Commercial Services

Intelligent Backhaul Radio Delivers Fiber Equivalent Performance to Reach New Customers

Fastback
NETWORKS ®
intelligent wireless transport

Commercial services offerings, such as Metro Ethernet, secure VPN and enterprise connectivity, are no longer limited to environments with direct access to fiber networks. The Intelligent Backhaul Radio (IBR) provides wireless fiber-equivalent services as "fiber fill-in". This provides cable, fiber and tower network operators the opportunity to extend fiber assets to serve previously out of reach locations where fiber cannot be deployed or lacks business case justification.
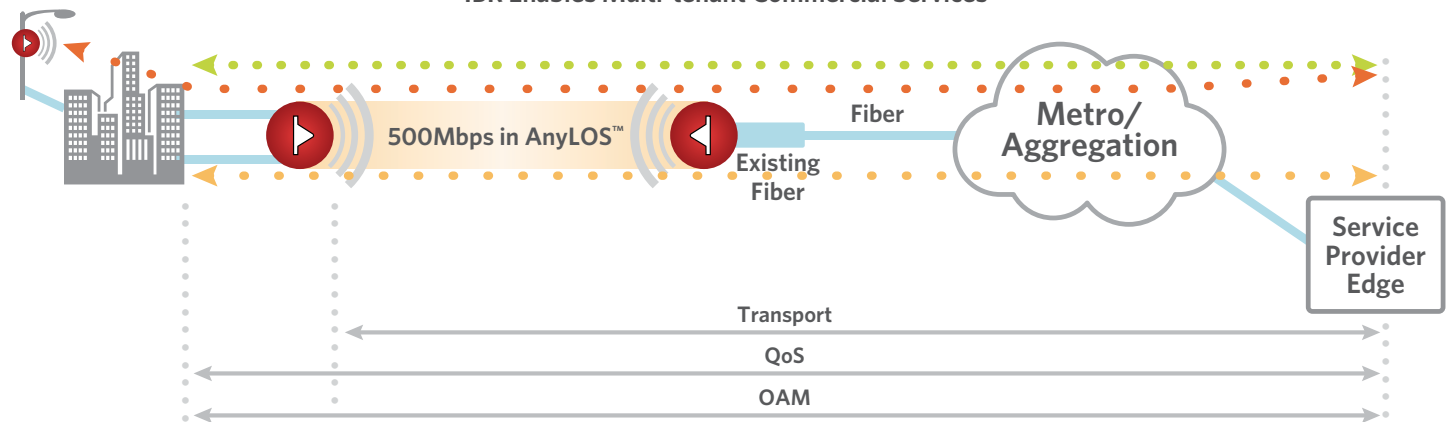
The Anywhere Service Edge

The IBR is an industry-first wireless connectivity device that enabless the fiber equivalent delivery of a wide range of services in both line of sight (LOS) and non-line of sight (NLOS) conditions. With the IBR, operators can preserve a standards-based high performance service level agreement (SLA) over a wireless link in any location with certainty.

Now the service edge can be extended to customer sites previously considered out of reach without compromising service. Service providers can quickly and cost-effectively respond to new revenue opportunities without the extensive time and effort required for a physical expansion of the fiber plant. By reaching new customers more quickly, new revenue streams begin sooner and the impact of backlog aging is dramatically reduced. In addition, new opportunities are enabled including multiple tenant service, small cell backhaul as a service and timing as a service. And service providers can begin to build an infrastructure footprint to target mobile opportunities such as in-building small cell, and new enterprise service connectivity.

Service Requirements for Commercial Services

Capacity/Building	over 250 Mbps
Architecture	Flat All-IP distributed
Traffic	Unicast, Multicast, Broadcast
Low Latency	<500μsec (one-way)
Availability	99.999%
Error Rate	<0.1%

IBR Breakthrough Features

- Highest capacity in AnyLOS™: over 800 Mbps
- Lowest latency: < 500μsec
- Carrier-Grade transport SLA's anywhere
- Extreme Interference Protocol (XIP™)
- Auto aligning, minutes to install
- Mount anywhere: strand, pole, or wall

IBR Enables Multi-tenant Commercial Services

500Mbps in AnyLOS™

Fiber

Existing Fiber

Metro/ Aggregation

Service Provider Edge

Transport

QoS

OAM

Service requirements: Multiple tenant SLAs
- Customer 1 SLA: 10Mbps, 2 level CoS priorities
- Customer 2 SLA: 50Mbps, 100ms failover, 4 level CoS priorities
- Customer 3 SLA: 100Mbps, <10ms one-way latency, 6 level CoS

Intelligent Backhaul Radio

CE 2.0 Over Wireless in Any Line of Sight (AnyLOS™)

The Fastback IBR fuses high performance data networking with advanced radio technology to achieve technical and economic breakthroughs that enable fiber-equivalent performance over a wireless connection regardless of environment and obstructions. This new class of wireless device is an integrated switch and radio, purpose-built to deliver high performance, low latency, and integrated CE 2.0 features that support new architectures and traffic types at scale. And the IBR meets the stringent frequency and timing phase requirements of LTE and LTE-A for backhaul of macrocell, small cell and enterprise indoor networks.

AnyLOS™ Reaches New Customers with New Services

Multi-Tenant, Backhaul, & Triple Play Enterprise Services

The IBR enables triple play voice, data and video enterprise networks as a service, providing backhaul to an enterprise building from a wireline plant. Wireline service providers can offer small cell transport and connectivity as a service to meet the demand for increased densification of mobile access infrastructure. And the IBR high-capacity wireless connection delivers throughput to support multiple tenant SLAs at a site. The IBR supports service layer traffic multiplexing via multiple Ethernet Virtual Circuits (EVC), quality management (QoS) and link management (OAM/PM) for each EVC. Service providers can extend the reach of their existing fiber plant to a new customer location and then expand that new location to support additional tenants — all with different SLA requirements.

Carrier Grade NLOS Solution

A key technical breakthough in the IBR is Extreme Interference Protection (XIP™), Fastback's patented algorithms for mitigating effects of uncoordinated and self-interference to enable new applications of unlicensed spectrum including macrocell and small cell backhaul. The IBR interference mitigation capability enables sustained, carrier grade/ SLA performance in unlicensed spectrum. This functionality unleashes new levels of certainty and reliability, along with the advantages of tapping hundreds of MHz of available 5 GHz spectrum to relieve the capacity constraints of licensed bands.

About Fastback Networks

Fastback Networks was founded with a vision to deliver innovative technology for the mobile infrastructure of the future, enabling network operators to deliver new services, tap new markets and monetize a new generation of mobile applications. With insights derived from the collective team's vast experience building leading edge radio and data networking solutions, Fastback Networks looked at the challenges of 4G/LTE deployment with fresh eyes and better ideas, and developed a transformational solution that enables the acceleration of next generation mobile services. Fastback Networks is funded by Foundation Capital, Granite Ventures and Matrix Partners.

Fastback Any Line of Sight

Sustained performance that automatically aligns and adapts to any radio line of sight conditions.

Line of Sight No obstructions	Similar to traditional point to point microwave at distances of a few kilometers, but without any precision alignment requirement
Near Line of Sight Partial obstructions	Working around obstacles such as trees and across rooftops
Non-Line of Sight Complete obstruction	Requiring radio waves to propagate around street corners and buildings

New Service Opportunities Include:

- High capacity fiber equivalent connectivity to new locations with multiple tenants
- LTE & LTE-A Backhaul for Small Cells
- Application services such as VPN, firewall, voice and video
- Triple play enterprise network services
- Small Cell as a service

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