

# Alcatel-Lucent 1643 AMS Access Multiplexer Small

Alcatel-Lucent 

Cost-effective STM-1  
multiservice metro access





The Alcatel-Lucent 1643 Access Multiplexer Small (AMS) is a compact multiservice provisioning platform (MSPP) that allows service providers to deliver new services to small and medium enterprises (SME). Delivering cost-effective, multiservice access, the 1643 AMS adds Ethernet to traditional TDM and SDH networks, eliminating the need for overlay equipment. Extending networks to the customer premises, it is energy efficient and compact, improving the use of space and reducing operating expenditures (OPEX) while offering enhanced revenue-generating potential.



## Meeting enterprise demands

New services, such as triple play and business Ethernet, are placing great demands on the existing transport infrastructure. To be profitable, service providers must reduce OPEX while meeting SME demands by offering a host of revenue-generating Internet Protocol (IP) and Ethernet services. At the same time, they must avoid the complexity and expense of overlay networks.

The Alcatel-Lucent 1643 AMS, a compact multiservice customer premises equipment (CPE), economically transports TDM and Ethernet services over SDH networks. This system converges voice and data traffic, eliminating the need for overlay networks.

The 1643 AMS efficiently delivers enterprise network services, such as LAN and Private Branch Exchange (PBX) interconnection over fiber,

all services where high performance and reliability are essential attributes. Used for interoffice applications in both access and mobile networks, it facilitates LAN-to-LAN communications on campus and virtual private networks (VPNs). The 1643 AMS has the flexibility to function in diverse local-loop environments, supporting various ring configurations for fiber-to-the-business or -home (FTTB or FTTH) applications.

### Benefits

- Offers a cost-effective multiservice access platform for SME customers
- Increases revenue potential while reducing OPEX
- Extends Ethernet service to the customer premises over SDH facilities
- Delivers a wide range of installation options
- Offers versatile and robust management capabilities and network protection
- Supports fiber and copper access for SDH, TDM and Ethernet traffic through both optical and electrical interfaces



### Enhanced revenue potential, reduced expenses

The 1643 AMS system enhances service-provider revenue-generating opportunities by delivering services such as IP transport, Ethernet Layer 2 VPN and TDM. It decreases OPEX through efficient use of space in tight environments and low power consumption.

### Extended Ethernet services

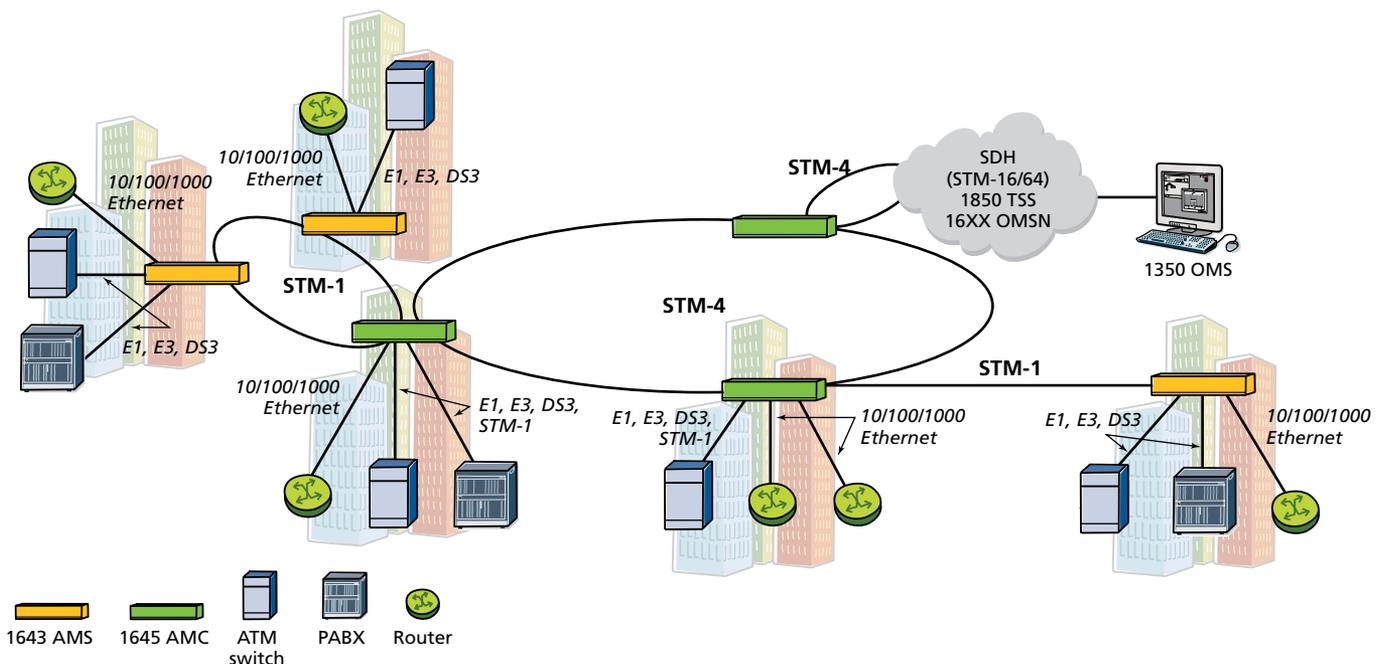
When deploying the optional Alcatel-Lucent *TransLAN*® Cards, the 1643 AMS delivers a diverse mix of standardized Ethernet services. Depending on the *TransLAN* Card selected, the 1643 AMS provides numerous capabilities:

- Full Layer 2 switching functionality: point-to-point and point-to-multipoint

- Virtual concatenation (VCAT) and generic framing procedure (GFP)
- Link capacity adjustment scheme (LCAS)
- International Electrotechnical Commission (IEEE) 802.1Q and 802.1ad virtual local area network (VLAN) tagging
- VLAN trunking, saving physical interfaces at hub locations

As shown in Figure 1, the 1643 AMS supports cost-efficient and reliable multiservice transport for metro access. It can be deployed with other SDH platforms, such as the Alcatel-Lucent 1645 AMC, for aggregation to higher speed networks.

Figure 1. 1643 AMC supporting a typical metro-access application



## Wide range of installation options

The 1643 AMS is designed for rack-mounted applications, while offering both street-cabinet and CPE installation capabilities. Using either DC or AC power, it also provides operating flexibility.



1643 AMS

## Versatile and robust management capabilities

As part of the Alcatel-Lucent optical portfolio, the 1643 AMS is supported by the Alcatel-Lucent 1350 Optical Management System (OMS), a flexible network management package customized to meet specific operational needs. With OMS, the 1643 AMS is managed through an embedded communications channel. The 1643 AMS also supports a PC-based craft interface for local and remote management and low-cost centralized alarming. In addition, the 1643 AMS can be integrated into Simple Network Management Protocol (SNMP) management systems.

The 1643 AMS derives fault-management information by monitoring and analyzing information contained in the path overhead of each virtual

container (VC). Alarm information is filtered and displayed locally, and transmitted to the management-center database.

Performance-management information from the overhead bytes is analyzed and stored in the database of the 1643 AMS. When equipped with a *TransLAN* Card, the 1643 AMS stores Ethernet-specific performance information. This feature facilitates quick turnaround for physical-configuration changes. For data communication networks (DCNs), the 1643 AMS offers several data communication channel (DCC) functions, providing multivendor interworking opportunities.

The 1643 AMS is a compact and cost-effective multiservice unit that enables next-generation services over existing SDH networks.





## Fiber and copper access options

When fiber access is available, the 1643 AMS is installed directly as CPE. If the last mile to the customer premise must be bridged through copper, the 1643 AMS provides a symmetric high-speed digital subscriber line (SHDSL) option. As a result, E1 over copper or 10/100BASE-T Ethernet access through up to four combined SHDSL copper lines can be served.

The base 1643 AMS configuration consists of a main board with 16 E1 ports, cages for two Small Form Factor Pluggables (SFPs) and one option-board slot. The hot-pluggable SFPs used in terminal-multiplexer or add/drop multiplexer (ADM) applications, are offered in three different types:

- STM-1 optical line interface: S-1.1, L-1.1, L-1.2 (SFP)
- STM-1 electrical interface
- STM-1 bidirectional

In addition, there is an option board available to support one of the following interface types: E1, DS1, E3, DS3, SHDSL and 10/100/1000BASE-T and 1000BASE-X Ethernet.

## Cost-effective next-generation services

The E1 ports offer an Integrated Services Digital Network (ISDN) mode, meeting to G.704 and I.431 specifications, and they support retiming mode and frame-slip control. The system offers flexible and adaptive bandwidth allocation by transporting LAN traffic in VCAT VC-12s or VC-3s.

The 1643 AMS adds Ethernet, Fast Ethernet (FE) and Gigabit Ethernet (GigE) transport service to the existing SDH infrastructure. A more cost-effective alternative to separate networks, it converges voice and data traffic, eliminating the need for overlay networks and increasing the network's revenue-generating opportunities.

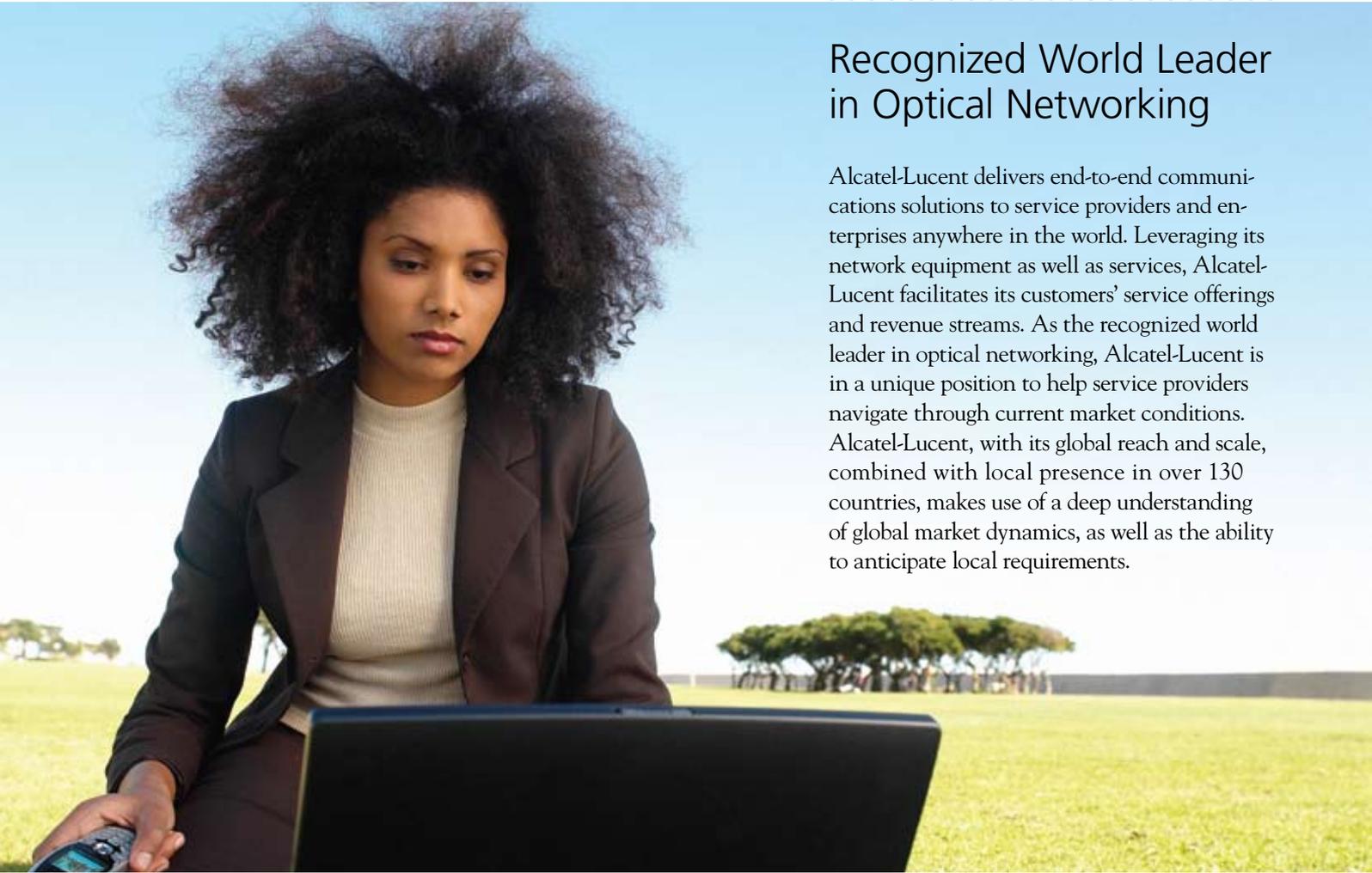
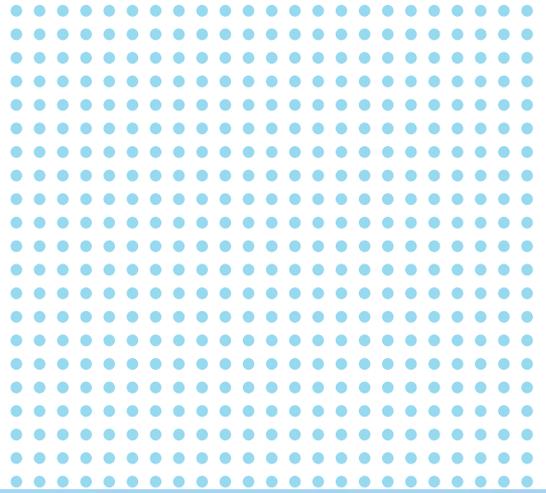
This compact STM-1 multiservice CPE provides cost-effective next-generation services to SME customers and offers a variety of aggregate interfaces suitable for short-range or long-range transmission. Its standards-based approach ensures rock-solid performance in enterprise applications where reliability is crucial for business-critical communications.

The 1643 AMS delivers cross-feature availability and circuit-pack compatibility with other Alcatel-Lucent optical products, a very high mean time between failures (MTBF) rate and a very low failure rate. Using a *TransLAN* Card to leverage existing SDH investments, this multiservice CPE is used for enterprise network applications with high performance and reliability requirements. It also offers a flexible choice of optical and tributary interfaces.



### Key features

- Low-cost multiservice access over the established SDH base
- Wide range of SFP interface types: S1.1, L1.1, L1.2, STM-1 bidirectional and STM-1 electrical
- Ethernet, FE and GigE with an optional *TransLAN* Card
- Space- and energy-saving compact design
- VC-12, VC-3 SNC protection and 1+1 multiplexer section protection (MSP)
- Orderwire support
- E1/Ethernet over copper (TU-12) through SHDSL
- Street cabinet or CPE installation options
- Optional Ethernet Layer 2 switching and aggregation



## Recognized World Leader in Optical Networking

Alcatel-Lucent delivers end-to-end communications solutions to service providers and enterprises anywhere in the world. Leveraging its network equipment as well as services, Alcatel-Lucent facilitates its customers' service offerings and revenue streams. As the recognized world leader in optical networking, Alcatel-Lucent is in a unique position to help service providers navigate through current market conditions. Alcatel-Lucent, with its global reach and scale, combined with local presence in over 130 countries, makes use of a deep understanding of global market dynamics, as well as the ability to anticipate local requirements.

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