

## **Summary**

This document is a brief coverage of key aspects of Evanti QoS solution designed for satellite data transfer networks. Both standalone and integration options are considered.

It has the following sections:

1. Background and key features
2. Success stories

## **Background and Key Features**

The history of Evanti QoS begins in 2005, when Raduga Internet, Russia's leading satellite provider, implemented its first shaping solution for mass-market service. By now, Evanti QoS has more than 10 years of successful operations with 3 satellites providers, servicing more than 1m end-users in a number of countries.

Satellite capacity price is the key challenge for retail satellite telecom providers. Unlike in many other segments of the telecom industry, satellite channel costs may account for more than 80% of overall provider expenses. Therefore, requirements to QoS solution features and performance in this segment are strict and specific. However, with a solution that meets these requirements at hand, a mass-market service provider can benefit from substantial advantages. Key features to providing a satellite ISP with a competitive edge:

1. Flexibility level meeting the needs of the retail segment

Unlike the corporate market, where most service plans and policies imply but fixed speeds and infrequent changes of conditions, retail service usually requires a higher degree of flexibility and adjustability at the policy level. Retail QoS solutions must accommodate for limitless combinations and interference of different policies operating with a very high performance, so as to adapt to a constantly changing environment in the

capacity, demonstrating a decent level of QoS to each and every active subscriber.

## 2. The highest possible channel utilization

As mentioned above, the channel is costly regardless of its actual utilization. Thus, a minor change in utilization can dramatically impact the overall profitability of the service. To boost utilization, providers are forced to apply various marketing tools: offer different service plans and conditions to efficiently use the capacity. QoS software is among the technologies used to implement these tools.

After years of high market efficiency and successful competition, the Evanti QoS solution successfully meets these requirements and resolves major challenges. To ensure operational excellence amidst a more and more demanding market environment, Evanti continuously improves its QoS software by adding new features and working on the overall performance.

Below are the highlights of the 2015 version of the QoS solution designed and implemented by Evanti to rise to the current and anticipated challenges in the mass- market satellite telecom segment:

### 1. Multiple level hierarchy

In a hierarchical structure of a typical service that starts at the capacity owner/lease and includes operator/s, subscribers, terminal/s and, finally, device/s using different services, our solution ensures a comprehensive capacity distribution at each level. It allows for both providing a granted capacity at each point and managing the shared capacity between several points in a flexible manner. Note that the shared bandwidth is not randomly supplied to all receivers, but is accurately and predictably allocated to them with regard to priorities and limitations configured at each point. Thus, at each service level, the contention ratio compliance is ensured by offering the minimal required percentage of the shared bandwidth.

Technically, the number of nesting levels is unlimited. At each level a whole new hierarchy with a multi-level management point architecture can be created to implement complex organizational structures meeting business requirements.

## 2. High performance management interface

As mentioned above, the Evanti QoS solution is designed to manage numerous subscribers alongside complex service plans. Against this backdrop, the QoS solution is supposed to promptly and flexibly change service parameters for multiple subscribers ensuring, at the same time, uninterrupted service.

## 3. HTS-ready

With numerous high-throughput satellites to be launched in the immediate future, it is vital to make sure that a QoS solution uses minimum resources per capacity managed. The Evanti's product has been significantly revamped to simultaneously manage hundreds of Mbps of bandwidth with a basic hardware configuration.

## 4. ACM support

This feature is paramount for modern satellite operations, as it ensures the full utilization of a capacity that changes constantly due to weather conditions in vast territories (even for Ka-band).

## 5. Full redundancy

High reliability/availability of the solution is ensured through the implementation of redundancy 2N and N+1 configuration options. Switchover is carried out transparently without interrupting subscriber's connection (switchover time <2 seconds). It allows to use Evanti QoS software in projects with Telco-grade requirements.

## 6. Volume accounting and access management

For the purposes of integration with high-level management system, the QoS solution is capable of collecting and storing statistics, blocking/unblocking users at different hierarchy levels.

## **Success Stories**

Being an element of our OSS/BSS suite, Evanti QoS can be implemented as a standalone product requiring no in-depth integration. Our team is also ready to perform integration projects of any complexity level.

### **1. Raduga Internet, Russia**

Founded as far back as in 2005, Raduga Internet is the nation's largest provider of hybrid and VSAT-based satellite telecommunication services. The company acquired a subscriber base topping 400K, and it runs 12 various platforms based on the single system and QoS. Its QoS and other technologies provided the company with a competitive edge due to efficient bandwidth management and distribution and allowed it to prosper through crisis.

### **2. AMOS-Spacecom, Israel**

Spacecom runs the world's largest network of virtual operators that provide satellite telecoms services in Africa. Our QoS solution ensures efficient bandwidth utilization, as well as implementation of a wide-range of competitive service plans. Creation of a comprehensive cloud service management system that includes QoS. Thanks to the QoS, the system can be flexibly adjusted to particularities of African markets.

### **3. Advantech Wireless, Canada**

Our joint initiative with Advantech is an example of integration of Evanti standalone QoS solution into a VSAT hub; the resulting architecture uses limited hub hardware resources to flexibly and effectively manage thousands of terminals receiving traffic via high-throughput satellites. According to the customer requirements, we ensured QoS backward compatibility with the previous solution for the fastest migration.