

## IMTECH TELECOM NETHERLANDS CASE STUDY

### IMTECH TELECOM IMPLEMENTS IP TELEPHONY SERVICE FOR DELTA N.V./ZEELANDNET

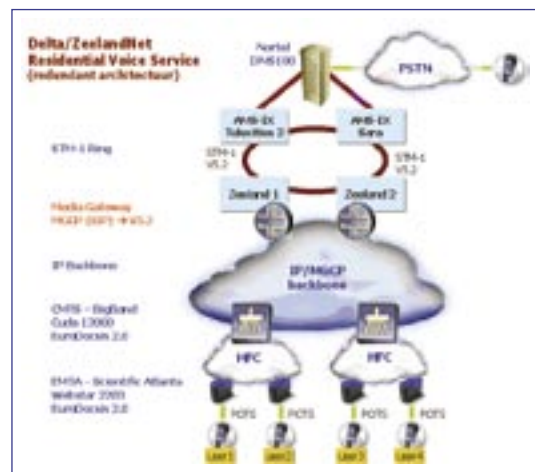


Imtech Telecom, the leading telecom solution provider throughout the European Union, will integrate General Bandwidth's Media Gateways into Delta N.V. a leading Dutch Cable Operator to provide full telephony services over IP.

From its inception Delta NV supplied gas and water via its own network to the province of Zeeland and South-west Brabant in the Netherlands. As a result of utility privatisations Delta NV now supplies cable, Internet and media services to businesses and individual customers, apart from electricity, gas and water.

ZeelandNet the Service Provider of Delta intend to establish in the second half of 2005 a full residential telecommunication service on the market. For the benefit of this service the existing cable network by means of an EuroDocsis 2.0 surroundings has been adapted. This EuroDocsis network will be used for the telecommunication service as well. Into the Delta/ZeelandNet network a media gateway will be installed by Imtech Telecom.

Since May 1999, General Bandwidth Inc. has been focused exclusively on developing its best-in-class Trunk Media Gateway, the G6® Packet Telephony Migration Platform, to meet the exacting requirements of the service providers (PTOs, CLECs, MSOs, ILECs, IXCs), regardless of access network. The G6 platform is NEBS Level 3 Certified, TL 9000 certified, ETSI compliant, tested to five 9's reliability, and intended for use in Headends and Central Offices. Due to the platform's tremendous flexibility, the G6 is currently used worldwide with live



implementations across multiple media environments, including packet T-1/E-1/PRI, DSL/copper, fiber networks such as FTTP/EPON/BPON, Broadband Wireless, and IP/HFC/Cable networks.

#### Architecture Residential Voice

The architecture for the telephone service is on basis of EuroDocsis 2.0, PacketCable and MGCP. As a MTA, an EMTA of Scientific Atlanta (Webstar 2203) is used with two standard POTS-gates. The EMTA is made by a MGCP- and a SIP-protocol stack, but for the benefit of the residential telephone service we only use the MGCP-stack. The EMTA connects via a HFC-network with a CMTS of BigBand (Cuda 12000), after which the signal goes via an IP-backbone to a media gateway. The media gateway is coupled via a redundant STM-1 connection at a Nortel DMS100 telephony-switch.



### TL 9000 Certification

General Bandwidth' G6 is one of only a few platforms that has received TL 9000 certification for hardware, software, and services.

### G6 Trunk Media Gateway works with any Access Topology.

The G6 platform is transport neutral, agnostic to the specific physical layers of access connectivity. Its access interfaces (layer 2) consist of Gigabit Ethernet as well as ATM OC-3/STM-1 & DS3. So regardless of the access technology chosen, the G6 can manage all communications between the packet network and TDM/PSTN. The main job of the G6 is to convert circuit-to-packet and packet-to-circuit bearer traffic seamlessly between the circuit and packet networks.

### General Bandwidth's G6 Platform.

The G6 is NEBS Level 3 Certified, having completed and passed all NEBS Level 3 tests necessary for central office deployment at an independent lab, without any exceptions. The G6 has also passed special ILEC-specific extended NEBS tests for fire (Verizon), earthquake (SBC/PacBell), and altitude (Qwest). Designed specifically for the rigorous environment of Central Offices, the G6 has passed stringent testing by Telcordia to achieve a predicted availability level of 99.999%. In addition, all field-replaceable components are hot-swappable.

### Redundancy.

Delta/ZeelandNet required "full redundancy" in their architecture on all line cards with completely separate

geographical configurations. All phone numbers can be provided by all gateways.

### Management

Delta/ZeelandNet want to have a number management possibilities on the media gateway for the benefit of configuration, trouble-shooting and analysis.

Imtech Telecom currently are implementing free lab trial/ technical test training. As part of a Proof-of-Concept, or lab trial, we will provide training. The training is available during the installation period for lab personnel. Training for lab trials is free of charge.

### Imtech Telecom

Imtech N.V. is a European technical service provider in the fields of information & communication technology, electrical engineering and mechanical engineering. With around 14,000 employees, Imtech achieves an annual turnover of around 2,0 billion euro. Imtech holds strong positions in the buildings, industry, marine, infrastructure and telecoms markets in Belgium, Germany, Luxembourg and The Netherlands and is also active in Sweden, UK and Spain. Imtech shares are listed on the Euronext Stock Exchange (Amsterdam), where Imtech is included in the Midkap index (AMX) and the Next 150 index. For more information on Imtech, visit its Web site at <http://www.imtechtele.com>




  
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