

Cost-effective trunking for mobile operators

Mobile service operators around the world are aggressively expanding into rural markets. Faced with difficult terrain and remote locations, operators can use satellite as their technology of choice for backhaul as it can be the most efficient technology for cellular backhaul in challenging environments.

Hughes cellular backhaul solutions have been specifically crafted for mobile operators to enable cost-effective service expansion into rural markets. These solutions provide high-quality links while optimizing space segment resource utilization by coupling the appropriate satellite technology with intelligent traffic optimization.

In addition, Hughes offers a complete solution for mobile operators, which includes system design, hub installation, and technical training—to ensure rapid and efficient implementation of their rural expansion projects.

Key Benefits of Hughes Cellular Backhaul Solutions

- Customized for optimum performance and operating cost savings
- High-quality voice support using premium bandwidth features of the Hughes system platforms
- Cost-effective equipment configurations
- Rapidly deployable and highly scalable
- Supports a wide range of additional broadband IP services

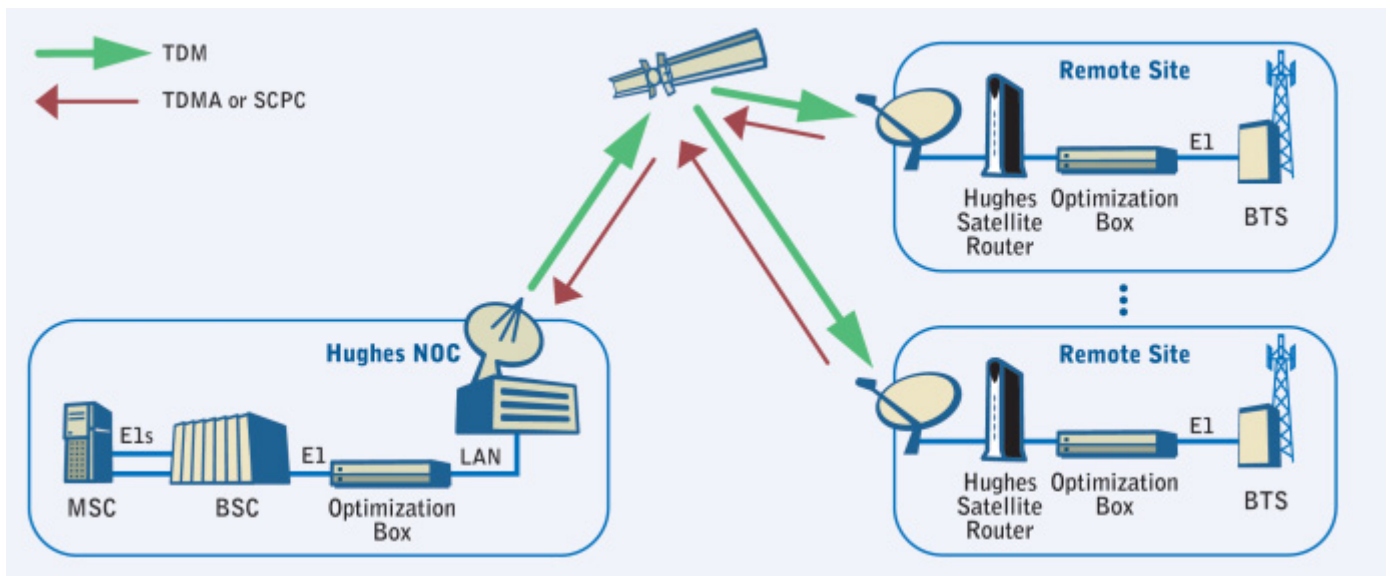
Hughes Optimized Solutions for Cellular Backhaul

Hughes cellular backhaul solutions are tailored to suit the specific traffic profile of individual remote cellular sites.

Depending on the network utilization of each remote location, an optimized TDMA or SCPC solution will be recommended. Both solutions incorporate traffic optimization that significantly reduces voice and signaling traffic resulting in substantial savings in operating costs. In addition, Hughes platforms are available in cost-effective, yet scalable configurations, that provide excellent return on investment.



Hughes offers mobile operators a full range of intelligent backhaul solutions based on the widely deployed Hughes broadband systems. These solutions are tailored for the actual traffic load, resulting in significant savings in operating costs compared with simple SCPC links.



Hughes Cellular Backhaul Architecture

Optimized TDM/TDMA solutions—Hughes broadband system for variable traffic locations

Industry-leading TDM/TDMA solutions from Hughes, based on either the Hughes HN or HX platforms, are ideally suited for backhauling cellular traffic with high variability.

The HN platform enables service operators to leverage the extensive capabilities of the widely-deployed HN system to support both cellular backhaul services, as well as data services on the same platform. The HX system is a cost-effective solution that enables mobile operators to efficiently run their own cellular backhaul solution. Both systems provide high-quality, low-jitter optimized trunks resulting in significant savings in operating costs.

Key benefits of the Hughes systems are:

- Multiple grades of bandwidth that can be configured to support premium voice, data, and video services
- Based on the industry-leading and widely-deployed Hughes technology
- Simple and economical network expansion
- Cost-effective equipment configurations

Optimized TDM/SCPC solutions—efficient solutions for low variability locations

In case of specific locations with high network utilization, Hughes offers intelligent TDM/MF-SCPC solutions that can be integrated easily with Hughes platforms. These solutions include point-to-point SCPC, as well as point-to-multipoint TDM/MF-SCPC solutions.

Traffic Optimization Module

All Hughes solutions for cellular backhaul incorporate a traffic optimizer that not only converts the cellular traffic to IP for transmission over satellite, but also optimizes both the data and control channels to deliver significant bandwidth savings over traditional SCPC links. This is done through:

- Reducing voice channel bandwidth through silence/idle frame suppression and regeneration
- Optimizing signaling traffic through extraction and statistical multiplexing of signaling data.

Hughes, with its comprehensive set of tailored backhaul solutions based on robust industry leading platforms, guarantees mobile operators significant cost savings while providing high-quality links to their new rural revenue opportunities.