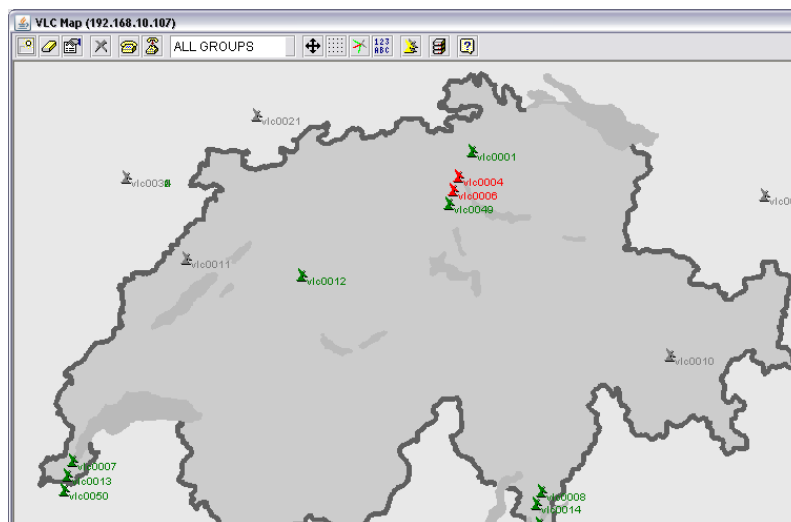


## **sat-nms NMS Network Management System General Overview**

SatService's **sat-nms** NMS Network Management System is a comprehensive software-based system providing monitoring and control of SCPC/MCPC VSAT stations and in general, Satellite Ground Station from a central site. The system consists of two parts:

- Network Management System (**sat-nms** NMS)
- VSAT Local Controller (**sat-nms** VLC)

A Network Management System is located at a central site that may or may not be located at the site of a satellite ground station. The **sat-nms** NMS uses the terrestrial telephone/ISDN system, the Internet, LAN, Satellite Channels or any other TCP/IP link as communication path for monitoring and controlling. Each site of a satellite ground station has a VLC installed. The VLC is connected via TCP/IP to the central Network Management System and via local serial interfaces connected with the equipment to be monitored and controlled at the site



### **Name Definition:**

A **sat-nms** VLC (VSAT Local Controller) is a Monitoring & Control System without a local user interface. It consists of a single, small sized computer and is specialized to be operated remotely from a Network Control System. It provides interfaces to the equipment to be controlled.

The **sat-nms** NMS (Network Control System) consists of one computer and some IP communication facilities and is used to control a set of **sat-nms** VLC VSAT Local Controllers remotely from a central location.

**sat-nms** Client: a computer running software that provides the **sat-nms** NMS or **sat-nms** MNC User Interfaces to control the satellite communication equipment at the remote locations via the **sat-nms** NMS.

The **sat-nms** NMS Server has the following functions:

- The **sat-nms** NMS monitors and controls each single SCPC/MCPC VSAT station from a central site
- The **sat-nms** NMS gathers all alarm messages from the different VSAT stations
- The alarm messages are stored together with a time/date stamp in the SQL database
- The operator gets a graphical and audible alarm and can dial into station
- The database can easily be scanned and searched with a user-friendly user interface for analysis

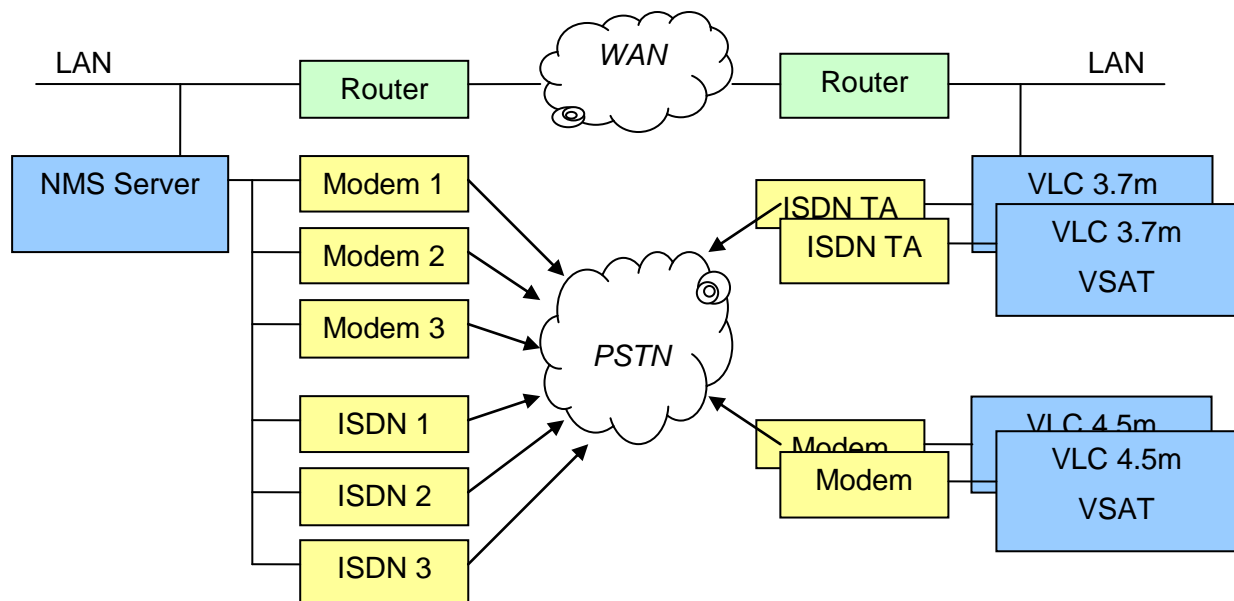
- The **sat-nms** NMS Operator has full control over all equipment and its functions and can monitor and change any equipment parameters as well as deletion of nodes without service interruption
- The **sat-nms** NMS Operator can store complete equipment configurations and can generate presets
- Traffic and Link Management as well as Bandwidth on Demand are available
- Communication System Monitoring (**sat-nms** CSM) is available

### **sat-nms** NMS Communication Links

The **sat-nms** NMS Network Management System uses the TCP/IP protocol for all communication between servers and clients. The communication channel between Network Management Server and the remote VLC / MNC is primarily realized via your IP network. If this network connection is not available for a remote location or not available due to a temporary failure, you can use one of the following dial methods:

- with analog telephone modems via terrestrial telephone network
- with ISDN terminal adapters via terrestrial telephone network

You can use the dial-up as primary or as backup connection. The **sat-nms** NMS will handle these communication packages automatically.



### **sat-nms** VLC - General Overview

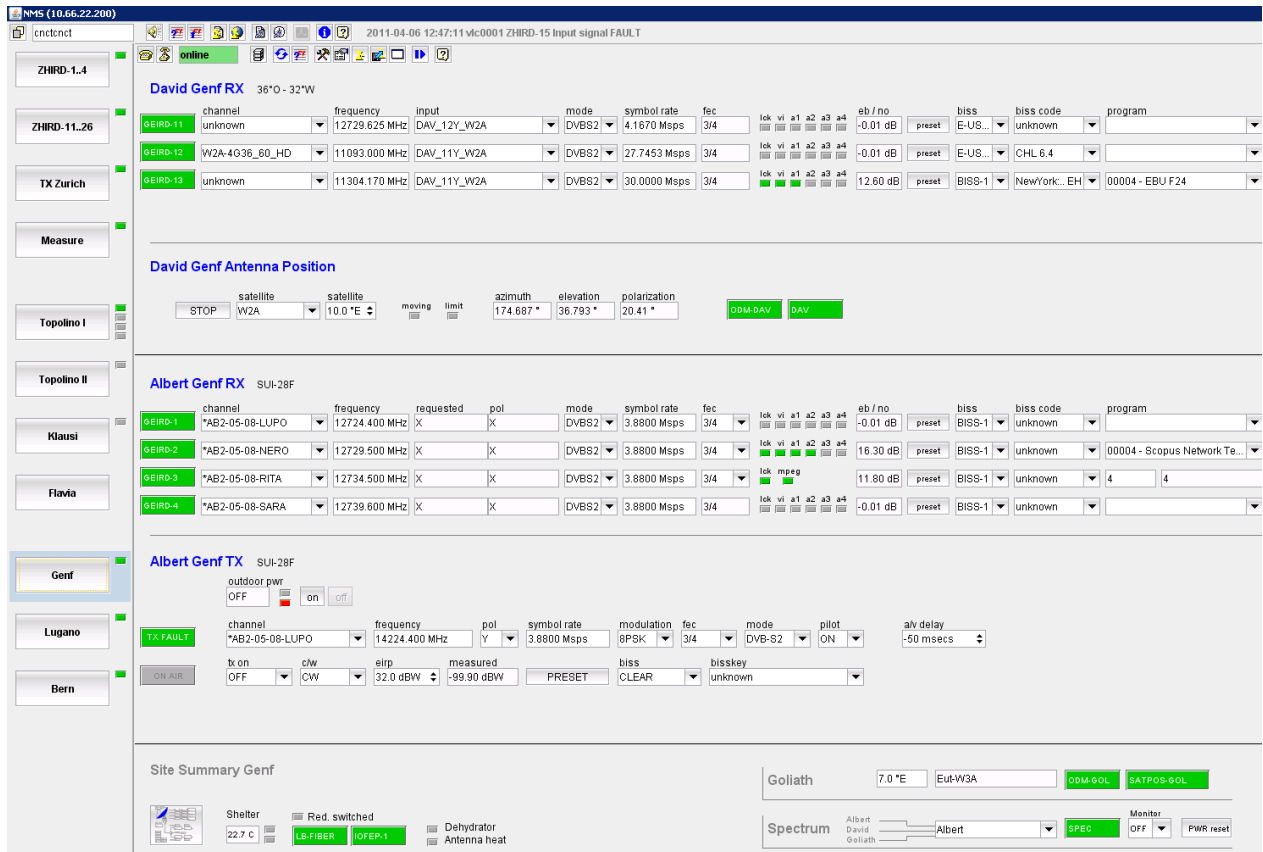
The **sat-nms** VLC VSAT Local Controller is in fact a **sat-nms** MNC Monitoring & Control System that works together with the **sat-nms** NMS Network Management Server. Therefore, the features of the **sat-nms** VLC are equal to the **sat-nms** MNC. For details please refer to the **sat-nms** MNC System General Description (MNC-OV-xx.pdf). This document provides information about the user interfaces, available software modules (logical devices) and device drivers.

### sat-nms NMS Classic View

In the classic view, each station will be presented in a separate window. These windows contain normal *sat-nms* MNC User Screen (task-oriented, device-oriented screens). For details, please refer to the *sat-nms* MNC Overview (MNC-OV-xxxx.pdf).

### Tabbed View

Another way to represent your station is the so-called tabbed view. Here you open one screen with a number of tabs and not one window per station. The following example contains an occasional used station with transmit and receive antennas and a channel database:



The screenshot displays the NMS Classic View interface for station Genf. The interface is organized into several sections:

- Sidebar:** A vertical list of station tabs including ZHIRD-1.4, ZHIRD-11.26, TX Zurich, Measure, Topolino I, Topolino II, Klaus, Flavia, Genf (selected), Lugano, and Bern.
- David Genf RX (36°0 - 32°W):** A table listing receive channels:
 

channel	frequency	input	mode	symbol rate	fec	lok	vi	a1	a2	a3	a4	eb / no	biss	biss code	program
GEIRD-11	unknown	DAV_12Y_W2A	DVB-S2	4.1670 Msp/s	3/4							-0.01 dB	preset	E-US...	unknown
GEIRD-12	W2A-4036_60_HD	DAV_11Y_W2A	DVB-S2	27.7453 Msp/s	3/4							-0.01 dB	preset	E-US...	CHL 6.4
GEIRD-13	unknown	DAV_11Y_W2A	DVB-S2	30.0000 Msp/s	3/4							12.60 dB	preset	BISS-1	NewYork...EH
- David Genf Antenna Position:** Configuration for satellite W2A at 10.0°E, with azimuth 174.687°, elevation 36.793°, and polarization 20.41°.
- Albert Genf RX (SUI-28F):** A table listing receive channels:
 

channel	frequency	requested	pol	mode	symbol rate	fec	lok	vi	a1	a2	a3	a4	eb / no	biss	biss code	program
GEIRD-1	*AB2-05-08-LUPO	X	X	DVB-S2	3.8800 Msp/s	3/4							-0.01 dB	preset	BISS-1	unknown
GEIRD-2	*AB2-05-08-NERO	X	X	DVB-S2	3.8800 Msp/s	3/4							16.30 dB	preset	BISS-1	unknown
GEIRD-3	*AB2-05-08-RITA	X	X	DVB-S2	3.8800 Msp/s	3/4							11.80 dB	preset	BISS-1	unknown
GEIRD-4	*AB2-05-08-SARA	X	X	DVB-S2	3.8800 Msp/s	3/4							-0.01 dB	preset	BISS-1	unknown
- Albert Genf TX (SUI-28F):** Configuration for transmit channels, including channel \*AB2-05-08-LUPO at 14224.400 MHz, modulation 8PSK, and pilot ON.
- Site Summary Genf:** Overview of site status including Shelter (22.7 C), Red switched, Dehydrator, and Antenna heat. It also shows antenna positions for Goliath (7.0°E, Eut-W3A) and Spectrum (Albert, David, Goliath).