NOVELSAT

ENSURING CRITICAL INFRASTRUCTURE CONNECTIVITY AT ALL TIMES

Compact Hub for High Availability Satellite Backup

Application Note

CONNECTIVITY, NO MATTER WHAT

In today's interconnected world, maintaining seamless connectivity for critical infrastructure is paramount. Critical infrastructure is vital for the functioning of a society and economy and includes a wide range of sectors and services that are necessary to maintain security, economic stability, safety, and public health. Critical infrastructure relies heavily on network connectivity to function, and any disruption in communication can lead to significant downtime, financial losses, and potential risks to public safety. Terrestrial networks, while robust, are not immune to failures caused by fiber cuts, outages and overloads, or natural disasters.

ON-DEMAND SATELLITE BACKUP
TO THE RESCUE

When natural disasters or other catastrophic events strike and terrestrial networks are damaged or overloaded, communications systems can quickly become disabled, degrading critical infrastructure operations. In such events, having access to an emergency satellite network becomes indispensable as a fail-safe redundancy measure, giving you peace of mind that communications will stay up no matter what.
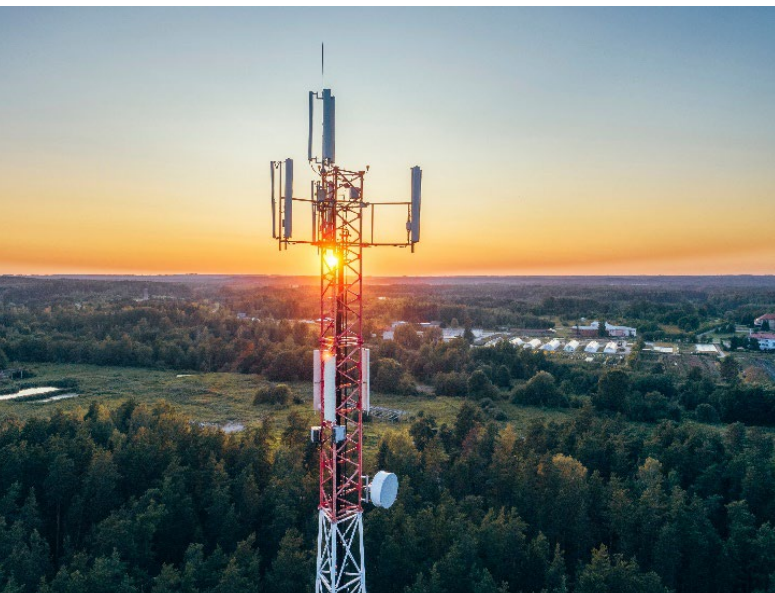
HIGHLIGHTS

- Dynamic satellite backup and/or ad-hoc satellite capacity enhancement

- Compact virtualized hub for high-capacity satellite connectivity

- High performance and efficiency

- Advanced dynamic resource management with NOVELSAT DynamiX engine

- High capacity with up to 425Mbps per modem

- High availability with 1:1 outbound redundancy and 1:N inbound redundancy

- Scale-up to any **network size**

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COMPACT VIRTUALIZED HUB FOR ANY-SCALE NETWORK

Built on off-the-shelf server (COTS) with virtualized architecture and a carrier-grade management system, NOVELSAT Xnet presents a highly integrated carrier-grade satellite connectivity solution. Utilizing compact chassis to support multiple receive and transmit modules, NOVELSAT Xnet features high-density design, minimizing rack space and power as well as easing deployment and operation. This compact satellite hub design can cater to networks of any scale, offering concurrent backup connectivity for N connections across a network of M sites, as well as ad-hoc satellite capacity enhancement to increase network robustness and ensure service continuity.

HIGH-AVAILABILITY, HIGH-PERFORMANCE ARCHITECTURE

NOVELSAT Xnet supports 1:1 outbound redundancy and 1:N inbound redundancy with automatic failover, ensuring very high system availability. Additionally, integrated redundant power supply and RF redundancy enable hot standby redundancy, further enhancing system reliability and uptime and minimizing the risk of service disruptions. Dynamically connecting multiple remote modems when needed, NOVELSAT Xnet enables data connectivity of up to 425Mbps per modem, supporting very high outbound and inbound data rates. The most bandwidth-efficient waveform, NOVELSAT NS4™, is used for the inbound carriers, providing very high-performance transmission and space segment efficiency as well as high robustness and resiliency. NOVELSAT NS4™ waveform is also supported for the outbound carrier, as well as standard DVB-S2 and DVB-S2X.

DESIGNED FOR DYNAMIC AND DIVERSE USE

NOVELSAT Xnet facilitates advanced dynamic resource management with NOVELSAT DynamiX engine to provides dynamic allocation of network resources in MCPC / Point-to-Multi-Point networks (Dynamic SCPC). Managing the network resources, DynamiX guarantees the availability of space and ground resources throughout the duration of each connection. Offering multiple modes of operation and comprehensive configuration, DynamiX optimizes and maximizes satellite capacity usage while meeting the defined SLA and QoS of each transmission session. Whenever a remote modem requires satellite connectivity, NOVELSAT Xnet automatically allocates a satellite connection and network resources to meet the connectivity requirements and parameters. Combining space segment and ground segment efficiencies, NOVELSAT's compact hub system reduces transmission costs as well as simplifies capacity and equipment allocation and operation.

POWERFUL OPERATIONS SUITE

Easy to install, configure, integrate, and operate, NOVELSAT Xnet includes a service-oriented management system, enabling to rapidly introduce and modify services, as well as maintaining and monitoring network connectivity. Network and connectivity grid dashboards provide an overarching centralized view for easy orientation and monitoring, while resources advanced resources and elements configuration tools simplify service setup and ongoing operations. Enhancing system monitoring and analysis, visual graphs track system resources and activity, and problems are classified and flagged in real-time.

For more information visit www.novelsat.com

20-03-2024

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