

The Wait for NB-IoT in the US

Narrowband IoT (NB-IoT) LTE is taking its time finding market take-up in the US.

The low power wide area network (LPWA) technology was first launched nationwide in the US by T-Mobile on July 19, 2018. AT&T followed with a nationwide launch on April 29, 2019, with Verizon bringing up the rear with a launch on May 14, 2019. Sprint hasn't yet launched an NB-IoT network, sticking with its LTE-M network service for IoT.

NB-IoT can be used for applications such as asset tracking or trash management. The NB-IoT services in the US all use the guard bands -- narrow bands between LTE main communications channels -- of the operators' existing licensed LTE networks, so as not to interfere with consumer smartphone traffic. NB-IoT operates at download speeds of 100 to 250-kbit/s in bandwidth of up to 200KHz with a battery life of more than ten years.

Complementary 3GPP standard Cat M LTE, in contrast, operates in a bandwidth of 1.4MHz with a download speed of 1-Mbit/s. Unlike NB-IoT, Cat M supports voice calls. Both NB-IoT and Cat M can "sleep" to reduce power usage. Devices using the Cat M protocol can also be mobile on the network, as opposed to items like sensors that can only be deployed as stationary devices on NB-IoT networks.

NB-IoT's main advantage is its low power requirements and ability to reach devices in dense or underground building environments.

T-Mobile has made the most early progress with its NB-IoT service so far. It has started selling its first nationwide asset tracking system, Roambee BeeAware, on NB-IoT. Sensoneo has started a trash management system in California, Colorado, and Ohio. While T-Mobile says that startup Ossia is leveraging NB-IoT in the company's wireless power tracker testing in Wal-Mart's procurement centers, we don't yet know how the network technology will be used.

AT&T has been largely silent on NB-IoT so far. "We have some things in the works, but nothing I can share publicly yet," an AT&T spokesperson told us in early September. The carrier hasn't updated its overall NB-IoT situation since then.

AT&T certified its first NB-IoT module -- the Telit ME910C1 -- on June 19 this year. It certified a LTE-M/NB-IoT chipset from Murata/Altair earlier this month.

Verizon has been testing NB-IoT modules from Quectel, SIM-COM and Telit on its network. When asked about customers, a Verizon spokesperson says that Verizon doesn't release information about customers on its network. "That info is proprietary," she says.

Market view

"It's true that NB-IoT had a later start in the US than in Europe and China," says Steve Bell, senior analyst at Heavy Reading. China Mobile and China Unicom started launching NB-IoT in Asia in the second quarter of 2017. Deutsche Telekom and Vodafone also started deploying NB-IoT in continental Europe in 2017.

AT&T and Verizon had initially focused on LTE-M launches in the US in the second quarter of 2017. Bell suggests that this "was a deliberate strategy for both AT&T and Verizon, who focused on LTE-M initially because of the mobility and higher data rates."

Sprint has so far only launched Cat M in the US.

The GSA says that 101 operators worldwide have now deployed or launched NB-IoT networks worldwide. In contrast, 41 operators have launched or deployed Cat M networks.

By 2026, cellular NB-IoT and Cat M connections will capture over 60% of the 3.6 billion LPWA network connections, according to ABI Research. Non-cellular LPWA connections, like LoRaWAN and Sigfox, will account for around 40% of the connections in 2026.