



All photos courtesy of the GVF.



# GVF Network Validation initiative

Over recent years, satellite industry association GVF has spearheaded initiatives to address challenges within the satellite industry such as interference. One of their latest programmes has been focused on Network Validation – an integral part of running an efficient communications network. Satellite Evolution takes a closer look.

**In any well-oiled machine, all the cogs** must turn in the right direction in order to make it work properly. The same goes for satellite communications networks. All the different components must be suited to their job, installed properly, maintained and monitored so that they work effectively. However, this does not always happen. There are, unfortunately, many cases where networks are installed badly, then neglected and result in cases of interference and a poor service for the end-user. Yet this is an easy problem to remedy, and GVF has brought together a Network Validation initiative that is tackling these very issues, to ensure that satellite networks are installed, maintained and monitored in order to deliver the best end-user experience possible.

### Question: Why is the GVF Network Validation initiative necessary?

**GVF:** Today, too many users of satellite networks suffer a poor service due to badly installed satellite systems that cause interference and result in an inefficient network. This

can lead to applications that do not work, service interruptions, increase in operating costs, low network reliability, productivity loss, dissatisfied customers and a loss of business.

### Question: What causes interference and why is it increasing?

**GVF:** Interference can be caused by various factors. Firstly, and probably most commonly, it is caused by improper installation of hardware, where satellite terminals are not installed accurately. Substandard equipment may also cause interference as can networks that are dysfunctional. In addition, interference may also be caused by unidentified carriers and wireless interference.

Interference is on the increase due to four main points. They are:

- Hardware costs – VSAT terminal costs have dropped to well below \$1,000, and therefore the margin for installation services is also dropping;
- Installer Fees – years ago, an engineer

might spend days on site running Satellite Systems Operations Guides (SSOGs). Now installers are often junior technicians and are paid as little as \$50 for a complete VSAT installation;

- Deployments – With over 100,000 VSAT terminals installed per year, anyone can cause serious interference; and
- Satellite sensitivity – Spotbeams make satellites more sensitive to uplink signals which helps reduce size and cost but it makes transponders more sensitive to interference.

All of these factors combine to greatly multiply the number of accidental interference incidents.

### Question: How does GVF's Network validation initiative work?

**GVF:** The Network Validation Quality Assurance initiative aims to solve network problems by addressing the root problems that are occurring. Therefore, the methodology is important and will consist of four steps:



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- Planning;
- Technical analysis;
- site visits; and
- Co-ordination and reporting.

The Planning element consists of the interviewing of individuals and user groups at the client's end, as well as key people responsible for the network and team members at the service provider end. This will help the GVF team to understand the applications and the priorities with respect to criticality for the end user, perhaps resulting in the fine-tuning of the network design to help it run more efficiently and effectively. In addition, the GVF team would also study the client's initial contract and use this to benchmark the delivered services. After this process has been completed, a gap analysis will take place and the problems in the service delivery identified.

The second step involves technical analysis where a review of the technical specification of the network is undertaken on factors such as link budget, latency, and ping response.

Then a series of site visits to remote lo-

cations are conducted where the state and quality of the installation is assessed as well as the quality of maintenance and associated components such as connectors and their weatherproofing, placement of outdoor and indoor equipment and checks on

waveguide and power.

Finally, a series of tests will take place on antenna optimisation and pointing. The team can also check for interference - if there is any - they conduct tests on the link, and measure how applications perform from the remote site.

After these processes have been completed, the emphasis is on co-ordination with all partners involved in the network from the service providers involved to the manufacturers of the equipment. GVF brings the service provider and the end-user together to discuss the findings of the tests and to explain the solutions that can be offered. It gives the GVF team the opportunity to explain the limitations and capabilities of the network so that they can be discussed.

Once everything is reported, recommendations can be suggested and then a report feeding back every finding is provided in both

hard and soft copy. GVF will then provide follow up and provide advice on methodology and approach for the efforts required to gain optimum performance of the network. GVF also promotes capacity building through its own training and certification courses.

### Question: What are the benefits and advantages of the initiative?

**GVF:** The benefits of undertaking a Network Validation Initiative are numerous. First of all, from the user's point of view, quality of service improves.

The network can also be re-sized to meet the bandwidth requirements of the user. From the provider's point of view, steps can be taken to mitigate interference, to make optimum use of the resources available and to save money on equipment. The long-term maintenance of the network ensures long-term customer loyalty which in turn secures a steady revenue stream and ensures repeat business.

When the end-user is having a good experience with an efficient, stable network, they can increase productivity. It results in a win-win for everyone involved.

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