

Case Study: LTE connectivity in metro-edge, mountains and islands

Visitors and residents of Japan's remote regions can now enjoy robust LTE data and voice services



Executive Summary

The Challenge

- Connectivity solution for remote regions
- Emergency network solution

The Solution

- Cellular backhaul over satellite
 - SkyEdge II-c with X-Architecture
 - Capricorn-4 VSAT

Benefits of Gilat

- Unparalleled time to market
- Exceptional performance
- Simplified integration and acceleration at Layer 2
- Proven experience providing emergency services

Designing The Future



Gilat offers KDDI a solution for both extended data and voice services and a mobile public safety network.



Gilat's LTE cellular backhaul over satellite solution plays a key part in KDDI's Mobile Services mission to deliver superior customer experience in Japan, including in islands and the metro-edge and for tourists visiting national parks and mountainous areas. Gilat's technology will be used to extend our network reach as well as a basis for our disaster recovery capabilities.



Nobuyuki Kawai
Senior General Manager, Global Network Engineering and Operations Center
at KDDI

The Challenge:

Deliver superior high-quality customer experience to Japanese residents and tourists in remote areas and to provide disaster recovery capabilities

The Oze National Park spans the four prefectures of Gunma, Fukushima, Niigata and Tochigi.

It is the largest mountain wetland in Japan and has been designated the "National Natural Monument" of the country. This is just one of the most picturesque regions of Japan, many of which happen to be distant from the nation's communications centers. Visitors and residents of these regions lacked reliable data and voice connectivity. KDDI was committed to revolutionize the lives of the Japanese people and visitors to Japan, by providing a superior connectivity experience. Rural residents and visitors ought to have the same quality of service as they would expect in urban centers.

In addition, these remote regions of Japan, beautiful as they are, are also susceptible to earthquakes, typhoons and windstorms. For KDDI, restoring and maintaining service under extreme weather conditions is of utmost importance. Consequently, KDDI looked for an emergency backup solution deployable under even the most adverse conditions. In addition, the solution had to be able to easily integrate with their core network.

The Solution:

A highly reliable platform that simultaneously answers the needs of both remote connectivity and disaster recovery

Gilat, with its vast experience handling projects of this nature in Asia, answered KDDI's call with a platform suited to handle all its needs. Gilat's VSATs were installed in fixed sites as well as on deployable vehicles for emergency response – Cellular on Wheels (COW). The solution leverages Gilat's patented LTE backhaul solution and leading mobility features to support continuous service for public safety, in addition to the outstanding performance provided in fixed LTE cellular sites.



SkyEdge II-c System with X-Chassis and Capricorn-4

"We are very pleased to select Gilat's LTE cellular backhaul over satellite solution to play a key part in KDDI's Mobile Services mission to deliver superior customer experience in Japan, including in islands and the metro-edge and for tourists visiting national parks and mountainous areas. Gilat's technology will be used to extend our network reach as well as a basis for our disaster recovery capabilities," said Nobuyuki Kawai, Senior General Manager, Global Network Engineering and Operations Center at KDDI. "During our intense evaluation, Gilat's solution stood out with its field proven carrier grade technology and superior performance that matches KDDI's highest standards of quality requirements."

These mobility capabilities are particularly helpful for emergency network deployment. Gilat's Cellular on Wheels solution enables rapid placement of VSATs and base stations, mounted on vehicles in disaster-struck regions. Restoring network access from these regions quickly and easily is pivotal for rescue and rebuilding efforts and ensures continuity of normal communications.

The COW solution is ideal for KDDI because it operates independent of the terrestrial network, with no single point of failure. In addition, switchover to the satellite link is instantaneous.

The integration of the satellite network with KDDI's existing network and protocols was done efficiently reducing complexity at layer-2 (data link layer).

The Gilat Advantage

Gilat's Capricorn 4 VSAT propels the cellular backhaul over satellite approach into the mainstream by providing terrestrial-quality broadband service with unparalleled time to market.

For KDDI, Gilat's solution allowed fast integration with their existing network and protocols with minimal disruption. The ability to implement the satellite-based solution on top of KDDI's existing cellular network was a key advantage thus reducing complexity. Gilat has the technical flexibility to provide an accelerated integration at a carrier-grade Layer 2 (data link layer) network at which KDDI operates. Not all satellite-based solutions, which usually operate at Layer 3 (network layer), can support this requirement.

Finally, the ability to provide instant network services when disaster strikes is a core advantage of Gilat's solution. When communication is vital and transport infrastructure potentially impacted, it's nice to know that a solution for any eventuality is close at hand.