

Building Future-Proof IP/Ethernet-based RAN with the Tellabs® 8600 Managed Edge System

Increasing Mobile Services Creates New Opportunities

Today friends, family members and even total strangers communicate with each other with an ever-increasing variety of social media and VoIP services, such as Skype, Facebook and Twitter. In addition, people exchange music, photos and YouTube videos, which have to be streamed quickly and easily over networks with smartphones, tablets or other mobile devices. People even rely on their smartphones and always up-to-date Internet maps to find their way to wherever they want to go –digging out a map is definitely last season!

All these popular new methods of communicating present new challenges for service providers and their networks. As the increase in traffic puts more pressure on the networks, service providers must solve growing congestion and inefficiency challenges. At the same time, fierce competition in the market drives service revenue down. It is therefore imperative for service providers to build or migrate to a cost- efficient and future-proof transport network to improve on existing customer satisfaction levels whilst having the ability to create new services to attract new customers and generate new revenue streams.

Getting the Most Out of the RAN Network

Current Radio Access Network (RAN) backhaul networks are often only optimized for 2G and 3G technologies to offer improved service bandwidth. LTE technology brings a new set of requirements for increased network scalability, technology and flexible connectivity in the access network. Ethernet is considered a very attractive and cost efficient way to build networks and minimize the cost per bit. However, only focusing on the cost per bit and scalability capabilities only solves 2 parts of the overall challenge. Service providers must also take into consideration the following areas:

- capability to simultaneously carry LTE, HSPA, 3G, 2G and fixed services
- efficient network management
- flexibility to mix various transport media and protocols
- accurate synchronization mechanisms

Smooth Network Migration is Key

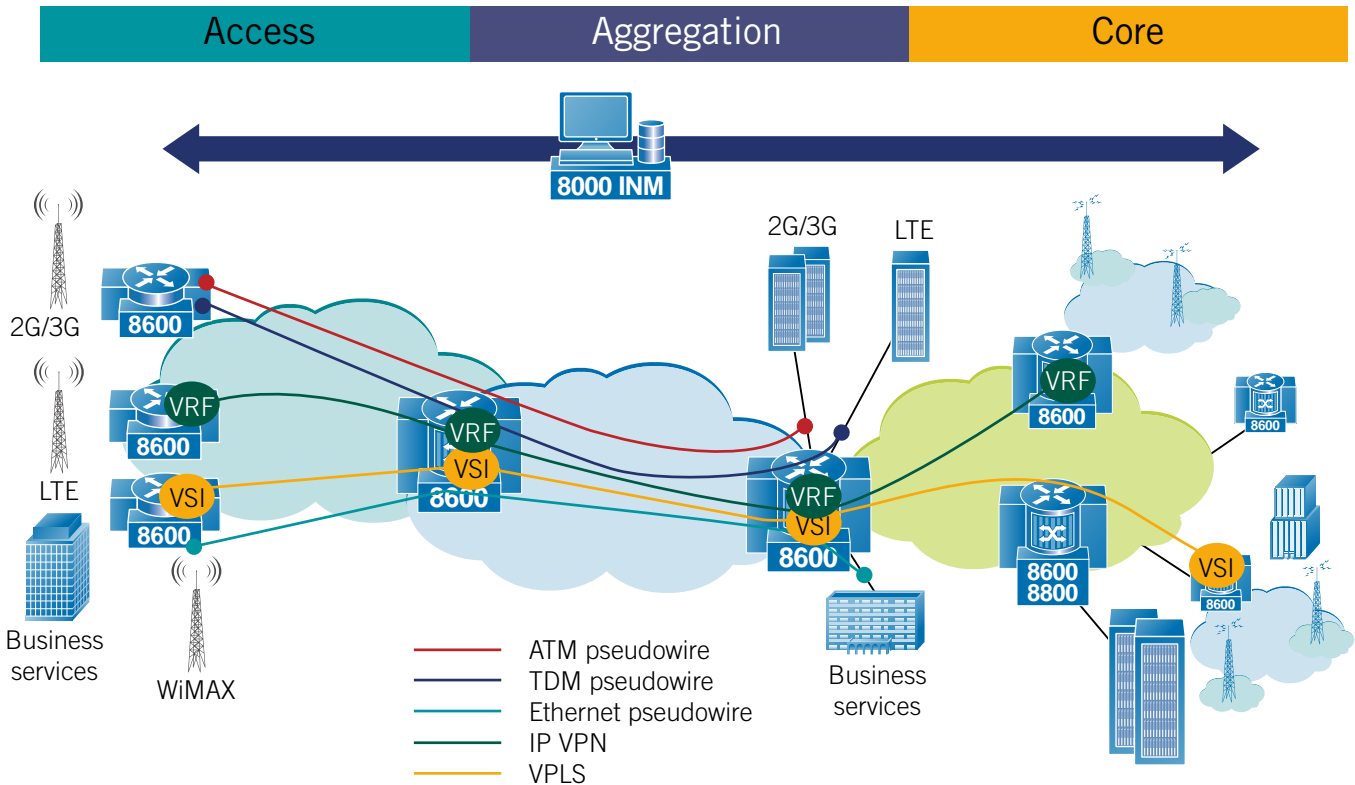
As LTE deployments roll-out globally, 3G and 2G technologies will still remain in mobile networks for years to come. In addition, service providers increasingly are building a unified mobile backhaul network, which supports both mobile and fixed services.



This strategic approach increases the breadth of technologies which need to be supported in a converged backhaul solution — IP and Ethernet are not enough anymore. Consequently, migrating from current technologies to new technologies should be as seamless and low risk as possible to service providers.

One vital area for service providers to take into consideration in network migration is the management of the entire network. A reliable network management system (NMS) is important to a successful network transition. It enables service providers to keep the current network running in parallel when building new networks whether it is an expansion of their current network, building a new network in parallel to their existing infrastructure or migrating from their current infrastructure to a completely new technology.

The network management system needs to be fast, accurate, provide fault free operations and most importantly, be easy to use. The role of the NMS will become even more evident as service providers networks grow. An efficient and reliable management system can also simplify network rollouts and reduce maintenance and operational costs.



Flexible Backhaul Solution Includes Cost-Efficient Synchronization

Service providers should design future networks by focusing on 2 things:

- optimizing the cost of the existing network infrastructure
- adding new technologies into the network to complete the existing infrastructure in a cost-efficient and flexible way

A flexible backhaul solution enables the complete use of available microwave radio infrastructure while also optimizing existing copper and fiber access utilization. It should also support all transport technologies including SDH/SONET, DSL, IP and Ethernet that will co-exist in the network for years to come.

Ethernet, which is very cost-efficient, offers an attractive technology option when moving towards HSPA and LTE. Migration to a pure packet transport solution mandates service providers to design synchronization across the entire mobile backhaul solution. With the introduction of 1588v2, the new synchronization standard in mobile backhaul, synchronization has developed to a new level. The availability, standardization readiness and cost benefits of 1588v2 make it the most viable synchronization technology for packet networks. To take advantage of the full benefits of 1588v2 implementation, synchronization functionality must be integrated into QoS-aware mobile backhaul solutions.

Tellabs Helps You to Succeed

Tellabs has over 20 years of expertise in providing mobile backhaul solutions. Over 150 mobile service providers around the world, including major multinational service providers, rely on the Tellabs® 8600 Managed Edge System.

The Tellabs 8600 system is a cost-efficient and fully managed mobile backhaul solution, which interoperates seamlessly with other RAN vendors and their technologies. The Tellabs 8600 system can minimize transport costs by providing an optimal solution for each network location from cell site all the way to the core network. Excellent flexibility and scalability capabilities enable service providers to increase system capacity and make new features available easily with only minor incremental investments as the network grows and service portfolio expands.

The Tellabs 8600 system offers a complete transport platform for service providers to seamlessly integrate and manage all mobile technologies, including IP, Ethernet, ATM, TDM and Frame Relay. A properly managed backhaul system simplifies the network infrastructure, lowers the total cost of ownership and makes the deployment of new RAN technologies easier.

A complete set of NMS tools with the Tellabs 8000 Intelligent Network Manager

Mobile networks are dynamic and require constant changes. The Tellabs® 8000 Intelligent Network Manager, an integrated network and service management system, provides a complete set of tools for network pre-planning, building, provisioning, monitoring and testing of the services offered in the Tellabs 8600 system.

The Tellabs 8000 intelligent manager automates the provisioning process thus speeding up time to revenue. In fact, one of our customers provisions service 5 times faster with our system than other systems. In addition, service providers are able to quickly and accurately trouble-shoot, make changes to the network and their services (irrespective of technology) without impacting current traffic.

The Tellabs 8000 intelligent manager reduces operational costs significantly by not only automating the process and offering ready-made templates for mass operations, but by also reducing the staff required to operate the network. The Tellabs 8000 intelligent manager keeps the whole network - with up to 30 000 network elements - constantly documented and in full control.

Extensive Synchronization Capabilities of the Tellabs 8600 System

The Tellabs 8600 system integrates several synchronization methods including TDM line synchronization, Synchronous Ethernet, adaptive timing and IEEE1588v2. With the Tellabs 8600 system, service providers are free to choose any transport technology with full synchronization. The Tellabs 8600 system and the Tellabs 8000 intelligent manager offer unique built-in tools to supervise the synchronization quality when migrating from traditional TDM to packet-based synchronization.

Conclusion

The ongoing mobile evolution creates several challenges for service providers. Mobile networks must be capable of supporting LTE, HSPA, 3G, 2G and fixed services without throughput or protocol bottlenecks. The network management system must be able to simplify the complexity of network operations and support required synchronization methods with proper security and quality mechanisms.

The Tellabs 8600 system coupled with the Tellabs 8000 intelligent manager provides a unique, fully managed and scalable solution to help service providers:

- provide a cost-effective and future-proof solution
- integrate a variety of synchronization methods
- minimize capital investments and streamline operational costs
- operate their networks efficiently and reliably

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