Wi-Fi® powers an advanced connectivity era

Wi-Fi® is the world's predominant wireless technology and has become synonymous with broadband access. More than thirteen[1] billion Wi-Fi devices are in use, demonstrating its success in meeting growing connectivity needs—almost every mobile device includes Wi-Fi and nearly all broadband homes have at least one Wi-Fi access point (AP). Businesses depend on Wi-Fi to extend networks and increase productivity, and cities provide free public Wi-Fi to deliver broadband access to citizens, helping bridge the digital divide in underserved areas.

Wi-Fi efficiently handles advanced applications commonly associated with the future of connectivity, such as augmented and virtual reality (AR/VR), ultra high-definition (Ultra HD) video, and immersive internet experiences. While other wireless technologies promote these use cases as forthcoming capabilities, Wi-Fi already delivers these scenarios today. With the addition of Wi-Fi CERTIFIED 6™, and an expanding technology portfolio focused on ease of use for network operators and end users alike, Wi-Fi delivers greater capacity, faster speed, and lower latency to enable even more advanced use cases.

Inherent strengths of Wi-Fi enable powerful connectivity experiences

The wireless industry has described the attributes necessary to support advanced use cases in a new connectivity era. These include gigabit speeds, low latency, efficiency in dense or remote network environments, and support for both Internet of Things (IoT) and bandwidth-intensive applications. Key strengths inherent to Wi-Fi already deliver many of these scenarios.

Affordable performance: High performance and cost effectiveness enable a wide range of business models and monetization opportunities. A wide choice of equipment options are available to meet varying requirements of service providers, enterprises, venues, and end users.

Unlicensed spectrum operation: Wi-Fi has a distinct competency of the benefits and challenges of operating in unlicensed spectrum and a long history of coexistence with other technologies in unlicensed bands.

Ease of use: Users can easily set up and connect to new and trusted networks. New Wi-Fi capabilities will continue to add security, data protections, and support to further improve ease of use for both users and network operators.

Self-deployment: Enterprises, public entities and end users can deploy and operate their own Wi-Fi networks, enabling full control and access to advanced analytics and direct relationships with network users.

Long-term compatibility: Backward interoperability ensures lasting use of Wi-Fi devices and provides support for frequent refresh cycles because new technologies can be integrated into existing infrastructure without a full network upgrade.

Wi-Fi CERTIFIED™ portfolio supports an array of advanced uses today

While the wireless communications industry prepares for the next generation of cellular connectivity, Wi-Fi Alliance® certification programs already address a host of associated applications through its portfolio of technologies.

Wi-Fi CERTIFIED 6™: Extended speed and capacity; efficient use of spectrum; high performance in dense environments

Wi-Fi CERTIFIED WiGig™: Multi-gigabit performance for bandwidth-intensive applications in the 60 GHz band

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[1] IDC, 2019

Wi-Fi HaLow™: Low band, longer range, power saving connectivity for IoT, smart home, and smart city applications

Wi-Fi CERTIFIED WPA3™: Latest security using 192-bit encryption and Protected Management Frames

Wi-Fi CERTIFIED Vantage™: High performance Wi-Fi and improved roaming for managed networks

Wi-Fi CERTIFIED Enhanced Open™: Data encryption to help protect user data in open Wi-Fi networks

These and other programs deliver a wide variety of use cases such as high resolution video streaming, smart home monitoring, residential AR/VR entertainment, and seamless roaming. Wi-Fi 6 chipset shipments are expected to exceed 1.6 billion by 2020[2], bringing a new level of performance and capacity and enabling advanced uses such as telepresence and AR/VR applications for the home, enterprise, education, and healthcare.

Wi-Fi complements both wired and wireless technologies

No technology can meet every user requirement. Technologies have different strengths that can be leveraged to benefit users, businesses, and organizations according to their specific requirements. User demands are high, and the industry is entering a new connectivity era that involves bringing available technologies together to effectively address a multitude of uses and create new opportunities. Wi-Fi complements other technologies, including 5G, to expand the richness and power of wireless connectivity and enhance the user experience. As next generation cellular networks are deployed, Wi-Fi will continue to carry a bulk of the world's data traffic.

Download the Wi-Fi Alliance white paper Next generation Wi-Fi: The future of connectivity to learn more about the power of Wi-Fi.

Wi-Fi: Technology to trust

Since 2000, Wi-Fi Alliance has been driving the adoption and evolution of Wi-Fi through its Wi-Fi CERTIFIED program. The Wi-Fi CERTIFIED logo designates products with proven interoperability, backward compatibility, and the highest industry-standard protections in place. Wi-Fi CERTIFIED devices can communicate with previous and future generations of Wi-Fi technologies, supporting use cases including seamless network access, multimedia, and device-to-device connectivity.

Wi-Fi technology performance has advanced by more than 100 times since its inception, and continues to evolve over time. Wi-Fi CERTIFIED devices give consumers confidence that the product they purchase will deliver a good user experience, with the security protections needed for next generation connectivity.

Learn more: www.wi-fi.org

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[2] IDC, 2019