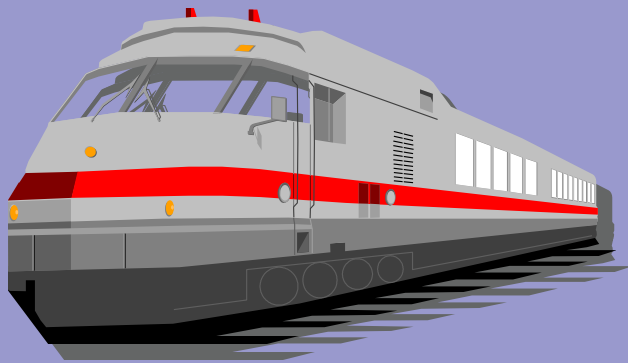**KOREA - FRANCE Urban Transportation Seminar**
**Seoul April 16 ~ 17, 2003**

# Technical trend for railway network and Alcatel DTS solution

Seongwook Cho
(seongwook.cho@alcatel.co.kr
Alcatel Korea

ARCHITECTS OF AN INTERNET WORLD **ALCATEL**

# SCOPE

> Dedicated Telecommunication network for Public Urban Transportation Authorities

> Network capabilities:
  - interface to different equipments
  - transport informations for different applications connected to the network
  - assure the communication between operation and administration staff
  - collect, transport & distribute data related to the controlled equipment.

ALCATEL

# OBJECTIVE

> To provide a reliable, flexible and real-time  Digital Telecommunication System (DTS) to transport the various types of services through a non-blocking network from remote stations to the Control Centre.

> To provide the necessary back-up, redundancy and duplications to assure a permanent control over the whole transport infrastructure of the Authority.

ALCATEL

# CHALLENGE

> The DTS (Digital Transmission System) is part of the NERVE SYSTEM of the TRANSPORT INFRASTRUCTURE requiring high performance and reliable equipment.

> This nerve system has two components:
  - The basic transport backbone
  - A peripheral access network
      for interfacing and connectivity

ALCATEL

# Alcatel SOLUTION (1)

> The Alcatel product portfolio end-to-end network solution:

- The totally reliable SDH technology ( transport backbone)
  - ring protection mechanism
  - redundancy up to port level
  - easily upgradable to a higher capacity

- The flexible Business Access technology
  - interface all services/equipment  in remote stations
  - cross-connect function (non-blocking, fully duplicated)
   supporting: all connections
           broadcasting, grooming and conferencing

ALCATEL

# Alcatel SOLUTION (2)

- Network management
  assuring visibility of the services and performance
  Implementing redundancy for traffic critical components in the
  network, by enabling automatic dual end-to-end transmission
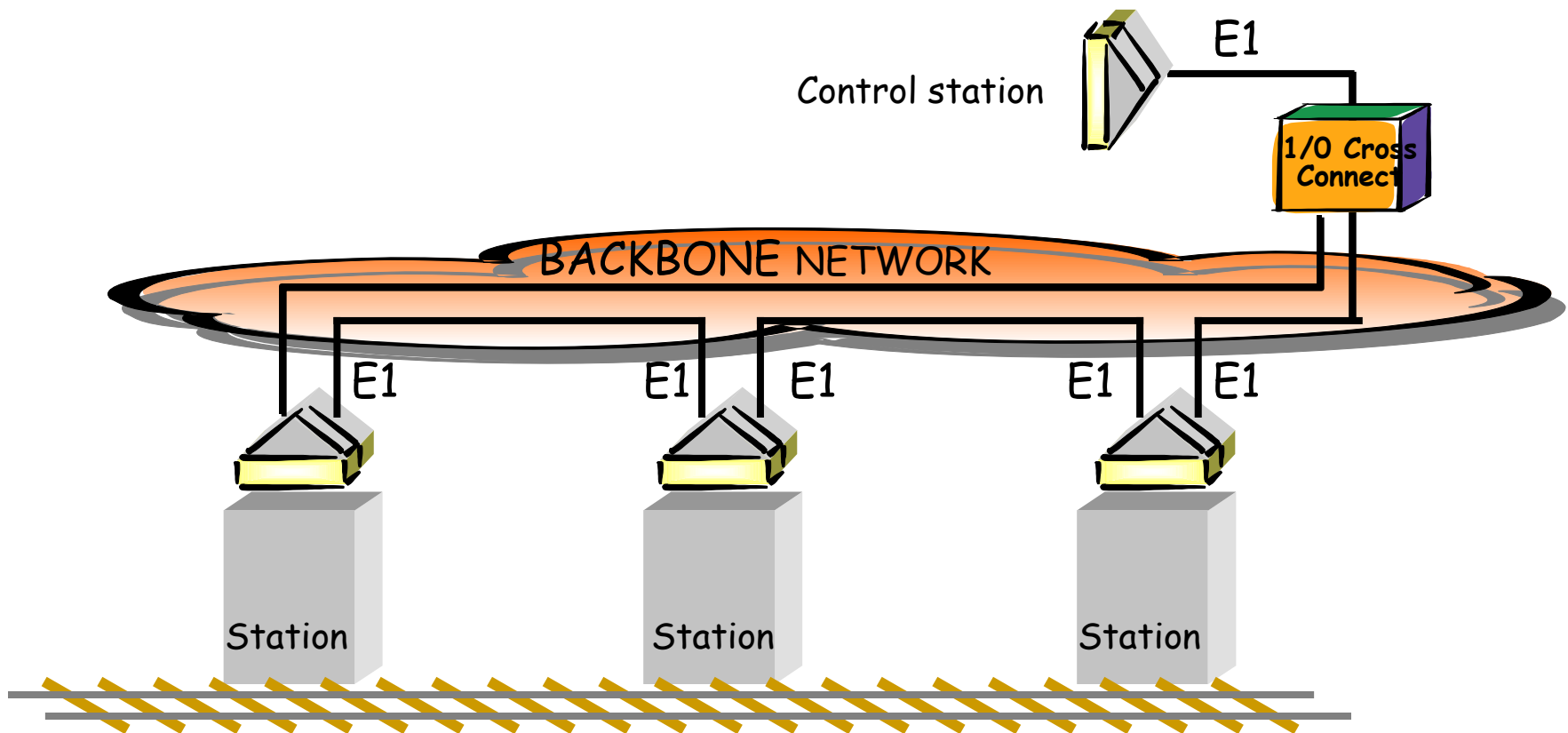  paths

**A L C A T E L**

- Alcatel product families:
   The SDH 16XX for the backbone network
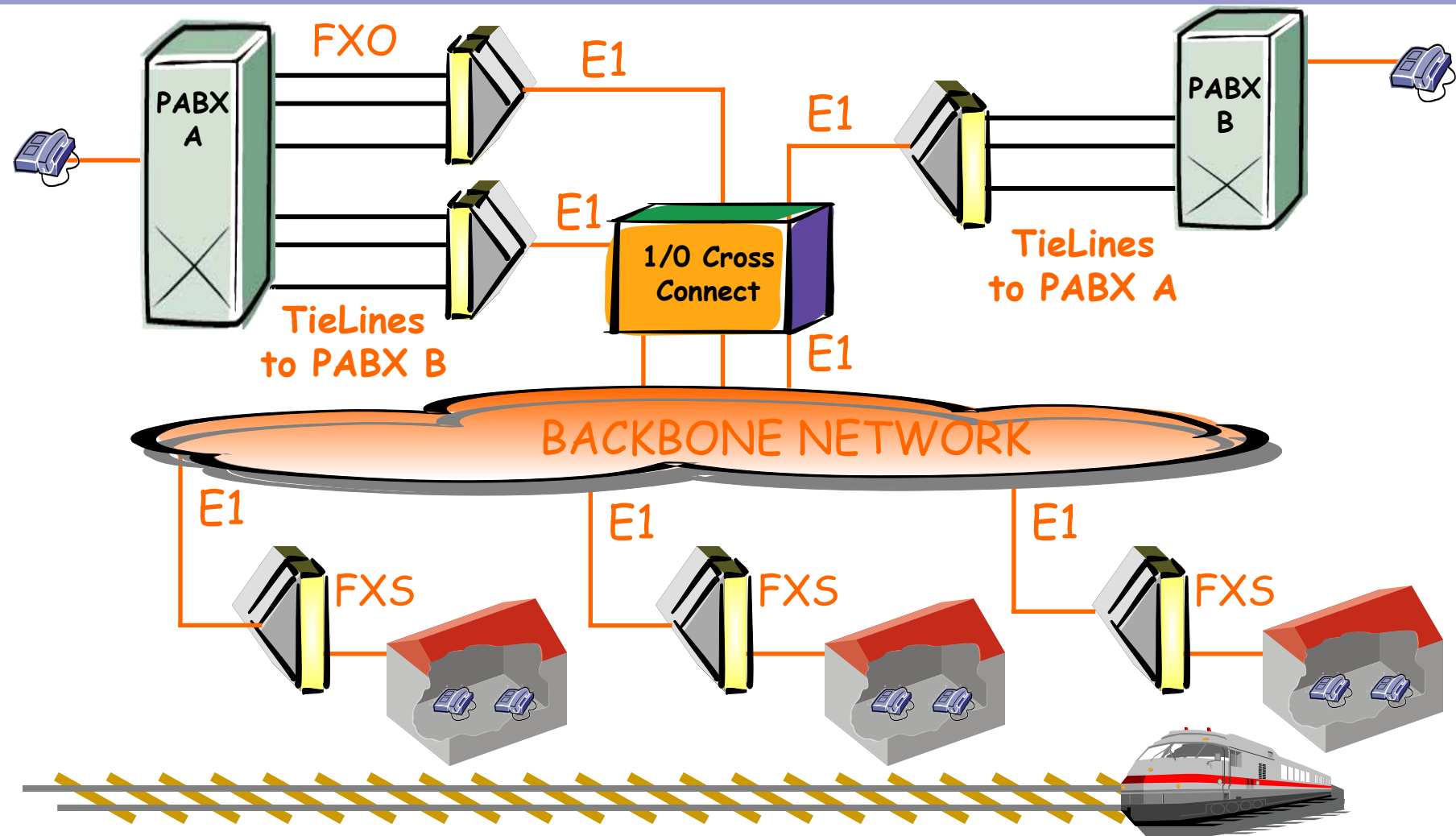   The Business Access 15XX equipment

**ALCATEL**

# NETWORK REQUIREMENTS

> POTS telephone applications with PABX applications

> Public Address

> Dispatcher Networks

> Hotline facilities for emergency events.

> SCADA information collection.

> Alarm collection.

> CCTV distribution and surveillance.

> Audio conferencing.

> Data point-to-point and point-to-multipoint connections.

> LAN bridging and routing.

> Automatic Fair Collection system (AFC).

> Train Radio System (TRS).

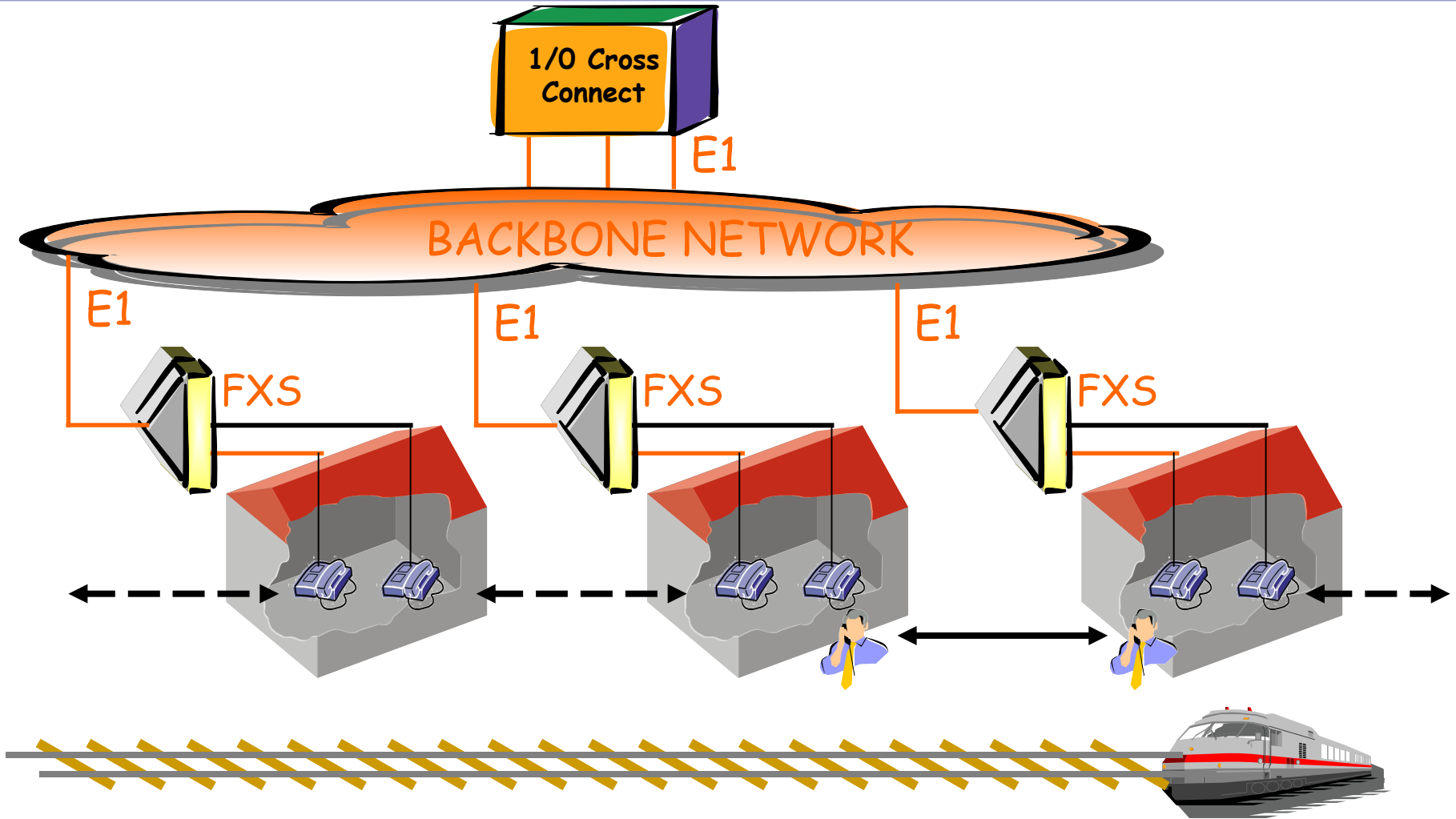ALCATEL

# NETWORK EXAMPLE - General

> Urban Transport, such as Metro's, Subway's, LRT, MRT, Railway are mainly based on linear networks as below :



E1

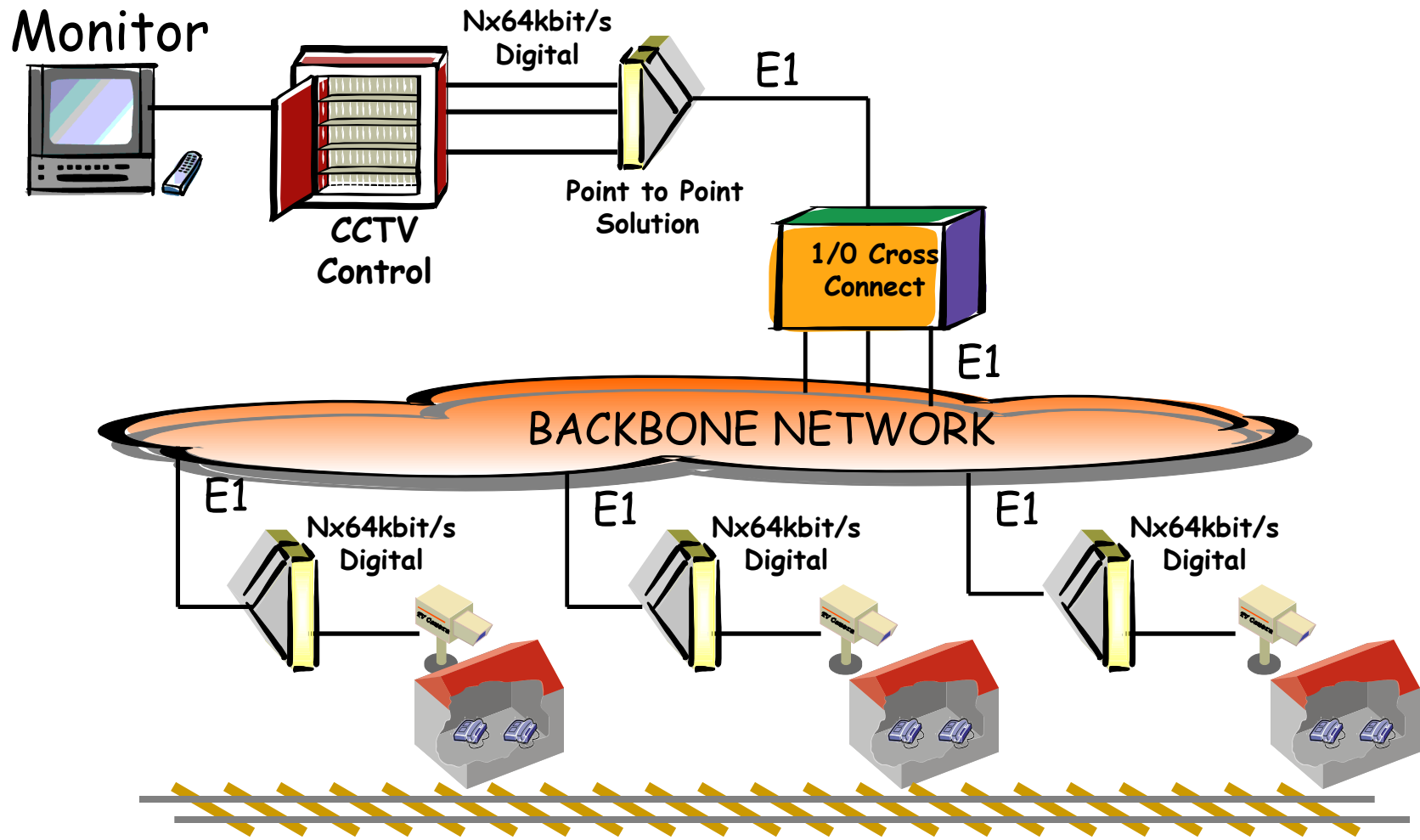Control station
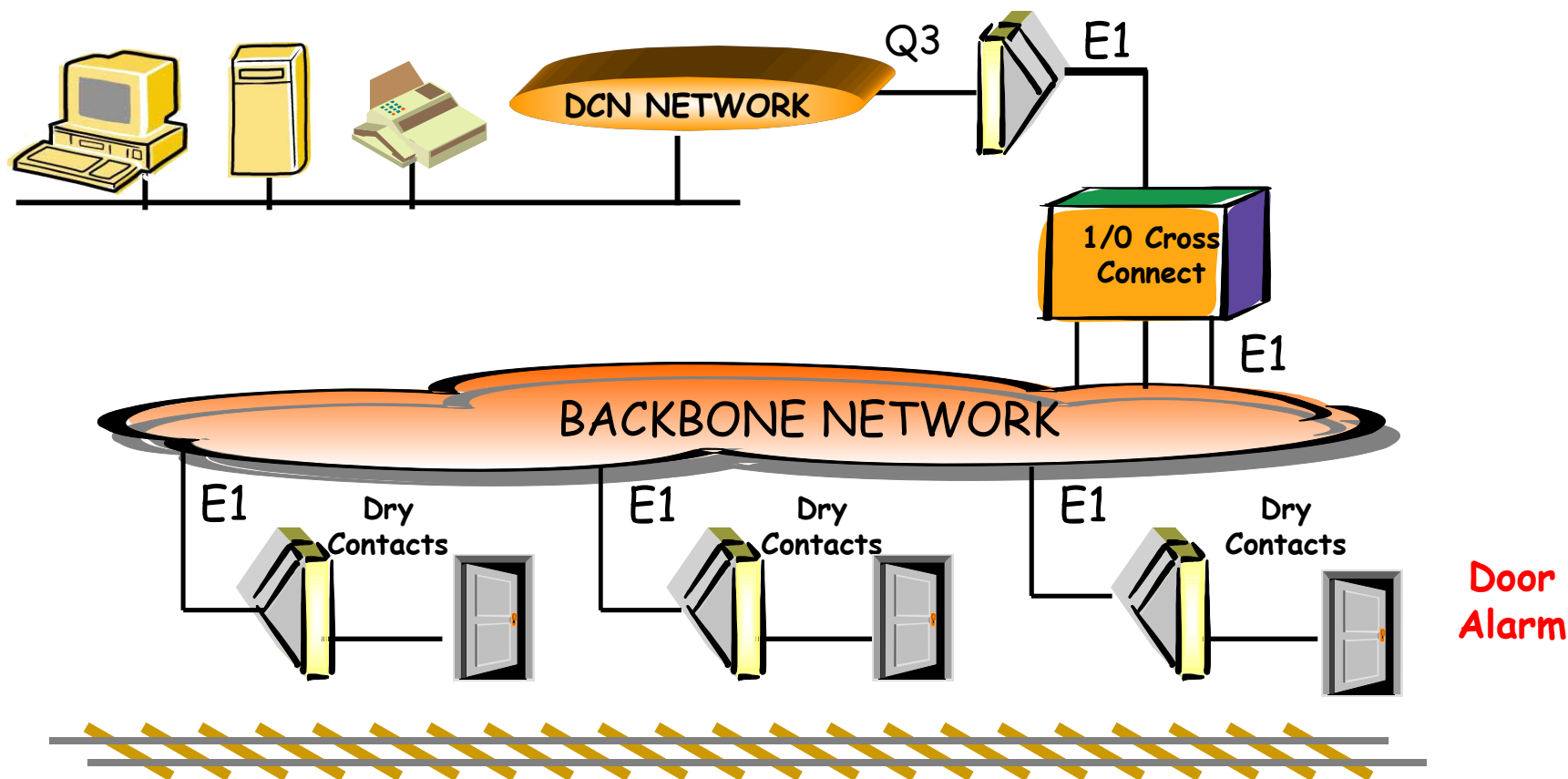
1/0 Cross Connect

BACKBONE NETWORK

E1    E1    E1    E1    E1

Station          Station          Station

ALCATEL

# PABX NETWORK

ALCATEL

# HOTLINE



1/0 Cross Connect

E1

BACKBONE NETWORK

E1

E1

E1

FXS

FXS

FXS

ALCATEL

# CCTV Surveillance

**Monitor**

**Nx64kbit/s Digital**

**E1**

**Point to Point Solution**

**CCTV Control**

**1/0 Cross Connect**

**E1**

**BACKBONE NETWORK**

**E1**    **Nx64kbit/s Digital**

**E1**    **Nx64kbit/s Digital**

**E1**    **Nx64kbit/s Digital**

**ALCATEL**

**OS : 1353AC**

Q3

E1

DCN NETWORK

1/0 Cross Connect

E1

BACKBONE NETWORK

E1    Dry Contacts

E1    Dry Contacts

E1    Dry Contacts

**Door Alarm**

**ALCATEL**

# REFERENCES (Networks)

> In Korea

- Seoul Metro Lines 5, 6, 7 & 8 :     Installed
- Daejeon Metro Line 1 :       Contracted
- Incheon International Airport Railway :  Contracted

> Outside Korea (only few examples)

- Belgian Railways (B-Telecom) - Belgium :  Installed (7 year program)
- Manila LRT Line 2 - Philippines :    Installed
- Circle Line - Singapore :      Contracted
- Network Rail - UK (4 year program) :   Contracted

> Several other railway/subway projects throughout the world such as Shanghai, Dublin, Madrid, Lisbon, Sao Paulo,Berlin,  ...

ALCATEL

# Alcatel's COMMITMENT

> Alcatel is a commited strategic partner of Korean System Integrators, combining different disciplines into an complete high quality, high reliability offer for the end-customer.

> Alcatel has the local resources and competencies
  - to consult the customer
  - to assist in designing
  - to assist in commissioning the most reliable network tailored to the needs.

Performance

Reliability

Safety
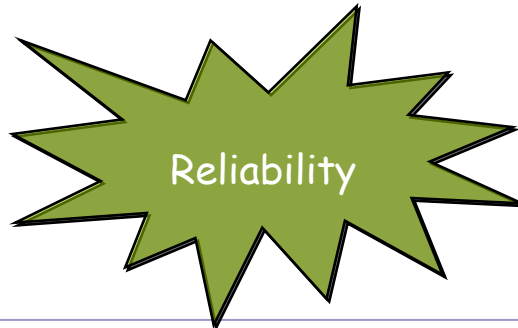
ALCATEL

> Thank you for listening

   • Any Question



> See you again

**ALCATEL**

www.alcatel.com