

# Maju Nusa Sdn Bhd

## Hughes, together with Maju Nusa Sdn Bhd, Helps Bring Cellular Services to Remote and Underserved Areas of Malaysia

The Malaysian government has made reliable telecommunications a top priority for every community within the nation's 329,000 square miles. Indeed, its Universal Service Provision (USP) program was specifically developed to provide voice and Internet connectivity for people living in its two major land masses, Peninsular Malaysia and East Malaysia, separated by the South China Sea. But reaching the approximately 8 million population living in rural and remote areas presented a major challenge—as the cost of terrestrial networks is prohibitive, in contrast with the 20 million in metropolitan areas who are well-served by cellular 2G and 3G networks.

Enter Hughes and Maju Nusa Sdn Bhd, a premier Malaysian satellite service provider. Together, they have successfully solved the problem by implementing a novel and cost-effective Multiple Operator Radio Access Network (MORAN) solution. So named because the same infrastructure enables multiple operators to deliver services, MORAN is composed of a Hughes HX system with terminals colocated in each 2G/3G cell site, connecting traffic via satellite between the Base Transceiver Station (BTS) and the core cellular network. Unlike terrestrial solutions, for which costs are distance sensitive, employing the HX Satellite Backhaul system means uniform Capex and Opex costs, no matter where the cells are located.

The Malaysian government owns the network and contracts with Maju Nusa to manage it on a long-term basis. Maju Nusa resells wholesale services to the cellular operators, which include managing the radio, transmission, BSC, and RNC portions end-to-end. Cellular operators, in turn, resell cellular services to end users.



The Hughes HX system has several key features that enable it to meet and exceed Maju Nusa's network requirements:

- Low latency and jitter, making it ideal for cellular backhaul
- An optimized encapsulation scheme on the outroute and advanced Low-Density Parity Check (LDPC) coding on the inroute, for maximum bandwidth efficiency
- Integrated traffic management techniques, such as dynamic channel assignment and as-needed sharing of capacity between multiple sites, yielding best-in-class throughput and lowest operational cost on satellite links
- Interoperability with a wide range of cellular provider networks and technologies

In addition, the HX system is easily installed by one person and can be solar powered to increase its versatility in areas with limited infrastructure.

“We have been using the Hughes HX system for last three years for various services that include broadband Internet, maritime, and mobility services. It was last year when we were awarded this GSM deployment project, and we can proudly say that the HX system allowed us to connect remote parts of the country and offer cost-effective backhaul for cellular mobile services without having to worry about jitter and latency on the satellite network,” said Faris Najhan Hashim, chairman of Maju Nusa.

Ramesh Ramaswamy, vice president of sales and marketing, international, at Hughes commented, “For people who live in these rural areas, this will be the first time they have cellular service in their communities. Hughes is deeply committed to delivering solutions that meet the challenge of providing cost-effective communications in rural and remote areas worldwide.”

With this important initiative, people across Malaysia will be connected to the global Internet marketplace and have the opportunity to help expand the country’s economy, now the world’s 29th largest and 3rd largest in Southeast Asia, with steadily growing manufacturing, agriculture, tourism, and financial services industries—no matter where they choose to live or work.



### About Maju Nusa Sdn Bhd

Maju Nusa Sdn Bhd (Maju Nusa), incorporated September 1993, is a managed network service provider company based in Malaysia. MajuNusa has been involved in various businesses related to VSAT networks, mobile data and managed services to provide innovative, reliable, and cost-effective products and solutions to their customers using state-of-the-art technologies. Through strategic alliances with our international principals, we have evolved to become a specialist in providing sophisticated state-of-the-art total IP-based and industry-leading telecommunications solutions.

### About Hughes

Hughes Network Systems, LLC (Hughes) is the world’s leading provider of satellite broadband for home and office, delivering innovative network technologies, managed services, and solutions for enterprises and governments globally. HughesNet® is the #1 high-speed satellite Internet service in the marketplace, with offerings to suit every budget. To date, Hughes has shipped more than 3.3 million systems to customers in more than 100 countries, representing greater than 50 percent market share. Its products employ global standards approved by the TIA, ETSI, and ITU organizations, including IPoS/DVB-S2, RSM-A, and GMR-1. Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes operates sales and support offices worldwide and is a wholly owned subsidiary of EchoStar Corporation (NASDAQ: SATS), a premier global provider of satellite operations and digital TV solutions. For additional information about Hughes, please visit [www.hughes.com](http://www.hughes.com).

For additional information, please visit [www.hughes.com](http://www.hughes.com) or email [globalsales@hughes.com](mailto:globalsales@hughes.com).

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11717 Exploration Lane Germantown, MD 20876 USA