

GSM Backhaul Solution Overview

VSAT connectivity is literally changing the landscape of the GSM cellular market.

With many of the world's major metropolitan areas already covered, still millions of people around the world have limited or no access to cellular services. GSM is the predominant cellular technology, appearing in more and more remote areas every day. But the number one obstacle remains — with only limited terrestrial infrastructure in place, how can these evolving needs be answered? How can you cost effectively expand the footprint of your GSM cellular network?

Satellite connectivity is an obvious means of overcoming geographic constraints; but conventional dedicated links can't offer the flexibility to dynamically adjust to changing calling patterns. Cellular providers need a more cost-effective backhaul solution.

iDirect's unique IP-based D-TDMA solution allows carriers to share network capacity across multiple locations, allocating bandwidth on demand to maximize efficiency while reducing costs.

With iDirect, there are unprecedented cost savings. But just as important, iDirect's implementation best preserves and protects the GSM traffic to ensure that the highest standards for availability and call quality are met.

The Market: Gaining Momentum

GSM is the dominant cellular technology, representing nearly 80% of all cellular traffic worldwide.

The GSM cellular market continues to grow, with a projected growth rate of 82% by 2010. By leveraging the efficiencies of an IP platform and iDirect's shared topology, operators can significantly reduce operating expenses and expand the reach of their network. And there's more good news. Base station (BTS) prices continue to fall, driving deployment in sparsely-populated regions.

Bringing the immediacy and convenience of cellular to areas not previously served has tremendous pay offs for operators who capitalize on this growing demand.

Now you can profitably, more easily offer cellular services to millions of potential new customers who may not have access to basic telephony.



The iDirect Opportunity

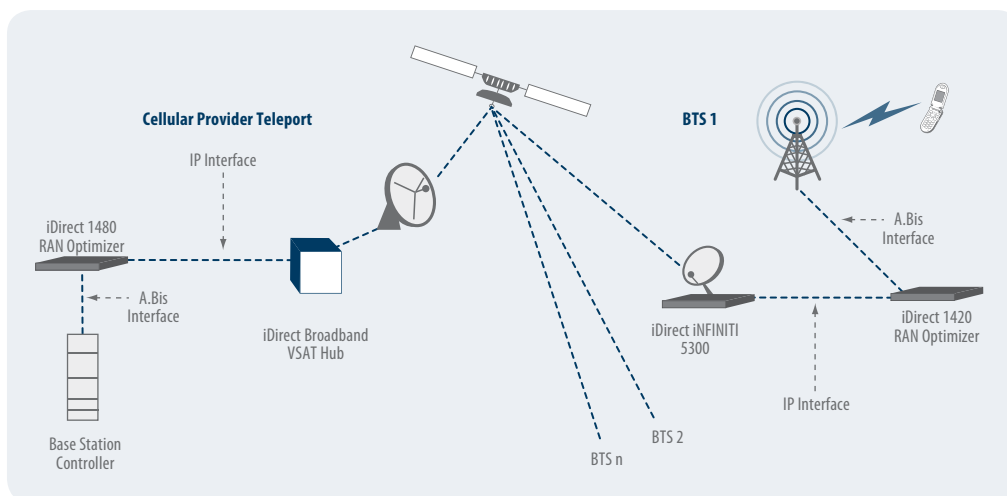
GSM networks via legacy SCPC backhaul have been bandwidth inefficient, due to the limited nature of fixed SCPC connections.

iDirect's unique IP-based D-TDMA approach significantly reduces the satellite bandwidth required and allows carriers to groom bandwidth across multiple locations spanning a wide geographic region.

iDirect's IP-based A.bis access enable cellular providers to grow traffic over multiple BTS remotes across a wide geographic footprint. This dynamic allocation and QoS algorithms eliminate unused time slots and enables more efficient multiplexing of signaling channels. The shared network topology allows operators to add additional layers of traffic as opposed to dedicated links. The result for cellular operators is reduced bandwidth requirements, more capacity, and lower operating expenses across the board.

Now, for the first time, the iDirect RAN Optimizer gives operators a simple, compelling alternative to basic TDM multiplexers for reducing RAN transmission costs. Combined with the iNFINITI platform of hubs and remotes, iDirect provides a complete end to end solution.

The iDirect RAN optimizer is a powerful core component, providing two key functions — converting GSM voice traffic to IP and bandwidth reduction. The iDirect RAN Optimizer increases the efficiency of iDirect's D-TDMA platform through compression of voice traffic and silence suppression. Combined with iDirect's QoS algorithms and dynamic bandwidth allocation, the result is up to a 3:1 bandwidth reduction, bringing significant savings to the cellular operator.



iDirect GSM Solution

Features and Benefits

- Offering the choice of three topologies (TDMA star, mesh and SCPC) all over one platform allowing operators to adapt to the most efficient technology as network traffic grows- easy to change with industry leading iVANTAGE NMS
- Adds flexibility to redistribute and balance network traffic maximizing the potential of the network while saving bandwidth costs
- Lower ongoing operating costs of maintaining GSM services
- Extend coverage into remote geographies previously cost prohibitive
- Expand service offerings to open additional revenue streams
- Supports point to point and multipoint backhaul

Transforming How Developing Nations Connect

iDirect's IP-based D-TDMA platform represents the next best step in the evolution of cellular backhaul.

Operating networks of GSM base-stations (A.bis links) over satellite IP is much more efficient than carrying the same traffic over dedicated satellite links. It's not hyperbole: savings can be as much as 50% of required satellite bandwidth.

With satellite capacity at a premium — especially in more remote regions — the upside for GSM network operators is substantial.

End users in even the most remote regions of the world get new, more widespread and reliable cellular service, and cellular service providers are in the best position to see greater revenue opportunities.

Today, the efficiencies of the iDirect platform make it all a reality.

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Advancing a Connected World