Technical Talk : Engineering the Digital ID Revolution: Managing Transformation, Integration, and Operational Readiness

By

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He is an eETD committee members for 2025/2026 session.

A two-hour technical talk titled "Engineering the Digital ID Revolution: Managing Transformation, Integration, and Operational Readiness" was successfully conducted on 16 August 2025 via webinar. The event was jointly organised by the IEM Electronic Engineering Technical Division (eETD) and the IEM Penang Branch. A total of 25 participants attended, including the speaker, moderator, and representatives from the organising committees.

The talk was delivered by Ir. Prof. Dr. Widad Ismail, founder of the Auto-ID Research Laboratory (AIDL) at Universiti Sains Malaysia (USM), the nation's first fully commercialized laboratory specialising in RFID, IoT, and wireless sensor technologies. The session provided an in-depth exploration of the history, development, and evolution of digital identification (Digital ID). It also covered challenges, case studies, applications, and policy readiness in this area.

Prof. Widad highlighted the concept of Intelligent ID (IID), which represents the progression from human-to-machine communication to machine-to-machine communication, underscoring the integration of RFID (Radio Frequency Identification) and NFC (Near-Field Communication) into IID systems.

She elaborated on the wide-ranging opportunities IID offers, including asset management, enhanced security systems, authentication and anti-counterfeiting, supply chain management, data collection, and analytics. At the same time, she emphasised the challenges associated with IID implementation, such as signal interference and attenuation, security concerns, infrastructure investment costs, and compatibility of standards.

As part of her sharing, Prof. Widad presented one of her notable projects completed in 2021, which successfully integrated Passive RFID, Active RFID, and wireless sensor networks into a unified 3-in-1 platform.
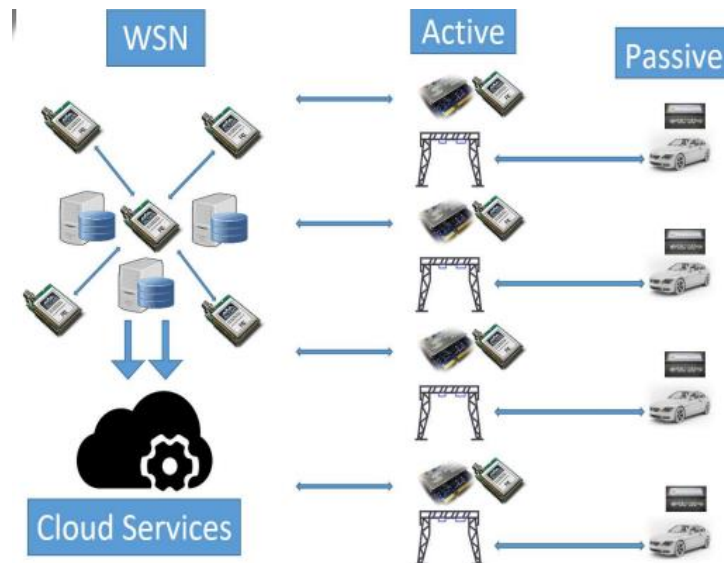
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The key takeaways highlighted that RF technologies such as RFID and NFC are pivotal in enabling IID development, with applications cutting across various industries, including healthcare, retail, and logistics. The outlook points toward the advancement of secure, sustainable, and efficient ID systems. The event concluded with the presentation of an electronic Certificate of Appreciation to the speaker, followed by a virtual group photo session.