



Future IoT Networks



Low Power Wide Area Networks

Over the next few years, so-called low power wide area (LPWA) networks could play an important role in connecting a range of devices that need to be low mobility, low power and low cost. Part of the Internet of Things, these connections are likely to serve a diverse range of industries, such as automotive, utilities and health, and cover a range of applications and deployment scenarios in which mobile and short-range wireless network technologies may not be best placed to provide connectivity.

Recently, a new breed of LPWA networks has emerged to fill the gap between local wireless and mobile wide area network technologies. These LPWA networks possess several characteristics that make them particularly attractive for devices and applications that require low mobility and low levels of data transfer:

- Low power consumption that enable devices to last up to 10 years on a single charge
- Optimised data transfer that supports small, intermittent blocks of data
- Low device unit cost that can be sub-\$5 per module
- Few base stations required to provide coverage
- Easy installation of the network
- Dedicated network authentication
- Optimised for low throughput, long or short distance
- Sufficient indoor penetration and coverage

The ability of LPWA networks to provide low cost, long battery life and wide area network coverage could mean such

networks potentially support up to 7.4 billion connections by 2020, according to Machina Research. LPWA networks could make it feasible for connectivity to be used in many more devices and scenarios, including security alarms, car park spaces, agricultural applications, such as monitoring the wetness and temperature of soil, as well as smart metering, consumer electronics and intelligent buildings.

Mobile operator support for low power wide area networks LPWA technologies are largely complementary to the existing mobile networks, and their addition to mobile network operators' (MNOs) infrastructure would have number of benefits for MNOs as well as the wider ecosystem:

- The deployment of LPWA networks in licensed spectrum will enhance the security of the IoT applications using them;
- Large scale deployment of LPWA technologies to new types of customers will fuel growth in demand for many services that MNOs already provide, such as mediation, billing and customer support, authentication and security, device management and data analytics.

Next steps

The GSMA Connected Living Programme is working on the analysis of existing and future LPWA network technologies and mapping these to future IoT services and use cases.

To get involved, please get in touch with the GSMA's Future IoT Networks team at connectedliving@gsma.com