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COIMBATORE-641 035, TAMIL NADU

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE306- SMART IoT APPLICATIONS

III ECE / V SEMESTER

UNIT IV

IOT Standardization: M2M

Overview of oneM2M and Its Role in M2M Communication

Introduction to oneM2M

The oneM2M Partnership Project, initiated in July 2012, is a collaborative effort to create a unified service layer for Machine-to-Machine (M2M) communications. It brings together leading Information and Communications Technology (ICT) Standards Development Organizations globally, including the founding partners, known as Type1 partners. These partners include the European Telecommunications Standards Institute (ETSI), the Association of Radio Industries and Businesses (ARIB, Japan), the Alliance for Telecommunications Industry Solutions (ATIS, US), the China Communications Standards Association (CCSA, China), the Telecommunications Industry Association (TIA, US), the Telecommunications Technology Association (TTA, Korea), and the Telecommunication Technology Committee (TTC, Japan).

In addition to the founding partners, oneM2M has integrated various other industry organizations as Type2 partners, such as the Broadband Forum (BBF), Continua Health Alliance, Home Gateway Initiative (HGI), and the Open Mobile Alliance (OMA). As of its first year and a half, oneM2M has expanded to over 260 member companies worldwide and has conducted plenary meetings across Europe, China, the U.S., Korea, Canada, and Japan.

Goals and Objectives

The primary aim of oneM2M is to establish a cost-effective and widely accessible service layer that addresses the needs of both the communications industry and specific vertical market segments. By fostering collaboration across diverse industries, oneM2M seeks to improve interoperability, enhance security, and reduce fragmentation in the M2M ecosystem.

Governance Structure

oneM2M operates under the governance of a Steering Committee composed of all partners, supported by sub-committees for Finance, Legal, and Marketing Communication (MARCOM). Additionally, a Methods and Procedures group oversees operational protocols. Technical development is facilitated through a Technical Plenary, organized into five working groups:

Requirements (WG1): Defines the service layer requirements.

Architecture (WG2): Develops the architectural framework for oneM2M.

Protocols (WG3): Focuses on standardizing communication protocols.

Security (WG4): Addresses security challenges in M2M communications.

Management, Abstraction, & Semantics (WG5): Ensures effective management and understanding of data semantics.

Technical Progress and Future Directions

Within the Technical Plenary and its working groups, numerous technical contributions from member companies have been reviewed and refined. As of now, oneM2M has established foundational service layer requirements, is developing an architectural vision, and is moving towards defining the necessary communication protocols. Key areas like security and management are progressing in parallel with the overall development effort.

oneM2M anticipates releasing its initial technical specifications in mid-2014. These specifications are expected to be adopted by founding partners for implementation in both global and regional M2M applications. Future endeavors will build upon the initial release to incorporate additional functionalities and enhance interoperability among devices.

Conclusion

The oneM2M initiative represents a significant step towards streamlining M2M communications on a global scale. By creating a cohesive service layer that promotes interoperability and security, oneM2M aims to facilitate the integration of M2M technologies across various industries, ultimately driving innovation and efficiency in the IoT landscape.