WiMedia — The Next Generation

The WiMedia Alliance will adopt existing industry-standard radio technology for the Medium Access Control (MAC) and Physical Layer (PHY). The radio portion will be based on the IEEE 802.15.3 wireless MAC and PHY specifications for high-rate wireless personal area networks (WPAN) and the alternate PHY (under development in the IEEE Task Force Group 802.15.3a). In addition to adopting these standards, the Alliance will create specifications and a certification program for the upper layers of the networking stack.

Mission&#151 The WiMedia Alliance is a not-for-profit open industry association formed to promote personal-area range wireless connectivity and interoperability among multimedia devices in a networked environment. The Alliance develops and adopts standards-based specifications for connecting wireless multimedia devices including, but not limited to, application, transport, and control profiles; test suites; and a certification program to accelerate wide-spread consumer adoption of &quotwire-free&quot imaging and multimedia solutions.

WiMedia-enabled products will meet the demanding requirements of portable consumer imaging and multimedia applications and support peer-to-peer connectivity and isochronous as well as asynchronous data. WiMedia technology will be optimized for low-cost, small-form factor, and quality of service (QoS) awareness and will enable multimedia applications that are not optimized by existing wireless standards.

Approach&#151 The WiMedia Alliance is developing application profiles and will provide interoperability compliance testing, market the standard and in the future may adopt alternate PHY standards. The WiMedia Alliance seeks to provide users with the most advanced technologies without rendering legacy equipment obsolete.

Status&#151 Formed in September 2002, the WiMedia Alliance is currently developing three profiles: a Streaming Media Profile (SMP), a Digital Imaging Profile (DIP), and a Device and Connection Management Profile (DCMP). The Alliance is also focused on new-member recruitment and currently holds member meetings three times a year.

Applications&#151 Anticipated early applications include the exchange of media content over high-data consumer-electronics devices including:
&#149 digital still and video cameras
&#149 standard-definition and high-definition TV displays
&#149 DVDs, DVRs and other home-theater equipment
&#149 set-top boxes/media gateways
&#149 MP3 players
&#149 printers/scanners (including public kiosks)
&#149 MP3 players and other handheld devices

WiMedia-compliance devices will be used in:
&#149 homes
&#149 retail stores
&#149 professional service bureaus

Typically, WiMedia usages will be in the 5 to 20 meter range, in a single room and, in some cases, between rooms.

Advantages/Benefits&#151 WiMedia is ideal for enabling wireless connectivity and real-time streaming amongst multimedia-centric consumer-electronic devices, such as camcorders, DVD players, digital cameras, home PC entertainment centers, and laptops. It is unique in the sense that no other existing standard can fulfill the stringent requirements that are specific to this market, such as:
&#149 low power consumption
&#149 small-form-factor
&#149 QoS awareness
&#149 reduced level of complexity per node
&#149 a longer battery life (due to the scheduling technique)
&#149 support of multiple power-management modes, as well as a higher spatial capacity.

WiMedia-certified solutions do not depend on the existence of a backbone network, making them true stand-alones. The standard is also secure, implementing privacy, data integrity, mutual-entity authentication, and data-origin authentication for consumer applications.

Manufacturers benefit from supporting one standard for wireless multimedia, thus

minimizing engineering costs and focusing on volume, while allowing differentiation and competition on implementation, price point, added features, and more.

Consumers benefit from device interoperability, lower prices (due to manufacturer competition), and the assurance of long-term industry support.

Limitations&#151 The execution of application-specific profiles may result in some limitations; however, actual limitations remain, as yet, undetermined.

Major Sponsors&#151 Appairent Technologies, Eastman Kodak Company, HP, Motorola, Philips, Samsung, Sharp Laboratories, STMicroelectronics, Time Domain, and XtremeSpectrum.

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