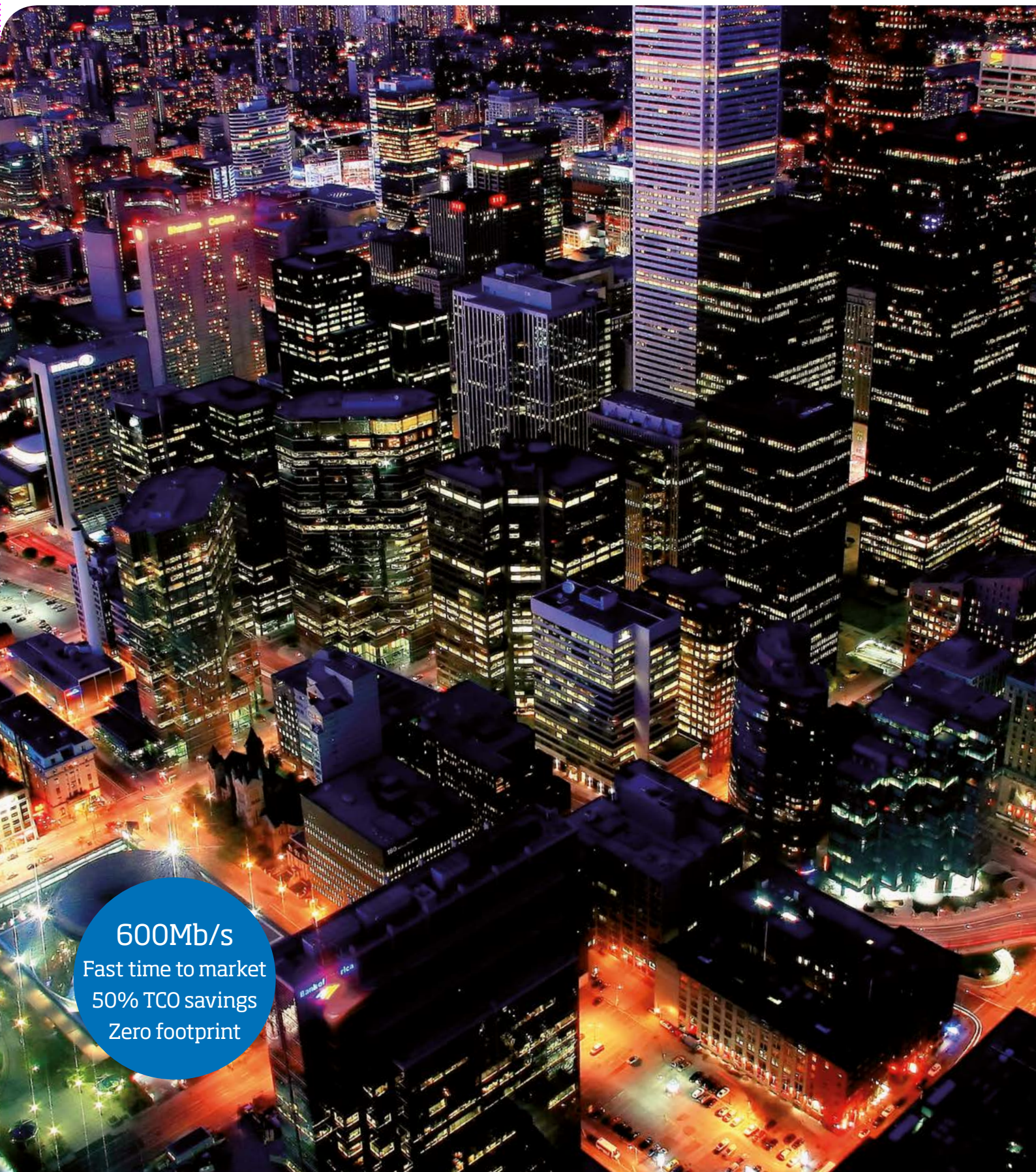


Backhaul breakthrough

VectaStar

The ultimate in multipoint microwave
for macro level backhaul



600Mb/s

Fast time to market

50% TCO savings

Zero footprint

Backhaul breakthrough



High performance
600Mb/s per link
<1ms round-trip latency
Up to 14.4Gb/s per hub site



**Low total cost of
ownership**
Up to 50% savings



Fast time to market
Almost half the radios
compared to point-to point

Next generation thinking



CBNL

Cambridge Broadband Networks

cbl.com

VectaStar

The ultimate in multipoint microwave for macro level backhaul

VectaStar is the market leading multipoint microwave platform which is proven across the globe in backhauling 2G, 3G, HSPA+, LTE and enterprise access networks.

Offering high capacity and unparalleled efficiency, VectaStar can be quickly deployed to meet immediate backhaul needs whilst offering operators the best business case with industry leading total cost of ownership savings.

The simplicity and flexibility of VectaStar ensures networks can easily scale to meet future backhaul requirements, maintaining outstanding quality of service with the minimum of further network resources.

Highlights

High performance

- High capacity: currently supporting 600Mb/s per link and up to 14.4Gb/s per hub site
- Future proof and guaranteed quality of service compared to non line of sight technologies
- Low latency: sub 1ms round-trip
- Ethernet as default configuration (TDM optional for legacy service provision)
- Future proofed Gigabit Ethernet and 10 Gigabit Ethernet interfaces
- Deploy additional enterprise access services within a mobile backhaul sector, offering tiered network capabilities and dedicated bandwidth to selected sites

Range

- 10.5GHz: 28.6km (typical), 26-28GHz: up to 20km (typical) with 30 degree sector antenna

Outstanding efficiency

- Multipoint sector aggregation proven to improve spectral efficiency by at least 40% when compared to point-to-point**

Current frequencies supported

- ETSI: 10.5, 26, 27, 28GHz
- Anatel: 27GHz
- FCC: 28GHz

Low total cost of ownership

- Independently proven to deliver savings of up to 50% over other forms of microwave backhaul*

Fast time to market

- Quick to deploy - almost half the radios compared to point-to-point
- Rapid coverage

Intelligent design

- Designed for quick and easy installation
- Unique zero indoor footprint covering both access points and remote terminals

Industry proven

- The market leading multipoint microwave product, deployed by over 70 leading operators in over 40 countries for 2G, 3G, LTE, Wi-Fi networks
- Serving seven of the top ten largest global operators.

* Senza Fili (2011) Crucial economics for mobile data backhaul

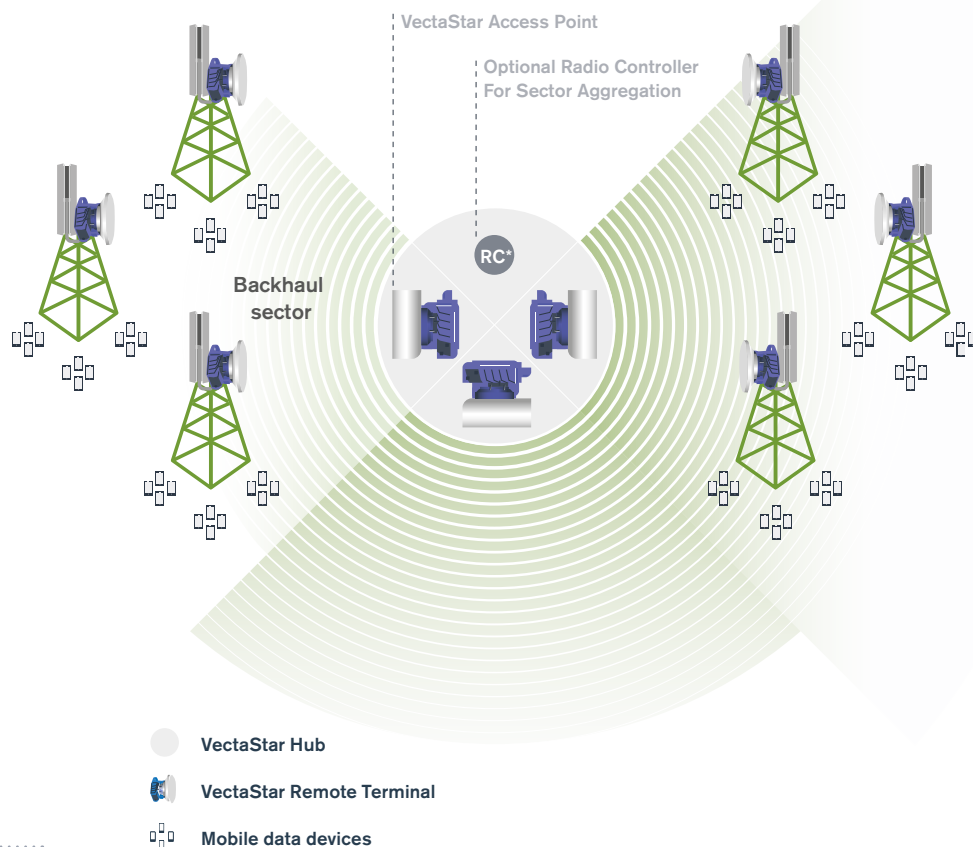
** CBNL (2011) The Effect of System Architecture on Net Spectral Efficiency for Fixed Services

How VectaStar Gigabit works

VectaStar creates a sector of coverage from a single access point which backhauls a number of remote terminals co-located at multiple 2G/3G/LTE sites.

Through aggregating bandwidth across all cell sites, VectaStar allows operators to deliver the optimum quality of service with outstanding efficiency - improving spectral efficiency and reducing associated costs.

Sector coverage provides the flexibility to add new sites quickly by a single installation team, without a visit to the access point or the need for additional spectrum. This allows for rapid network expansion at minimal costs and with no disruption to service or revenues.



Applications

New all-IP networks - 3G, HSPA+, LTE

Build carrier-grade all-IP networks quickly, cost effectively and with the performance to scale to meet future demands.

2G - 3G IP backhaul migration

VectaStar supports TDM, all-IP, hybrid backhaul and all forms of network synchronisation to enable a simple and low risk backhaul migration.

Network upgrade

Create 'real-time offload' to lighten packet data traffic on over-stretched backhaul networks.

Last mile fibre extension

Quickly and cost effectively extend fibre networks through a high capacity last mile microwave link.

Special events

Provide simple and fast backhaul services to transportable cell sites which deliver high capacity networks for special events and venues.

Converged networks

Create a converged network offering mobile backhaul and tiered enterprise access services within a single sector.

Deliver the optimum quality of service **with outstanding efficiency**

Efficiency through sector traffic aggregation

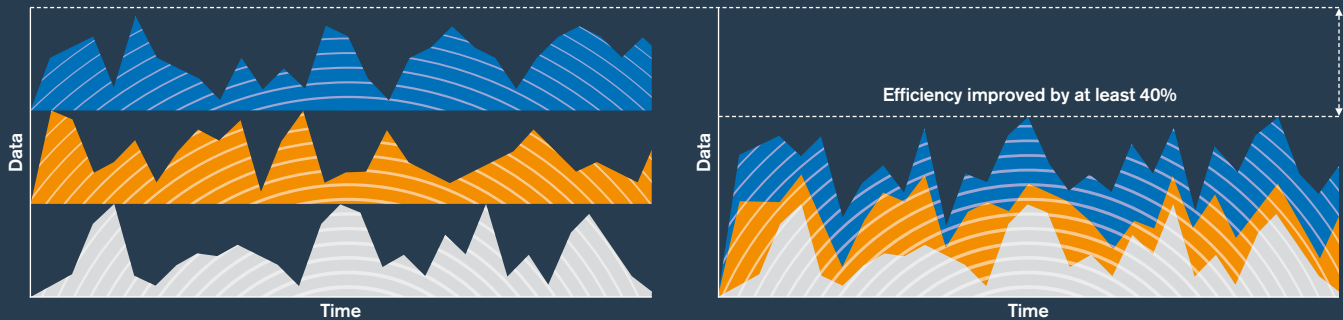
By aggregating traffic, VectaStar can improve spectral efficiency by at least 40% when compared to point-to-point, providing the capacity for current needs and leaving headroom for future growth.

By sharing bandwidth across all sites in the sector, multipoint microwave allows the 'troughs' of one cell site's demands to be filled by the 'peaks' of another. This reduces the backhaul required, lowers costs and provides capacity to roll out profitable enterprise access services alongside mobile backhaul.



Images from the top:
VectaStar Access Point & VectaStar Remote Terminal

VectaStar's traffic aggregation improves spectral efficiency by at least 40%

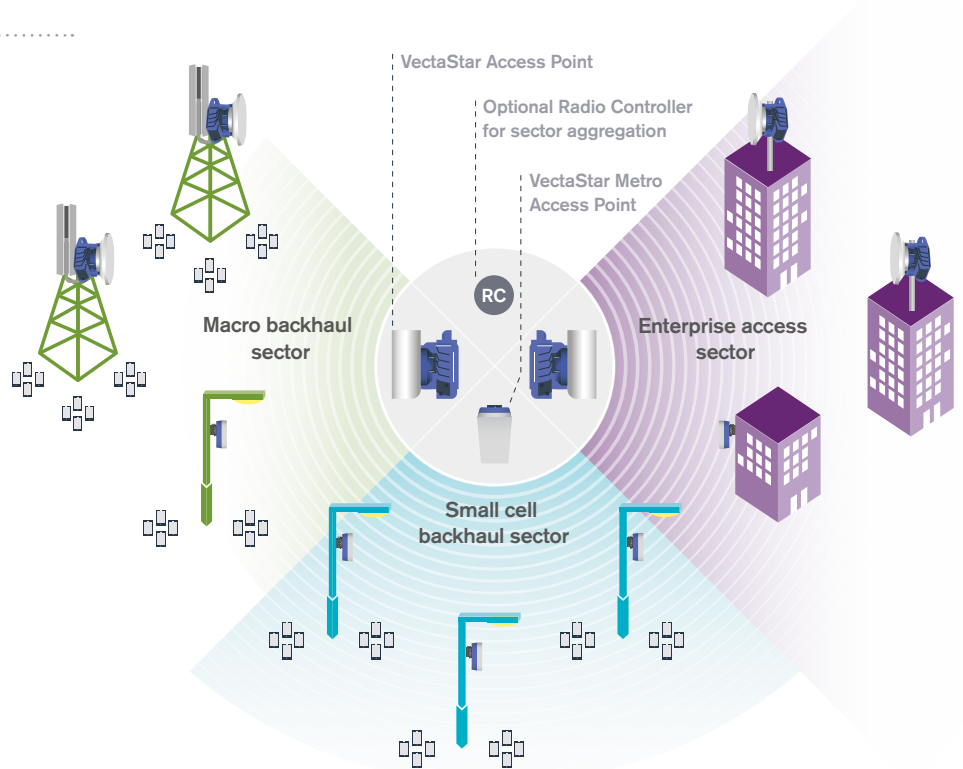


- Cell site 3
- Cell site 2
- Cell site 1

VectaStar: a complete network solution

The VectaStar portfolio offers operators a carrier-class backhaul, enterprise access and small cell network solution, or any mixed configuration.

-  VectaStar Hub
-  VectaStar Remote Terminal
-  VectaStar Metro Remote Terminal
-  Mobile data devices



Planning
& Design

Deployment

Operation
& Support

Managed services

VectaStar can be deployed within our managed services portfolio. This is delivered directly by our team of highly-skilled engineers and through partnerships with the industry's leading system integrators. Through technical expertise, proven methodology and local market knowledge, we offer customers the reliability and guarantee of complete network delivery and support.

Welcome to next generation thinking Welcome to CBNL

Pioneering the development and deployment of next generation microwave transmission equipment since 2000, CBNL is the global market leader in multipoint microwave backhaul and access solutions. Our carrier-class VectaStar platform serves over 70 communication providers in over 40 countries, including 7 of the top 10 world's largest mobile operators.

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Part number: VSG-MB-03

