LONG: Laboratories Over Next Generation Networks.

Participants : PTIN, TED, TID, UC3M, UEV, UPC, UPM.

General Information

- LONG: Laboratories Over Next Generation Networks.

  - IST Program of EU (European Union): IST-1999-20393.
  - Participants: PTIN, TED, TID, UC3M, UEV, UPC, UPM.
  - Start Date: 1/12/2000, Duration: 24 Months.

- Previous Experiences and Knowledge:

  - Standards Related to IPv6 protocol.
  - Experiences and practical tests with IPv6 in test-beds.
  - IPv4-IPv6 transition mechanisms.
  - New technologies in Broadband Access Networks.
  - Transport Network Technologies.
  - Collaborative Work Environment (CSCW Applications).

General Information(II)

- Aim of the Project:
    - IPv6 offers new solutions to solve actual problems such as:
        - Scarcity of IP addresses.
        - Stability of Internet routing protocols.
        - Security at IP packet level.
    - Besides IPv6 allows some mechanisms to be improved:
        - Mobility.
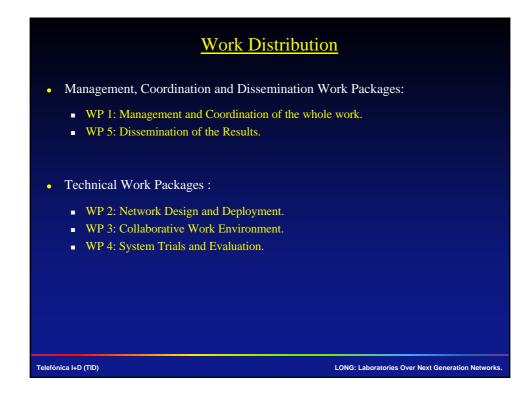   - Quality of Service.
        - Multicast.

    - IPv6 launching will occur when applications and services use the new features provided by this protocol. Main points:
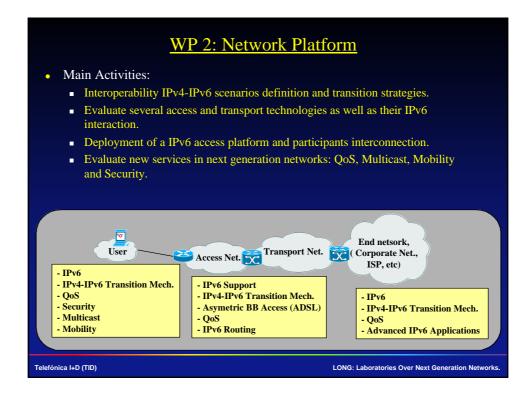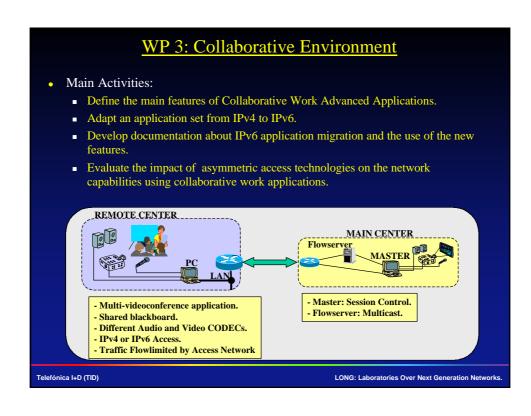   - Development of a Next Generation Network Platform.
        - Adaptation of current IPv4 based applications to IPv6.
        - Design of New IPv6 Applications which use the new features.

Objectives

- Main Objectives:
    - Develop a "next generation" network platform including interaction between the following technologies:
        - Protocol IPv6.
        - Advanced Network Mechanisms: Autoconfiguration, Security, Multicast, Mobility.
        - IPv6-IPv4 Transition and Integration Mechanisms.
        - New Broadband Access Technologies: ADSL.
        - Transport Technologies: ATM.
    - Adapt and validate a representative set of applications/services in "next generation" network scenarios.
    - Make tests and Experiences with such applications and platform.
    - Make available documentation and recommendations about migration to next generation networks.

Work Distribution

- Management, Coordination and Dissemination Work Packages:

  - WP 1: Management and Coordination of the whole work.
  - WP 5: Dissemination of the Results.

- Technical Work Packages :

  - WP 2: Network Design and Deployment.
  - WP 3: Collaborative Work Environment.
  - WP 4: System Trials and Evaluation.

WP 2: Network Platform

- Main Activities:
  - Interoperability IPv4-IPv6 scenarios definition and transition strategies.
  - Evaluate several access and transport technologies as well as their IPv6 interaction.
  - Deployment of a IPv6 access platform and participants interconnection.
  - Evaluate new services in next generation networks: QoS, Multicast, Mobility and Security.

User   **Access Net.**   **Transport Net.**   **End netsork, (Corporate Net., ISP, etc)**

- IPv6
- IPv4-IPv6 Transition Mech.
- QoS
- Security
- Multicast
- Mobility

- IPv6 Support
- IPv4-IPv6 Transition Mech.
- Asymetric BB Access (ADSL)
- QoS
- IPv6 Routing

- IPv6
- IPv4-IPv6 Transition Mech.
- QoS
- Advanced IPv6 Applications

WP 3: Collaborative Environment

- Main Activities:
  - Define the main features of Collaborative Work Advanced Applications.
  - Adapt an application set from IPv4 to IPv6.
  - Develop documentation about IPv6 application migration and the use of the new features.
  - Evaluate the impact of asymmetric access technologies on the network capabilities using collaborative work applications.

REMOTE CENTER

PC

LAN

MAIN CENTER

Flowserver

MASTER

- **Multi-videoconference application.**
- **Shared blackboard.**
- **Different Audio and Video CODECs.**
- **IPv4 or IPv6 Access.**
- **Traffic Flowlimited by Access Network**

- **Master: Session Control.**
- **Flowserver: Multicast.**

WP 4: Experiences and Tests

- Main Activities:
  - Carry out tests: configuration, stability and capabilities of network components and network mechanisms.
  - Fulfill tele-meeting experiences and/or tele-conference to evaluate in an accurate way the defined platforms and perform real traffic measurements.

MAIN SITE

Remote Site 1

Remote Site 2

...

Remote Site N

External Collaborations

- Possible Synergies and Collaboration with:

  - "Next generation networks" development teams.
  - Advanced IPv6 Applications development groups.
  - Collaborative Work Applicationes development groups.

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