

**Evanti Comprehensive Suite for Providers of Satellite Internet
Access**

Overview

Evanti suite (the System) is designed for operators furnishing/planning to provide telecommunication services via satellite data transfer channels.

The system ensure efficient management of the whole range of operator (Customer) services, including wholesale broadband Web-access, satellite channel lease, VPN, SNG, SIP. The solution combines an optimal purchase price, low operational costs and fast ROI.

Key System features are:

- High availability proven by actual usage experience
- Maximization of a satellite channel utilization
- Support of any number of various technologies for base communication network setup (hubs/satellites, fixed-line communication, mobile communication) within a single business-model and process management architecture
- Prompt and flexible subscriber connection technology
- Flexible service plan setup and management options
- Flexible setup and management of extra services
- Wide range of predefined service plans and models to manage extras
- Integrated tools supporting:
 - Internal business process
 - Sales network
 - Customer loyalty management
- Integrated customization and localization tools
- Fully-fledged API
- SaaS/IaaS-based service models allow providing VNOs with a ready-made solution that requires no investment in infrastructure
- Adapted to virtual environments, the solution is highly resistant to hardware and software failures, while it can be easily upgraded capacity-wise

The system is designed to operate service supply to various types of Customer clients/subscribers and to their VNOs, including:

1. VNOs
2. Sales representatives (dealers, agents, installers)
3. Corporate subscribers
4. Individual subscribers

The Solution allows Customers and their VNOs to build a unified technical platform for providing the following services:

1. Satellite capacity priced per Mbps, Mb or MHz
2. Broadband services for individual and corporate subscribers
3. Setup of turn-key segments of corporate networks
4. Comprehensive SaaS/IaaS solutions supporting broadband operator businesses

Customers and Services

The system allows servicing a wide range of Customer subscribers and architecture users, in particular:

1. Operators with previous experience in the broadband satellite access market and planning to extend their product line by using the satellite
2. Operators having no previous experience in the segment and facing the following challenges:
 - a. Applied/local issues that require involvement of satellite capacities (e.g., last mile);
 - b. Penetration into the satellite broadband access segment (e.g., DHT operators).
3. Corporate subscribers that are interested in using satellite capacities to build corporate networks (in particular, segments of networks involving satellite broadband technologies, including VPN and channel leasing).
4. Private subscribers.

The System allows providing the above groups with the following services:

1. Satellite single/multiple beam capacities (in particular, Mobile Backhaul, VPN, etc.) with billing based on:
 - Mbps
 - Mb
 - MHz
2. Customizable set of extras that are not directly related to Web access (delivery, installation and setup, direct IP, static IP, etc.)
3. Management of processes related to equipment storage, sales, bundling and shipment
4. Comprehensive SaaS/IaaS solution to provide broadband telecoms services via satellite
5. Turn-key network segments using satellite broadband technologies, in particular, VPN
6. Broadband access to corporate and individual subscribers

The above billing options are available at downlink and uplink channels; a wide range of extras can be billed as well.

Also, the System allows providing fully-fledged services to regional representatives (agents dealers) and other operators. It offers Customers/VNOs a range of convenient tools to build relationships with their representatives either via the System interfaces (Web-based GUI) or via REST/SOAP models.

Billing Policies

The System supports the following billing policies:

- VNO billing policies (calculation of fees for operation of the leased satellite capacity) including billing based on Mbps (CIR/MIR), Mb (used traffic), MHz (reserved range passed through a transponder)
- Subscriber-level billing policies (including "multi-subscribers" and collective access points):
 - Mbps and Mb (CIR/MIR) policies
 - Billing of extras not directly related to access supply (delivery, installation and setup, direct IP, static IP, etc.)
- Dealer-level policies (reward calculation methods) based on MB or Mbps performance

The System allows implementing both pre-paid and post-paid billing policies.

The standard System configuration supports the following billing policies:

- Operator-level policies:
 1. Telecoms channel post/pre-paid sale. The system supports both committed information rate and maximum information rate setup options.
 2. Pre-paid traffic sales when a fixed amount of traffic for a reporting period is sold; MIR and CIR can be configured.
 3. Post-paid sales with MIR and CIR specified; fee is charged on actual basis at period end
- Subscriber-level billing policies (each policy supports setup of CIR and MIR):
 1. Pay-per-Traffic. This service plan has no specific period; access is not blocked as long as a subscriber has funds on their balance. Traffic unit pricing depends on the time of the day and speed selected by a subscriber. Subscribers can change the speed any time, as needed.
 2. Pay-per-Traffic Light. A light version of the above option with a single traffic unit price and no speed change option.
 3. Traffic Package. Under this plan a fixed traffic amount is supplied at a specified CIR and MIR. The amount and billing period have to be defined.

4. Day Plan. Under this plan the period depends on subscriber fee with access blocked upon expiration. A subscriber has a daily limit of high-speed traffic. Once exhausted, a subscriber is switched to a lower priority/slower speed + FAP . For additional fee, a subscriber can buy more traffic or high-speed time. Unlimited options in off-peak time can be offered.
 5. Complex. Under this service plan the period depends on a subscriber fee (usually, a month, though other options are supported). Access is blocked at the period end or at the traffic package exhaustion. A subscriber can go on using the Web upon exhaustion of the main package by either paying for additional traffic at a fixed price from their balance (then the available traffic volume depends on the balance), or by buying a new traffic package.
 6. Unlimited. This service plan applies unique algorithms of FAP use. Depending on settings, the plan can either be customized for surfers or for video-streamers. .
 7. Dynamic. Under this plan a subscriber can either choose (bid) price or preferred speed. The choice (bid) can be revised any time. Depending on the actual channel utilization and subscriber preferences (bids), the System dynamically changes traffic pricing for different speeds.
- Three predefined rules exist to bill operator extras:
 1. Non-recurrent charging of a specific amount
 2. Monthly charging:
 - a) unlimited
 - b) specific number of periods
 - c) till a specific date
 3. Even distribution of a specified amount
 - a) across a specific number of periods
 - b) till a specific date
 - Regional representatives can get rewards under the following payment models (reward policies):
 1. Fixed percentage of amounts subscribers spend for telecoms services
 2. Non-recurrent reward for acquiring a new subscriber
 3. Flexible rate depending on the amount of acquired subscribers either with an agreed-upon sales plan or without it

Customer and operator staff can create service plans on their own (without developer assistance) by editing parameters of billing policies.

System Architecture

See Figure 1 below for the software module chart.

The high-level System architecture includes the following basic components:

- QoS: traffic optimization solution
- Billing: balance management module
- Modules ensuring connection with over 20 payment systems, including payments from balance accounts of mobile operators
- Monitoring system
- Customer request processing system
- Set of management interfaces (BSS, corporate web-portal)
- Customer (external) web-portal

An implemented architecture ensures the following:

- Alteration of any module without considerable impact on modules not directly connected to it
- Replacement of any module by external software by aligning a corresponding API
- Considerable extendibility of a modular structure, ability to develop/connect additional System modules created on demand

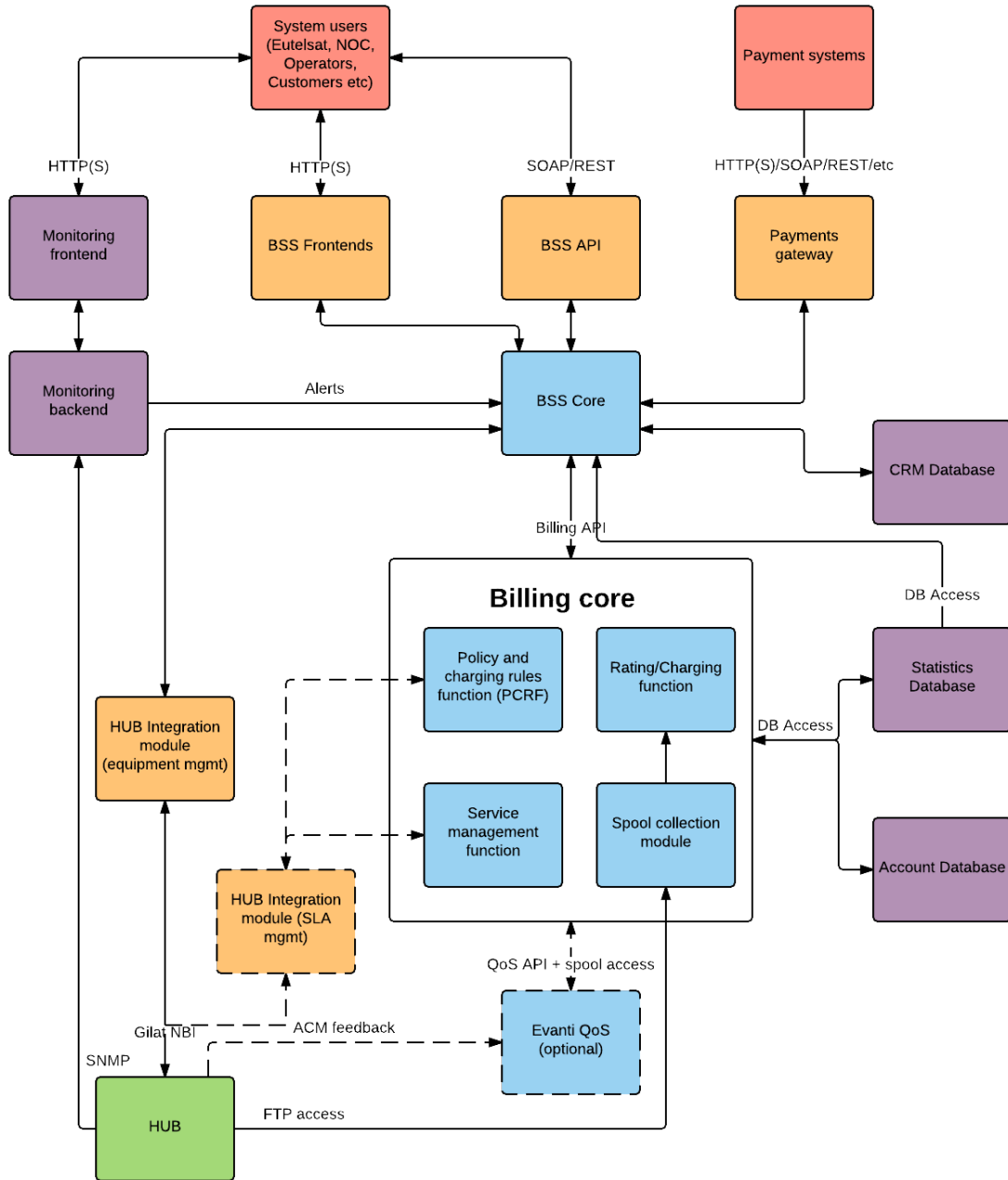


Figure1

The standard System version supports interaction with the following hubs:

- Advantech Discovery

- Hughes JUPITER Worldwide system
- Newtec Sat3Play
- ViaSat SurfBeam 2
- Gilat SkyEdge II-c c

The System's modular architecture ensures its prompt integration with other models of the above hubs and/or with hubs of other manufacturers, as needed to a Customer.

Interaction with the hubs is carried out in two modes:

- Standard mode involving a proprietary quality management tool (QoS Server)
- Backup mode relying only on functionality of the hub NMS

The System supports two interface groups:

- Web-interfaces
- API

Coupled to a fully-fledged API, the modular architecture ensures easy installation of additional modules for integration with antenna management tools, monitoring systems, CRMs and third-party software.

Service Architecture

The System allows managing the following inter-related entities within operator infrastructure:

- Operator: telecoms company using satellite capacity to provide Internet access to their subscribers under a direct contract with the service Provider and in virtue of their own license to offer telecoms services
- Sub-operator: operator that uses satellite capacity under a contract with another operator (not Customer)

Note:

VNO (Virtual Network Operator) will further define both operators and sub-operators.

- Agent: regional Customer/VNO representative that carries out the following functions under an agent agreement for a fee:
 - Subscriber acquisition
 - Sales, deliveries, installation of subscriber kits
 - 1st tier subscriber support
- Dealer: regional Customer/VNO representative that carries out the following functions under a service agreement for a fee:
 - Subscriber acquisition
 - Sales, deliveries, installation of subscriber kits

Note:

Agents and dealers will be collectively referred to as Regional representatives further in this document.

- Subscriber: user of broadband Web-access services provided via a satellite channel and one subscriber kit. The Solution allows differentiating private and corporate subscribers (as defined by the Russian law).
- Multi-subscriber: a subscriber who uses several equipment kit to access the Internet and pays from the single account.
- Device: subscriber device used to access the web using the satellite connection service
- Collective access point: subscriber device used by several subscribers with separate accounts

The System supports the following relationships between the above entities (see also Figure 2 below):

- Customer - operators
- Customer- subscribers
- Customer collective access points
- Customer - regional representatives
- Customer - multi-subscribers
- Operator - subscribers
- Operator- collective access points
- Operator - regional representatives
- Operator - multi-subscribers
- Operator - sub-operators (unlimited number of hierarchy levels)
- Sub-operator - subscribers
- Sub-operator - collective access points
- Sub-operator - regional representatives
- Sub-operator - multi-subscribers
- Agent - subscribers
- Agent - collective access points
- Agent - multi-subscribers
- Agent - agents/sub-agents
- Agent - dealers
- Dealer - subscribers
- Dealer - collective access points
- Dealer - multi-subscribers
- Subscriber -device
- Multi-subscriber - devices

- Collective access point - subscribers (multiple accounts)

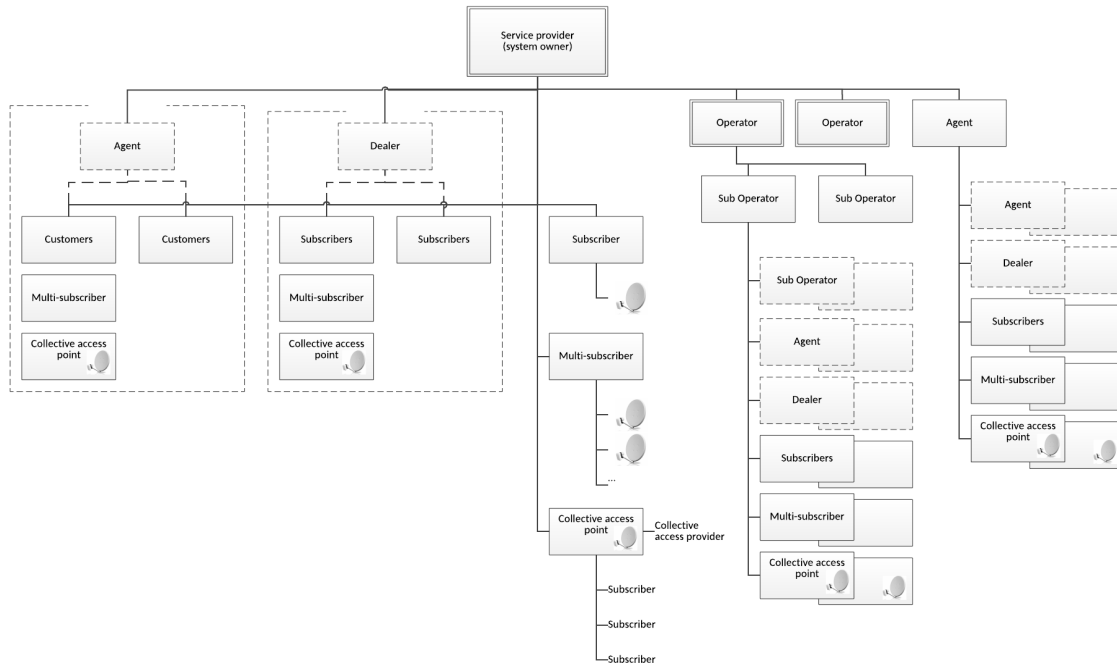


Figure 2

Additional System entity is an installer (not indicated in the figure above) represented by either sole trader or a company that offers equipment installation and setup services to operators, agents and dealers.

The System built-in tools ensure support of hot-spots either directly connected to subscriber terminals or operating as collective access points.

Interfaces

The System offers a user-friendly web-based GUI for internal users and for the NOC service (Administrative GUI) that ensures efficient performance of Customer staff.

The System's administrative GUI provides seven views of supported business processes tailored to various user groups:

1. Executives
2. Financial specialists
3. Marketing & sales staff
4. Telecoms service users
5. Potential customers at the stage of equipment purchase and connection
6. 1st tier support staff
7. Technical support staff (Network Operation Center – NOC) responsible for monitoring, system management, and for 2nd and 3rd tier user support

Support functionality includes an expert system that allows operators to promptly and effectively respond to user requests, as well as to reduce operator service costs without impairing their QoE (fast fix to up to 99% issues).

All subscriber/client categories can access the GUI via the single external web-portal (Customer GUI).

The Customer GUI ensures that subscribers can:

1. Independently order connection to the service by:
 - a. Ordering equipment via the web-portal
 - b. Ordering equipment via web-sites of the sales network (interaction powered by the API and html-code)
2. Independently activate the purchased equipment without addressing the NOC or support staff
3. Get support to all types of personal accounts

Personal account pages allow subscribers to independently manage parameters of their service, obtain online usage and balance statistics, make payments and order extras in one click, as well as to request any necessary technical support.

The System offers centralized generation of accounting documents (invoices, proformas, acts). Once generated, documents are displayed in personal subscriber accounts, available for search, printing and mailing.

Subscriber account pages provide easy access to interfaces of electronic payment systems, allow recharging balance via previously issued scratch-cards.

Options available to each subscriber/client category are determined by dynamic right (role) settings defined in the Administrative GUI.

In the current System version the Administrative and Customer GUIs support Russian and English; the System architecture allows adding additional versions promptly.

Delivery and Support

A typical System instance can be deployed and integrated with one of the predefined hubs within 60-90 days.

Additional services can be offered to Customer in the course of deployment and configuration:

- Follow-up development and customization
 - Development of additional service plans and VAS
 - Development of additional modules for integration with payment systems and banks
 - Automation of additional customer-specific business processes
- Staff training

Technical support of the System is offered 24/7 in compliance with a wide range of support pricing options (SLA).

Summing up

Thanks to its unique features, the System ensure operator efficiency by:

- Attaining maximum commercial efficiency of an available satellite capacity (defined by a fixed throughput and costs)
- Stimulative efficient partnership with maximum number of operators, subscribers and partners (agents, dealers, installers) operating within the reach of the satellite capacity
- Optimizing costs related to the System usage and business-processes it supports

With the SaaS/IaaS-model in place, interface data is available to all System users in compliance with their access rights.

Given the System high availability, it can be delivered and deployed within a quarter or two (depends on the agreed-upon amount of extra services).

The System developer, Evanti LLC, has a wealth of proven experience in implementing and operating systems for satellite channel management supported by testimonials of Russian and foreign customers.

Actual experience of the System use in the B2C customer proved its commercial efficiency in the segment of congested broadband channels with low ARPU, large number of subscribers with weak IT competencies, high sensitivity to price, service quality and range.