PROTOCOL TRANSPARENCY THROUGH L2OS

ST Engineering

Overview

ST Engineering iDirect's Layer 2 over Satellite (L2oS) offers service providers the option to run an Evolution or Velocity network in an efficient Layer 2 bridging mode as an alternative to the traditional Layer 3 routing architecture.

This approach expands flexibility. A service provider can implement a variety of converged network architectures, pass any Layer 3 protocols desired, and easily modify Layer 3 architectures after deployment. Since data transport is decoupled from the overlaying network, L2oS enables new satellite service delivery models based upon carrier-grade Ethernet and facilitates converged services so that a satellite network can behave like a mainstream access network. A service provider can empower customers to configure their own networks without worry about impacting the underlying satellite network infrastructure.

How it Works

L2oS emulates a standard Ethernet connection across the satellite link, forming an end-to-end network and transparent pathway for Layer 3 traffic. ST Engineering iDirect equipment no longer participates in routing, or interferes with Layer 3 protocols and higher layer functions.

VELOCITY

EVOLUTION

powered by Newtec iDirect

Solution Benefits

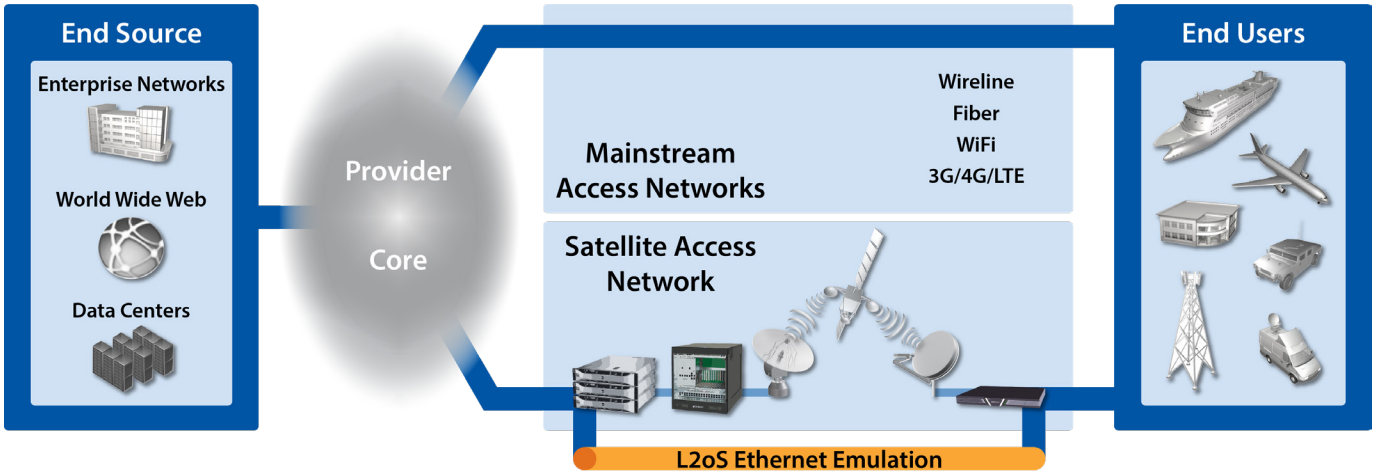
Transparent Layer 3 Delivery
Inherent support of protocols such as IPv4, IPv6, OSPF, BGP, and IPsec

More Virtual Network Options
Use physical access ports, VLAN tags, or Q-in-Q tags

Simplified Network Management
Reduced number of IP address assignments and less tunneling

Efficient Header Compression
Advanced header compression across Layers 2 to 4

Expanded Service Delivery
Deploy hybrid mix of Layer 2 and Layer 3 to best meet needs



The platform's Protocol Processors and remotes serve as Ethernet switches that maintain MAC tables to make forwarding decisions based entirely on the information in the Ethernet header, passing entire Ethernet frames over the air. As a result, the platform behaves not unlike a simple Ethernet cable from the port entering the hub Protocol Processor to the port exiting the site remote.

Virtual network connections are configured with VLAN or Q-in-Q tags and support L2VPN models such as Virtual Private Wire Service (VPWS) or Virtual Private LAN Service (VPLS). A network and remotes can support both Layer 2 and Layer 3 modes simultaneously, with configuration and traffic for each isolated through independent virtual networks. An L2oS-based satellite network behaves very similar to other access network technologies such as cable modem, DSL or Passive Optical Networks.

Efficiency is paramount for any satellite networks. Traditional optimizations critical to operation are not lost; rather they have been expanded. Group QoS now encompasses Layer 2 classifications. The same TCP Acceleration supported in the Layer 3 model are supported for L2oS links. In addition, L2oS minimizes bandwidth overhead associated with Layer 2 networks through intelligent MAC address learning and advanced header compression (ROHCv2).

When to Deploy L2oS

L2oS becomes an valuable tool, expanding support of Telco capabilities. A service provider gains freedom to deploy whatever meets the customer application, including building a mixed hybrid network to take advantage of the strengths of all aproaches. L2oS is best for maximizing protocol support, simplifying network architectures, and scaling tagging with customer edge tag transparency using Q-in-Q.

L2oS service case opportunities include:

- Layer 2 Ethernet Services
- Layer 3 VPN over Layer 2
- Disaster Recovery Backup
- Maritime
- Enterprise connectivity
- Mission Critical connectivity
- Cellular Backhaul

For more information about L2oS, please contact your Sales Representative at **sales@idirect.net.**

Newtec iDirect