



IMTECH TELECOM NETHERLANDS CASE STUDY
 IP ACCESS NANO BTS SOLUTION FOR
 DUTCH ISP TELFORT



Imtech Telecom, a leading telecom solution provider throughout the European Union, will integrate ip.access technology to cover buildings with mobile networks for Telfort.

Telfort is a Dutch mobile telecommunication company operating in the whole Netherlands. The company was founded in 1997 and has constantly grown since its foundation. In the last year the company had a turnover of 509 million Euros and has 613 employees.

Imtech Telecom partnered with ip.access to provide a range of GSM products, nanoGSM, that allows Mobile Network Operators to extend their existing service offering to areas of poor coverage and/or capacity and deliver new and exciting services.

Utilising IP connectivity, nanoGSM will offer Mobile Network Operators a number of opportunities to increase service reach and develop new localised revenue-earning solutions.

The ip.access concept is based on providing indoor GSM coverage and capacity via IP backhaul (such as ADSL or other broadband connection) for small and medium

enterprises using the nanoGSM system.

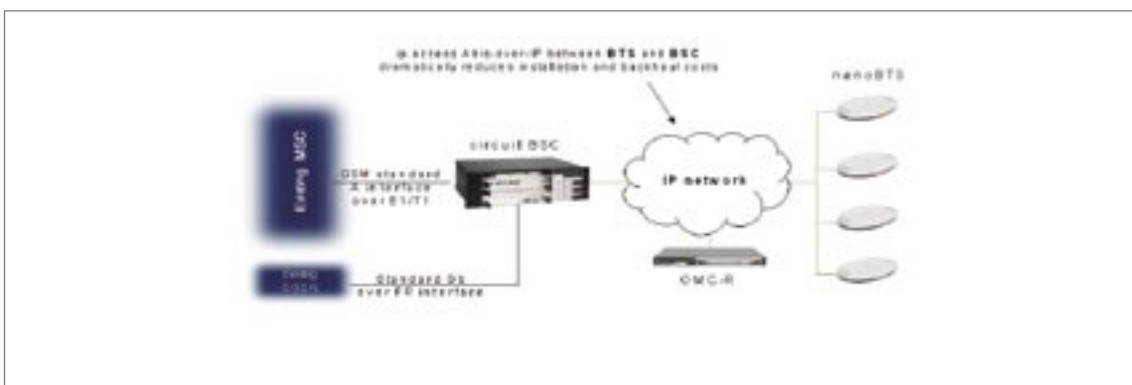
In situations where the in-building coverage or capacity of the GSM Macro network is insufficient to set-up calls, this concept will guarantee subscribers optimal coverage and capacity where it's needed... in the building!

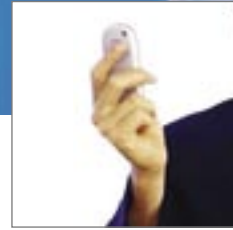
This unique ip.access concept is based on a GSM cellular basestation intended for deployment in public and enterprise GSM networks connected by ADSL lines. The nanoBTS provides a single GSM transceiver (TRX) in the smallest and most cost-effective package available today produced by a world leading mobile handset chipset manufacturer. Its low power and unobtrusive design ensure it can be installed wherever and whenever capacity and coverage are required

The technical and commercial metrics of the ip.access system in combination with the full service provider approach of Imtech Telecom will now enable the operator to rapidly target, acquire and retain both SME and Corporates at minimal commercial and operational risk.

Why another in building product for the mobile operators?

Optimisation of the Macro layer, RF repeaters and Micro BTS (with a DAS) are the most traditional solutions for in-building solutions. However they are not always the most preferred solutions from technical, installation and economical point of view.





A Picocell is the most logic solution for providing inbuilding coverage and capacity. However, traditional...
...Picocells still need the expensive and time consuming process of getting the E1 (ABIS) connection.

This is solved now by ABIS over IP, the Ip.access nanoBTS solution, a low cost inbuilding GSM BTS.

Advantages in relation to the traditional solutions

The nano BTS is the most cost effective BTS available in the market and provides GSM coverage and capacity where its needed.

It is the smallest basestation in the world, occupying a smaller footprint than even a notebook PC. It can be mounted easily and unobtrusively on a wall or ceiling, taking its power from a single 10/100 switched Ethernet connection. No specialist cable installation is required; the system uses spare capacity in the existing Ethernet cabling. Installation of the nanoBTS can take as little as 15 minutes and systems can be moved easily around a building to adapt to changing requirements.

Brief technical description

The ip.access concept is based on A-bis interface connection from the nanoBTS to the BSC via an IP connection which is significantly more cost effective than the traditional E1 (2 Mb) leased line or Microwave link used by micro BTS. By using IP it's possible to connect the nanoBTS via the public internet, using ADSL lines or cable (coax) modems. ADSL is almost every available. The BSC is fully supporting nowadays MSC's and SGSN's from a

Role of Imtech Telecom

Imtech Telecom offers the ip.access concept as a Full Operational Service Provider to the Mobile operators. Meaning, the operational impact on the operators resources and network is reduced to a minimum and Imtech will take care for:

- Radio Measurements and Civil Survey (incl. Reporting)
- Purchase and payments for ADSL lines
- Installation and Configuration of BSC
- IP Plan
- Installation – Configuration and Testing of Nano BTS
- Commissioning and acceptance test
- Monitoring Service
- Call centre, call handling
- Software updates and Backup's
- Spare management (incl. Reporting)
- Project Management (incl. Monthly Reporting)

variety of vendors and their software releases.

ip.access has developed the nanoBTS in accordance with ETSI standards which guarantee compatibility with both GSM handsets and today's and tomorrow's PLMN infrastructure.

Pilot

To understand the ip.access concept and to test it's full functionality a pilot proposal is available upon your request. The pilot includes pilot plan, test plans and 1xBSC and 4xnano BTS's.





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