



Wi-SUN Alliance: Background and Messaging

Overview:

The Wi-SUN Alliance is a global ecosystem of member companies driving the proliferation of interoperable wireless solutions for use in smart cities, smart utilities and other large-scale IoT and IIoT applications. Wi-SUN develops and implements robust testing and certification programs to ensure that members' products are compliant and fully interoperable.

With more than 300 members across 46 countries, including the Americas, APAC, South Asia and Japan, Wi-SUN is seeing strong membership growth in Europe, and the Middle East and Africa, up 20% year on year.

Membership is open to all industry stakeholders, including silicon and product vendors, utilities, enterprises, cities, municipalities, service providers and regulatory and government organizations. The Alliance offers four levels of membership: Promoter (Arm, Cisco, Hexing, Itron, Landis+Gyr, NICT, Omron, Renesas, Silicon Labs, Texas Instruments, Toshiba, Trilliant), Contributor, Observer, and Adopter.

There are more than 200 Wi-SUN certified products, with members offering a wide range of solutions including utility products, energy management, and silicon.

Currently there are more than 100 million Wi-SUN-capable devices awarded worldwide according to Guidehouse Insights (formerly Navigant Research).

Wi-SUN FAN:

The Wi-SUN Field Area Network (FAN) is an open standards-based (IEEE 802.15.4 sub-GHz wireless) proven wireless mesh technology, designed for large-scale IoT applications, specifically for smart cities and smart utilities.

The Wi-SUN FAN testing program, introduced in 2018, certifies products that are compliant with the FAN profile specification. These products are fully interoperable, offering multi-service capabilities for smart cities and utilities. The Wi-SUN FAN certified logo is now a recognized global brand reassuring users that products can work together in a multi-vendor network environment.

- Enterprise-grade security is the gold standard among IoT networks; only Wi-SUN FAN-based networks achieve this level of security.
- Wi-SUN FAN networks are proven across a range of challenging urban and rural environments around the world. Tens of millions of reliably connected endpoints demonstrate that a Wi-SUN FAN-based mesh network can achieve the ubiquity and scalability that many customers demand.
- Wi-SUN FAN networks are resilient against faults and interference. It is extremely difficult to disrupt a Wi-SUN network, e.g. through a DDoS attack.
- Wi-SUN FAN adapts to the landscape and environment as it evolves, so it will re-route around a high-rise building or optimize routes for data transmission.



Smart cities and smart utilities:

Most countries are either investigating or investing in smart applications, driven by the need to meet sustainability goals, reduce costs and manage citizen mobility and safety.

Applications include energy management, connected streetlights, smart parking and intelligent transport systems, air quality and environmental monitoring, smart buildings and facilities, smart waste management, smart healthcare, and electric vehicle charging infrastructure. Smart grids are providing remote meter reading, controlling loads on electricity supply to help reduce peak demand, and optimizing the use of newer forms of energy, like renewables.

The global pandemic is also likely to accelerate other initiatives over the next few years. Industry analyst, Frost & Sullivan forecasts spending on smart city technology will reach US\$327 billion by 2025, up from US\$96 billion in 2019.

Wi-SUN FAN use cases:

- The City of London has completed a three-year project to replace its out-dated street lighting system to help manage rising energy costs and reduce energy consumption. The authority has deployed 12,000 streetlights supported by a Wi-SUN-capable FAN with plans to use the wireless network to integrate other third-party devices and sensors over the next few years, including traffic and air quality monitoring, and occupancy sensing. Smart sensors on lifebelt holders along the Thames are also being trialed, which will alert the authority when lifebelts have been removed so they can be replaced quickly, potentially saving lives.
- Dubai Electricity & Water Authority (DEWA) is creating an integrated smart energy grid to harness key data to benefit its customers through improved service provision, and optimize its own power generation, transmission and distribution activities. The grid is built on a Wi-SUN mesh technology providing full interoperability for product vendors and opening up the potential for DEWA to add other devices and sensors to the network, including for smart electricity meter deployment and applications to improve its distribution automation systems.
- Tokyo Electric Power Company (29 million meters), Paris (280,000 connected streetlights retrofitted across the city) and Miami (500,000 units of connected streetlights), all deploy Wi-SUN FAN-capable networks.

Useful links:

Wi-SUN Alliance: <https://www.wi-sun.org>

Wi-SUN FAN Interop demo video: <https://www.youtube.com/watch?v=uXg0heNZNI>

Wi-SUN and the City of London: <https://www.youtube.com/watch?v=3nQDSqx3S3w>

Wi-SUN on LinkedIn: <https://www.linkedin.com/company/wi-sun/>

Twitter: @WiSunAlliance