Xtend Satellite Hub Data Sheet

Forsway

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Forsway Scandinavia AB, Kanikegränd 3B, 541 34 Skövde Sweden

Xtend Satellite Hub

The Xtend satellite Hub provides services for hybrid satellite/terrestrial Internet access. The solution is very well fitted for providing broadband access with high QoE to users in areas with an existing narrowband return channel. The Xtend Hub has been optimized for a wide selection of return channels. The most commonly used are GPRS, 3G, ADSL, and WiMAX.

The system is it easy for an operator to operate and includes everything needed to deploy a scalable hybrid satellite service.

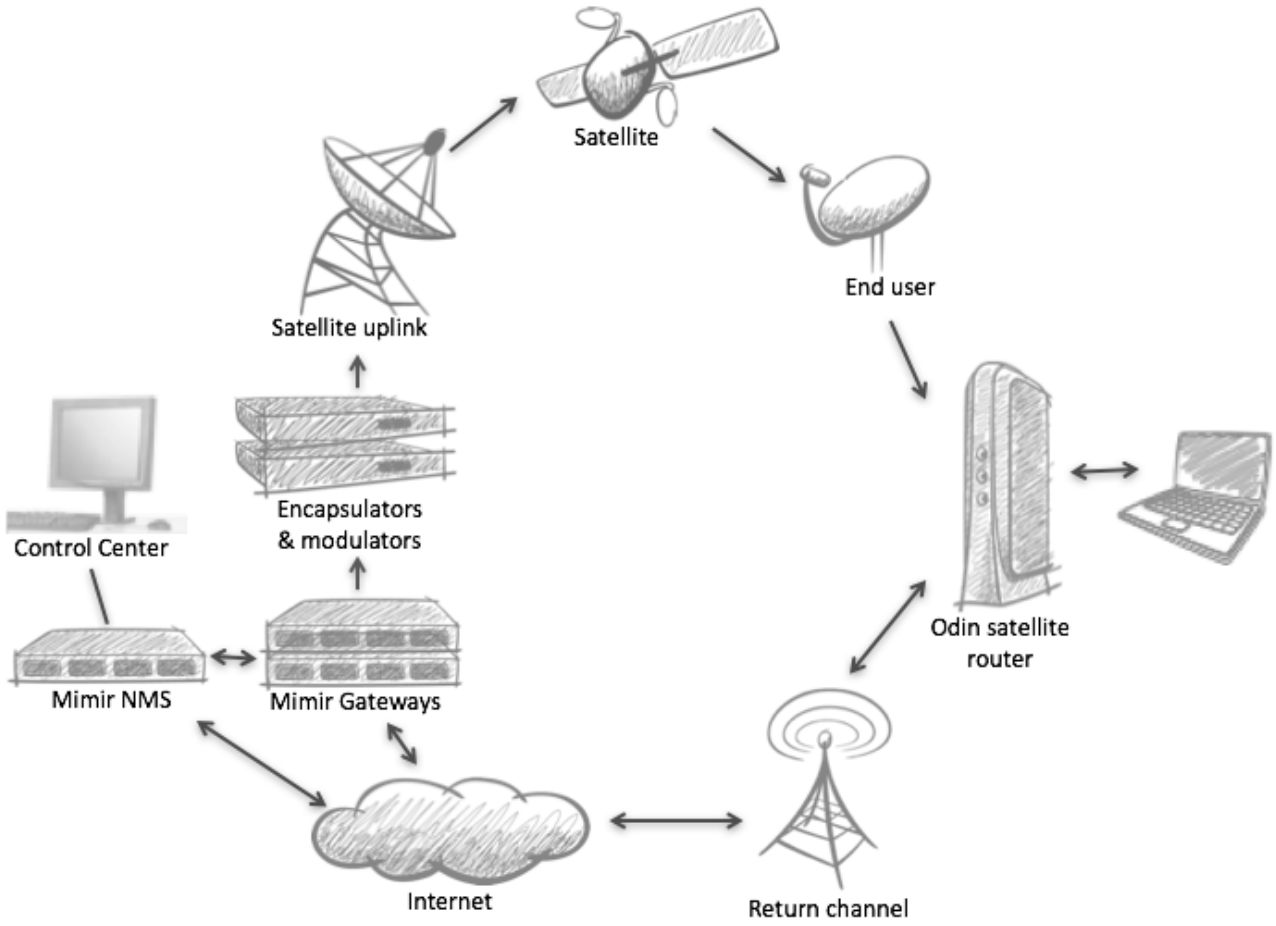
The system is pre-integrated with Forsway's Odin satellite router, and can be integrated with third-party satellite modems and set-top boxes.

System Components

Xtend NMS, the central management server for user management and operating a cluster of Xtend Gateways.

Xtend Gateway, all traffic flows through the gateway, optimizing for best possible QoE over a satellite link.

IP encapsulator and DVB-S2 modulator, for transmitting the Internet traffic as over satellite.



Overview

Asymmetric Routing

As a hybrid Internet over satellite service uses different transmission paths for the incoming and outgoing data it is important to in an efficient manner support reception of requests on one network interface, while outgoing transmission is done on another network interface.

Protocol Acceleration

The long distance to geostationary satellite has the effect that it takes approximately 240 ms for a signal to travel to the satellite and back to earth. The TCP/IP protocol is not designed for such a long latency and this will affect the possible maximum throughput. Protocol acceleration from a Performance Enhancing Proxy can greatly improve throughput.

On-Demand Satellite Bonding

Forsway Xtend can bond medium bandwidth return channels with the satellite service in an efficient way. When bandwidth usage is low all traffic will go over the return channel. When bandwidth demands increases to more than the return channel can provide, satellite is automatically activated and bonded with the return link to give the end-user the combined bandwidth of the satellite link and return channel. Latency sensitive protocols are always prioritized for the low-latency return channel.

Link Aggregation

The system supports different type of link aggregation, for example by combining the bandwidth of two mobile connections for improved uplink performance.

Terminal Auto Configuration

All satellite parameters are automatically sent to the terminal when connecting. The end user only needs to configure the return channel.

Security

The Xtend system allows secure authentication at login time from the user of PKI certificates. The certificates are preinstalled in the Odin satellite modems from factory and removes the burden of username and password management. All communication between the Xtend Gateway and terminal can be encrypted.

Multi-Transponder

The system can scale to supports multi transponder environments with automatic load balancing

between transponders, based on geographic properties of end users.

User Management

Xtend NMS includes a system for simple user provisioning, allowing the system administrator to configure and manage users, terminals, and different types of accounts and services. Third party provisioning and billing systems can be integrated through a provisioning API.

Simple Installation

The Xtend Hub is preferably deployed at the uplink site. The Odin terminal can be factory configured for a specific operator.

Encapsulation & Modulation

The Xtend Hub supports a variety of IP encapsulators and modulators.