



TIA Standards Committees

TR-8 Mobile and Personal Private Radio Standards

Engineering Committee TR-8 formulates and maintains standards for two-way voice and data radio communications, including all technical matters for analog and digital radio systems and services, such as definitions, interoperability, compatibility, and compliance requirements. The types of systems addressed by these standards include business and industrial Land Mobile Radio applications, as well as public safety (such as police, ambulance and firefighting) applications specified by APCO 25/P25. The committee is currently working with ATIS on a Land Mobile Radio system interface with LTE networks.

TR-14 Structural Standards for Communication and Small Wind Turbine Support Structures

Engineering Committee TR-14 – Structural Standards for Communication and Small Wind Turbine Support Structures – is responsible for standards and recommended practices related to the design, fabrication and production of broadcast and wireless towers (cell towers) and systems. The committee supports the continued maintenance of TIA Standard 222-G, Structural Standards for Steel Antenna Towers and Supporting Structures. An updated 222-H revision currently being developed, which will incorporate the latest version of the ASCE standard, 7-10 Minimum Design Loads of Buildings and Other Structures as well as ratings for antenna mounts, safety anchorages for pole climbing, and how to address the corrosion of anchor bolts. The committee is also addressing how wind turbines may be affixed to antenna towers.

TR-30 Multi-Media Access, Protocols and Interfaces

Engineering Committee TR-30 develops standards related to the functional, electrical and mechanical characteristics of interfaces between data circuit terminating equipment (DCE), data terminal equipment (DTE) and multimedia gateways, telephone and voice-over-Internet protocol (VoIP) networks, and other DCE and facsimile systems. TR-30 also develops standards for the measurement of the quality of transmission over Internet and analog networks. Subcommittee TR-30.3, Data Communications Equipment Evaluation and Network, addresses the consumer demand for the broadband delivery of video and audio, such as third-party Over-the-Top (OTT) content from sources such as Netflix or Pandora.

TR-34 Satellite Equipment & Systems

Engineering Committee TR-34 is responsible for standards and studies related to satellite communications systems, including both the space and earth segments. The committee focuses on standards for space-borne and terrestrial hardware; interfaces on standards for satellite and terrestrial systems; and the efficient use of spectrum and orbital resources, including sharing between satellite and terrestrial services (satellite IP communications). The committee is currently working on a Joint IP Modem (JIPM) interworking standard, an interoperability specification consisting of extensions to the current DVB-S2 and DVB-RCS specification, which are used by the U.S. DoD.

TR-41 User Premises Telecommunications Requirements

Engineering Committee TR-42 develops and maintains voluntary standards for telecommunications cabling infrastructure in user-owned buildings such as commercial, residential and industrial buildings; educational, healthcare and large facilities (e.g. stadiums and airports) and data centers. The committee's standards work covers requirements for copper and optical fiber cabling components (such as cables, connectors and cable assemblies), installation, and field testing in addition to the administration of pathways and spaces that support the cabling.

TR-42 Telecommunications Cabling Systems

Engineering Committee TR-42 develops and maintains voluntary standards for telecommunications cabling infrastructure in user-owned buildings such as commercial, residential and industrial buildings; educational, healthcare and large facilities (e.g. stadiums and airports) and data centers. The committee's standards work covers requirements for copper and optical fiber cabling components (such as cables, connectors and cable assemblies), installation, and field testing in addition to the administration of pathways and spaces that support the cabling.

TR-45 Mobile and Personal Communications Systems Standards

Engineering Committee TR-45 develops standards for mobile cellular and personal communications systems, specifically those that support the cdma2000 mobile network and devices. Standards address key industry areas, including mobile transport standards that meet the needs of M2M connectivity, utilizing current commercial mobile phone functions in emergency situations, e.g. SMS to 9-1-1, interoperability and connectivity between cdma2000 and LTE networks, and the performance and interoperation of femtocells.

TR-47 Terrestrial Mobile Multimedia Multicast

Engineering Committee TR-47 is responsible for the development and maintenance of voluntary downlink standards for terrestrial and non-terrestrial mobile multimedia multicast systems. These standards are intended to be employed by users and supplier to promote compatible and interoperable systems to support multicast audio, video and data requirements for a wide range of commercial and public services.

TR-48 Vehicular Telematics

Engineering Committee TR-48 is responsible for the development and maintenance of voluntary standards relating to vehicular telematics equipment, services and intelligent transportation systems (ITS). The committee is currently exploring standards for both the adoption of the U.S. Department of Transportation's 5.9GHz Dedicated Short Range Communications (DSRC) network for intelligent transportation systems as well as the feasibility of commercial mobile service systems, including LTE, for North American ITS/Infotainment use.

TR-49 Healthcare ICT

Engineering Committee TR-49 is responsible for development and maintenance of standards for healthcare ICT applications which involve medical devices, network infrastructure, applications, and operations support. This committee is capable of hosting standards projects that address electronic health record management, health information exchange networks, mobile applications, wireless life sciences, and security.

TR-50 M2M - Smart Device Communications

Engineering Committee TR-50 M2M - Smart Device Communications is responsible for the development and maintenance of access-agnostic interface standards for the monitoring and bi-directional communication of events and information between smart devices and other devices, applications, or networks. The committee is developing a multi-part machine-to-machine (M2M) framework that can operate over different underlying transport networks (wireless, wired, etc.) and can be adapted to a given transport network by means of an adaptation/convergence layer. The committee works with other TIA Engineering Committees (TR-42, TR-45, TR-48), non-TIA standards forums (GSC MSTF, ETSI, OPC Foundation), and academia (Georgia Tech Research Institute and Florida Atlantic University) to ensure end-to-end functionality and interoperability and to foster collaboration and coordination among organizations addressing various components of M2M communications.

TR-51 Smart Utility Networks

Engineering Committee TR-51 Smart Utility Networks focuses on efficient access technology with a mesh network topography optimized for Smart Grid applications. The Smart Utility Network standards series is intended to provide electric utility companies with another tool to improve services for their customers. The committee works to incorporate the best of the applicable existing standards in order to develop an integrated multi-layer standard (covering layers 1 through 4).

ICT Trends & TIA Engineering Committees

Security

TSB-4940, Smart Device Communications; Security Aspects provides guidance on the management of cyber security related risks derived from ICT systems. The document considers the overall security of the M2M architecture.

TIA, the Georgia Tech Applied Research Corporation, and Georgia Tech Research Institute (GTRI) currently collaborate within TR-50's Security Ad-Hoc Group, which is tasked with analyzing the threats that may be posed by M2M services and to assess how security risks can be mitigated effectively.

TR-42's Network Security Task Group addresses the risks associated with both the theft or physical damage of electronics and cabling as well as the loss of data via wired or wireless transmission.

Machine-to-Machine (M2M)

TR-50 is currently working on a multi-part machine-to-machine (M2M) framework designed to operate over different underlying transport networks (wireless, wired, etc.) and can be applied to any industry vertical allowing for agnostic M2M connectivity across industries and applications. This framework offers a foundation for ubiquitous connectivity across devices that is needed to create the Internet of Things. The committee has published documents related to the M2M architecture, protocols, and security and will continue work on the series, including work items related to network optimization, software aspects, conformance and testing.

TR-45 published Machine-to-Machine (M2M) Communication System Requirements Documents to guide the work of needed network enhancements required of the cdma2000 network to support M2M communications. The committee recently initiated a new project to address interoperability specifications for cdma2000 M2M communications.

Small Cells / Distributed Antenna Systems (DAS)

The topology, design, installation, and testing of cabling infrastructure that supports in-building wireless systems, such as Wireless Access Points (WAP) and Distributed Antenna Systems (DAS) are of continued interest to TR-42. Many of the committee's documents on premise cabling are being amended to include specifications to support WAP and DAS infrastructure.

TR-45 develops standards that support the function of femtocell technology in the cdma2000 network. The committee has published TIA-1169-A which defines the security requirements, security architecture and mechanisms for securely connecting femtocells to cdma2000 networks.

Sustainability

TR-42.10, Sustainable Information Communication Technology develops voluntary standards, guidelines and recommendations for sustainable ICT equipment, with the goal of reducing the long-term environmental impact of technology deployment.

TR-14 is currently addressing the use of small towers which may provide means to reduce a cellular site's energy consumption.

Recent additions to TR-42's 942-A, Infrastructure Standards for Data Centers addresses ways to increase the energy efficiency of data centers.

Spectrum

Committees on mobile devices (TR-45), emergency communications (TR-8), and satellite communications (TR-34) all work to develop standards that make efficient use of available spectrum allocations.

Cloud Computing / Data Centers

TR-42.1.1 Data Center Fabrics Task Group is the author of TIA-942-A, Telecommunications Infrastructure Standard for Data Centers, which addresses the design, installation and maintenance of telecommunications cabling/topography within data centers.

The recent addendum to TIA-942-A addresses the design, construction and administration of flat, or multi-switch, data center topography which reduces the complexity of the traditional three-tier data center networks and is more suitable for virtualization, e.g. software defined data centers.

Standard document TIA 568-C.0 defines the overall premises infrastructure, including horizontal cabling, backbone cabling, and distribution facilities, for 40G/100G networks within commercial building spaces such as data centers and business campuses.

Smart Buildings / Smart Grid

TR-51's multi-part wireless point-to-multipoint network and conformance standard in support of smart grid applications is intended to provide electric utility providers with a standardized and industry-proven blueprint to intelligent two-way data transmission between smart meters, smart home appliances and a utility's back-office system.

TR-42.10, Sustainable Information Communication Technology develops voluntary standards, guidelines and recommendations for sustainable ICT equipment, with the goal of reducing the long-term environmental impact of technology deployment.

The TR-42 currently collaborates with TIA's TR-50, Smart Device - M2M engineering committee on building automation systems in support of TR-42's standard TIA-862, Building Automation Systems Cabling. The committee is currently revising the 862 document to include new technologies and systems related to "intelligent buildings."

Vehicular Telematics

TR-48 is currently in contact with the US Department of Transportation (DOT) Research and Innovative Technology Administration (RITA) Intelligent Transportation Systems Joint Program Office on a standard pertaining to the 5.9 GHz Dedicated Short Range Communications (DSRC) for Wireless Access in Vehicular Environments (WAVE) which has been chosen to be the primary radio technology for North American ITS emergency services.

TR-42.7 has proposed a new project to address the use of telecommunications cabling, e.g. RJ-45 Ethernet cabling within automobiles.

LTE Networks

TR-8 is currently working on public safety "push-to-talk" specifications between Land Mobile Radio systems and LTE networks.

TR-45 continues to develop standards to support the interworking and connectivity between devices operating on the cdma2000 network and LTE networks.

TR-48 is exploring the use of LTE networks for North American Intelligent Transportation Systems (ITS) use.

TR-50's M2M Reference Architecture can be applied to any transport layer, including LTE networks.

Next-Generation Cabling

TR-42 is currently working in conjunction with IEEE 802.3 to develop testing and installation specifications for Category 8 next-generation twisted-pair cabling.

