



Case Study: DVB-T Repeater Station Remote Management

Arctic GPRS Gateway Helps Digita Save Costs in Network Management through Remote Troubleshooting

Digita, the leading Finnish distributor of radio, television and broadband services, has now a reliable way to monitor remotely its nationwide network of 70 DVB-T repeater stations.

Digita operates a broadcasting network for terrestrial television (DVB-T). Digita's nationwide DVB-T network comprises 38 main broadcasting stations and 70 repeater stations.

The repeater stations extend the network coverage into areas where the signal from the main broadcasting stations would otherwise be too weak. A repeater station listens to the nearest main broadcasting station and then simply sends the received transmission signal unchanged out into the air.

When TVs go blank

Digita's repeater stations are often located in remote places where it is too expensive to build fixed line connections. "The repeater stations, being relatively new technology, are surprisingly prone to faults. If a repeater station fails, people's television sets go blank. In case of a failure, we want to have our repair team on the road well before people start calling us," explains **Esa Maunula**, Manager of Network Management Systems at Digita.

It's all about SNMP traps

One or many repeater devices at the repeater station are connected to an Ethernet LAN. When an abnormal event occurs, it triggers a repeater to send a Simple Network Management Protocol (SNMP) trap. The SNMP trap is sent to HP OpenView, a software for network node management, located at the Digita Network Management Center.

Alarms, alarms, alarms

Examples of an abnormal event: repeater transmission power failure, no incoming transmission signal or high repeater device temperature. In addition to the event-triggered alarms, Digita also polls device status on daily basis.

Competitively priced, Always-on connectivity

In early 2004 Digita commenced its search for a suitable remote connectivity solution. A technical screening was conducted first and then an invitation for tender was sent to the selected candidates.

"Viola beat the competition as its product, the Arctic GPRS Gateway, was priced competitively, is fully compliant with the SNMP standard, and offers always-on connectivity," Maunula remembers.

"Many candidates offered GSM data, a legacy dial-up-not-always-on technology that simply won't work with delay-sensitive network management systems."



Esa Maunula, Manager of Network Management Systems at Digita, is satisfied with the instant deployment and high reliability Arctic GPRS Gateway

"Unnecessary and costly onsite service visits can now be avoided as we can check our repeaters' operational status remotely," explains Maunula.

"In addition, getting service outage alarms on time is vital for us since it helps us to keep the tight Service Level Agreements we have with our demanding customers," Maunula adds.

Industry:	Telecommunications
Customer:	Digita
Solution:	Arctic GPRS Gateway with extended I/O + Viola M2M Gateway

Instant deployment, robust design

Digita placed its first order for the Arctic GPRS Gateways in September 2004. At the time Digita was building a small DVB-H pilot network, a digital broadcast network for handhelds. The DVB-H pilot network offered an excellent playground where the first Arctics were put through extensive field tests.

"We were somewhat surprised of the instant deployment and ease of use the Arctics delivered during the tests," Maunula endorses. "The Arctic GPRS Gateway is a robust embedded system clearly designed for harsh and demanding environments."

Extended with Digital I/Os

The Arctic GPRS Gateway that Digita uses is extended with digital inputs and outputs.

This allows Digita to do extra things like check whether supply of electricity to the repeater site works or not, check premises temperatures, and even turn on a back-up power source.

From a test installation to every repeater station

Today the Arctic GPRS Gateways allow Digita to remotely monitor and control their whole nationwide network of 70 DVB-T repeater stations. Furthermore, the Arctic GPRS Gateways have found their ways to other remote monitoring applications at Digita.

To the top of Finland

One of Digita's main broadcasting stations stands at the top of 1029 m high Saana fell. The station's back-up power source, located at the bottom of Saana, is remotely supervised through the Arctic GPRS Gateway.

Tangible business results

"We have received numerous alarms from the Arctics based on which we have dispatched our repair teams immediately to the right places. We now have the tools to direct our network maintenance operations in a reliable and timely manner, thanks to the Arctic GPRS Gateway," Maunula ends.

For the SNMP-based remote management of any telecommunications infrastructure, such as **cellular base stations**, the Arctic GPRS Gateway, featuring a built-in firewall and VPN, is a robust and easy to deploy solution.

Want to know more?

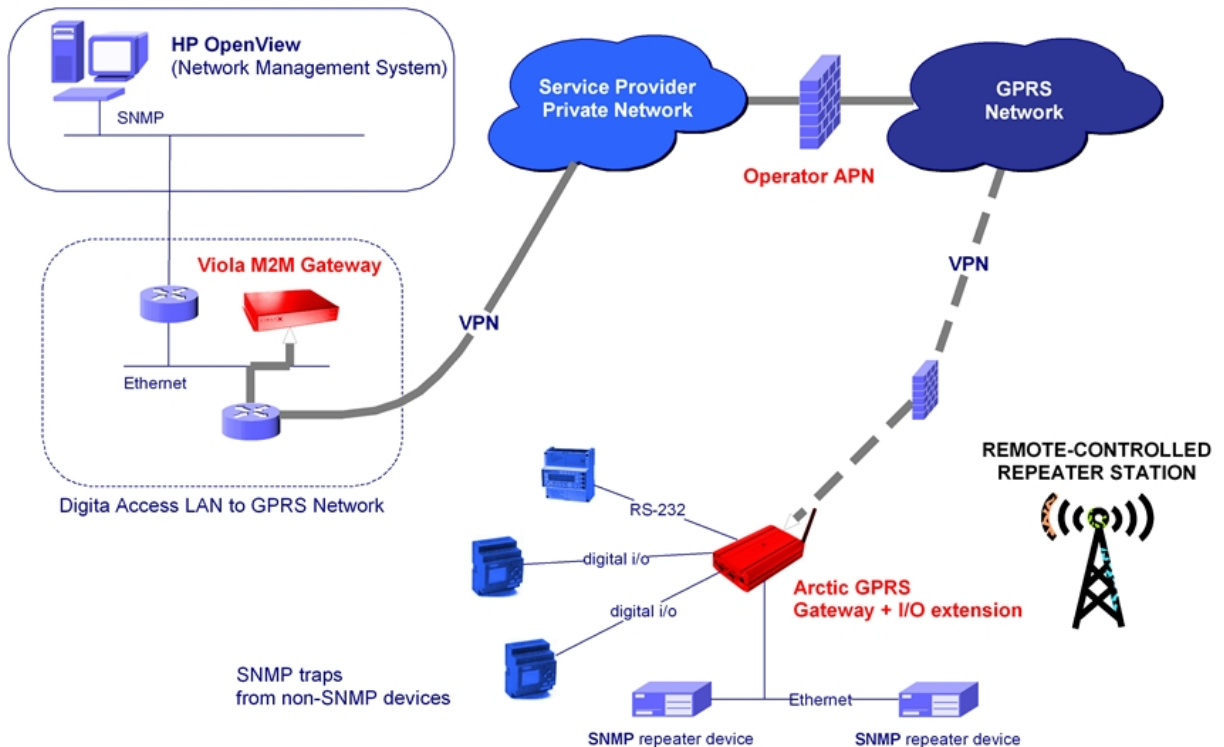
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For more information, please visit at

www.violasystems.com

DIGITA NETWORK MANAGEMENT CENTER



About Viola M2M Solution™

Unlike many competitors who sell boxes, Viola delivers a total secure end-to-end connectivity solution that seamlessly integrates remote devices and sites to centralized management systems such as SCADA or HP OpenView. No changes to existing systems are needed. Viola M2M Solution™ is an install-and-forget-it, hassle-free approach. In addition, Viola M2M Solution™ is operator-independent; it allows customers to implement two-way data communications in a similar manner all around the world.

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