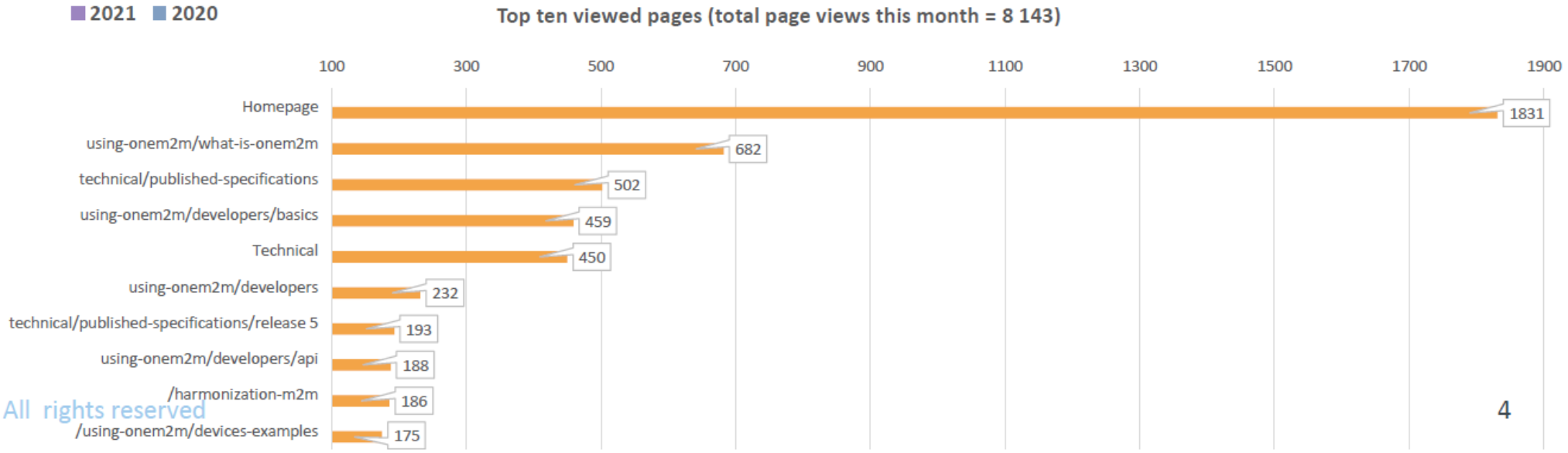
Impressions	2,685
Total engagements	4
Link clicks	2
Replies	1
Likes	1



oneM2M website







Looking ahead > 2022

Video & generic collaterals
Launch of the new generic video to best present oneM2M to a new audience, Launch in January
Produce high class collaterals (brochure/ppt to present M2M on events ect)

oneM2M news announcements & Executive Interviews
With Release 5 and oneM2M's **10th anniversary** taking place in 2022, there will be opportunities to highlight the important work that oneM2M is doing. Promoting any deployments or real-life impacts of oneM2M's work will also allow to further position oneM2M as an industry leader. By using announcements and updates from work groups and TPs, key publications and editors can be kept informed of oneM2M's achievements.

oneM2M as a thought leader
We need to continue to ensure high quality coverage across top-tier publications for oneM2M. This coverage covers a wide range of areas, including smart cities and public safety, as well as the global IoT landscape. The real life impact of oneM2M's work and expertise is of interest to key editors, and our agency is already looking at 2022 editorial and comment opportunities for oneM2M's experts.

Industry event promotion & Webinars
Speaking opportunities have been secured throughout the year, and we have already started arranging speaking slots for 2022 that allow oneM2M experts to be positioned as thought leaders in the industry. While these events do include IoT focused events, the COM agency is also in discussions with vertical specific events too, such as smart cities, automotive and disaster recovery.

Digital content
Digital content across the website and social media is an important element of modern PR. For 2022 recommends prioritising social media follower and engagement growth by developing a social media strategy. The agency has extensive social media experience, and offers a 'Digital Forensics Report'. This would look in-depth at oneM2M's social media accounts and statistics and would provide recommendations on how to improve engagement.

Thank you!