AMERHIS: An Interactive Regenerative Satellite Network For Mesh Communications. Operation And Applications

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This paper intends to demonstrate the high versatility of Amerhis satellite system for all kind of environments where high-quality multimedia capabilities are needed, specially for remote areas or those with very low telecom infrastructures. The operation and exploitation possibilities of Amerhis system will be presented.

Nomenclature

CRA = Constant Rate Assignment
FCA = Free Capacity Assignment
INAP = Interactive Network Access Provider
MS = Management Station
OBP = On Board Processor
PEP = Performance Enhancement Proxies
QOS = Quality of Service
RBDC = Rate Based Dynamic Capacity
RCST = amplitude of oscillation
RSGW = Regenerative Satellite Gateway
SCC = Satellite Control Center
SLA = Service Level Agreement
SNMP = Simple Network Management Protocol
SP = Service Provider
VPN = Virtual Private Network
VSN = Virtual Satellite Network

I. Introduction

A MERHIS System, integrated in AMAZONAS Satellite, was launched in the Summer of 2004, and it was the first regenerative payload in orbit performing on-board switching based on DVB-RCS/DVB-S standards. It is presently fully operational and giving multimedia services to four coverage areas located in Europe and America.

On Board Processing (OBP) switching technology offers the possibility of one-hop meshed connections among remote ground terminals located in the same or different satellite spots, using standard DVB-RCS user terminals and while supporting star connectivity in the same Network.

The main objective of Operators today is to provide multi-service connectivity, not depending on local infrastructures of each of the sites. In this way, a single Service Provider may cover the needs of all the remote sites, managed from a single point of operation.