

Technology Information Brief

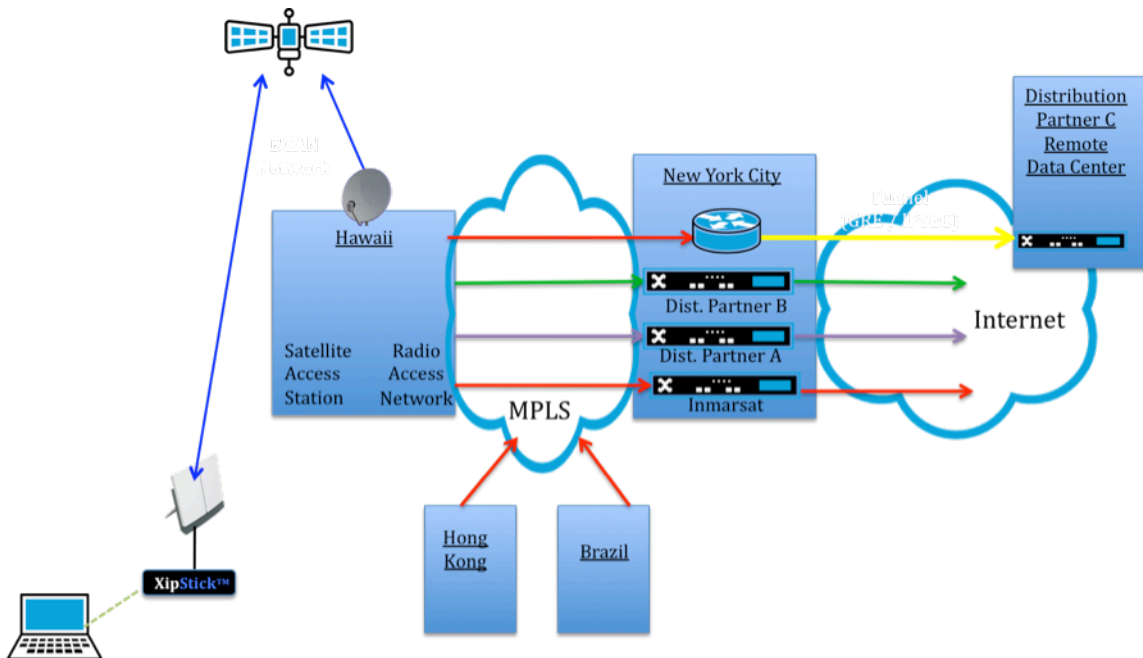
Optimizer Deployment Guide – Mobile Satellite Services

MSS Network Deployments - Introduction

XipLink’s wireless optimizer family continues to expand in direct response to customer needs, most recently combining Hub Optimizer quality of service features with a small portable wireless optimizer to deliver increased throughput to Mobile Satellite Service (MSS) users. These QoS features were originally designed to support optimization to users on different types of wireless networks in a single appliance, but using these same features an MSS Distribution Partner (DP) can quickly enable their network for some or all users to achieve higher throughput with a minimum capital investment.

Below is a simplified diagram of an MSS Satellite Operator network and interconnect topology. Once a Distribution Partner installs redundant Hub Optimizers in the satellite co-location facility or at their own point of presence, possibly over a Layer 3 tunnel, any remote user’s behind a XipStick™ or any user’s behind a small or medium XA-Appliance will have their combined TCP data transparently accelerated and optimized, generally achieving two to three times the available bandwidth, but often even higher.

From a networking perspective, traffic arriving from terminals assigned to each DP is authenticated by the Radio Access Network and subsequently delivered on an MPLS label switched path, or alternately over an Internet tunnel directly from the Satellite Access Station. At this point, the DP can use routing policies to determine whether to forward the remote user traffic to the Hub Optimizer or selectively bypass unauthorized users. This flexibility leads to the option of charging a fee for a premium service or simply increasing capacity to all users and upgrade the all of a Distribution Partner’s service offerings to be more competitive.



Wireless Optimization for MSS Distribution Partners

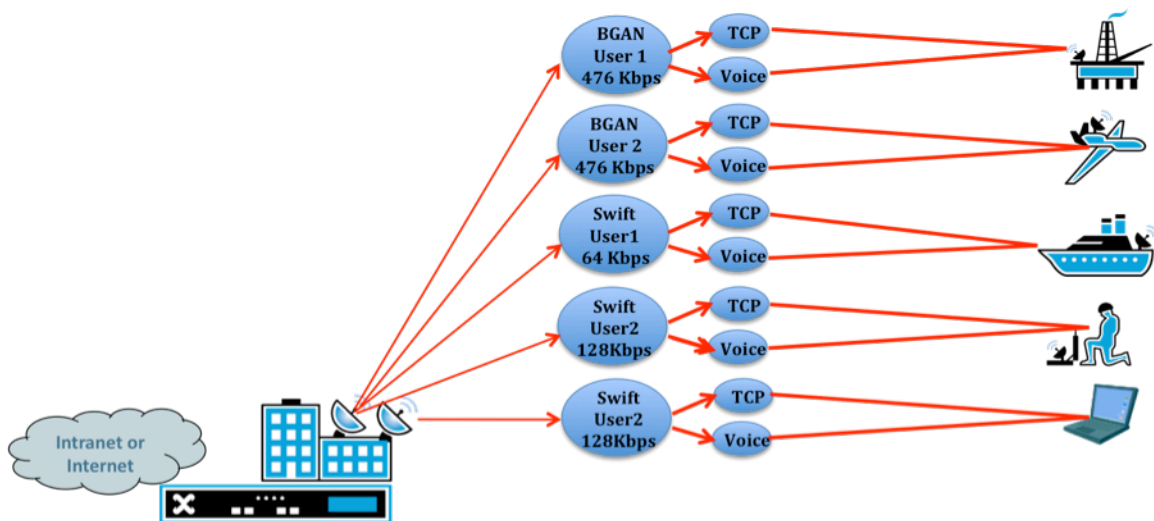
MSS Deployment Guide

MSS Network Deployments

On the Hub Optimizer, XipLink Optimization Software (XipOS) Version 3.0 enables the network operator to configure Logical Network Classes. In combination with the XipStick portable optimizer it is critical that a system designed for MSS operators enable the Distribution Partner to maximize the bandwidth to each mobile user by applying XipLink Transport Controls (XTC) to each individual connection. This is a very important configuration option that enables the operator to apply traditional wireless optimization techniques to each remote network connection, which are known to operate under widely varying conditions based on the local environment.

Originally designed for traditional space based wireless networks, a key XipOS design feature is Logical Network Classes, which are used to combine support for multiple remote wireless technologies. For instance a network operator may aggregate VSAT with TDMA as well as VSAT with Single Channel Per Carrier (SCPC) in a single Hub Optimizer at a teleport. To realize the full benefits of wireless optimization over MSS networks, the Hub Optimizer now uses the same logical functionality in a slightly different way.

Instead of a few very high-bandwidth sites aggregated together at a hub site, we now find hundreds of simultaneous mobile users aggregated at a single site, which may or may not be located at the co-location facility. An MSS Distribution Partner typically combines offerings like Swift64, BGAN and streaming services in a single appliance. XipOS is unique in the ability to allow a redundant appliance to optimize different service offerings on a single, easily affordable appliance while still taking full advantage of XipLink's core transport rate controls and error recovery algorithms, delivering the most throughput and service flexibility with the industry's lowest capital investment.



Typical MSS Deployment using Logical Wireless Classes

Conclusion

Based on the Space Communication Protocol Specification XipLink wireless optimization is transparent to users and easy to deploy from a central Hub Optimizer and works with integrated IPsec or any Type 1 encryption devices. For more information please contact us at xiplink@xiplink.com.