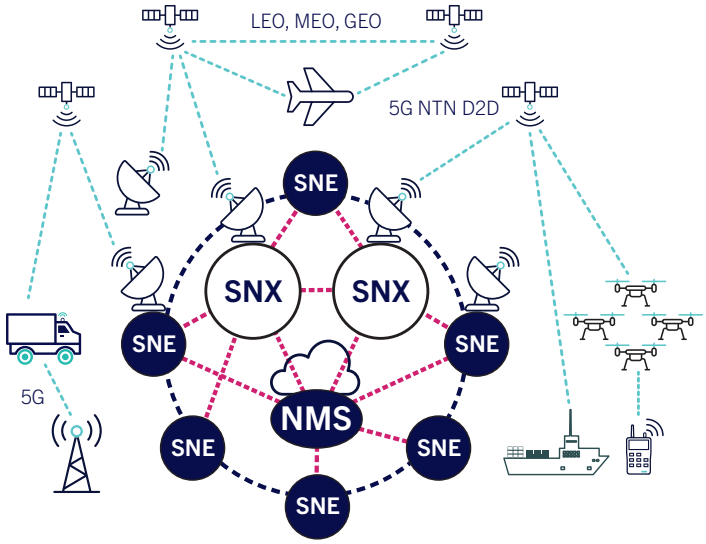
HUGHES
An EchoStar Company

Smart Network Exchange

The Hughes Smart Network Exchange (SNX) is a virtualized exchange point mesh router built on a modular and extensible management/control microservice architecture and a FIPS-certified, state-of-the-art routing and security engine. The SNX mesh router supports multiple transport types (wireline, Geostationary Earth Orbit (GEO), Middle Earth Orbit (MEO), Low Earth Orbit (LEO) satellite, 4G/5G, and Fiber), can actively monitor the underlying traffic, and perform policy-based traffic routing. SNX has a next-generation firewall and a local user interface for transport situational awareness. SNX allows devices or lower-level network functions to interact over the mesh fabric created by the SNX(s). SNX builds a transport agnostic mesh fabric that allows secure, authenticated, and protocol neutral communication between various user networks. A device on the user network "A" can talk with a device on another user network via a chain of SNX(s). The traffic routing, reporting, and Quality of Service (QoS) assurance across the various networks and protocols is enabled via the SNX(s) based on specified policies.

SNX supports inter-network traffic aggregation and orchestration, typically performed at ground, and in future space. It fits within the Hughes three-tier resiliency framework with Network Management System (NMS) at the enterprise level and Smart Network Edge (SNE) for the edge (tactical sites).



Roadmap Features (2026)

- SR-MPLS overlay network
- Up to 100 Gigabit overlay throughput
- Alignment with MPLS protocol framework
- Edge compute with cognitive engine capabilities
- Sensor data fusion for mission and networks

Benefits

- Route aggregation, load balancing, and traffic engineering
- Per Wide Area Network (WAN) link monitoring and QoS support
- Ready for GEO, MEO, LEO, 5G, and Terrestrial
- Extensible to support future network transports
- Autonomous operation for contested environments
- Comprehensive resiliency with NMS and SNE
- PACE policies (priorities, failover, time window)
- Reliable cyber, network, and Radio Frequency (RF) SA data collection

Current Features

- Overlay mesh network based on Internet Protocol Security (IPSec)
- Supports all major SATCOM underlay networks
- Starlink, OneWeb, Hughes HT/HM, 4G/5G/Wireline
- Integrated security (Next-Generation Firewall, IPS/IDS)
- Up to 5 Gigabit overlay throughput on x86 server
- Edge-to-edge, edge-to-network, and network-to-network topologies
- Modern containerized software for horizontal scaling
- Underlying traffic: MPLS, DISN, Internet, SATCOM, 5G
- Local situational awareness (via a secure web Graphics User Interface (GUI)
- Local policies (via web GUI)
- SA data reporting to Network Manager
- Centralized policies from Network Manager (orchestrator)

For more information, visit
www.hughes.com