

Overview of CYTA's Network Management



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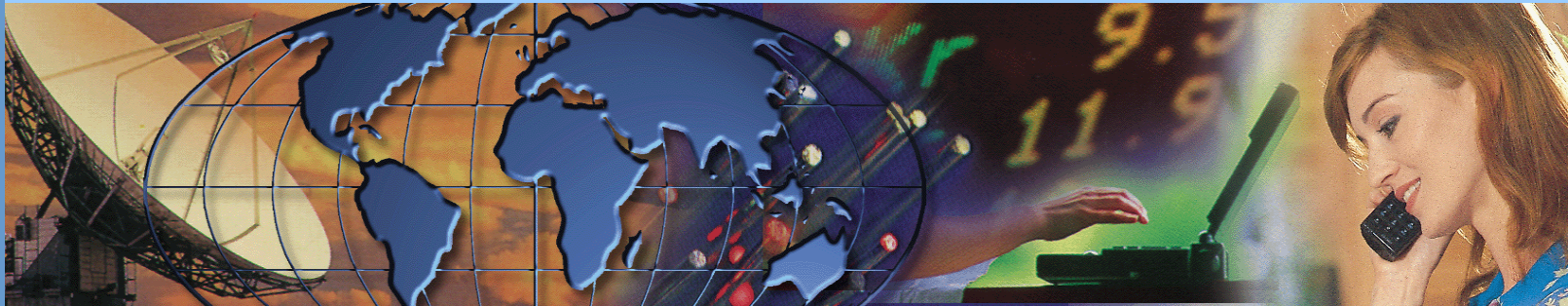
Fixed Network Services
Network Management

Overview

❖ Cyprus Telecommunications Authority

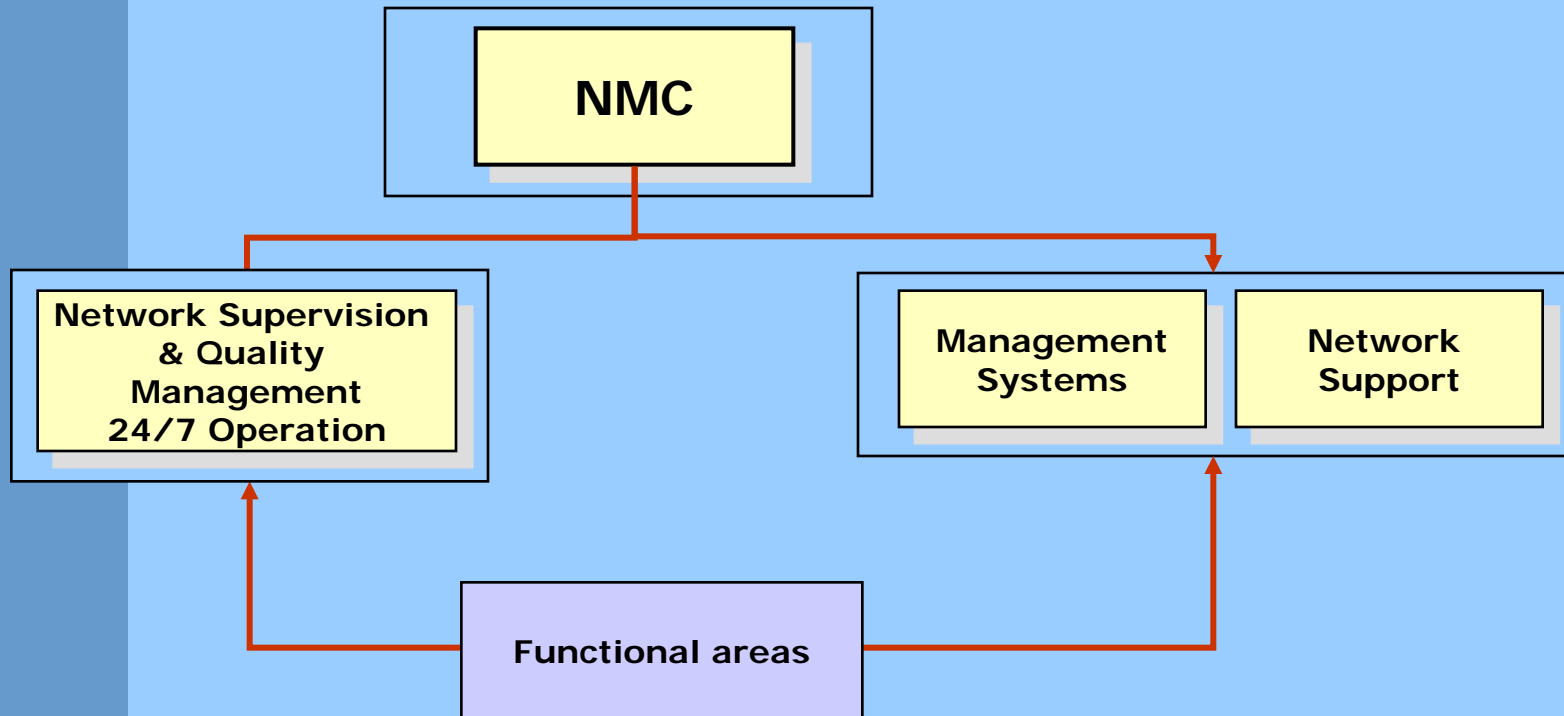


- Offers probably the most advanced telecommunications network in the Eastern Mediterranean region
- Committed to meeting the area's ever expanding needs and business goals via a portfolio of competitively priced and flexible products



CYTA NMS Overview

The Network Management Departmental Structure



Network Management Overview (1)

Network Management Architecture based on NMF Model

Scope



End-to-End
Management



Business Management

Service Management

Network Management

Element Management

Network Elements

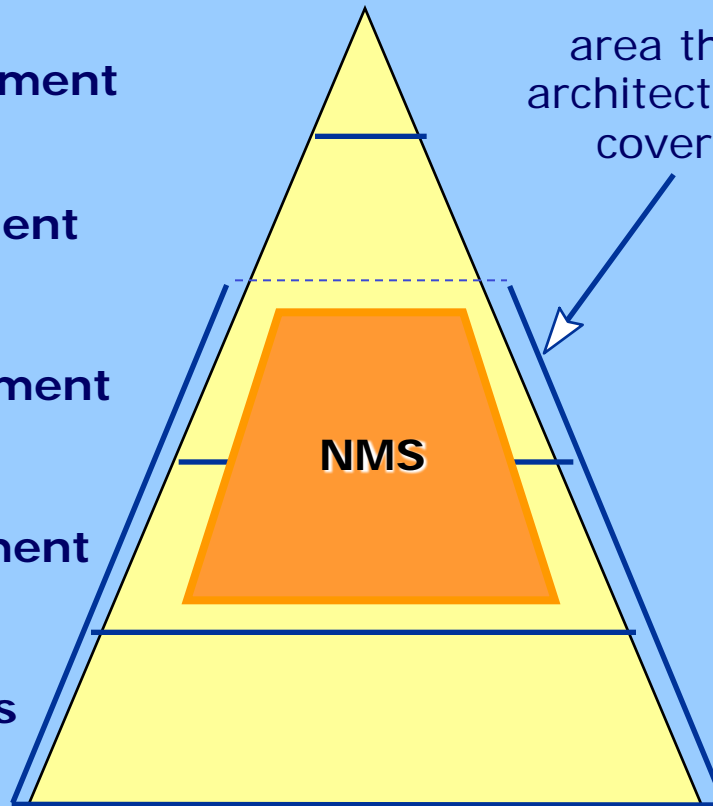
area the
architecture
covers

Business
Needs



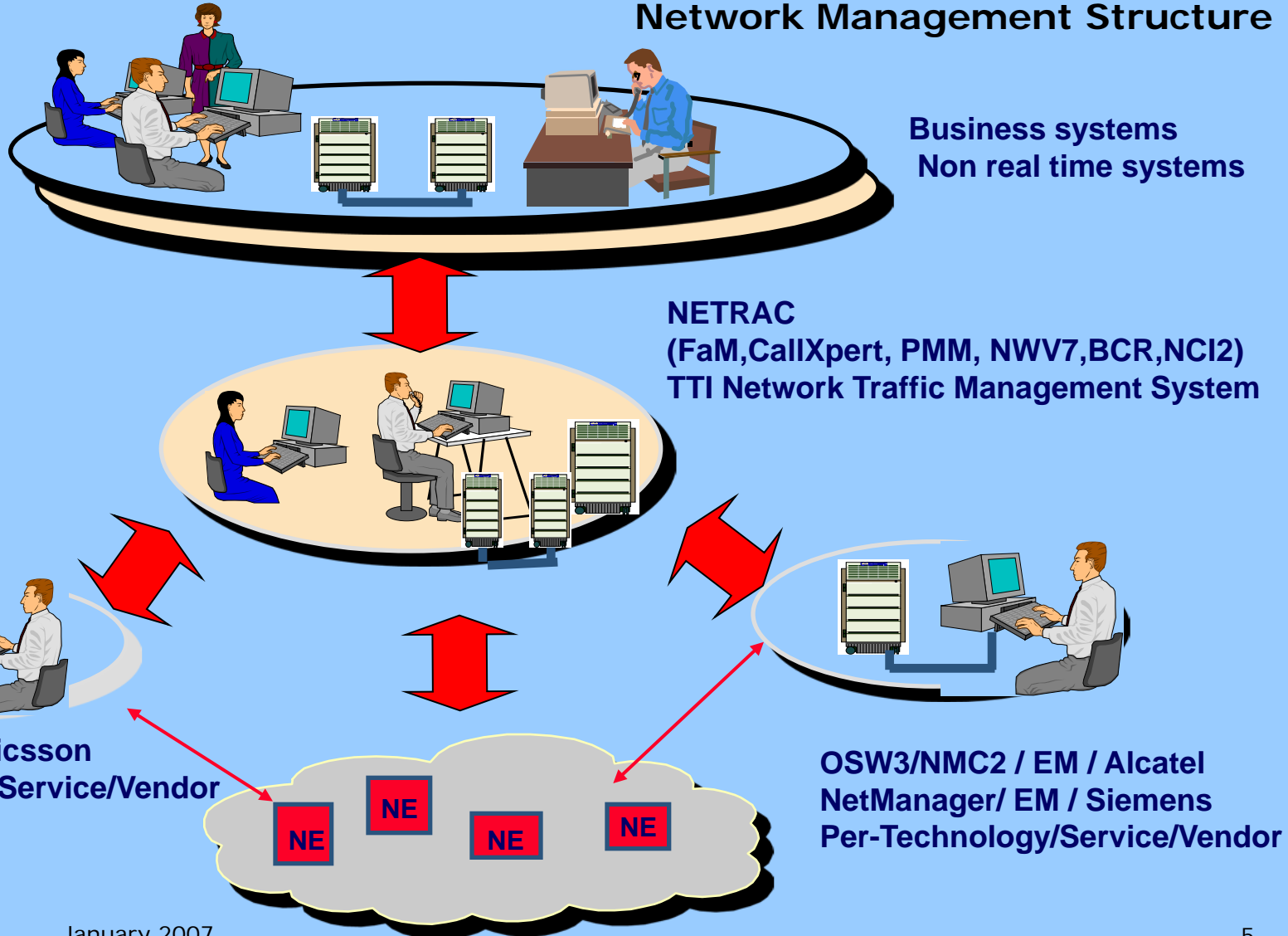
NMS

Technology
& Standards



Network Management Overview (2)

Network Management Structure



CYTA Fixed network infrastructure (1)

- **Circuit-switched PSTN/ISDN network**
 - ▶ Based on Alcatel and Ericsson technology
 - ▶ 22 TDM exchanges
 - ▶ Offers class 5 services to residential and business customers
- **Packet-switched ATM/Frame Relay network**
 - ▶ Based on Cisco technology
 - ▶ 19 ATM/Frame Relay nodes, geographically distributed all over Cyprus, interconnected via STM-1 (155Mbps) or STM-4 (622Mbps) trunks
 - ▶ Offers ATM and Frame Relay services to business customers with guaranteed bandwidth and Quality of Service

CYTA fixed network infrastructure (2)

- **IP/MPLS backbone network**

- ▶ Based on Cisco technology
- ▶ 6 Cisco core and 40 Cisco edge routers
- ▶ Offers MPLS-based IP VPNs to business customers
- ▶ Infrastructure for transporting video services over ADSL (Video On Demand)
- ▶ Backbone network for interconnecting soft switching elements for transporting voice, data and video (Broadcast TV via ADSL)

- **Soft Switch network**

- ▶ Based on Siemens technology
- ▶ 7 Media Gateways, 2 Media Gateway Controllers
- ▶ Signaling overlay network and Number portability platform
- ▶ Used for class 4 replacement, internet traffic offloading and provision of next generation services

CYTA fixed network infrastructure (3)

The CYTA Switched Network

Type	Manufacturer		
	Ericsson (PSTN)	Alcatel (PSTN/ISDN)	Siemens
<i>International Switching Centers</i>	2		2 (<i>AXE replacements</i>)
<i>Regional Exchanges</i>		4 (<i>gradually phased out</i>)	2 (<i>Combi XGE with Regional and Intl operation</i>)
<i>Local Exchanges</i>		16	7 (<i>Media Gateways & Juniper Aggregation routers</i>)
<i>Remote Subscriber Units</i>		78	

⇒ *other networks: ATM/FR, IN, IP/MPLS, GSM, ADSL, CYTANET*

Softswitch evolution

✦ Class 5 replacement

- ✦ Media Gateway + Softswitch + Feature Server
- ✦ Next generation services

✦ International Gateways

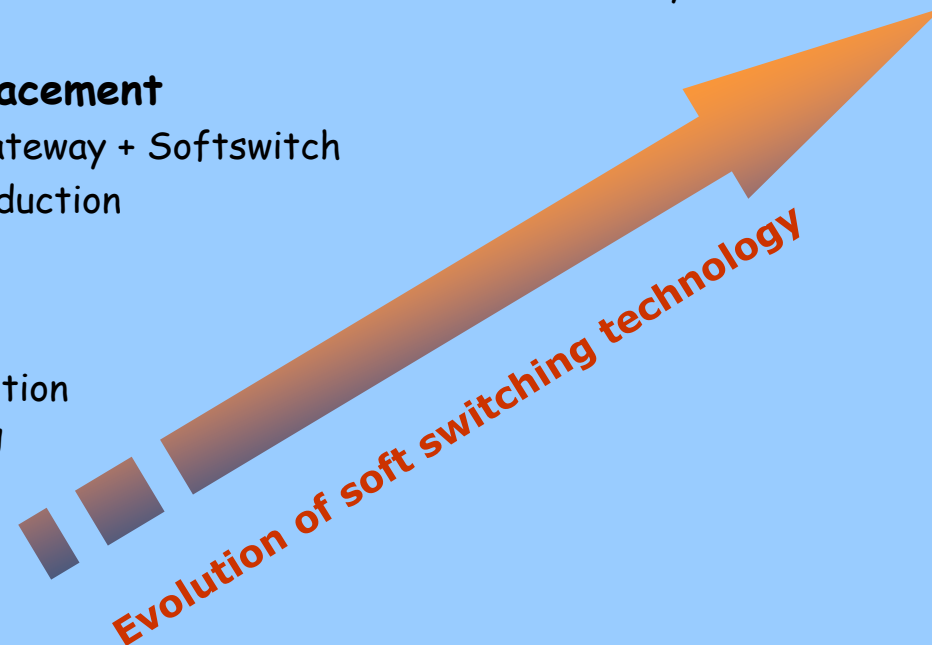
- ✦ TDM & SIP connectivity

✦ Class 4 replacement

- ✦ Media Gateway + Softswitch
- ✦ OPEX reduction

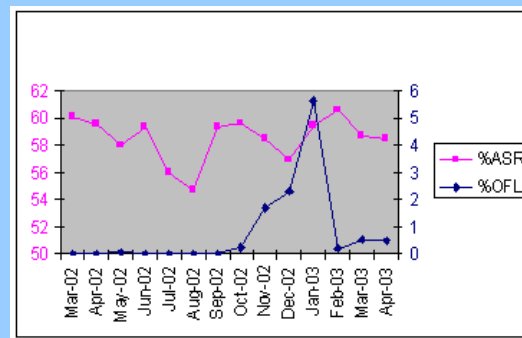
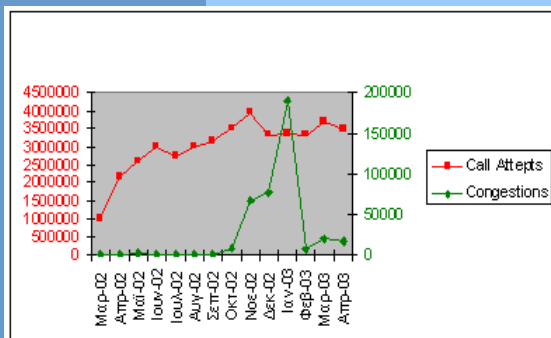
✦ Internet traffic offloading

- ✦ Initial step for long-term transition from circuit to packet switching

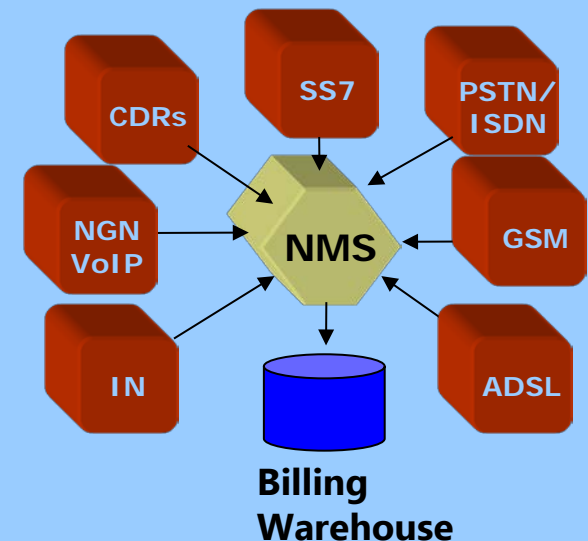


NOC Basic Functions

- ❖ Continuous monitoring and control of international telephony traffic
- ❖ Monitoring of national fixed telephony traffic
- ❖ Monitoring of other CYTA networks and Systems (GSM, GPRS, ADSL, ATM, IN).
- ❖ In case of serious faults, the NMC is used as a reference point between CYTA and other networks/ operators
- ❖ DASR, RASR
- ❖ DOFL, ROFL, route congestions
- ❖ Voice quality monitoring



Current and Near Term NMS Services Interfaces



Network Management Tools Overview

❖ Netrac Modules Implemented

- ❖ Fault Management (FaM)
- ❖ Performance Management Module (PMM)
- ❖ Network Command Interface (NCI2)
- ❖ Call Expert
- ❖ Best Cost Routing (BCR)
 - ✓ Automatic Routing Recommendations and MML generation for 700 International Destinations
- ❖ Limited Network Configuration
- ❖ Network Wide View SS7 (NWW7)

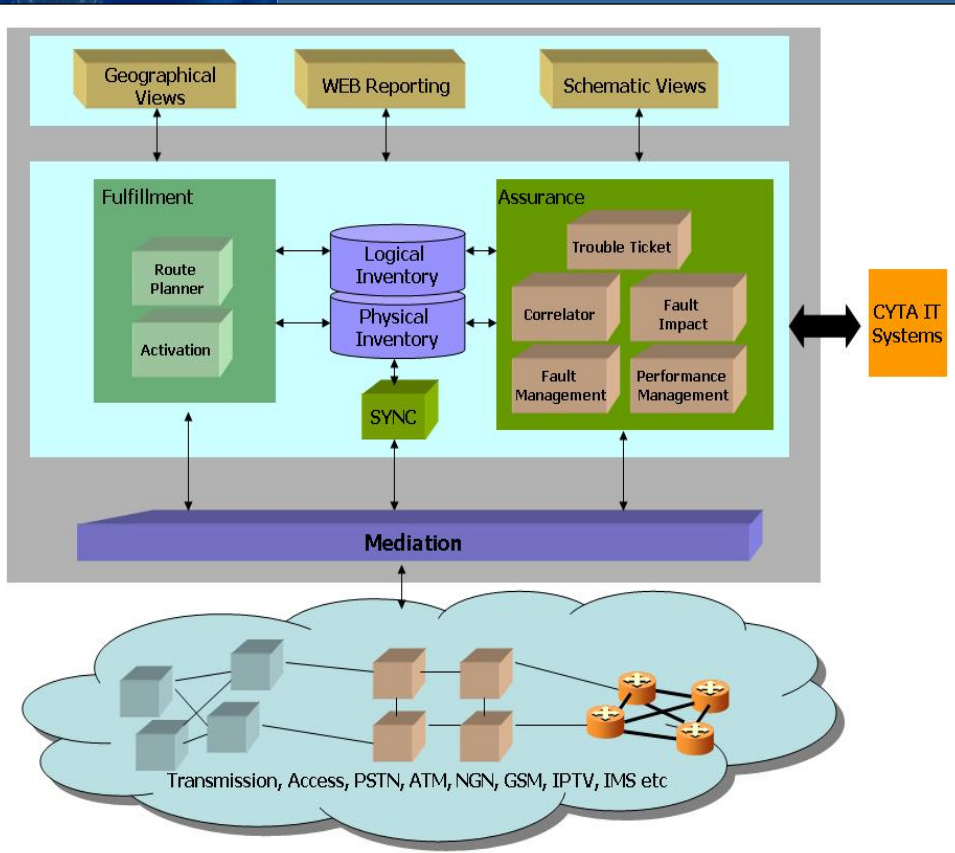
❖ Switching Element Managers

- ❖ XMATE for Ericsson
- ❖ NMC2 /Webpack / OSWS3 for Alcatel
- ❖ NetManager for Siemens

Integrated Network Management System (INMS)

- ❖ An international tender has been issued for the provision of an Integrated Network Management System (INMS)
 - Tender Issued: 10th November 2006
 - Tender Closing Date: 9th March 2007
 - Operation expected to start: Q1/2008
- ❖ A new Management Center is being re-organised to accommodate all of CYTA's requirements and facilitate management operations
- ❖ The INMS shall be an Inventory-Powered Network Management system consisting of an integrated suite of best-of-breed software applications

INMS System Architecture



❖ The INMS shall provide the entire range of management functionality (in accordance with TMN and e-TOM) including:

- ✓ Inventory Management
- ✓ Fault Management
- ✓ Configuration Management
- ✓ Accounting Management
- ✓ Performance Management
- ✓ Security Management.

- ❖ The proposed system shall integrate management operations for CYTA's next generation networks and platforms (e.g. IP/MPLS, IP TV, ADSL, IMS, Soft Switch etc) under a single and unified platform
- ❖ In addition, the proposed system shall provide fault management functionality for CYTA's legacy networks (e.g. SDH, ATM, PSTN etc)

Overview of CYTA's Network Management

...end of presentation

thank you !