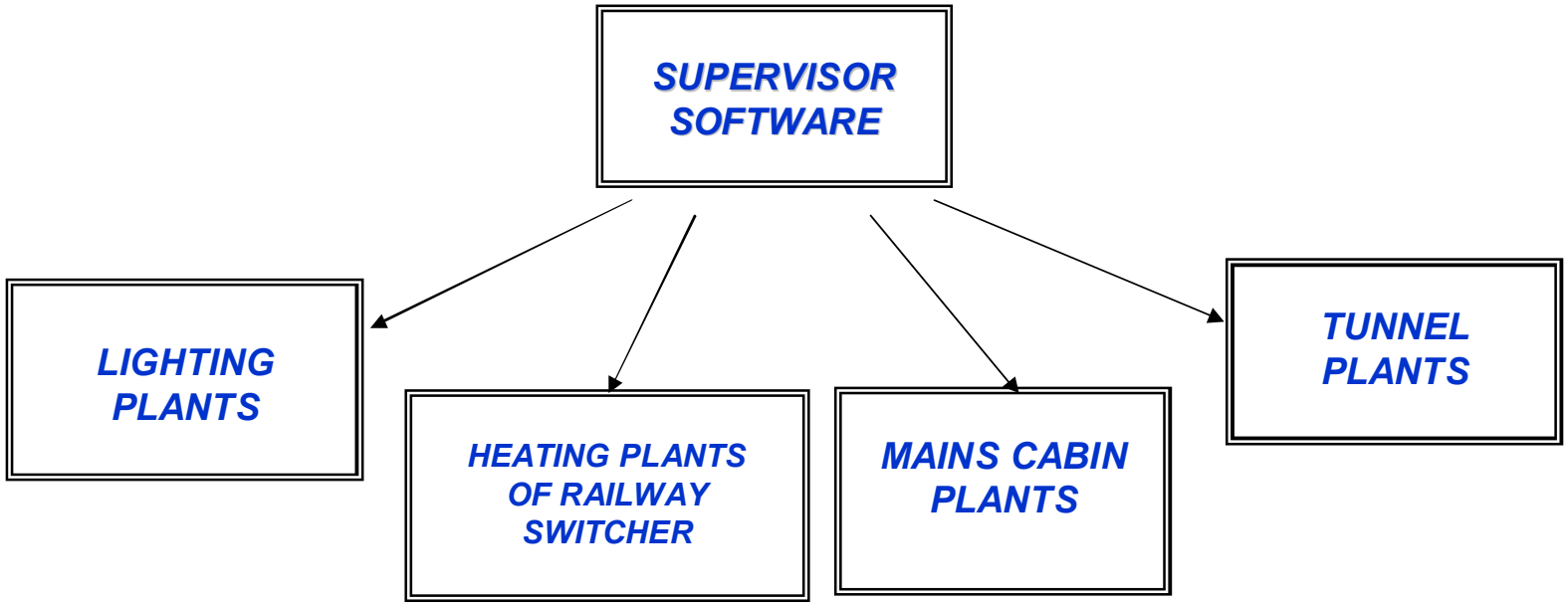
TELELighting System Application

Railway, Highway & Tunnel


Italian Railways monitoring

Supervisor Software

Railway management system



Telemanagement

Management of railway data/alarms

Telemanagement

lighting plants

RIMINI

> High mast
> Platform
> Subway

MILANO C.le

> High mast

Telemanagement

Main Cabin plants

RIMINI

> Supervisior Software
> Data management low voltage side
> Data management medium voltage side



CESENA

> Supervisior Software
> Data management low voltage side
> Data management heating system




RIMINI: Cabin Monfalcone (400kVA) low voltage side

Main cabinet

Control unit installation

C_MAD control unit

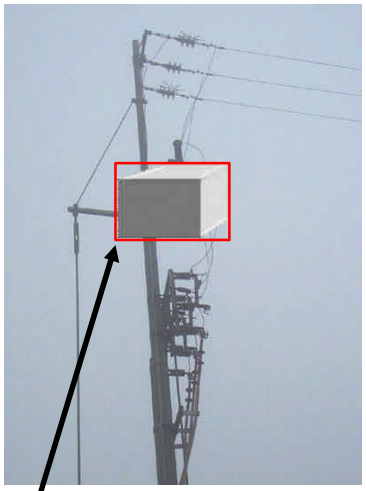
RIMINI: Cabin Monfalcone (400kVA) medium voltage side

MAD-C control unit

MEASUREMENT CELL

Inside installation

(Outside installation)



MEASUREMENT CELL

RIMINI: Cabin Dep. Locomotive medium voltage side

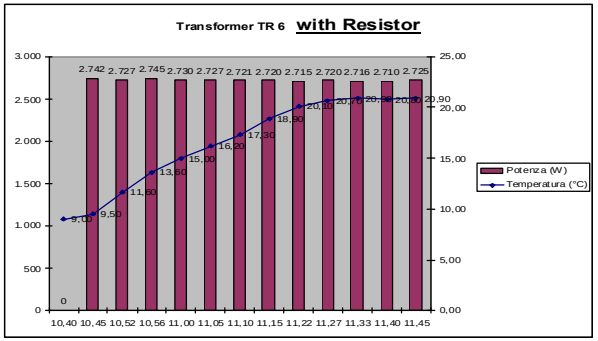
MEASUREMENT CELL

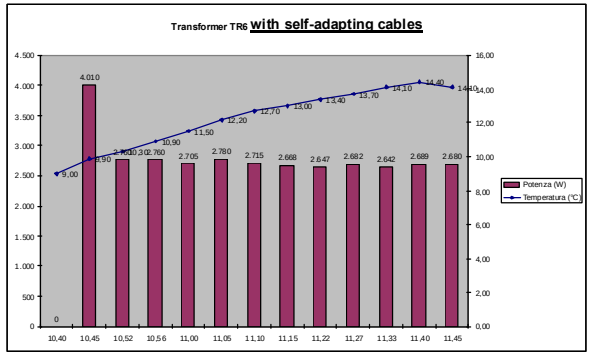
Telemanagement

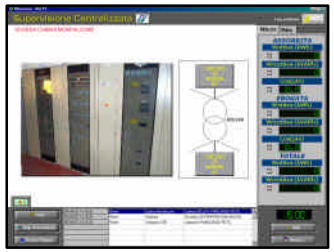
Heating plants

CESENA

> Supervisior Software
> Data management low voltage side
> Data management heating system







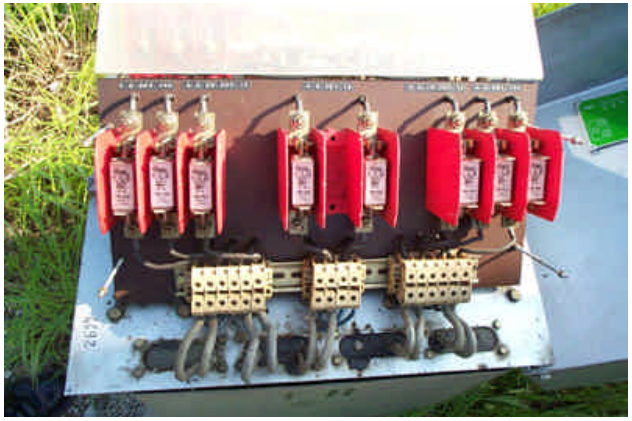
CESENA: low voltage management

Cesena (cabinet Rimini side)

Cesena (cabinet Bologna side)

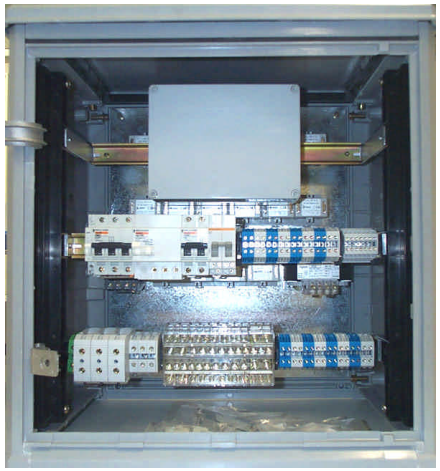
CESENA: MAD_D
Heating switcher control unit

heating switcher cabinet



380V/55V Transformer (resistor)

MAD-D control unit

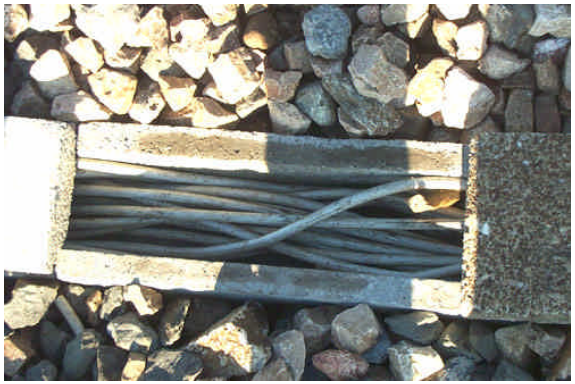


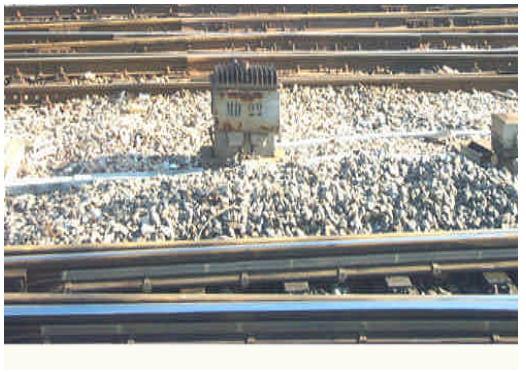
MAD-D control unit

Resistor heating technology:

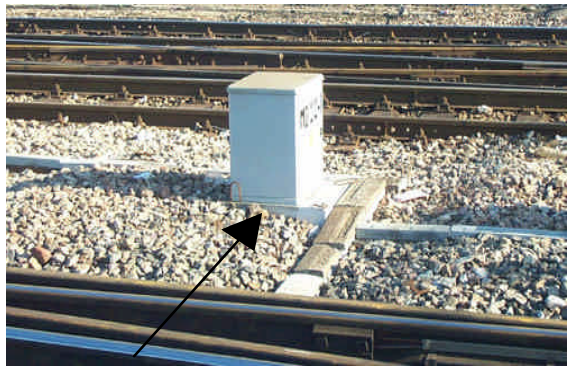
Resistor Transformer
(new generation type)

Resistor Transformer
(old generation)

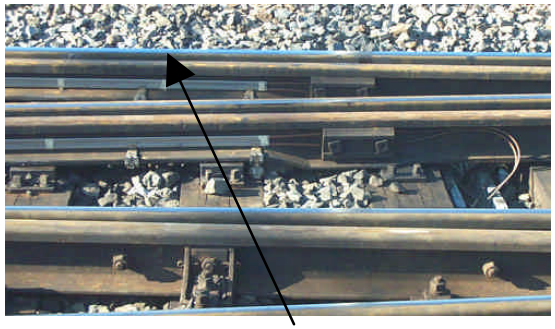




Self-adapting cable heating technology:

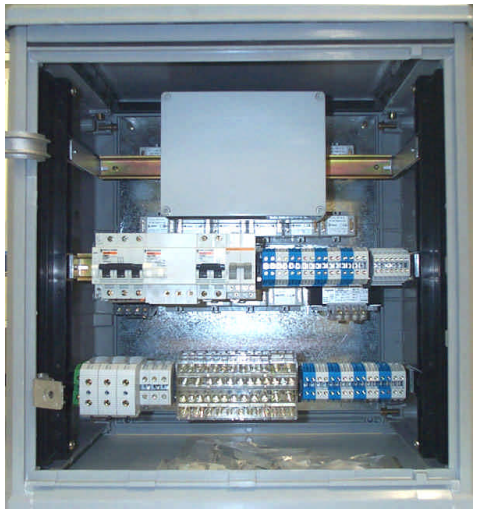


Transformer cabinet



Double self-adapting cables

MAD-D control unit



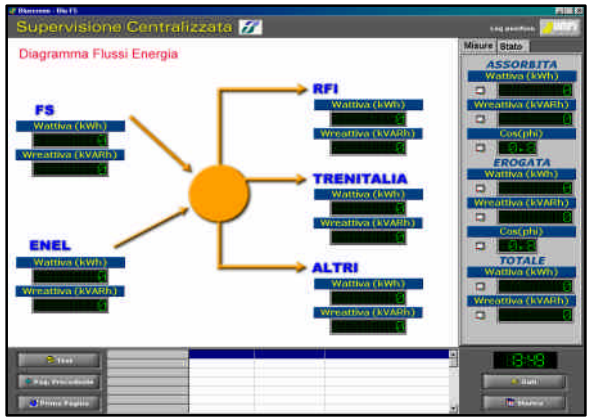
MAD-D control unit

Supervisor Software

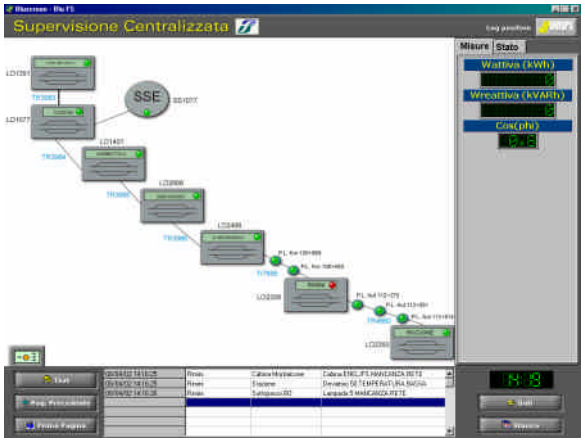
Software pages: Player and Editor

Home Page

Player

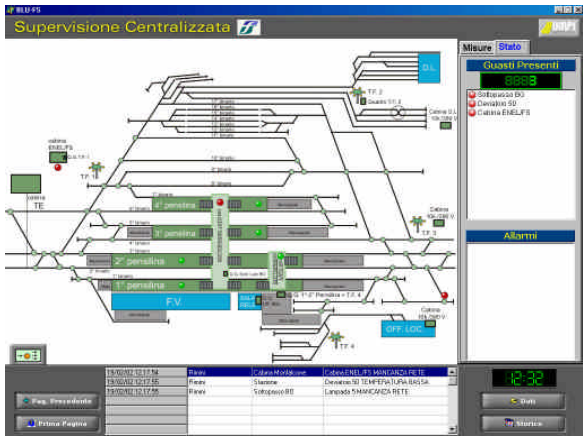


Energy flux



Sector

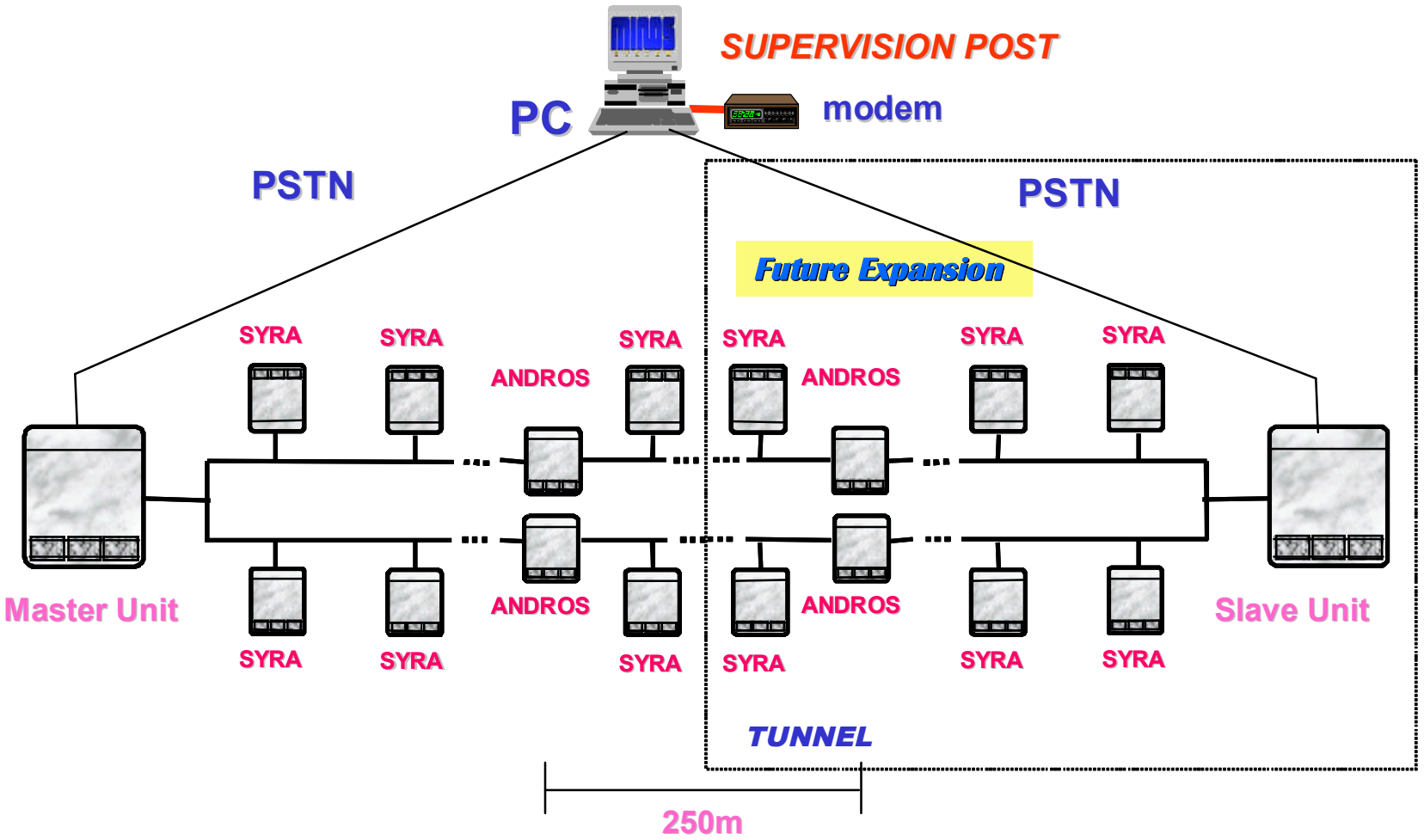
Editor



Station

Telemanagement

Tunnel plants



Example - Railway High Mast application

MILAN - MAIN RAILWAY STATION
Whole lighting network being equipped with TELELighting SYSTEM
Tele-managed cabinets: nr. 4
Tele-managed lamps: nr. 245

Supervision Post

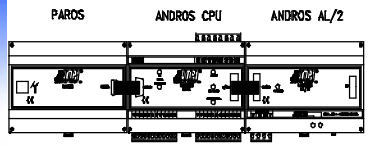
- SHP 400W
- HQI 400W

NG Software

PSTN

Power line

Cabinet



ANDROS

Example - Railway High Mast application

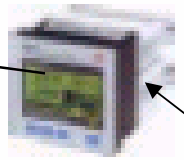
RIMINI- RAILWAY STATION
Whole lighting network and electrical cabins ere equipped with TELELighting SYSTEM
Tele managed cabins: nr. 2
Tele-managed cabinets: nr. 7
Tele-managed lamps: nr. 720

Supervision Post

BlusFs Software

TA

Electrical parameters



WM3

GSM-PSTN

Lamps control

Cabin

ANDROS

Power line

Lamps cabinet

Example - Railway High Mast application

CESENA - RAILWAY STATION
Whole lighting network being equipped with TELELighting SYSTEM
Tele-managed cabinets: nr. 2

Electrical parameters

Weather station

Cabinet

Heating resistors control

Supervision Post

Blus-FS Software

GSM PSTN

ANDROS

Example - Railway High Mast application

FERROVIE NORD Novate (North Milan Railways company)
Tele-managed cabinets: nr. 41
Tele-managed lamps: nr. 84

• SHP 1000W

Supervision Post

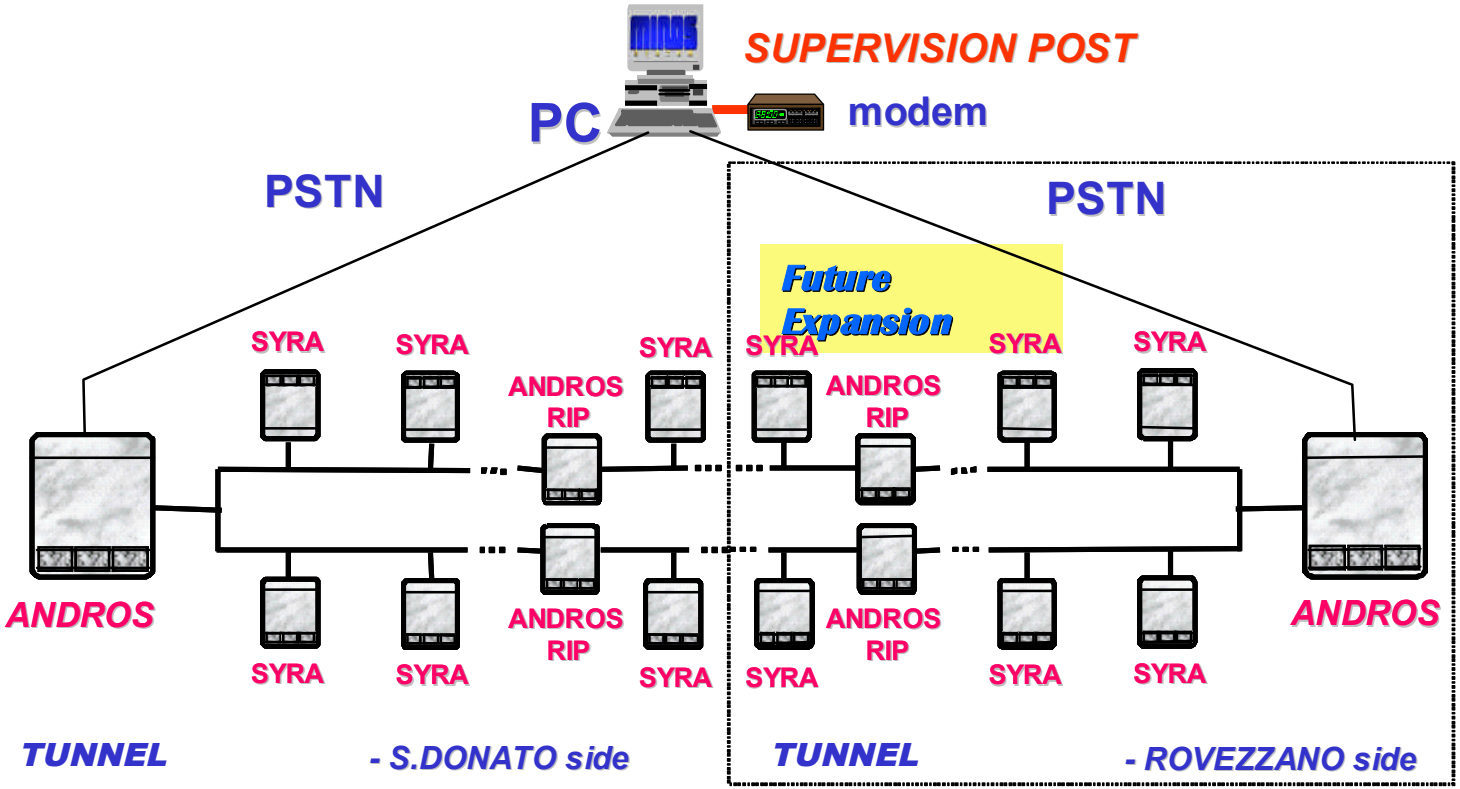
GSM

Power line

Cabinet

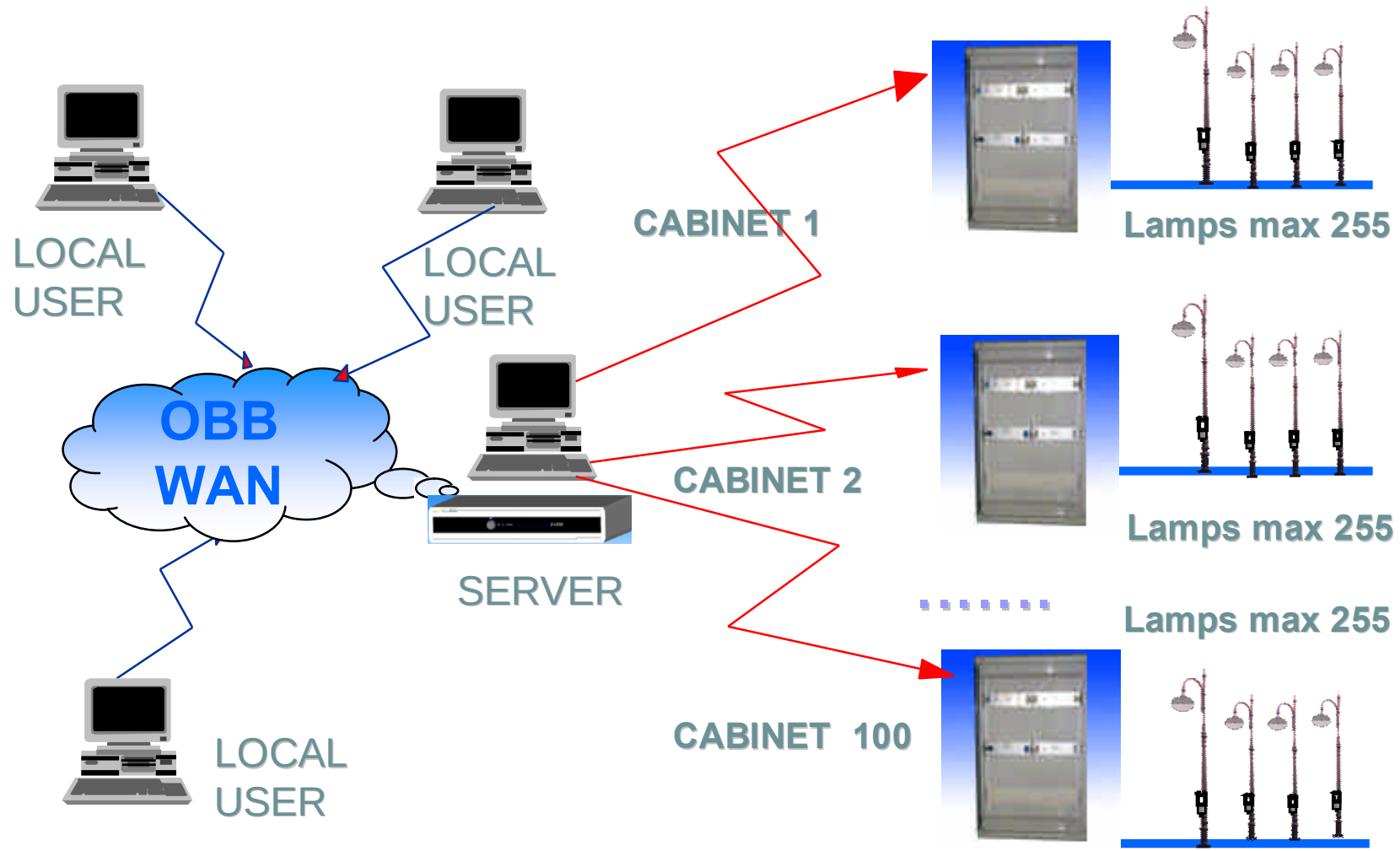
Example - Railway Tunnel application

Railway Tunnel "S.DONATO" at INCISA VALDARNO (FI)
Nr.1 cabinet powering lamps until half tunnel, about 5km length
Actually Tele-managed lamps: nr.156
Notes: * Power line carrier Repeaters (ANDROS RIP) are used,
allowing ANDROS-SYRA communication even over long distances

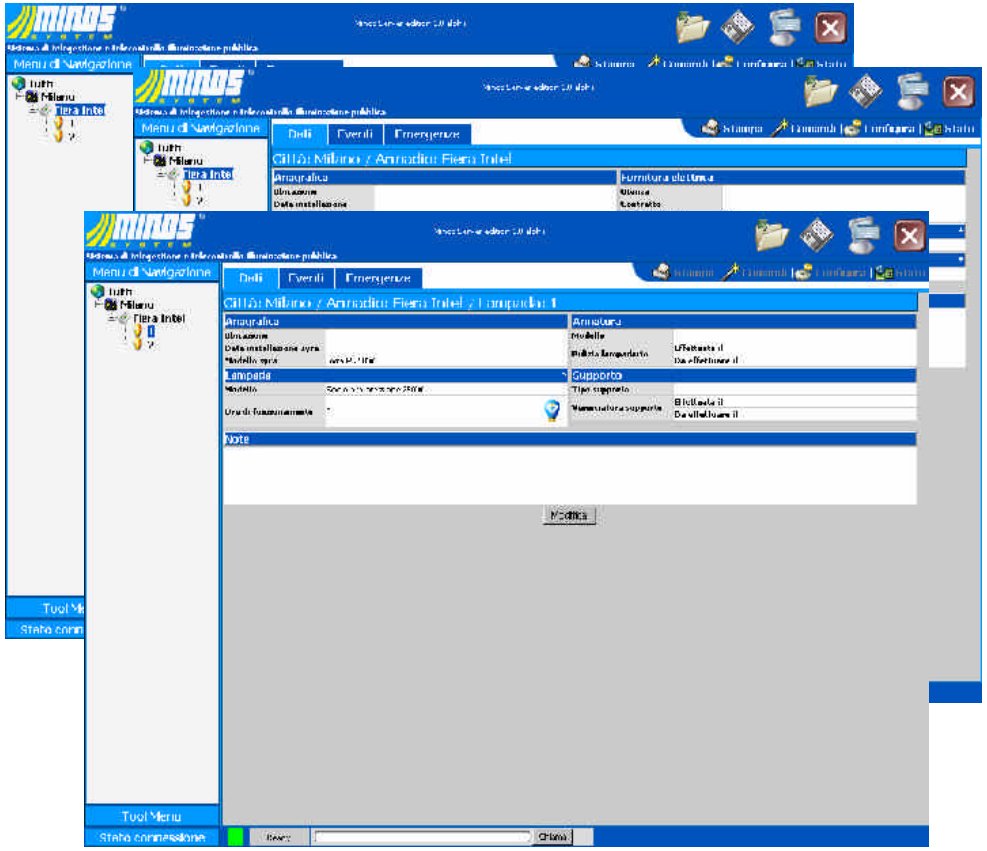


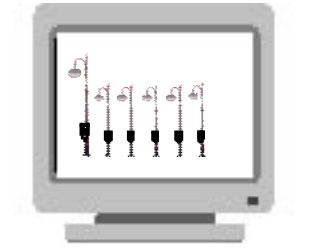
Austrian Railway monitoring (OBB)

Telemanagement
TELELighting SYSTEM structure



Supervisor station

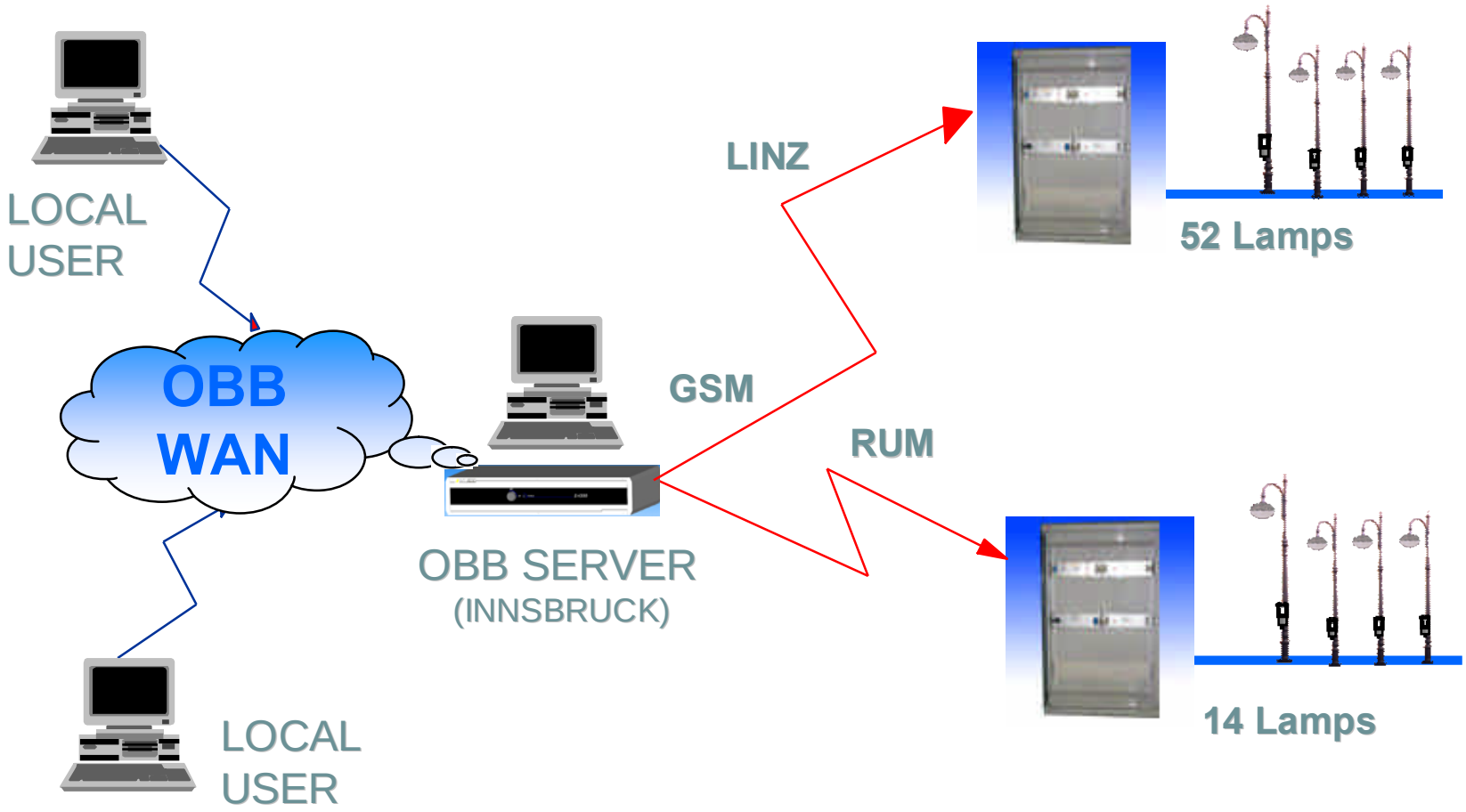




Server

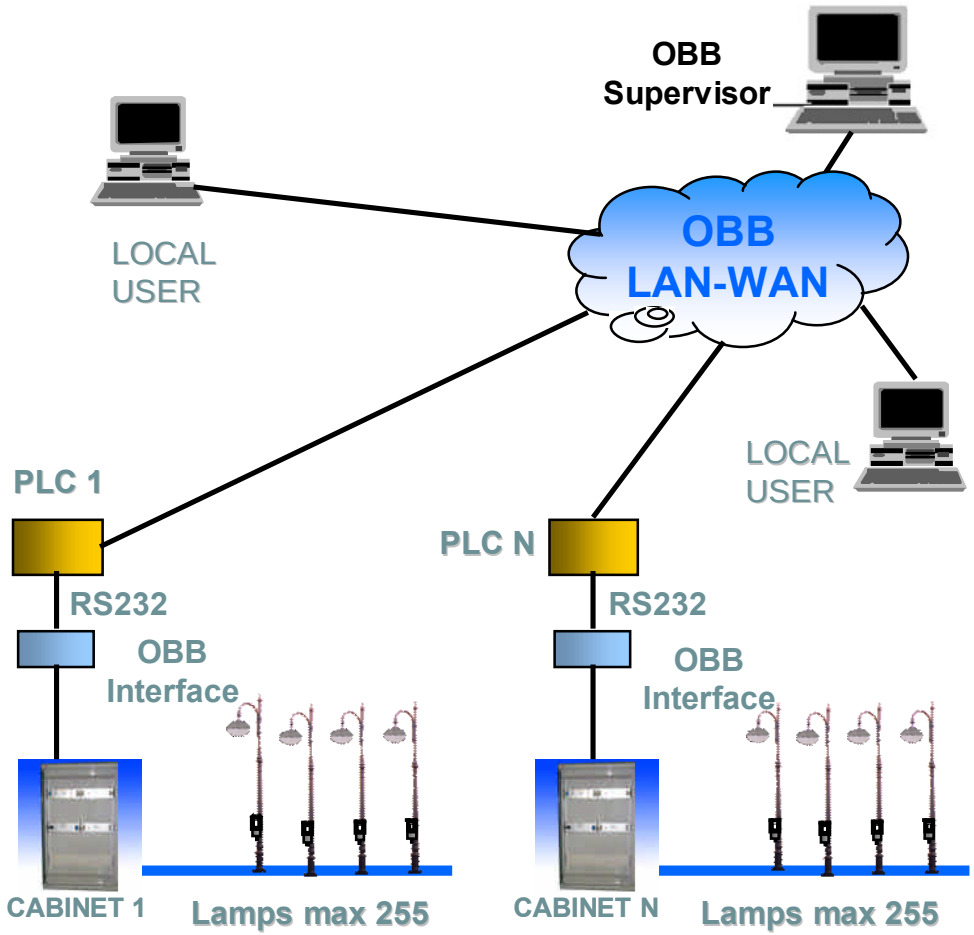
* daily cabinet polling
* plant register
* working cycles configuration
* INTERNET/LAN user's terminal access

OBB plants examples



OBB interfacing

TELELighting System
OBB Interfacing at Cabinet Level



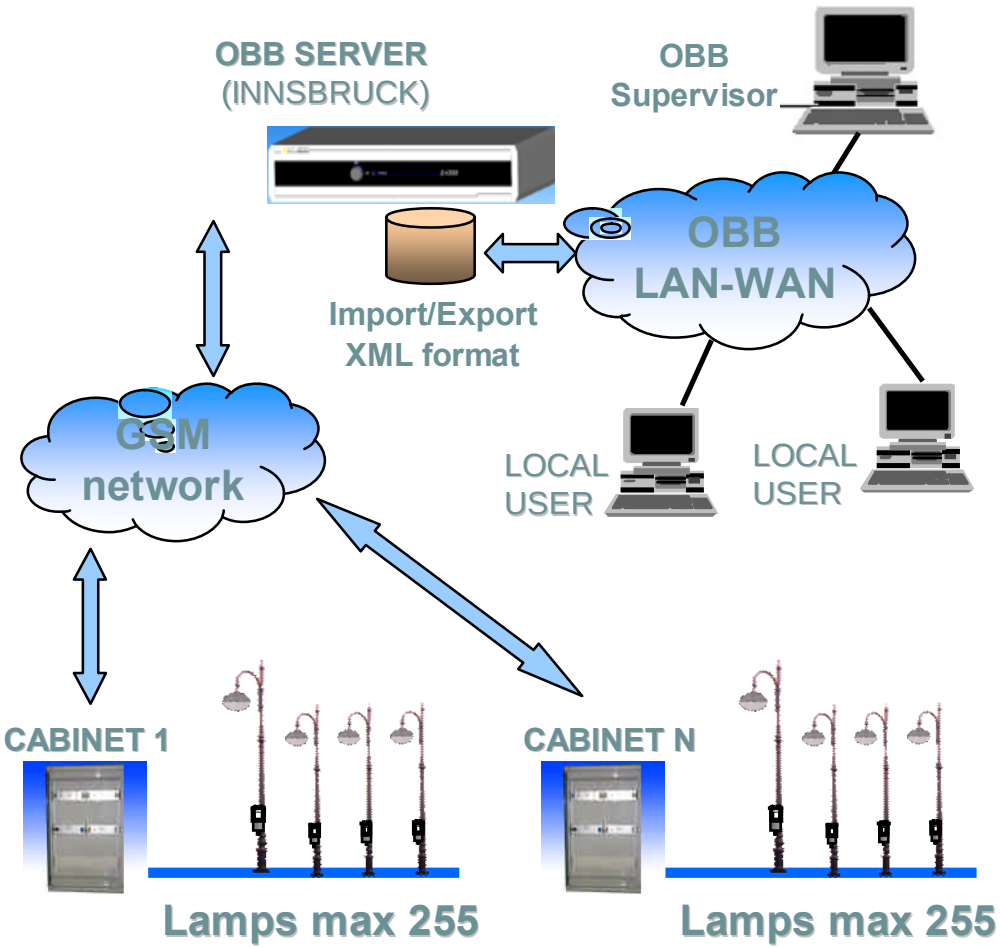
PLC LEVEL
INTERFACING FEATURES:

- access to Andros memory areas
- download events
- download status
- send group command
- send relays command

Further possibilities:

- send configuration to Andros

TELELighting System
OBB Interfacing at Supervisor Level



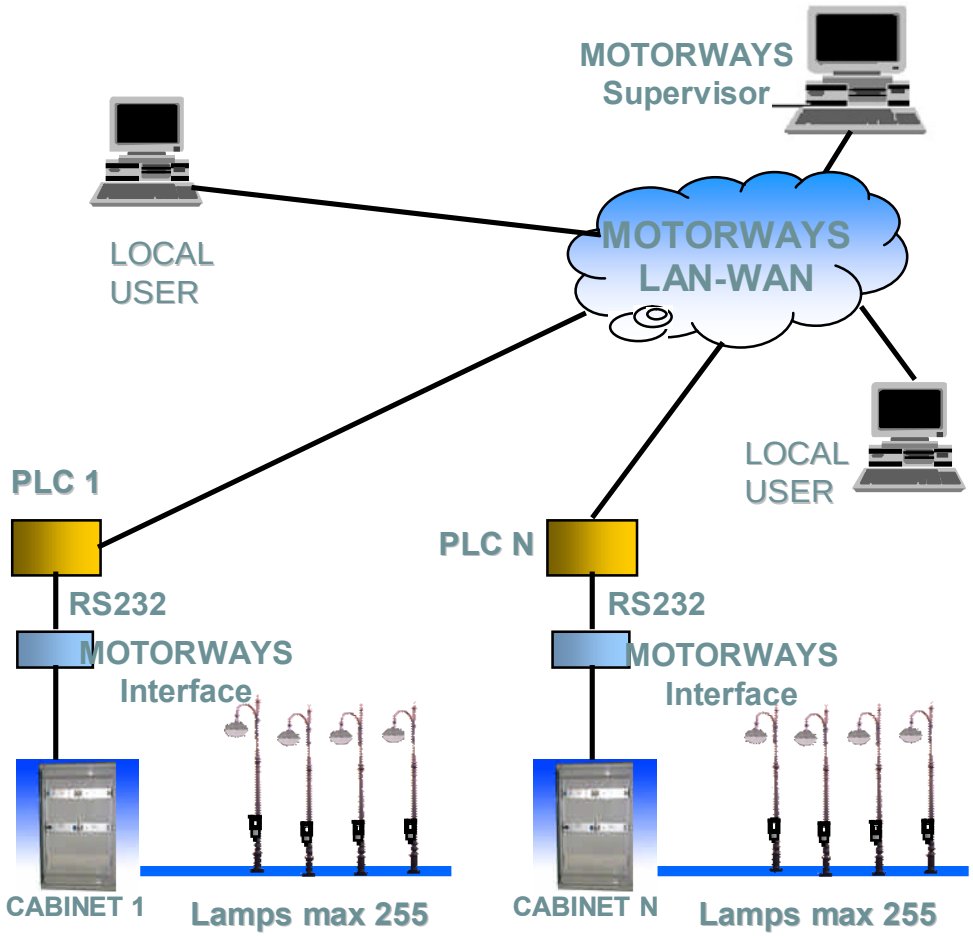
IOS LEVEL
INTERFACING FEATURES:

Future Import/Export function:

- Export lamps/cabinet events
- Export lamps/cabinet status
- Import/Export lamps/cabinet data
- download WM recording from RDE
- send group command
- send relays command
- send configuration


Motorways monitoring

TELELighting System
Highways Cabinet Level Interfacing



PLC LEVEL
INTERFACING FEATURES:

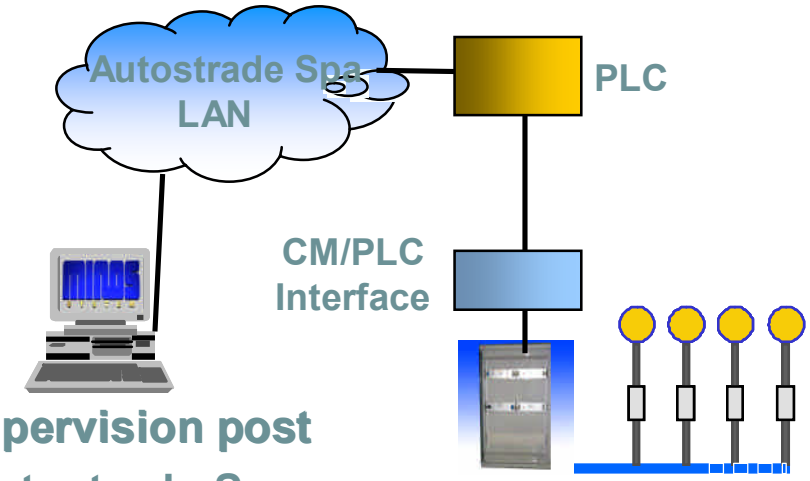
- access to Andros memory areas
- download events
- download status
- send group command
- send relays command

Further possibilities:

- send configuration to Andros

Examples - Motorways applications

AUTOSTRADE SPA - Motorway exit at Pontebba (ITALY - Udine)
Actually tele-managed cabinets: nr. 1
Actually tele-managed lamps: nr. 104 (mixed: SHP and Fluorescent)
Note: ANDROS-PC communication via-PLC (Andros PLC interface)



Pontebba toll-gate

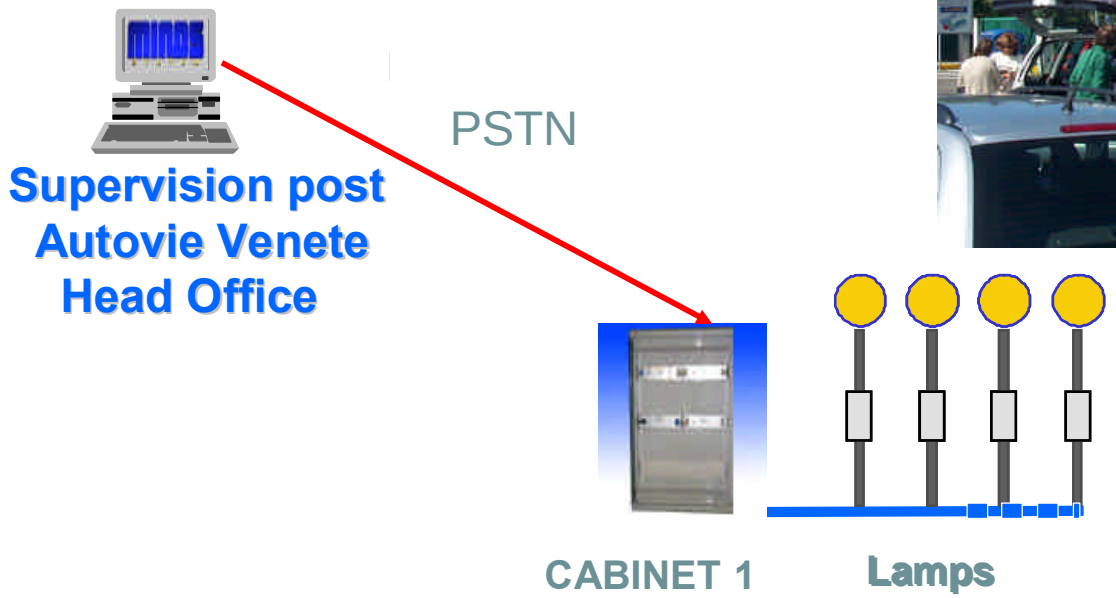
Cabinet

Lamps

SYRA's installation

Examples - Motorways applications

AUTOVIE VENETE - Motorway exit at Palmanova (ITALY - Udine)
Actually tele-managed cabinets: nr. 1
Actually tele-managed lamps: nr. 87 (mixed: SHP and Fluorescent)
Note: ANDROS-PC communication via-PSTN

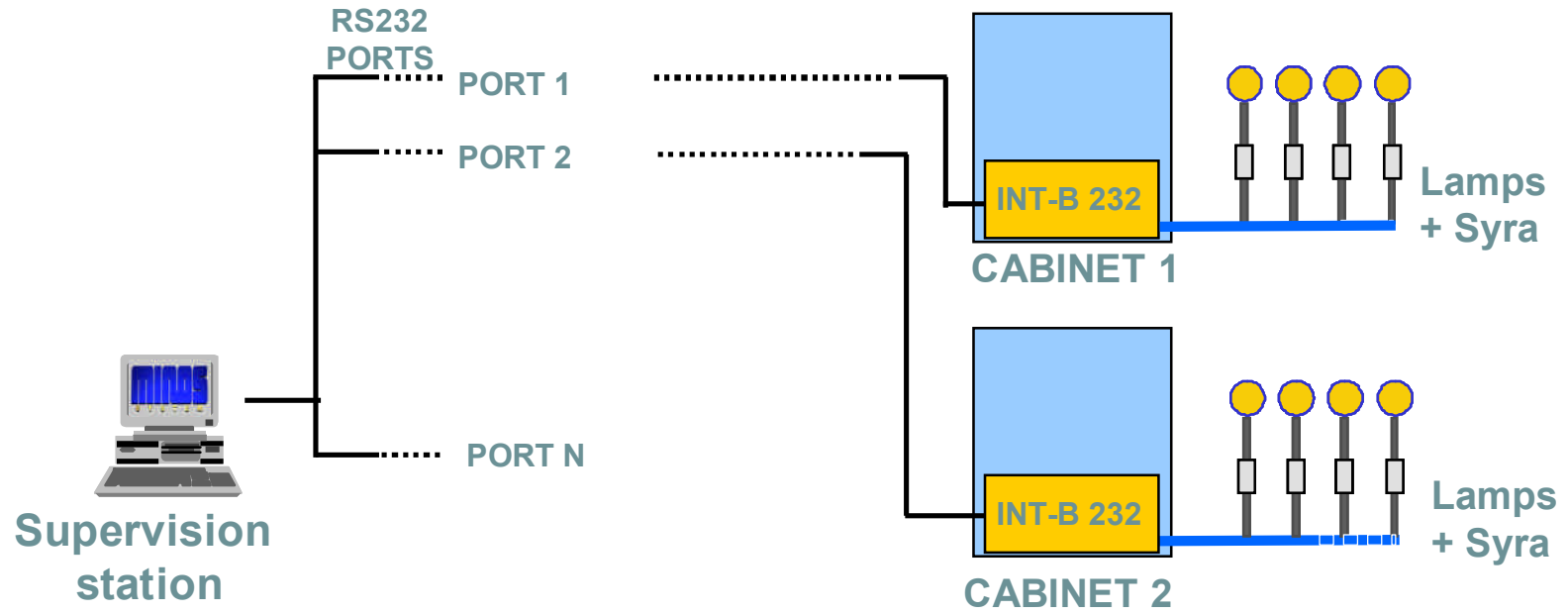


Examples - Motorways applications

BELGIUM MOTORWAYS

Note: Direct communication PC – Lamps through INT-B232 interface
RS232 signals from PC are converted into Powerline Signals to the lamps

AUTOROUTE A4 (E411 – Bruxelles – Arlon – Luxembourg section)
AUTOROUTE A10-A15 (E40/E42 – Bruxelles – Oostende section)




Tunnel monitoring

Tunnel lighting telemanagement
Example – Road tunnel applications (ANAS)

Tunnel "COLPIANO" 770 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (3 Andros – with 14 bit technology)
Tele-managed lamps: nr. 572

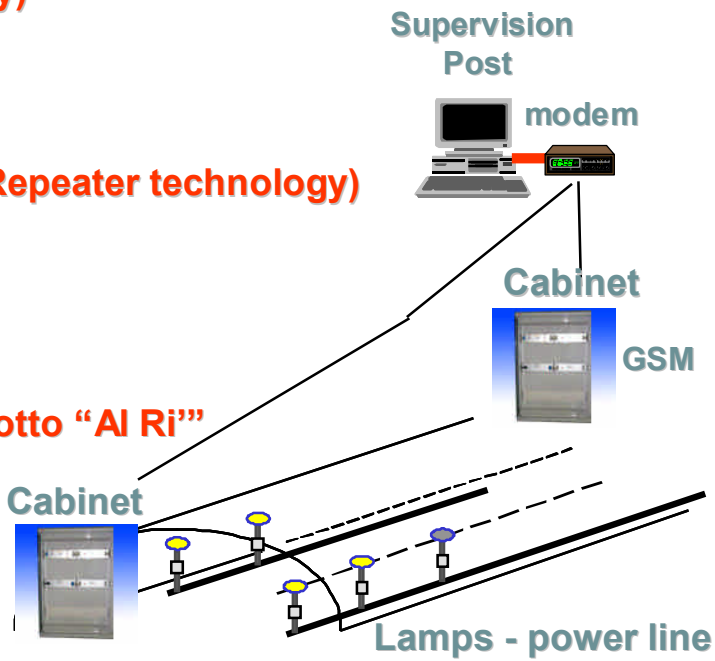
Highway "VALLE OPOL" external poles (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1
Tele-managed lamps: nr. 22

Tunnel "SVINCOLO ZONE" 500 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1
Tele-managed lamps: nr. 33

Tunnel "VELLO I" 2200 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (3 Andros – with 14 bit & Repeater technology)
Tele-managed lamps: nr. 774

Tunnel "VELLOII" 560 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1
Tele-managed lamps: nr. 66

Tunnel "VELLOIII" 270 m (Milano/Brescia - Italy) + Viadotto "Al Ri'"
Tele-managed cabinets: nr.1
Tele-managed lamps: nr. 59 + 13 = 72

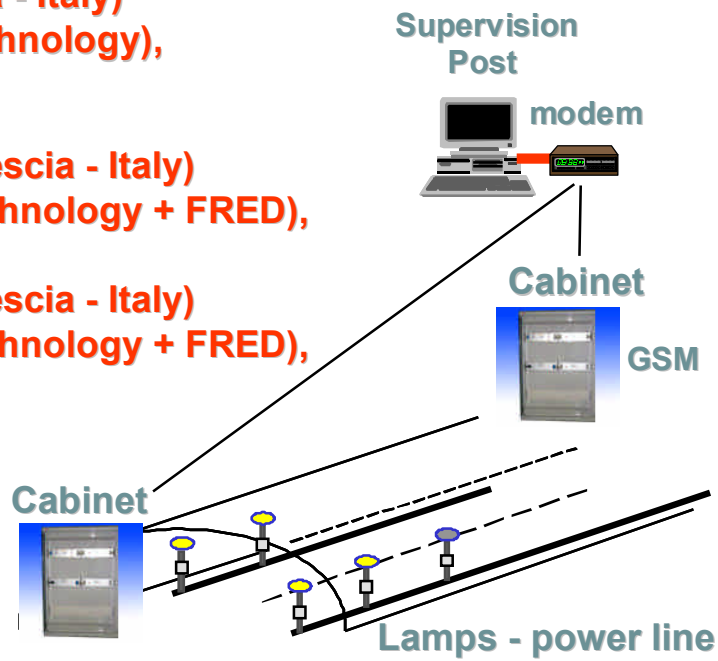


Tunnel lighting telemanagement
Example – Road tunnel applications (ANAS)

Tunnel "PIANZOLE & S. FERMO" 900 + 300 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (2 Andros – with 14 bit & Repeater technology)
Tele-managed lamps: nr. 427

Tunnel "COVELO Breno Side" 1200 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (2 Andros – with 14 bit technology),
telemaanaged lamps: nr. 288
Tunnel "COVELO Brescia Side" 1200 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (2 Andros – with 14 bit technology),
tele-managed lamps: nr. 303

Tunnel "Massenzano Brescia side " 1200 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (1 Andros – with 14 bit technology + FRED),
lamps: nr. 285
Tunnel "Massenzano Brescia side " 1200 m (Milano/Brescia - Italy)
Tele-managed cabinets: nr.1 (1 Andros – with 14 bit technology + FRED),
lamps: nr. 276



Tunnel lighting telemanagement
Example – Road tunnel applications (ANAS)

SS 237 : tunnel "Barghe 1" 750 m (Brescia - Italy)
SS 237 : tunnel "Barghe 2" 600 m (Brescia - Italy)

Barghe 1 : tele-management lamps:256 lamps, SHP 100W: 150W, 250W and 400W

Barghe 2 : tele-management lamps:
251 lamps: SHP 100W, 150W, 250W and 400W

About the 50% of the lamps are controlled by Syra/P able to reduce the flush of the single lamp, the other 50% are controlled by Syra 1, able to give ON/OFF command

Tunnel lighting telemanagement
Example – Road tunnel applications (ANAS)

SS 237 : tunnel "Sabbio Chiese" 1.000 m (Brescia - Italy)

Sabbio-Chiese : tele-management lamps:
275 lamps, SHP 100W: 150W, 250W and 400W

About the 50% of the lamps are controlled by Syra/P able to reduce the flush of the single lamp, the other 50% are controlled by Syra 1, able to give ON/OFF command

Tunnel entrance : tele-management lamps:
48 lamps: SHP 250W and 400W

All the lamps are controlled by Syra/P able to reduce the flush of the single lamp,

Tunnel lighting telemanagement
Example – Road tunnel applications (France)

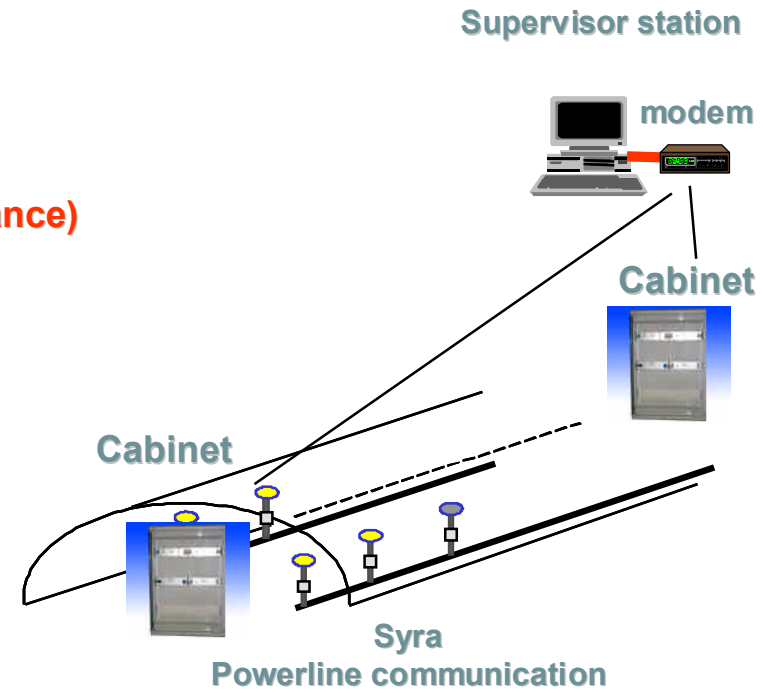
Tunnel "Des Traverses" (Nice - France)
Telecontrolled cabinets: nr.1
Telecontrolled lamps: nr. 202

Tunnel "Des Gorges du Cians" (Nice - France)

Tunnel "du Frontonnay"(France)

Tunnel "de Glacier" (France)

Tunnel "du Peuch Brunet" (France)

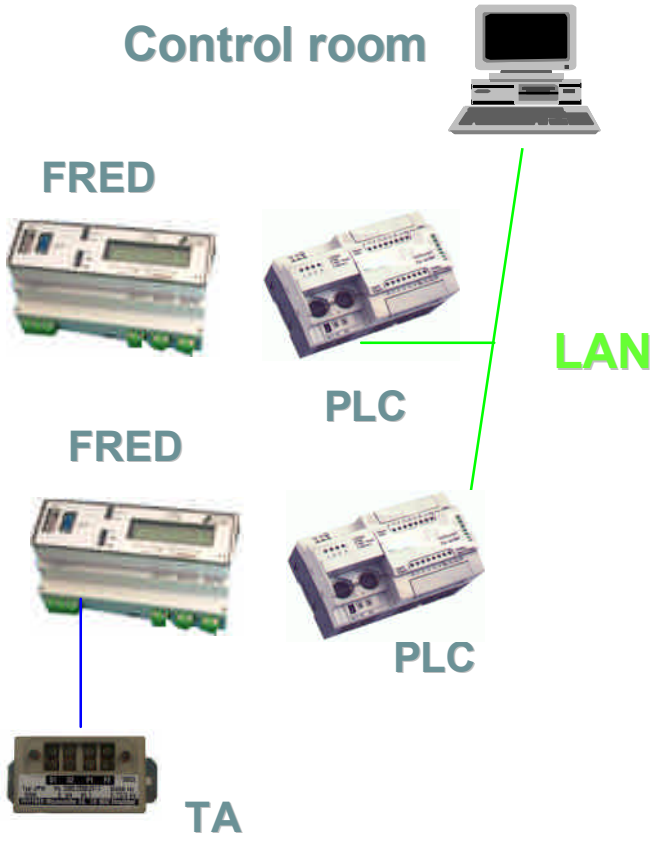


Tunnel lighting telemanagement
Example – Railway tunnel application

Tunnel Salgesch-Leuk, CCF (Chemins de Fer Suisse) **2.800 and 1.400 mt**

Tele-managed emergency lamps cabinets: nr.1

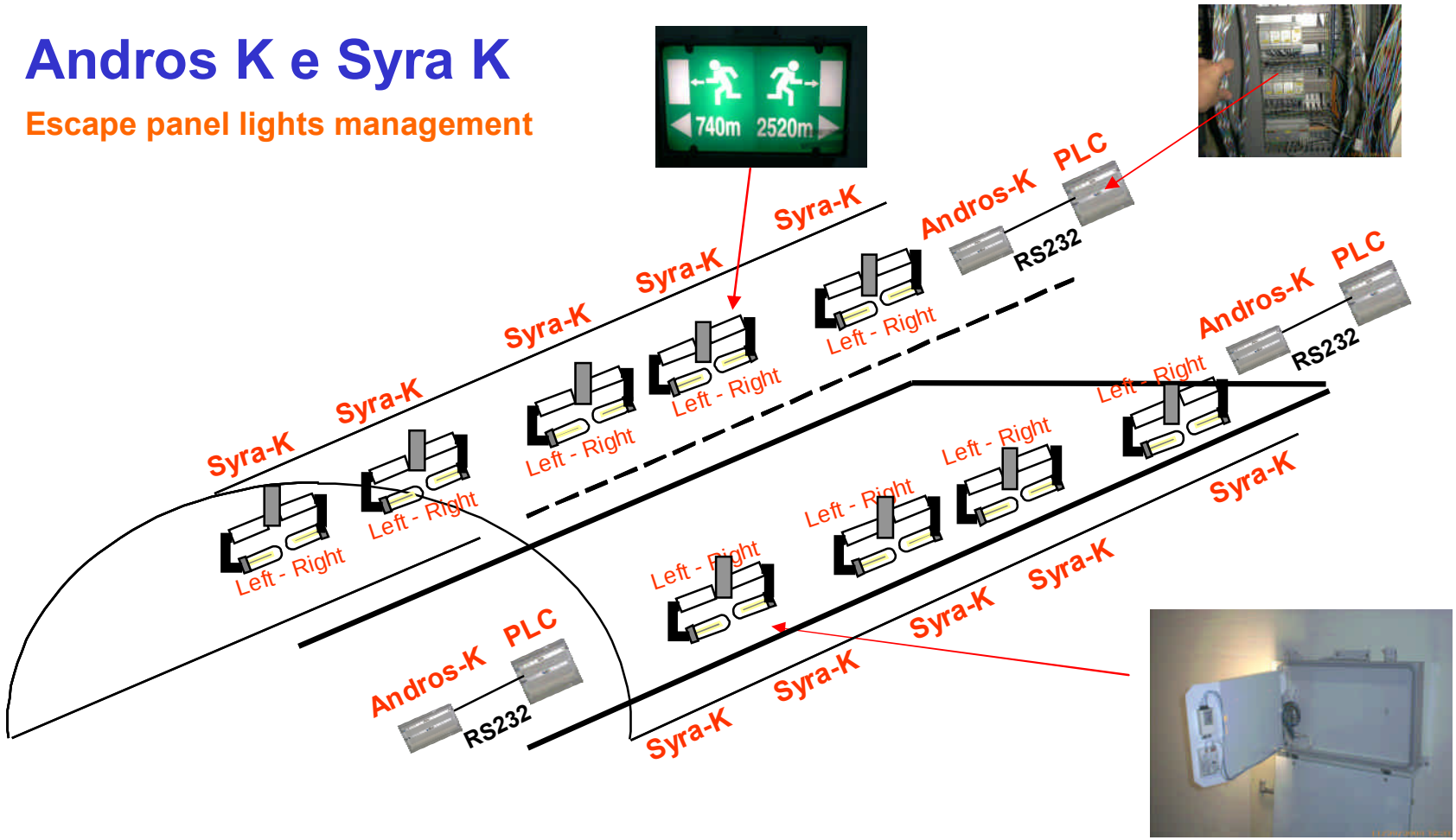
Control of lamps group alarm by FRED meter



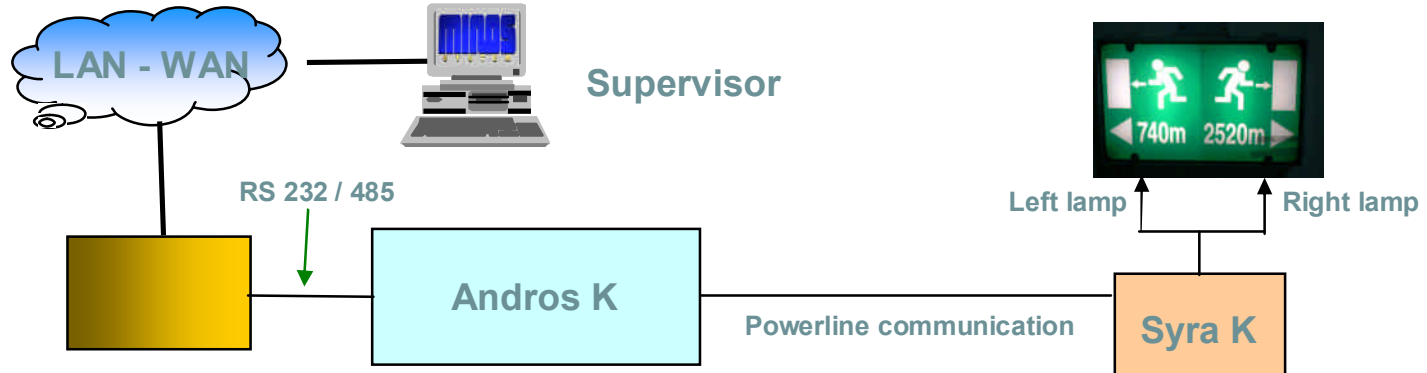
Emergency lamps control
"K" System: description

Andros K e Syra K

Escape panel lights management



Emergency lamps control
"K" System: description



Andros K:

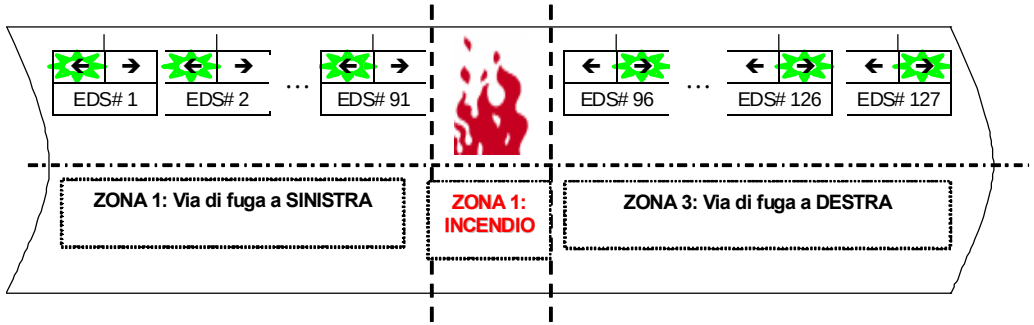
Acquires and stores the lamps faults signalizations

In case of emergency sends the switching off commands (generated by PLC) to the lamps

Syra K:
Diagnosis and control of the 2 lamps of the panel

Normal working:
- Both lamps are ON
- In case of lamp fault automatical switching off of the second lamp

Emergency working:
- The lamp indicating the nearest escape way is kept on (Andros K sends the switching off command of the other lamp to Syra K)



Emergency lamps control
Applications in motorway tunnels (AUSTRIA)

Lermooser Tunnel – Tirol (Austria)

"Lermooser" Tunnel – 3200 mt.
Telecontrolled cabinets: nr.3
Telecontrolled lamps: nr. 33

Emergency lamps control
Applications in motorway tunnels (AUSTRIA)

"Strengener" Tunnel - Tirol (Aut)
Telecontrolled cabinets : nr.12
Telecontrolled lamps : nr. 178

"Milser" Tunnel –Motorway A12 - Tirol (Aut)
Telecontrolled cabinets : nr.4
Telecontrolled lamps : nr. 60

"Langener" Tunnel – SS16 - Tirol (Aut)
Telecontrolled cabinets : nr.3
Telecontrolled lamps : nr. 65

"Bergisel" Tunnel – Motorway A13 - Tirol (Aut)
Telecontrolled cabinets : 2
Telecontrolled lamps : nr. 12

"Wiltener" Tunnel –Motorway A12 - Tirol (Aut)
Telecontrolled cabinets : 2
Telecontrolled lamps : nr. 14

"Quadratscher" Tunnel –Tirol (Aut)
Telecontrolled cabinets : 2
Telecontrolled lamps : nr. 50

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