



Photo courtesy of Intel

Case Study

IPSTAR Wireless Technology Backhaul

Intel and IPSTAR Join Forces to Link Remote Community to the World

In late 2007, Intel in collaboration with IPSTAR embarked on a rural connectivity pilot project that combines Wireless Local Area Network (WLAN) and Wide Area Network (WAN) technologies with broadband satellite backhaul to provide a remote community in Vietnam with broadband Internet and Voice over Internet Protocol (VoIP) services.

Located in the highland area of Ta Van village, the Worldwide Interoperability for Microwave Access (WiMAX) via IPSTAR broadband satellite-enabled network has been deployed in cooperation with service provider Vietnam Data Communication (VDC), the United States Agency for International Development (USAID).

The pilot project is part of Intel's "World Ahead-Connecting the Next One Billion" program. It is intended to replicate the wireless network and satellite backhaul project in other remote areas in Asia-Pacific.

The IPSTAR backhaul-enabled wireless broadband access proved to be a cost-effective solution for the Ta Van community, which has lacking access to terrestrial line infrastructure. With flexible and rapid infrastructure rollout, IPSTAR has provided instant broadband coverage for the community.

Benefits

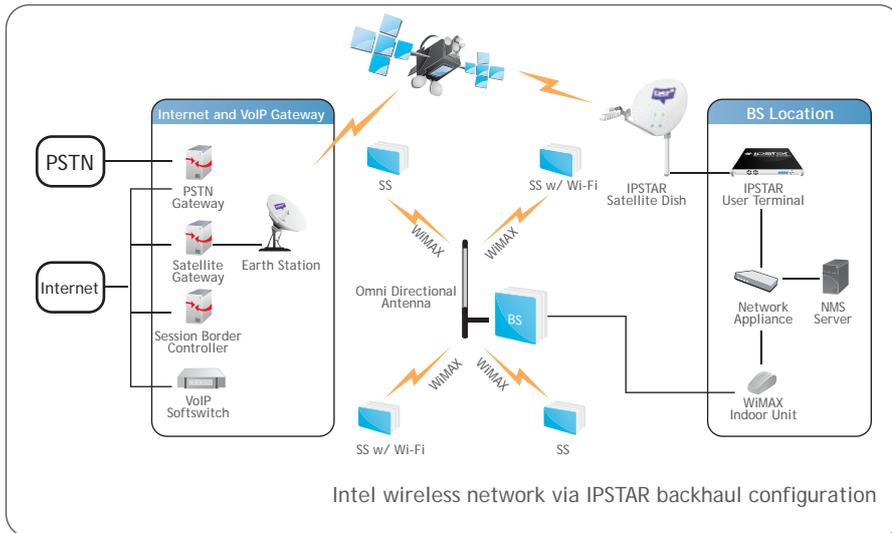
- The combination of IPSTAR backhaul and wireless network technology supports a sustainable business model that uses a shared access community model and IP technology without the need for wired infrastructure – leapfrogging wired technologies – so that a large number of users can be connected quickly and cost-effectively.
- With flexible and rapid infrastructure rollout, IPSTAR Wireless Technology Backhaul is a cost-effective solution for any remote user lacking access to terrestrial line infrastructure, providing instant coverage in blind spot areas and wherever Internet connectivity is required.

Challenge

- Provide the community in Ta Van access to information systems and economic opportunities via broadband Internet access
- Create an effective community-shared access broadband model that can be deployed in other underserved communities in Asia-Pacific

Solution

- Deploy wireless infrastructure with IPSTAR satellite backhaul, and distribute the connection via WiMAX and Wi-Fi technology
- Establish broadband Internet access including VoIP, thus eliminating the need for a fixed-line network



The Situation

Ta Van village, near the town of Sapa, is situated in the highlands some 300 kilometers north-west of Hanoi and borders China's Yunnan province. Its main business is farming and tourism, and the monthly per capita income from farming is USD 13. Ta Van's mountainous terrain means that the area is cut-off from most communications access.

Favorably, it is nearby to the city of Lao Cai – where Intel, USAID and VDC had earlier deployed their first WiMAX trial project in Vietnam. Ta Van is the second phase of the project and the IPSTAR broadband satellite platform serves as the backhaul solution for the wireless network.

The Solution

The Ta Van community broadband solution works by way of distributing one satellite connection to multiple end users via a WiMAX network. IPSTAR is the satellite platform of choice because of its cost advantage and QoS.

The satellite signal is distributed throughout the community via a WiMAX micro base station. Then, WiMAX subscriber stations located around the village route the connection to PCs and VoIP phones in numerous locations, including Ta Van's medical clinic, school and guesthouses.

The project addresses one of the main challenges in many Asian markets, namely the lack of backhaul. In addition, it marks an important milestone in the broadband satellite industry, as it is the first time in Asia that a satellite provides a broadband service, in combination with WiMAX, for both voice and data applications.

In the case of Ta Van, the IPSTAR backhaul proves to be an economically viable and more cost efficient solution compared to a satellite-only solution.

Proof-of-Concept

The Ta Van project is a major milestone in the deployment of WiMAX via satellite backhaul. In addition, Ta Van provided a rich opportunity for a visible demonstration that not only it can be used across Vietnam, but also in other countries in Asia-Pacific facing similar challenges.

According to Intel, for remote communities around the world, the combination of broadband satellite Internet access and WiMAX technology helps roll out a sustainable business model that uses a shared access community model and IP technology without the need for wired infrastructure – leapfrogging wired technologies – so that a large number of users can be connected quickly and affordably.

The focus in Ta Van was to pursue wireless broadband solutions that would have direct value for those communities eligible to receive universal access funding by delivering broadband Internet and voice services over a single wireless network to remote locations.

About IPSTAR

THAICOM-4 (IPSTAR) is the world's largest and most advanced commercial satellite serving up to 10 million users in Asia-Pacific. The breadth of the satellite's geographical reach in the region – covering an area inhabited by 4 billion people or roughly 60 percent of the world's population – positions IPSTAR as the preferred gateway in 14 countries across Asia-Pacific. IPSTAR has achieved a critical milestone in its pursuit to bridge the digital divide in the region. With a combined 100,000 subscribers in Australia and New Zealand alone and still growing, IPSTAR has become the single largest VSAT network operator in both countries. Across the region, IPSTAR has sold nearly a quarter of a million user terminals.

For more information, visit www.ipstar.com.

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