



UNIVERSITAT POLITÈCNICA
DE CATALUNYA

i2CAT / CARISMA



Jordi Domingo-Pascual
CCABA /UPC

TF-NGN Optical Networks



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i2CAT
www.i2cat.net

i2CAT Project

- A consortium-like model project.
- Promoted by the Catalan government.
- Joint effort of Universities, regional and local authorities, telecommunication operators, service providers and companies.
- UPC (Technical University of Catalunya) keeps the leadership.



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i2CAT Project

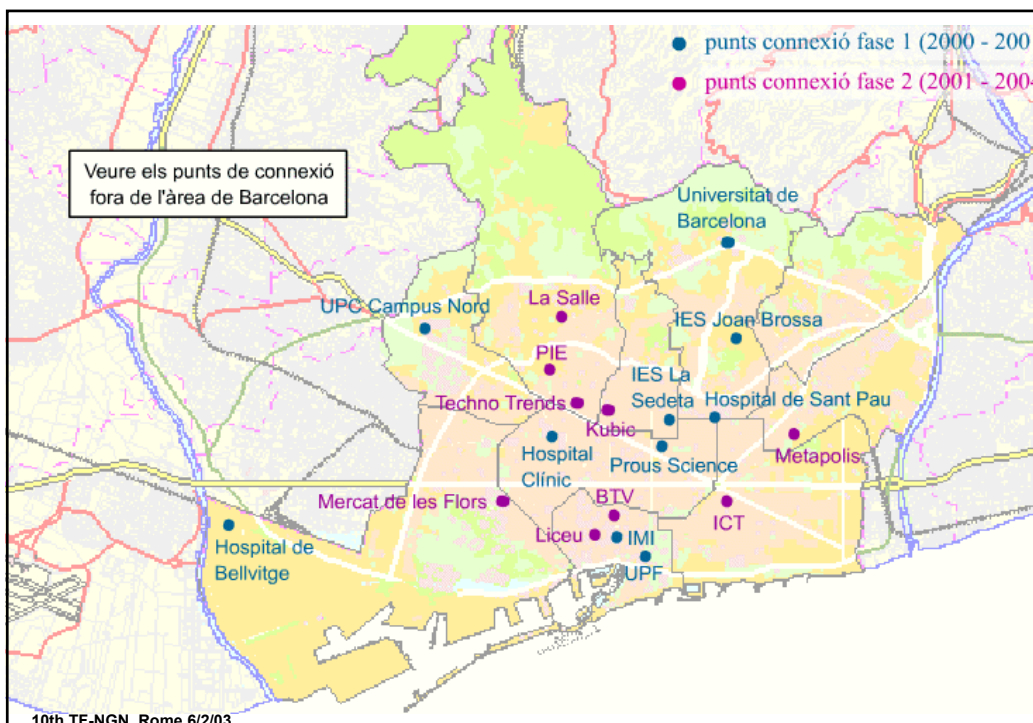
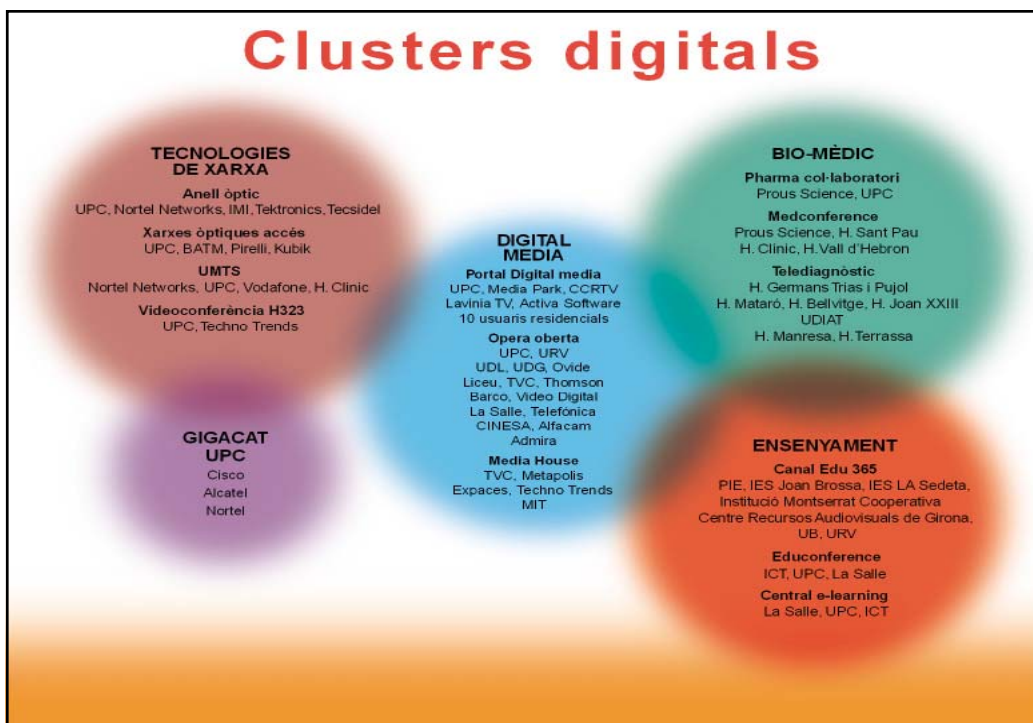
- The goal of the present agreement is to establish an experimental pre-competitive platform, named i2-CAT, to promote the deployment of broadband services and applications developed by public or private R+D communities, and also to promote the deployment of the broadband infrastructure of the carriers operating in Catalonia.
- Thus, i2-CAT is essentially a project for the experimentation of broadband applications and services based on the telecommunication infrastructures provided by participant entities.

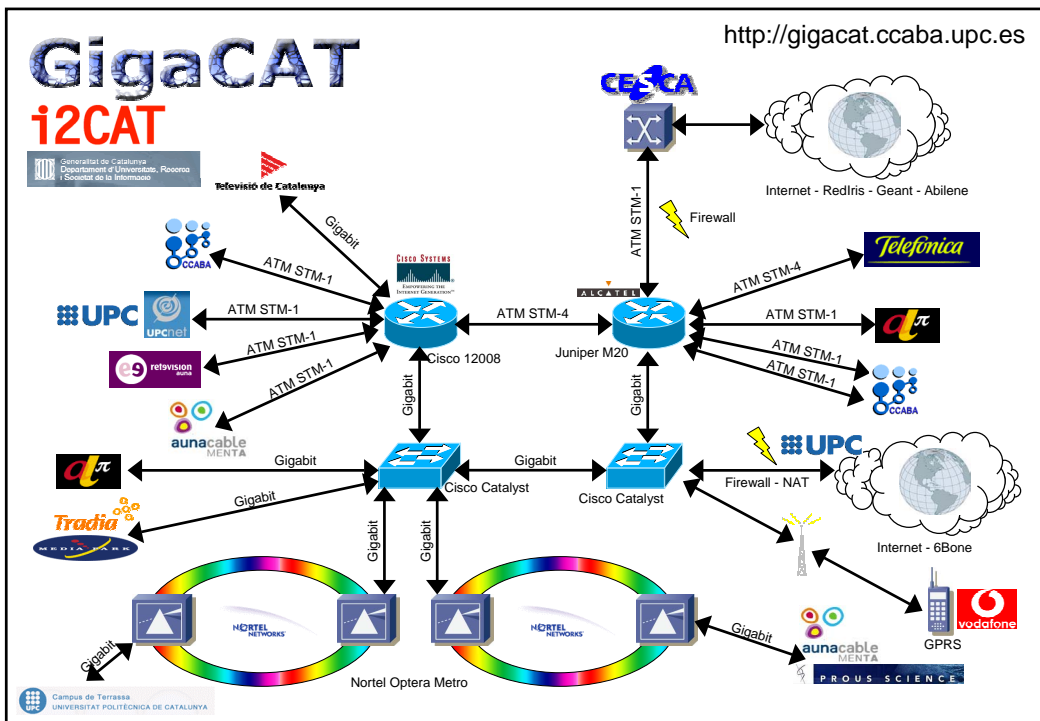
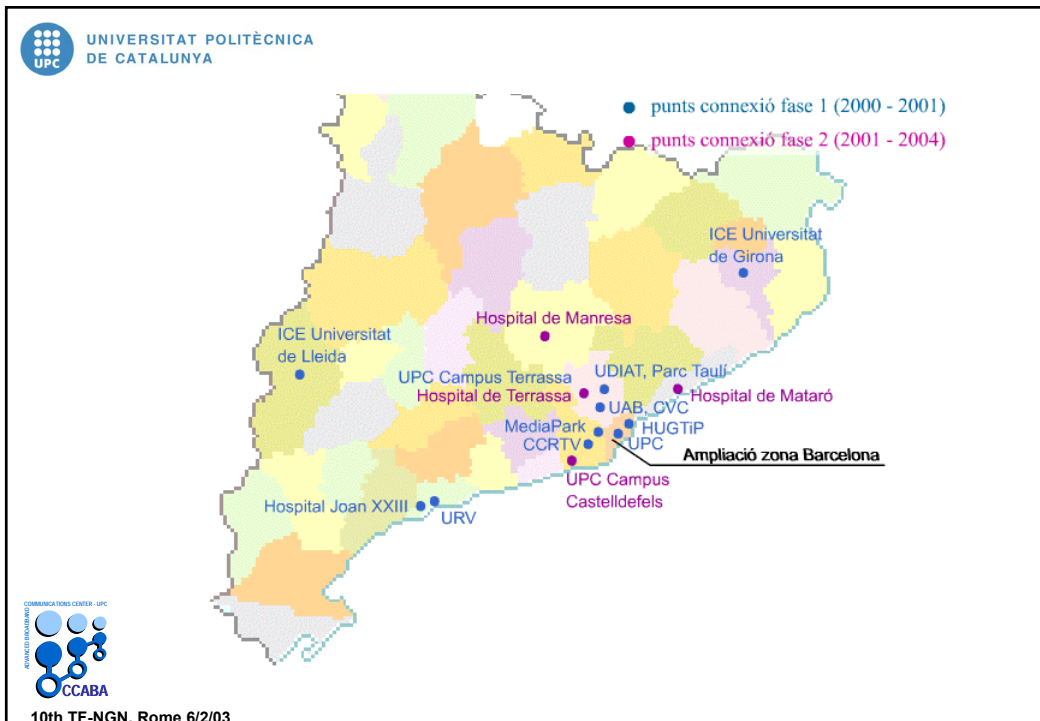


i2CAT Members



Clusters digitals

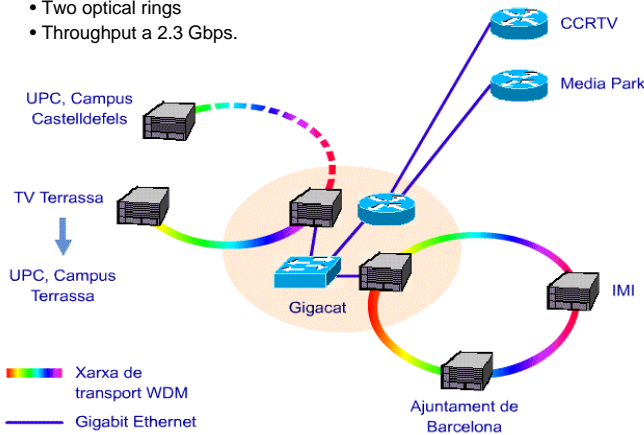






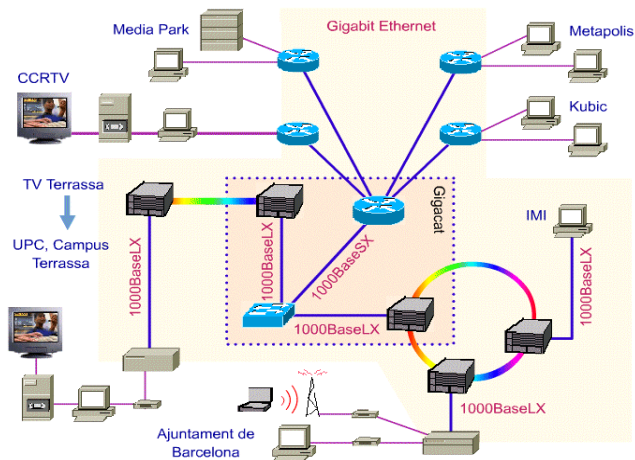
WDM Optical Rings Project (2001-2002)

- Two optical rings
- Throughput a 2.3 Gbps.



GE Network Access project

- GE at home scenario





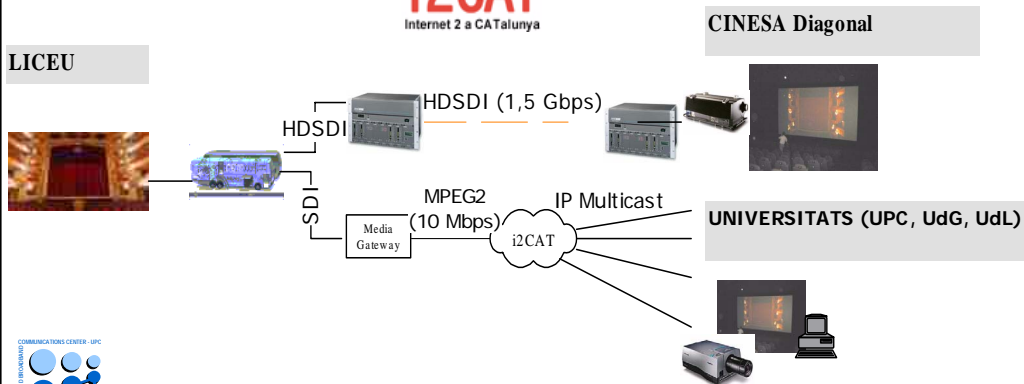
i2CAT Digital Media Cluster (2001-2002)

- Opera Oberta
- New Digital Media Portal, Dexvio
- MedConference, a son of Megaconference for the biomedical community
- City-based Wireless LAN video (e-Gothic)
- HDTV Internet project



Opera Oberta Project (2001) Uncompressed HDTV over fibre MPEG2 over IP Multicast

i2CAT
Internet 2 a CATALunya

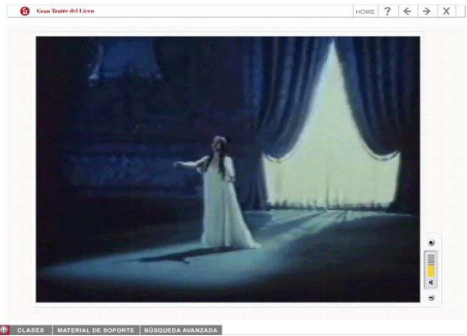




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Òpera Learning Project (2002-2003)

- Create an IP channel TV offering live Opera from the Liceu Opera House
- Participants: Liceu, Techno Trends, UOC, UPC and CIRENE.



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eGòtic

City-based WLAN
Localisation and
Tourist Information



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The Gaudi Project

Real HDTV over IP

iGRID 2002
Seattle –
Amsterdam

270 Mbps
(SDI) over IP



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i2CAT Network Technologies

- IPv6 deployment, IPv6 services and TM
- Multicast deployment
- WDM network
- VDSL Access Network
- FTTH (GE) Access Network
- GPRS / UMTS Access Network
- WLAN Access Network



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i2CAT in the future

- Join research with similar experimental platforms (networking, services and applications)
- Collaborate with TF-NGN. Contribute with our expertise running an experimental network and services with real users.
- Collaboration with 6NET. Currently i2CAT network is being migrated to IPv6.



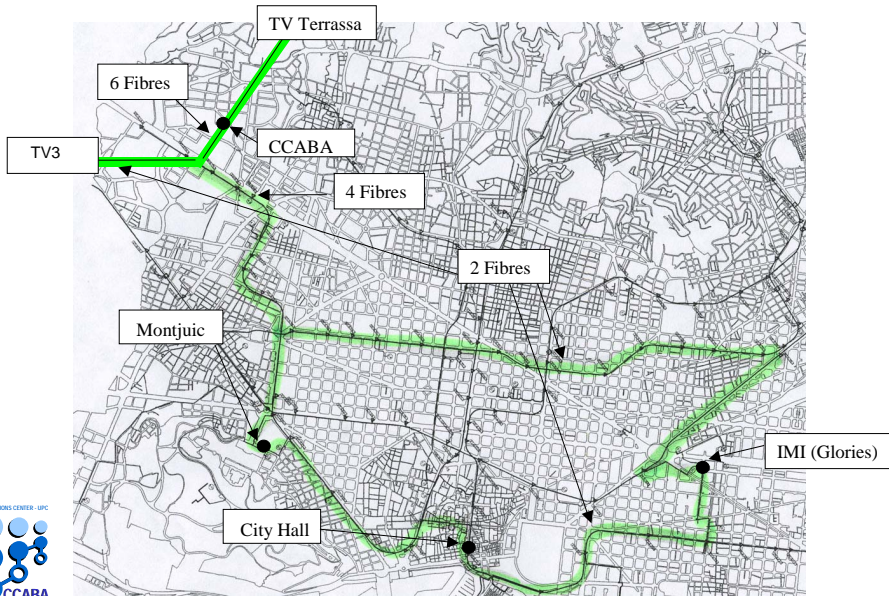
CARISMA Project

- Optical Ring Network using DWDM
- Optical Network of i2CAT
- And much more ...

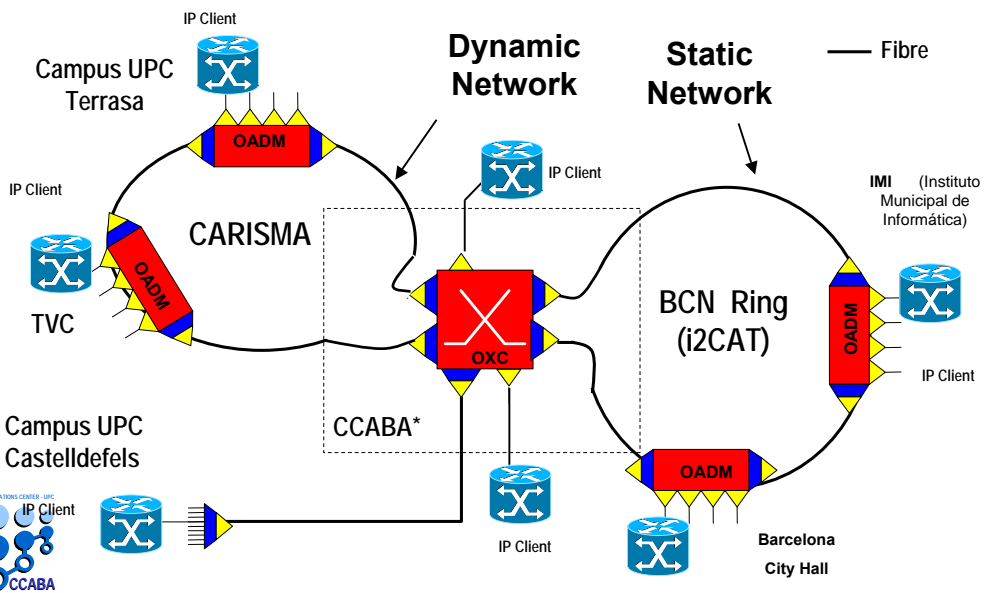




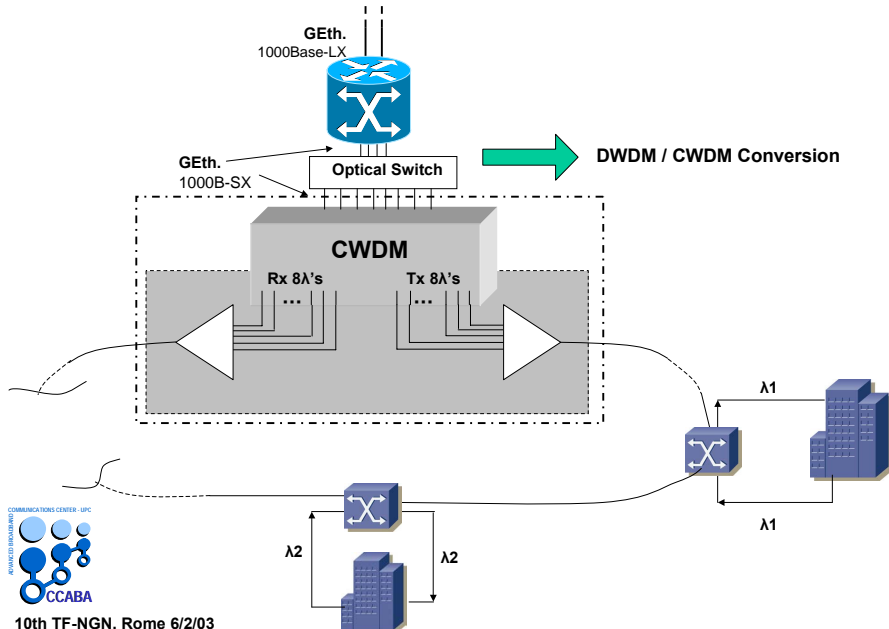
i2CAT Optical Ring Deployment



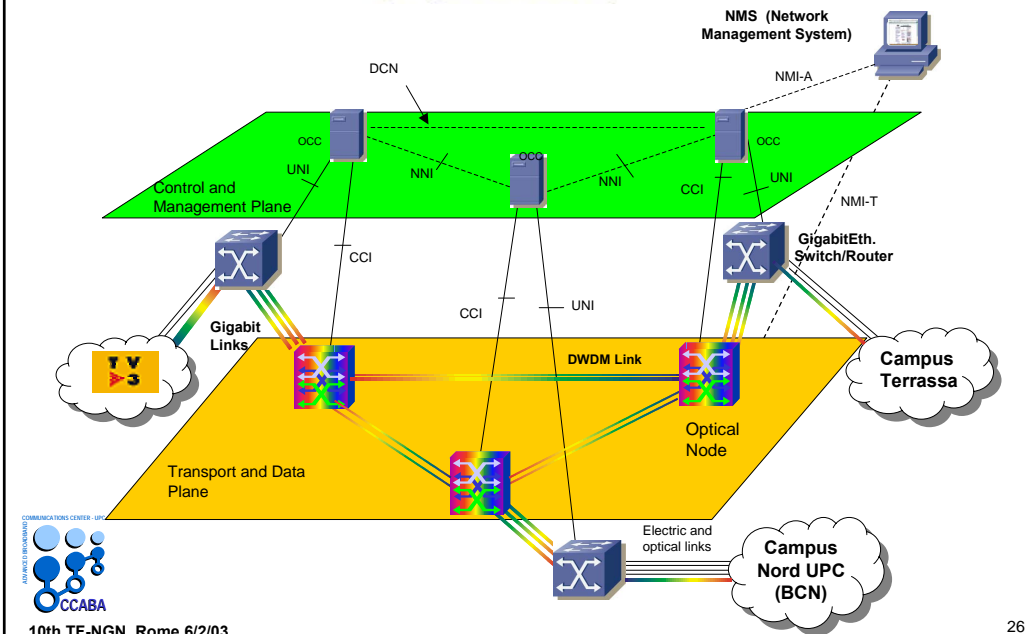
i2CAT and CARISMA Interconnection

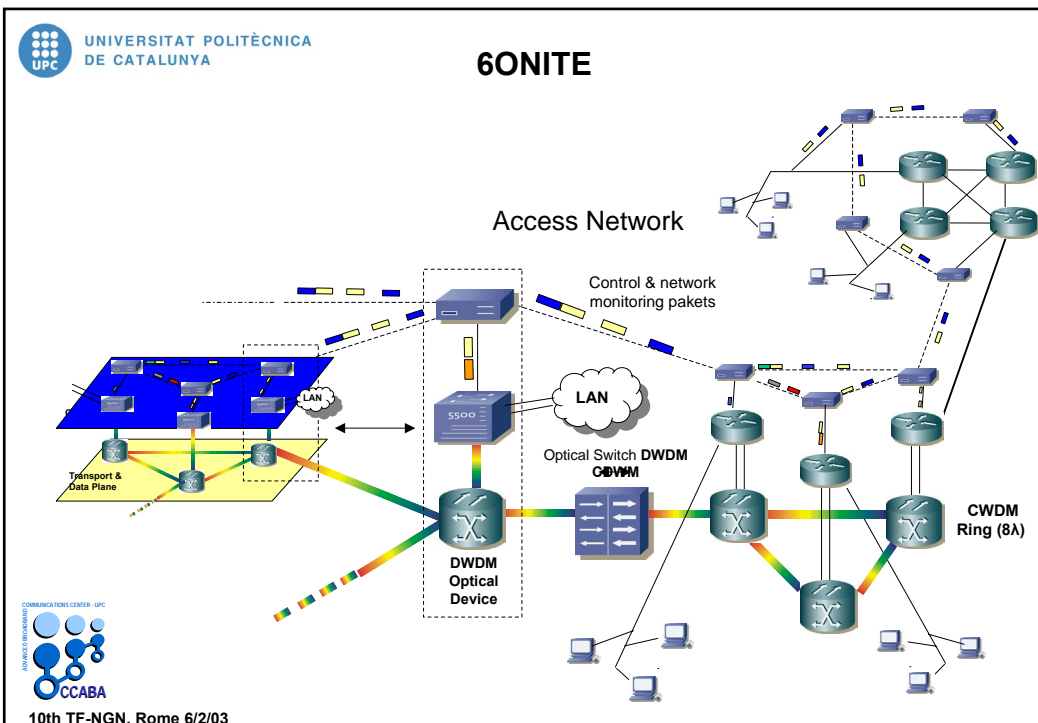
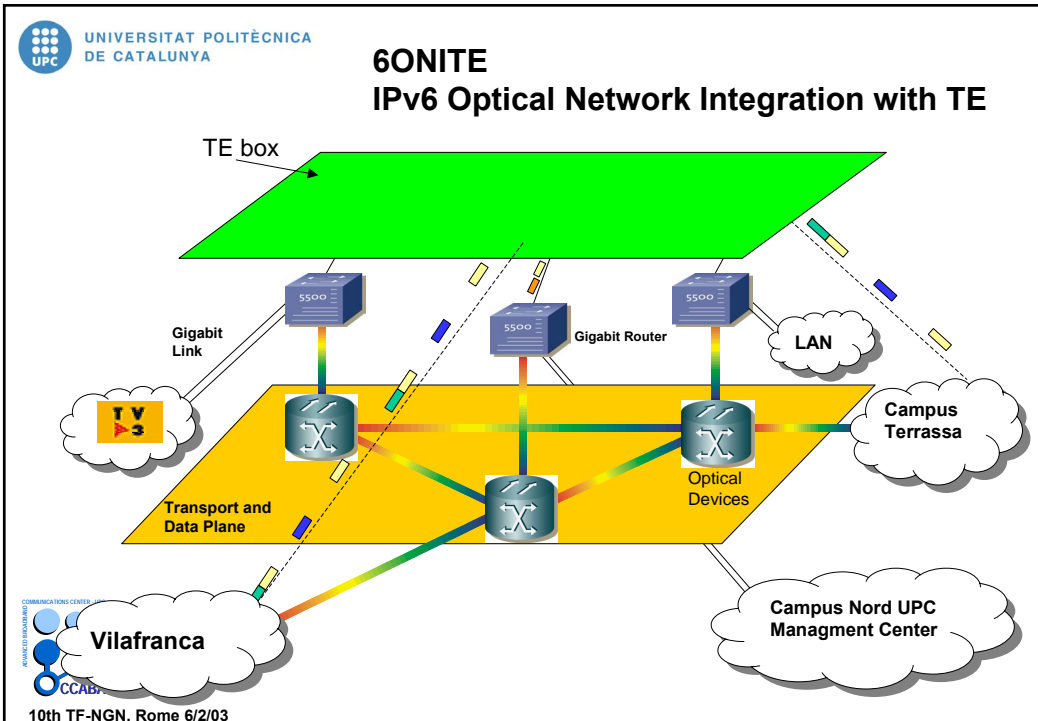


Client Node: CWDM Network



crismal Network







6ONITE Objectives

- Provide a reliable network with QoS and dynamically Bandwidth on Demand on IPv6
- Deploy an Optical Transport Network with Traffic Engineering under IPv6
- Implementation of unused fields of IPv6 (flowid,...) to implement a robust control with Traffic Engineering.
- Provide the network with full management by the SNMP protocol and new optical MIB's
- Interrelation between L2 and L3. Deploy an intelligent network.
- Control Plane deployed at the IP domain and operates both, at the IP level (with DiffServ) and at the optical domain.
- Optimization of the bandwidth resources.
- Monitoring the network. Provide the network with Security and other policies. Study the interoperability. Provide the network with a billing and an accounting platform.
- Combination of different optical technologies such as DWDM and CWDM.



Summary

- We are willing to establish collaboration with NGN experimental projects.
- Connection of i2CAT/CARISMA network to other research platforms is a priority issue.
- Proposal for IPv6 Optical Integration with TE open for new partners.

