



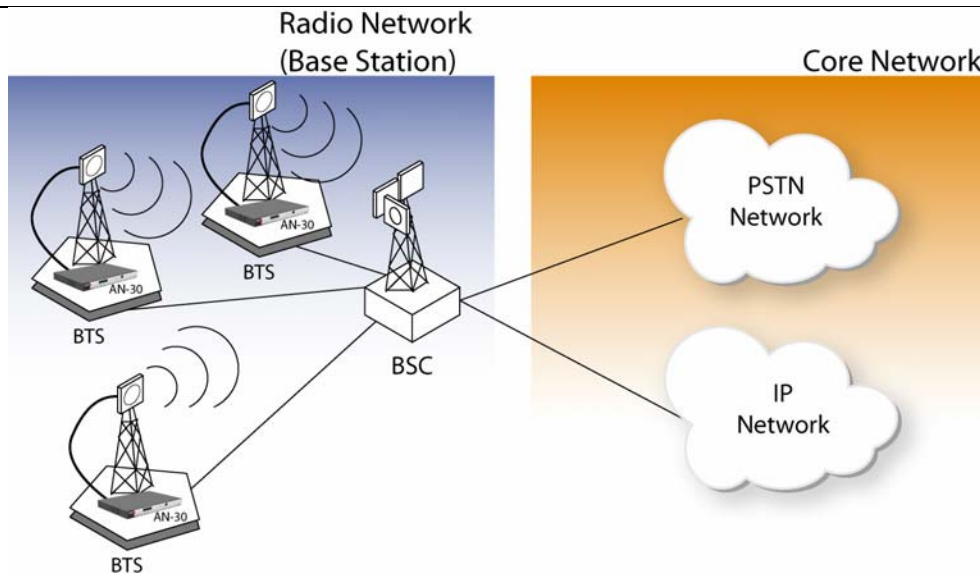
Application Note

Cellular Backhaul

Cellular systems require carrier-grade communications facilities. It is essential to provide reliable links on the connections between BTS and BSC nodes in the cellular network. With the advent of Wi-Fi™ based “hot-spots” there is an emerging need for both TDM and IP services at many BTS locations in urban and suburban markets. Carriers looking to reduce OPEX can convert some T1/E1 or DS3 lines to wireless. Many carriers are using BFW platforms to provide a “quick-response” capability where they need to deploy required T1/E1 or DS3 facilities and IP facilities in advance of a fiber or copper plant build-

Wireless bridges provide reliable high reliability T1/E1 links for connecting your BTS sites along with multi-Megabit per second IP connectivity

out. With Broadband Fixed Wireless (BFW), your capital dollars are not buried in the ground but rather can be redeployed with minimal effort as required. As carriers examine their readiness in the face of disaster, BFW becomes a strategic option to provide continuity services in the face of landline failures.



Business Requirement

BTS to BSC connections are a mission critical link for the cellular operator. Many of these links utilize BFW connectivity due to its rapid deployment capability, and the need for operators to reduce OPEX.

Increasingly cellular operators worldwide seek to convert ongoing OPEX into one-time CAPEX in order to improve operating results and provide better customer service and overall return to their shareholders.

Wireless Advantage

Long-range BFW connections have emerged as an alternative to expensive landline and IP circuits. It is now possible to link one or multiple BTS's to a BSC with high-speed links up to 50 miles long. One initial investment replaces ongoing monthly charges, charges that escalate as your data usage increases.

Alternately wireless links can provide a very inexpensive redundant or parallel link to carry voice and data traffic to meet business continuity requirements.

Typical Uses

- BTS to BSC Wireless Connections
- Connect T1/E1 circuits and high speed IP based equipment over long range wireless links
- Provide continuity services to land-line based T1/E1 facilities
- Provide converged backhaul services for TDM T1/E1 links and Wi-Fi™ hot-spots
- Provide a “quick-response” capability where sites need to be brought up in advanced of permanent land-line services

Key Features

- OFDM technology provides robust wireless links even in the presence of multipath interference
- Ability to operate in some non line of sight conditions
- Ranges of 80 km (50 miles)
- Extremely low latency is ideal for time sensitive applications like VoIP and videoconferencing
- Carries up to 4 T1/E1 circuits plus IP data traffic (up to 30 Mbps) simultaneously
- Point-to-point and point-to-multipoint configurations
- Offers high speed 64 QAM modulation
- Carrier grade Network Management System support
- Over the air encryption
- Single or dual AC or DC power supplies for redundancy

Benefits to Cellular Operators

- Allows BTS's to be connected to BSC's with 1 – 4 T1/E1 connections at long ranges
- Supports T1/E1 connection based equipment AND protects your investment if connections are converted to Hybrid or next generation IP only equipment
- Supports both voice (T1/E1) traffic and data traffic on a single link
- Eliminate or significantly reduces Operational Expenses (OPEX)
- Supports remote management and diagnostic tools for high levels of reliability
- Supports a redundant link to provide business continuity services to land-line based facilities

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