

Wireless Networking Standards and Organizations

This document was prepared by the Wireless LAN Association (WLANA) as a brief guide to wireless networking standards and to the organizations involved in defining and/or promoting wireless local area network (WLAN) technology. Visit WLANA at <http://www.wlana.org> for more information on WLAN technology.

Wireless Networking Standards

The following standards are approved.

| Standard | Description | Approved |
|--------------|---|--|
| IEEE 802.11 | Standard for WLAN operations at data rates up to 2 Mbps in the 2.4-GHz ISM (Industrial, Scientific and Medical) band. | July 1997. |
| IEEE 802.11a | Standard for WLAN operations at data rates up to 54 Mbps in the 5-GHz Unlicensed National Information Infrastructure (UNII) band. | Sept 1999. End-user products began shipping in early 2002. |
| IEEE 802.11b | Standard for WLAN operations at data rates up to 11 Mbps in the 2.4-GHz ISM (Industrial, Scientific and Medical) band. | Sept 1999. End-user products began shipping in early 2000. |

The following standards are in draft or conditional approval stage.

| Standard | Description | Current Status |
|---------------|---|--|
| IEEE 802.11g | High-rate extension to 802.11b allowing for data rates up to 54 Mbps in the 2.4-GHz ISM band. | Draft standard adopted Nov 2001. Full ratification expected late 2002 or early 2003. |
| IEEE 802.15.1 | Wireless Personal Area Network standard based on the Bluetooth™ specification, operating in the 2.4-GHz ISM band. | 802.15.1-2002 conditionally approved on March 21, 2002. |

The following standards are still in development, i.e., in the task group (TG) stage.

| Task Group | Project Scope |
|-----------------|---|
| IEEE 802.11e | Enhance the 802.11 Medium Access Control (MAC) to improve and manage Quality of Service, provide classes of service, and enhanced security and authentication mechanisms. These enhancements should provide the quality required for services such as IP telephony and video streaming. |
| IEEE 802.11f | Develop recommended practices for an Inter-Access Point Protocol (IAPP) which provides the necessary capabilities to achieve multi-vendor Access Point interoperability across a Distribution System supporting IEEE P802.11 Wireless LAN Links. |
| IEEE 802.11h | Enhance the 802.11 Medium Access Control (MAC) standard and 802.11a High Speed Physical Layer (PHY) in the 5GHz band. Objective is to make IEEE 802.11ah products compliant with European regulatory requirements. |
| IEEE 802.11i | Enhance the 802.11 Medium Access Control (MAC) to enhance security and authentication mechanisms |
| IEEE 802.15 TG2 | Developing Recommended Practices to facilitate coexistence of Wireless Personal Area Networks™ (802.15) and Wireless Local Area Networks (802.11). |
| IEEE 802.15 TG3 | Draft and publish a new standard for high-rate (20Mbit/s or greater) WPANs™. |
| IEEE 802.15 TG4 | Investigate a low data rate WPAN solution with multi-month to multi-year battery life and very low complexity/ |

Wireless Networking Organizations

The following organizations are involved in defining and/or promoting wireless networking standards.

| Organization Name | Mission | Wireless Networking Technologies Promoted |
|--|---|--|
| Trade Associations | | |
| Wireless LAN Association (WLANA) http://www.wlana.org | Educational trade association promoting the use of wireless networking technology and working to raise consumer awareness regarding the use and availability of WLANs. | Local Area Networks, Public Access WLAN Networks, LAN to LAN Bridges and Personal Area Networks, |
| Technology Alliances | | |
| Wireless Ethernet Compatibility Alliance (WECA) http://www.wi-fi.org | Certify interoperability of Wi-Fi (IEEE 802.11) products and to promote Wi-Fi as the global wireless LAN standard across all market segments. | Wi-Fi: IEEE 802.11 |
| Bluetooth Special Interest Group http://www.bluetooth.com | Drive the development of the Bluetooth specification. | Bluetooth: IEEE 802.15 |
| OFDM Forum http://www.ofdm-forum.org | Foster a single compatible OFDM standard | OFDM - Orthogonal Frequency Division Multiplexing |
| HomeRF http://www.homerf.org | Develop specifications for wireless communications in the home | HomeRF Protocol Specification |
| HIPERLAN Alliance http://www.hiperlan.com | Accelerate the worldwide deployment of HiperLAN/1 systems | HiperLAN/1 |
| HiperLAN2 Global Forum http://www.hiperlan2.com | Drive the adoption of HiperLAN2 as the global broadband wireless technology in the 5 GHz band | HiperLAN/2 |
| Standards Bodies | | |
| Institute for Electrical and Electronics Engineers (IEEE) Standards Association http://www.ieee.org | Develop market-relevant standards. | All 802.11 and 802.15 standards |
| The European Telecommunications Standards Institute (ETSI) http://www.etsi.org | Produce telecommunications standards that will be used throughout Europe. | HiperLAN/1 HiperLAN/2 |
| Regulatory Agencies | | |
| Federal Communications Commission (FCC) http://www.fcc.gov | The FCC is a United States Government agency that makes laws, defining the frequency bands, power transmission levels, modulation technologies and other ways in which WLAN devices must operate. | Various |
| Test Labs | | |
| University of New Hampshire Interoperability Lab http://www.iol.unh.edu | Test interoperability | Various |