



OTN Systems Introduction





Company

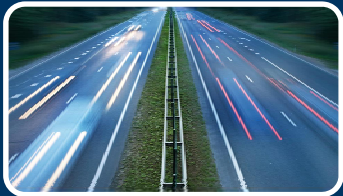
→ **OTN Systems**



OTN Systems in a nutshell



- ▶ OTN Systems HQ is based in Olen, Belgium
- ▶ World-wide footprint through sales offices in US, China, Malaysia, Brasil, Germany, Netherlands, UAE and Algeria complemented with local partners



- ▶ Healthy 20+ million Euro revenue company
- ▶ Over 100 enthusiastic employees of which 45 in R&D
- ▶ The company is going after growth, both organically and through M&A



- ▶ OTN develops and markets its own telecommunication product range for dedicated and industrial networks on a world-wide basis
- ▶ OTN has tailored its products towards specific verticals market segments



Strong roots and a proven track record

SIEMENS

- 1st OTN version OTN-36
- Belgium and expanding beyond

SIEMENS

- 1994: OTN-150 - OTN-600
- New: video transport & switching capabilities
- Important partner: Siemens Transportation & Automation
- 2003: Birth of OTN-X3M-2500
- Annual sales growth: 15%



- Center of competence for industrial networks
- Main focus NSN: operators / CSP



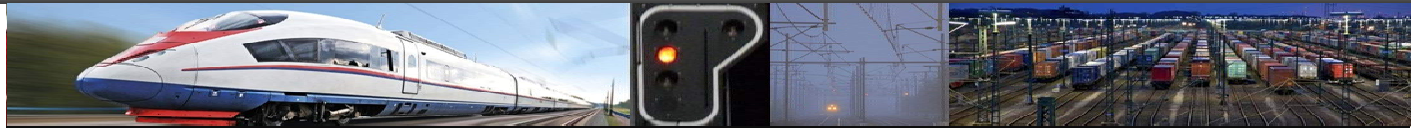
- Management Buy-Out supported by Gimv resulting in spin-out of OTN Systems
- Birth of OTN-X3M-10G
- New XTran product line

1990 -1994
The start of OTN

1994 -2007
Growing the Business

2007 – June '08
OTN as part of NSN

1 July '08 – today
OTN as stand alone



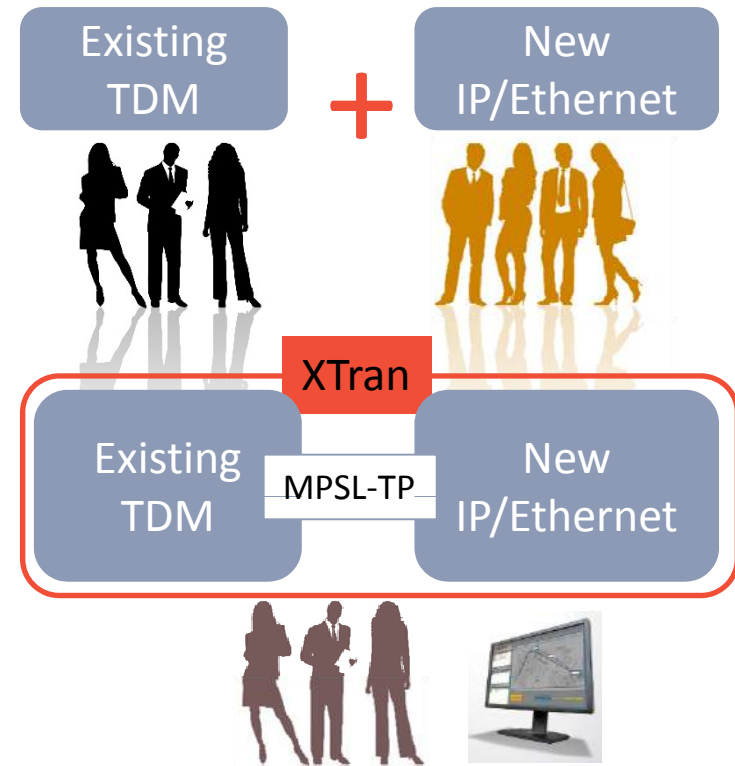
Product Portfolio

→ Product portfolio



OTN-X3M and XTRAN

- The OTN-X3M product family is SDH/TDM based and is in use at about 85 transport authorities worldwide.
- The XTRAN product family is currently under development and is based on the new MPLS-TP standard for packet networks.





Portfolio network products

OTN Classic X3M

XTran

Network technology & layout

SDH/SONET, Ring (coupled), TDM

MPLS-TP, Meshed, Packet

Speeds **Today**
 Future

155Mbps – 10G
 40G/100G

64kbps – 1Gbps
 10G

Typical interfaces

Ethernet, RSx, video, E1, voice, ...

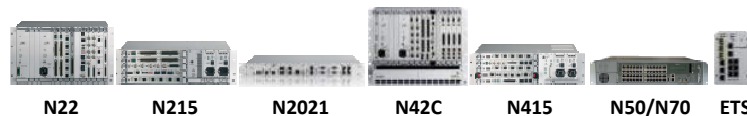
Ethernet, E1, voice

Typical applications & location

Passenger info, CCTV, Public address, stations

Signaling, GSM-R, operational communications, trackside

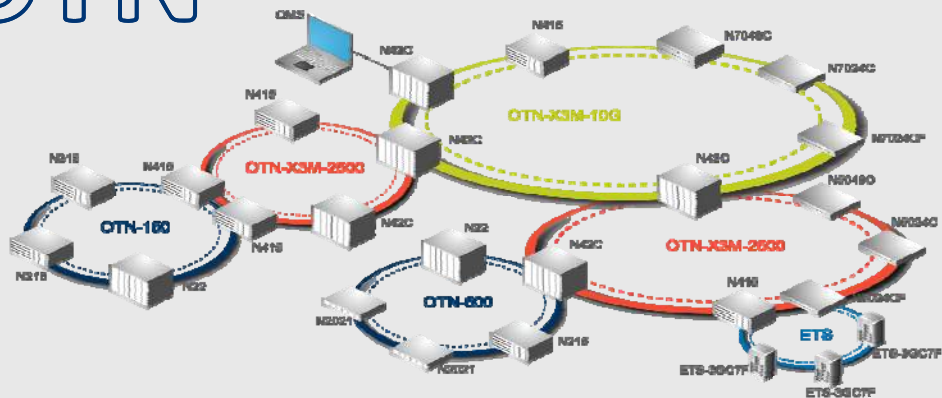
Network Nodes





Network portfolio

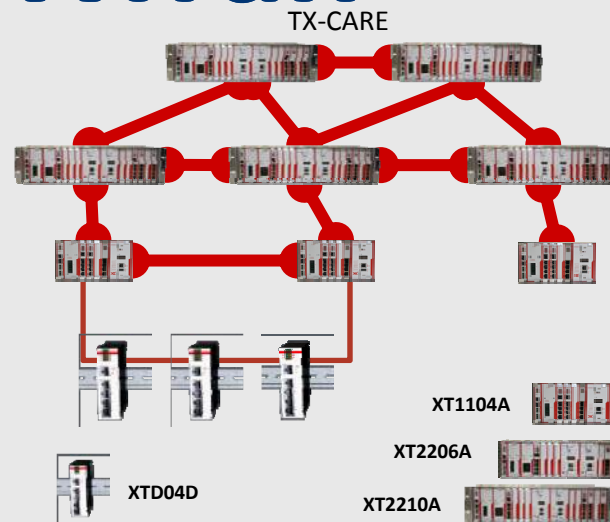
OTN



Network Nodes



XTran





Open Transport Network

Open

Multiservice platform that supports Voice, Audio, Serial Data, Ethernet, Video and Specific communication protocols

Transport

of information in a digital, transparent & secure way

Network

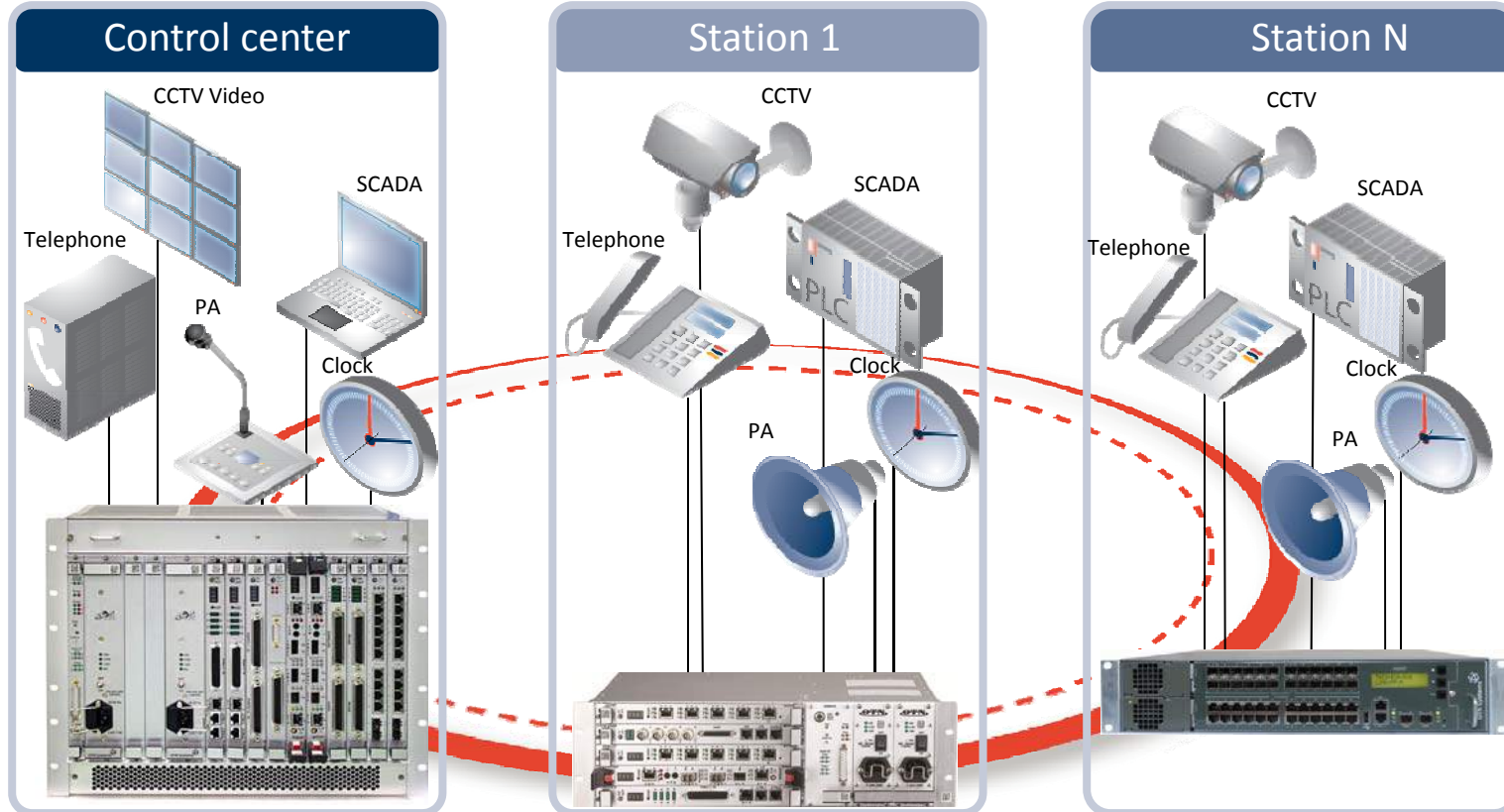
using redundant fiber optic cable as the physical link

Put your entire world on
a fiber!





The integrated OTN Network





OTN-X3M portfolio overview

Multi Service Network



A multitude of interfaces

- Voice: analog, digital, VoIP
- E1,T1
- audio
- Data: RS232/422, RS485
- LAN:10/100/1000Base
- Video: MPEG2/4, H264
- Backbone capacity:
- STM-1/OC-3 (155Mbps)
- STM-4/OC-12 (622Mbps)
- STM-16/OC-48 (2.5Gbps)
- STM-64/OC-192 (10Gbps)

Ethernet & IP Backbone



Ethernet & IP, L2 & L3

- N50/70xx: Backbone nodes for Ethernet & IP Transport
- Connection oriented Ethernet
- 24 GbE ports (Electrical/Optical/PoE) or 48 GbE interface ports (Electrical/PoE) or
- 24 GbE ports (Electrical/PoE) combined with 24 ports transparent E1
- 12 Secured LAN segments
- Industrial L3 features
- Backbone capacity:
- 2.5 Gbps (STM-16/OC-48)
- 10 Gbps (STM-64/OC-192)
- Compatible with OTN-X3M

Ethernet & IP access



Industrial Ethernet

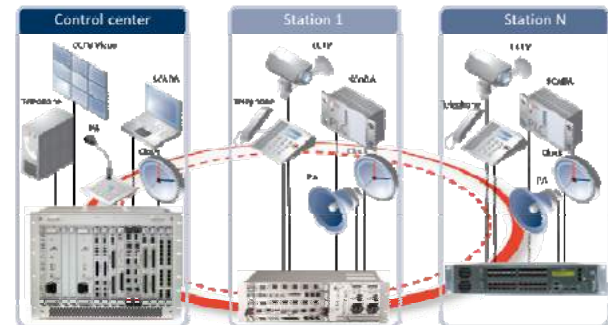
- ETS-3GC7F:
 - 3 GbE Combo ports
 - 7 Fast Ethernet ports
- ETS-4GC24FP
 - 4 GbE Combo ports
 - 24 Fast Ethernet ports with PoE support
- L2 managed switch
- IGMP snooping

Network Management



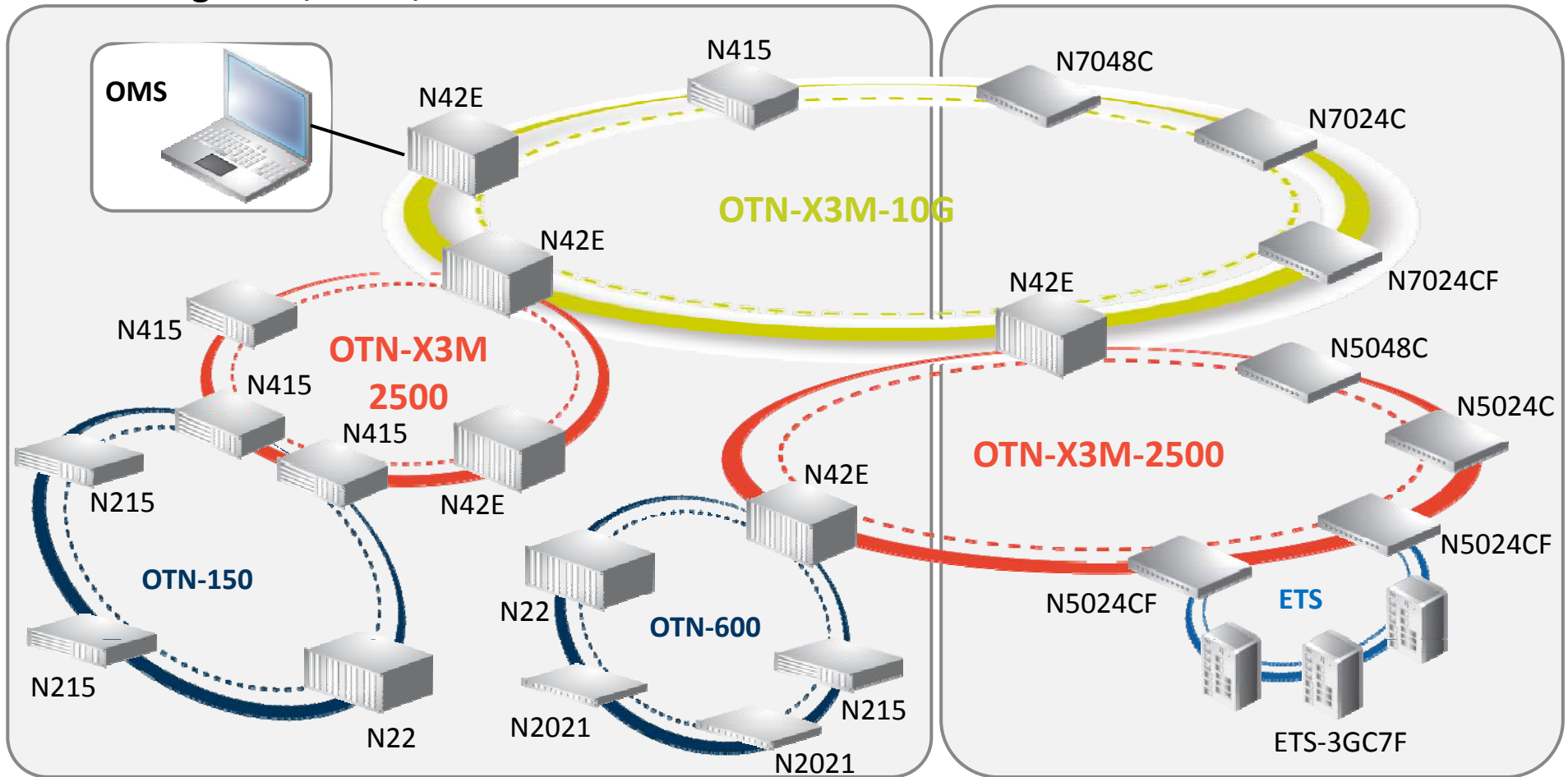
Integrated & easy

- Graphical User Interface
- Hardware Mgmt
- Connection Mgmt
- Alarm logging & forwarding
- User management
- Redundant System



**Mixed interface types:
analog voice, video, serial data & IP**

**Mix of Ethernet interfaces:
10/100/1000Base, Cu, Fiber, PoE**





XTRAN portfolio overview

Ruggedized nodes



Fanless
-20 to +65°C
19" or DIN Rail
EMC hardened

Power options



90-264VAC/18-300VDC

Central Switching



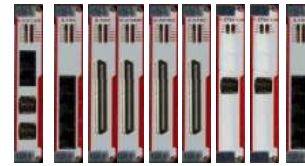
MPLS-TP compliant
Single /dual CSM
Protection <50ms
Quick replacement
Meshed topology
Hardware OAM

Ethernet interfaces

1G – 10G WAN
Layer 2/3
Cu or FO
Power over Ethernet



Legacy interfaces



Sync interfaces: X.21 / V.35
Low speed: RS232, 422, 485
Voice: 2W/4WE&M, FXO, FXS
Teleprotection: C37.94
SDH interworking: STM1/4
SHDSL interfaces

SHDSL demarcation

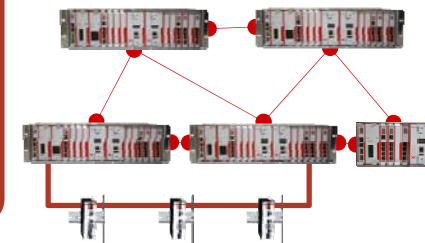


2xSHDSL
4x Fast Ethernet
Ethernet OAM
Fully managed

Management



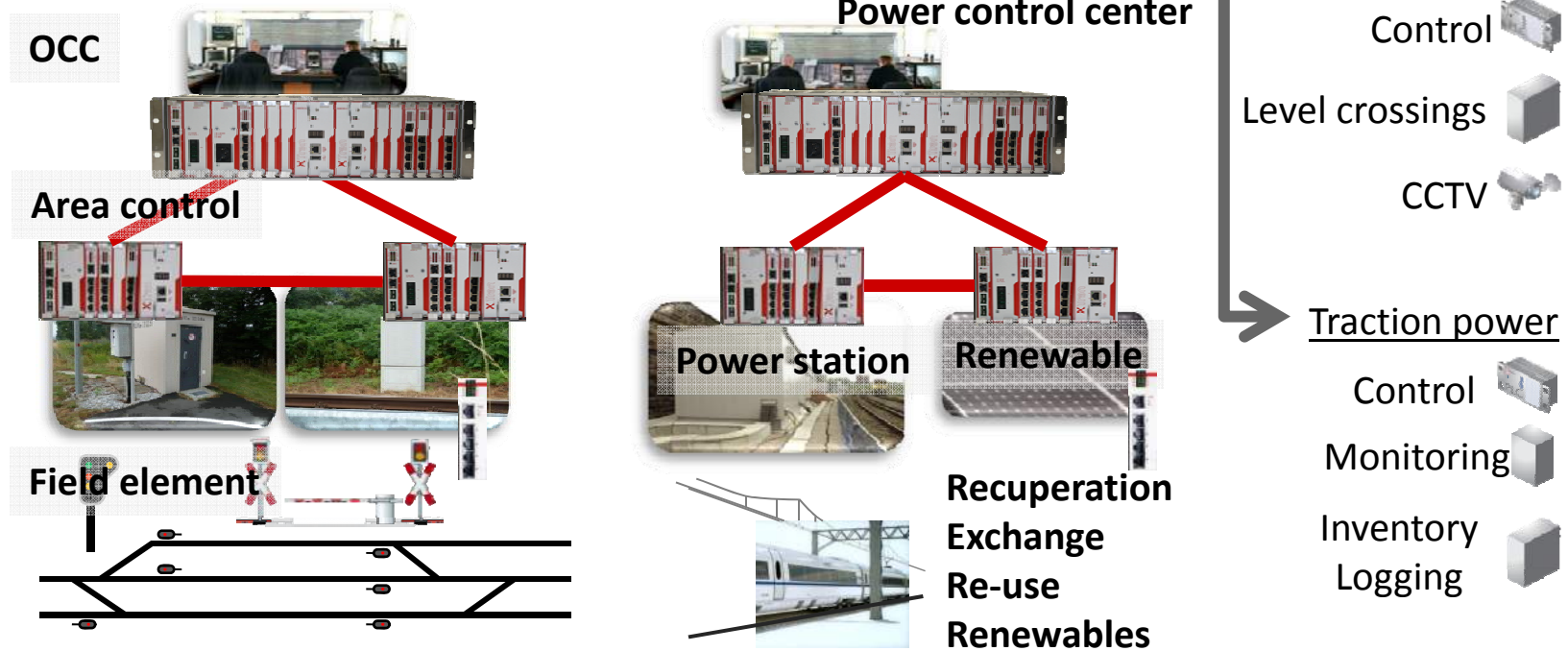
Graphical User Interface
Deployment
Provisioning
Assurance
Alarm handling
User management

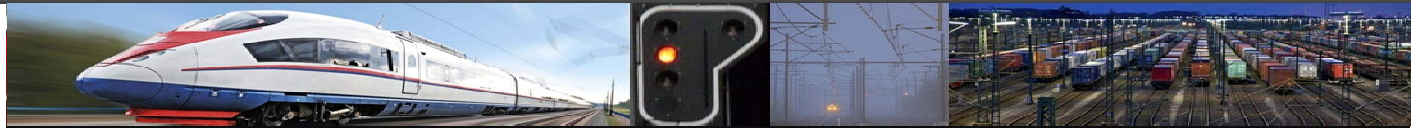




XTRAN overview

Multi-service backbone for the new app's



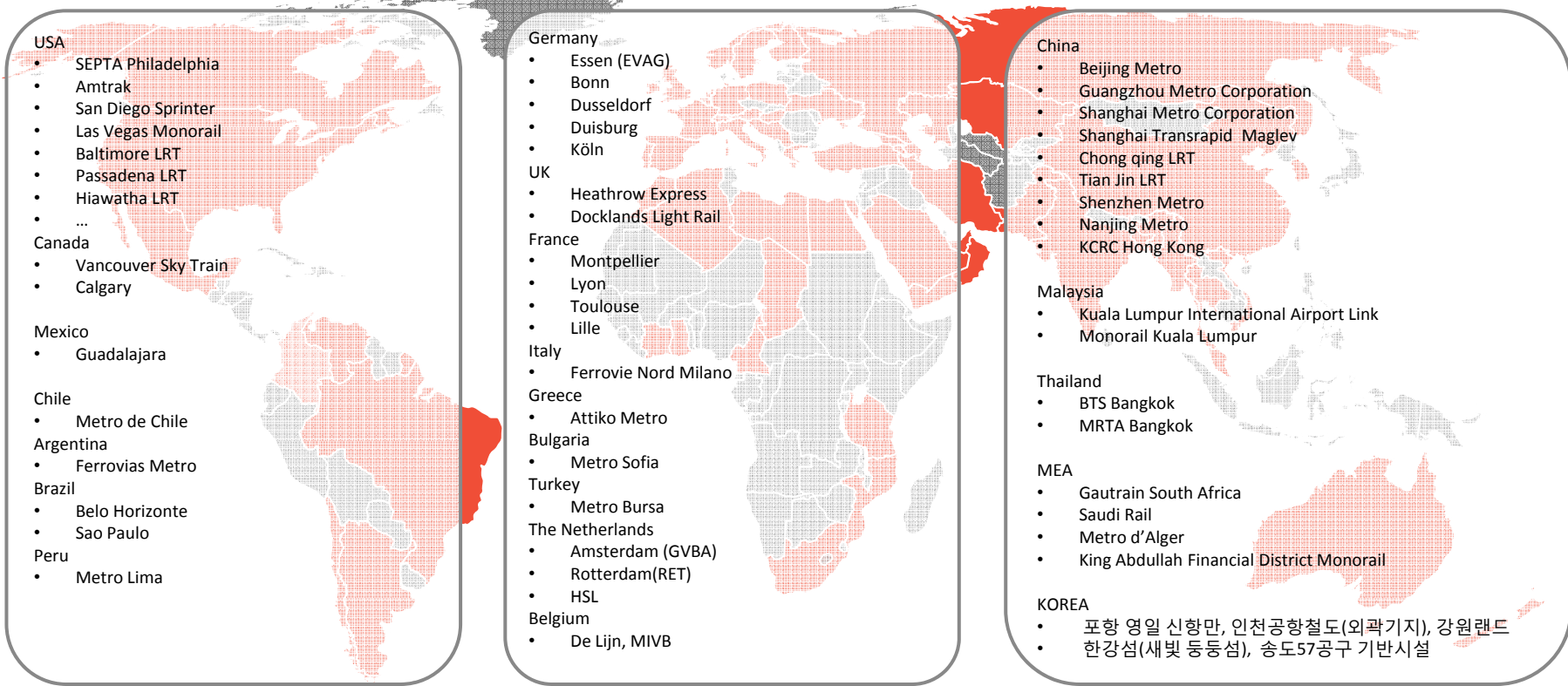


References

→ References



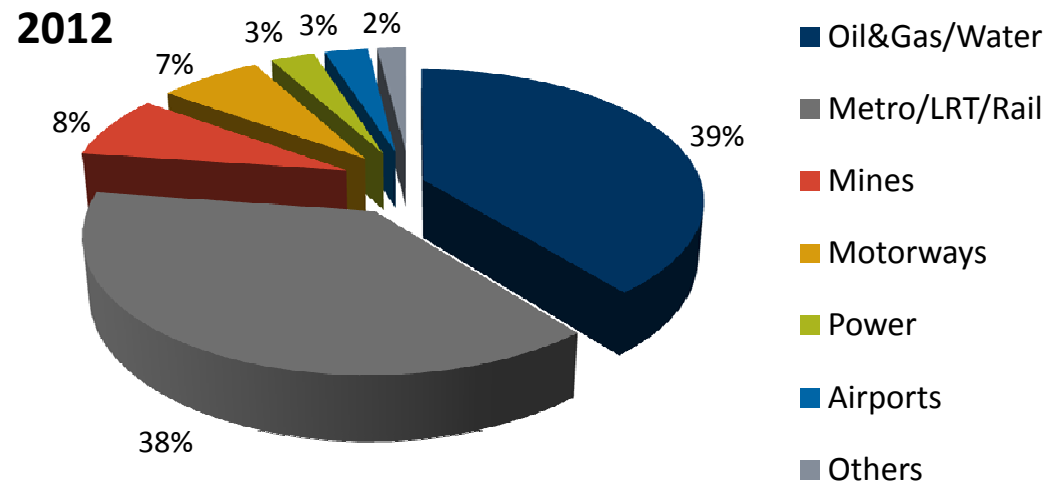
OTN is in use in 85+ Transport Systems world wide...



Sales by segment

→ Highlights

- Main segments are Oil&Gas and Transportation
- Strong relative position in Mining



→ 제품 문의

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