TDM over Ethernet
Telecable, Spain

Building Out a Metro Ethernet Network with TDM Service Support

Using Pseudowire Technology to Retire SDH from the Access Network

Challenge

To continue to provide legacy services over new packet-switched infrastructure.

Solution

RAD's IPmux family of pseudowire access gateways and ETX family of Carrier Ethernet demarcation devices.

Telecable is a Spanish cable operator that focuses on residential and enterprise customers, mainly in Asturias in the north of the country, which is one of Spain's "autonomous communities."

Residential customers are generally connected over an HFC-based network. Enterprise services are mainly delivered using legacy SDH technology. The physical medium for enterprise access is, whenever possible, dark fiber with ring topology, primarily in cities.

Today, E1 services are employed to connect private PBXs or a customer PBX to Telecable's PSTN. For such services, legacy SDH is used to transport the E1 line.

Two Different Technologies at the Same POP

Telecable had been employing Ethernet-over-SDH (EoSDH) technology to deliver its Ethernet services. Since it is now more common to deploy Ethernet directly over fiber using a Metro Ethernet network, however, it is now possible to see two different technologies – SDH and Ethernet – operating simultaneously at the same Point Of Presence (POP).

"TDM-over-Ethernet provides Telecable with the opportunity to simplify the network by allowing us to employ a single technology that supports TDM services when required."

Jose Manuel Menendez, Connectivity & Datacenter Manager, Telecable.

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In consultation with Elecnor, a RAD partner in Spain, Telecable decided to deploy RAD's Service Assured Access TDM-over-Ethernet pseudowire technology. Pseudowire simplifies Telecable's network by enabling it to build out a Metro Ethernet network that can also support TDM services whenever they are required. "TDM-over-Ethernet provides Telecable with the opportunity to simplify the network by allowing us to employ a single technology that supports TDM services when required," notes Jose Manuel Menendez, the company's Connectivity & Datacenter Manager.

Telecable now uses this solution to connect new subscribers and plans to expand its deployment of RAD's IPmux family of pseudowire access gateways and the ETX series of Carrier Ethernet demarcation devices in order to completely retire SDH from its access network. Once that happens, only one access technology – Ethernet – will be available to all customers.

From Telecable's perspective, RAD's pseudowire solution has several advantages:

- It is very scalable in terms of the central POP – one 3U-size box can support up to 1,000 E1 services
- Remote TDM equipment is only required if the customer requires TDM, so there is only one access technology inside the Metro Ethernet physical ring
- Because synchronization is assured using a variety of mechanisms, including Sync-E, 1588-2008 and a proprietary solution, it is possible to offer high-quality synchronized services, including Sync-as-a-Service, using the same central site equipment and mobile-optimized devices
- RAD's IPmux family and ETX devices employ standard management protocols (SNMP/ Telnet/HTTP), making it easily integrated into existing management systems

The Business Case

"Before deciding what solution to deploy, Telecable analyzed the impact on OpEx and CapEx by comparing pseudowire to its existing legacy costs," states Ignacio Fumanal, General Manager of RAD Iberia. "It found that RAD's pseudowire technology reduces CapEx at the service end points by up to 75% and CapEx at the POP by up to 50%," he adds. " These statistics speak for themselves."

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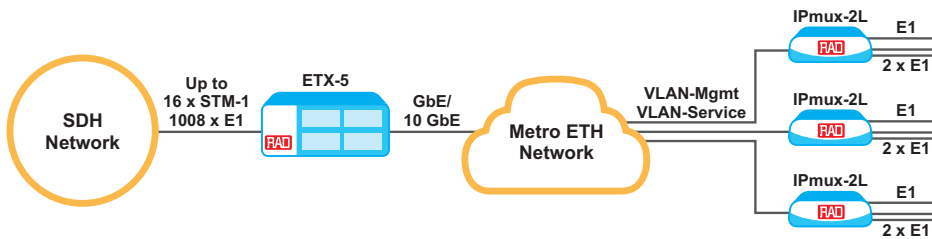
Ignacio Fumenal,
General Manager, RAD Iberia.

Features

- One 3U-sized unit can support up to 1,000 E1 services
- Single access technology in the physical ring
- Various synchronization alternatives, including Sync-E, 1588 and a proprietary solution
- Standard management (SNMP/ Telnet/ HTTP)

Benefits

- Scalable solution
- Remote TDM equipment is required only for TDM customers
- Enables high quality services, including Sync-as-a-Service, using the same central-site equipment and optimized cellular devices
- Continued use of existing management systems

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