

**Solutions for Service-Integrated Broadband Access Networks**

**Next Generation SDH**

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**Our earth**

become a  
leading supplier  
of broadband access  
network solutions  
and services

### AXXESSIT HISTORY

Telettra Norge a.s. (1976 - 1992)

STK Standard Telefon og kabelforbruk (1915 - 1986)

Alcatel Telecom Norway (1987 - 1993)

Alcatel Telettra Norway (1993 - 1997)

Alcatel Telecom Norway Division Telettra (1997 - 1999)

AXXESSIT 2000 -

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### Description of AXXESSIT products

AXXMETRO

AXXCONECT

AXXE10

AXXE155E

AXXE155E

IP Backbone/MPLS

P131R/20R

TDM services

Ethernet services

Mapping of Ethernet into SDH

DCN features

Network management

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### AXXE10 Base Module and PDH Modules

The AXXE10 is a traffic concentrator that supports different types of transmission media. It can be used in networks based on fibre, radio or copper media. The AXXE10 concentrates both IP-and TDM-traffic and is able to interface to both TDM and IP backbone networks. The AXXE10 maps both IP and TDM traffic into a TDM data stream.

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### AXXE10 A Highly Versatile Consolidation Unit

IP/Packet Traffic Carried in TDM

Any Transmission Media:  
- Fiber  
- Copper

Simple Flexible Scalable Inter-Operable Compact Low-Power Affordable

AXXESSIT

AXXE10

Any Topology Supported:  
- Ring  
- Mesh  
- Star  
- Bus  
- Chain  
- Any Combinations

Stackable:  
- Build Very Small Nodes  
- Scale Up in Small Steps  
- to Very Large Nodes

Low Power Dissipation

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## AXXEDGE Available SDH modules

Module Name	Nr. of Inter.	Nr. of Inter per box	Type of module
8xS-1.1-LC	8	16	Short haul STM1 interfaces with 8 mappers
8xS-1.1-LC	8	32	Short haul STM1 interfaces
2xS-1.1-LC	2	8	Short haul STM1 interfaces
2xS-1.1-LC	2	8	Short haul STM1 interfaces
2xL-1.2-LC	2	8	Long Haul STM1 interfaces
2xS-4.1-LC	2	8	Short haul STM4 interfaces
2xL-4.2-LC	2	8	Long Haul STM4 interfaces
4xS-4.1-LC	4	8	Short haul STM4 interfaces
4xL-4.2-LC	4	8	Long Haul STM4 interfaces
1xS-16.1-LC	1	4	Short haul STM16 interfaces
1xL-16.2-LC	1	4	Long Haul STM16 interfaces

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## AXXEDGE Available SDH modules: PDH, LAN

Module Name	Nr. of Inter.	Mapper (Nr)	Type of module
8xE1-RJ45	8	No	E1 interfaces with one connector per interface
63xE1-LFH	63	No	E1 interfaces with 32 interfaces per connector
6xE3-1.0/2.3	6	No	E3/T3 interfaces
21xE1-3xE3-LFH-1.0/2.3	21xE1 3xE3	No	Hybrid module with E1 and E3/T3 interfaces
2xSTM-1+21xE1	2xSTM-1 21xE1	No	Hybrid module with STM-1 and E1 interfaces
8xFE-RJ45	8	No	LAN interfaces
4xFE-4xMAP-RJ45	4	Yes (4)	Lan interfaces with mappers
2xGE-SM-LC	2	No	GE LAN interfaces with both optical and electrical interfaces
8xFE-16xMAP-RJ45	8	Yes (16)	LAN interfaces
2xGE-2xMAP-RJ45	2	Yes (2)	LAN interfaces

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## AXX155E Enhanced Integrated Access Device



The AXX155E is an Integrated Access Device for use in fibre optic networks. The AXX155E combine IP- and TDM-traffic, by running IP- along with TDM-channels inside an SDH STM-1 frame structure that can be easily carried across the network. The bandwidth of the IP-channel is configurable up to 100 Mb/s true "wire-speed". The IP part of the AXX155E consists of a L2/L3 switch.

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## AXX10/AXX11 Low-Cost Integrated Access Device

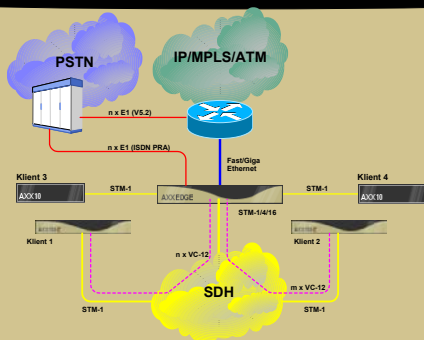


The AXX10 is a new Integrated Access Device for use in fibre optic networks. The AXX10 combine IP- and TDM-traffic, in a cost-effective way, by running IP- along with TDM-channels inside an SDH-frame structure that can be easily carried across the network. The bandwidth of the IP-channel is configurable to 10 Mb/s or 100 Mb/s true "wire-speed".

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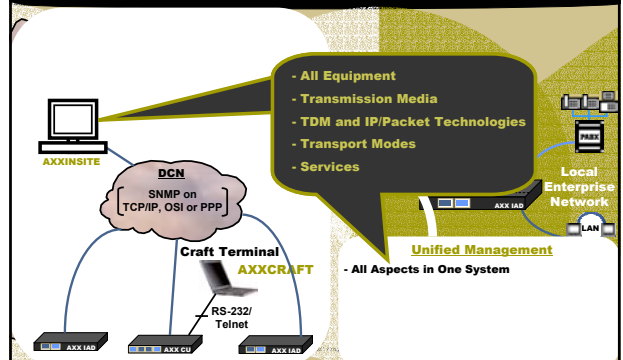
## AXXESSIT AXXESSIT in existing IP/MPLS/ATM/Ethernet/PSTN network

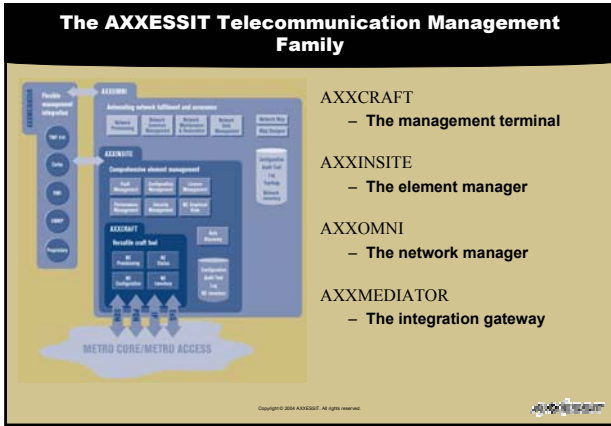
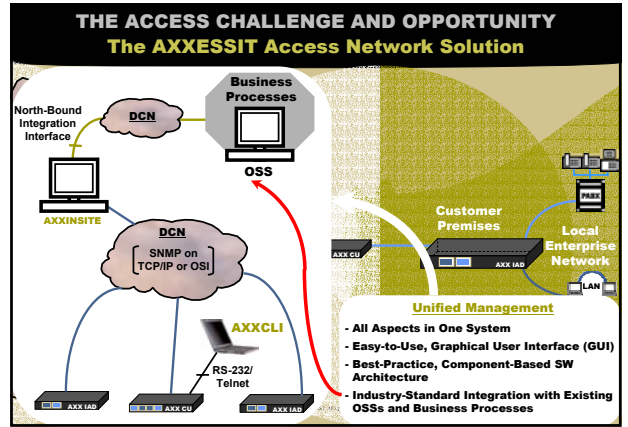
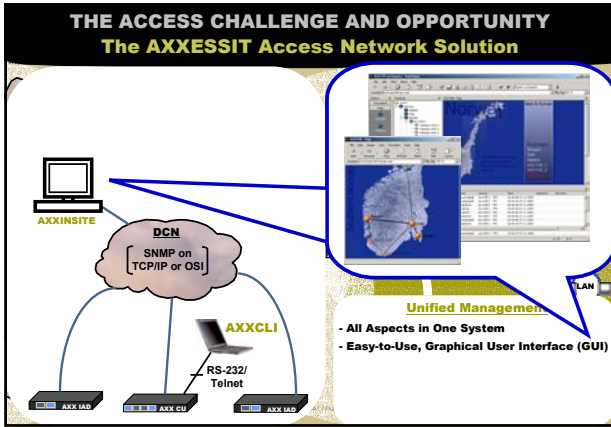


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## THE ACCESS CHALLENGE AND OPPORTUNITY The AXXESSIT Access Network Solution





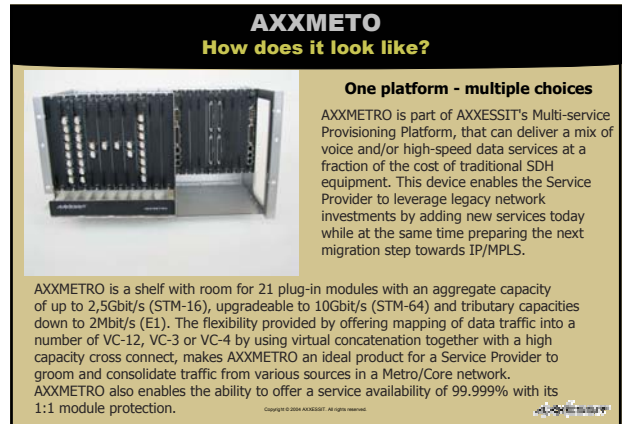
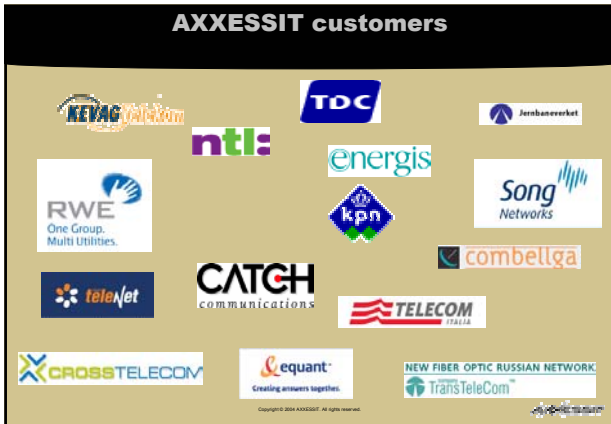
### AXCESSIT customers in Ukraine

End customers

- DataCom
- Farlep/Odessa

Partners

- Vector Kiev
- InCom



## AXXMETRO Aggregate card interfaces

Type of card	Nr of int.	Media	Short Haul 15km	Long Haul 40km	Long Haul 80km	Single Fibre	CWD M	DWD M
STM-1	1-2	Opt	✓	✓	✓	✓	✓	✓
STM-4	1-2	Opt	✓	✓	✓	✓	✓	✓
STM-16	1-2	Opt	✓	✓	✓	✓	✓	✓
STM-64	1-2	Opt	✓	✓	✓	✓	✓	✓

- **Up to two aggregate interfaces**
  - STM-64 in later release
  - All optics are based on SFP (XFP for 10G)
- **Miscellaneous interfaces**
  - CLI (VT-100) terminal interface on the front of the card
  - MAN, Synch, Aux, PWR, Alarm and FAN interfaces on dedicated connector card

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## AXXMETRO Interfaces for tributary cards

Type of card	Nr of int.	Media	Short Haul 15km	Long Haul 40km	Long Haul 80km	Single Fibre	CWD M	Multi Mode 500m	Att.
STM-16	1	Opt	✓	✓	✓		✓		
STM-4	1-4	Opt	✓	✓	✓		✓		
STM-1	1-8	Opt	✓	✓	✓	✓	✓		
STM-1 Opt/Elec	0-4 4	Opt Elect	✓	✓	✓	✓	✓		12 dB
FE	8	Elect							100m
FE	1-8	Opt	✓	✓		✓	✓	✓	
GE	1-2	Opt	✓	✓	✓	✓	✓	✓	
Opt/Elec	2 ?	Elect							100m
LAN	1-2	Opt	✓	✓			✓	✓	
E1	8/63	Elect							6 dB
E3/T3	3-6	Elect							12 dB

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## AXXCORE What does it look like?

One slot for aggregate module

Two slots for tributary modules



- Tributary and optical modules can be upgraded in the field
- Hot insertion is not supported

Size 114mm, 114mm and 114mm

- Support for wall mounting and desktop mounting

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## AXXCORE Configurations

- Functionality  TM  ADM
- Aggregate interfaces  1  2
- Aggregate line rate  STM-1  STM-4
- Ethernet functionality  L1  L2
- AC power
- 16xE1 on main module
- E1 patch panel  75  120
- 8xE1 32xE1 3xE3 4xFE GE
- Tributary slot 1
- Tributary slot 2

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## AXXCORE Aggregate module interfaces

Type of module	Nr of int.	Media	Short Haul 15km	Long Haul 40km	Long Haul 80km	Single Fibre	CWDM
STM-1	1-2	Opt	✓	✓	✓	✓	✓
STM-4	1-2	Opt	✓	✓	✓	✓	✓

- **One or two aggregate interfaces**
  - All optics are based on SFP
  - Optical modules support hot insertion

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## AXXCORE Interfaces for tributary modules

Type of module	Nr of int.	Media	Short Haul 15km	Long Haul 40km	Long Haul 80km	Multi Mode 500m	Type of con.
FE	4	Elect					RJ-45
GE	1	Opt	✓	✓	✓	✓	SFP/LC
GE	1	Elect					RJ-45
E1	8	Elect					RJ-45
E1	32	Elect					LFH
E3/T3	1-3	Elect					1.0/2.3

- **Optical modules based on SFP Multi Source Agreement**
  - Optical modules support hot insertion
- **32xE1 interface use one LFH connector for all interfaces**
  - 75 ohm and 120 patch panel are available

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