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Title:	Document Version:
Deliverable D3.3.7 **Network Usage (M7, July 2002)**	1.1

Project Number:	Project Acronym:	Project Title:
IST-2001-32161	Euro6IX	European IPv6 Internet Exchanges Backbone

Contractual Delivery Date:	Actual Delivery Date:	Deliverable Type* - Security**:
31/07/2002	20/10/2002	R – PU

* Type: P - Prototype, R - Report, D - Demonstrator, O - Other
** Security Class: PU- Public, PP – Restricted to other programme participants (including the Commission), RE – Restricted to a group defined by the consortium (including the Commission), CO – Confidential, only for members of the consortium (including the Commission)

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Abstract:

Deliverable D3.3.7 is produced after a minimum network infrastructure is up and running. The main goal of these documents is to reports regarding the Euro6IX networks status, deployment state and usage by internal activities as well as public events.

Since most international links are still under deployment there is no real Euro6IX single network as of July 2002. Then, deliverable D3.3.7 is mainly oriented to define a reference and document index to facilitate partner contributions to next reports.

Keywords:

Euro6IX, IPv6, Network Maps, Network Reports, Network Status, Statistics, Traffic.

Revision History

Revision	Date	Description	Author (Organization)
v0.1	01/09/2002	Document creation	Carlos Ralli Ucendo (TID)
v1.0	20/09/2002	Index and Contents review.	Carlos Ralli Ucendo (TID)
v1.1	20/10/2002	Updated to project template and further inputs	Jordi Palet (Consulintel)

Executive Summary

This D3.3.7 deliverable has been produced in the context of activities A3.1 and A3.2.

Activity A3.1 covers the deployment of the local networks attached to the different Euro6IX IXs nodes. Activity A3.2 deals with all deployments related to Euro6IX Backbone network.

Deliverables D3.3.x will be produced every month, and this document is the first one of them, corresponding to month number 7 (July 2002).

D3.3.7 aims to summarize the status and usage of the different Euro6IX networks and services during July 2002.

As a first approach, the structure of these network usage reports is the following:

- First section (Current Network Status) is intended to clarify which links have been already deployed and which concrete networks have been attached.
- Second section (Network Stability and Global Traffic Reports) is intended to show the reachability of all network sections as well as a global view of the total traffic exchanged in Euro6IX network.
- Third section (Detailed Network and Services Usage in Events/Trials) is intended to show and analyze the traffic produced in some internal trials and in all public events where Euro6IX contributes in any way.

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1. INTRODUCTION

Euro6IX project has, as a key goal, to accelerate the introduction of IPv6 protocol in Europe. To reach this purpose, an appropriate architecture will be researched in order to design, develop, deploy and validate the first Pan-European pre-commercial IPv6 Internet Exchanges Network.

The network will connect regional and strategic neutral IPv6 Internet Exchanges across Europe in order to achieve higher levels of robustness and service quality than currently offered by IPv4 Networks.

The project will give the possibility to test advanced network services and IPv6 enabled applications that need to be properly monitored and reported, as part of the deployment activity, as is actually done in production networks.

2. CURRENT NETWORK STATUS

This section is intended to update and clarify which links have been already deployed and which concrete networks have been attached to Euro6IX backbone.

2.1 Remarkable news Related to Euro6IX Network & Services

In this period (July 2002, M7), and including all the work done since the start of the project, the related news include:

- Consulintel, TID and UPM local sites connected to MAD6IX node, since early April 2002.
- LIS6IX and MAD6IX linked by a 34 Mbps ATM link on 29th May 2002.

2.2 Status of International Links

The Figure 2-1 shows the topology of international links obtained after the Euro6IX consortium Berlin meeting (11th April 2002) discussions.

Finally, all Euro6IX international links will be sponsored (in part or totally, depending on each case) by several of the Telco's related to participants in the project. The advantage of this solution is the budget saved in international connectivity, which can be re-distributed to other concepts (as stated in the section 11.10 of the Euro6IX Technical Annex).

We took this decision regardless of the delay incurred because the negotiations done with each partner related Telco's, understanding that this is part of the business case that the project needs to provide. As a consequence, some of these links could be provided with delayed time frames than considering regular commercial solutions and/or providers not related to the consortium.

The first result of these negotiations can be summarized as:

- **LIS6IX-MAD6IX:** As already indicated, this link has been sponsored between Telefónica and Portugal Telecom, and is already fully operational.
- **MAD6IX-LON6IX:** This link has been officially requested and will be deployed during M8 and M9 (August and September 2002). Telefónica will sponsor MAD6IX-East Telehouse link, while BT will provide the link between East and North Telehouse's (LON6IX is located in the last one), probably being sponsored by a 3rd party (XchangePoint), depending on the negotiations being carried out. A 34 Mbps ATM PVC will be configured.
- **LON6IX-PAR6IX:** This link will be routed using an available FT's STM-1 POS connection. At least 34 Mbps will be available for Euro6IX traffic. The L3 connectivity is not working as of July 2002.
- **PAR6IX-BER6IX:** PAR6IX-Frankfut section will be also provided, by the means of an available FT's STM-1 POS, while DT will provide Frankfurt-BER6IX. The link is not working as of July 2002.

- **BER6IX-TOR6IX:** DT will provide BER6IX-Frankfurt link, in parallel with the one for PAR6IX-BER6IX connection. Frankfurt-TOR6IX link will be provided by TILAB. The link is not working as of July 2002.
- **TOR6IX-ZUR6IX:** Link provided by TILAB. Not working as of July 2002.
- **TOR6IX-MAD6IX:** This link is scheduled for Dec 2002 since Telefónica could provide Madrid-Savona section, but TILAB could not provide the connection to Torino. In the case, as of Dec 2002, this link is not successfully negotiated, other solutions will be decided, within several choices actually being investigated, in order to reach a minimum ring/mesh topology as showed in the previous figure.

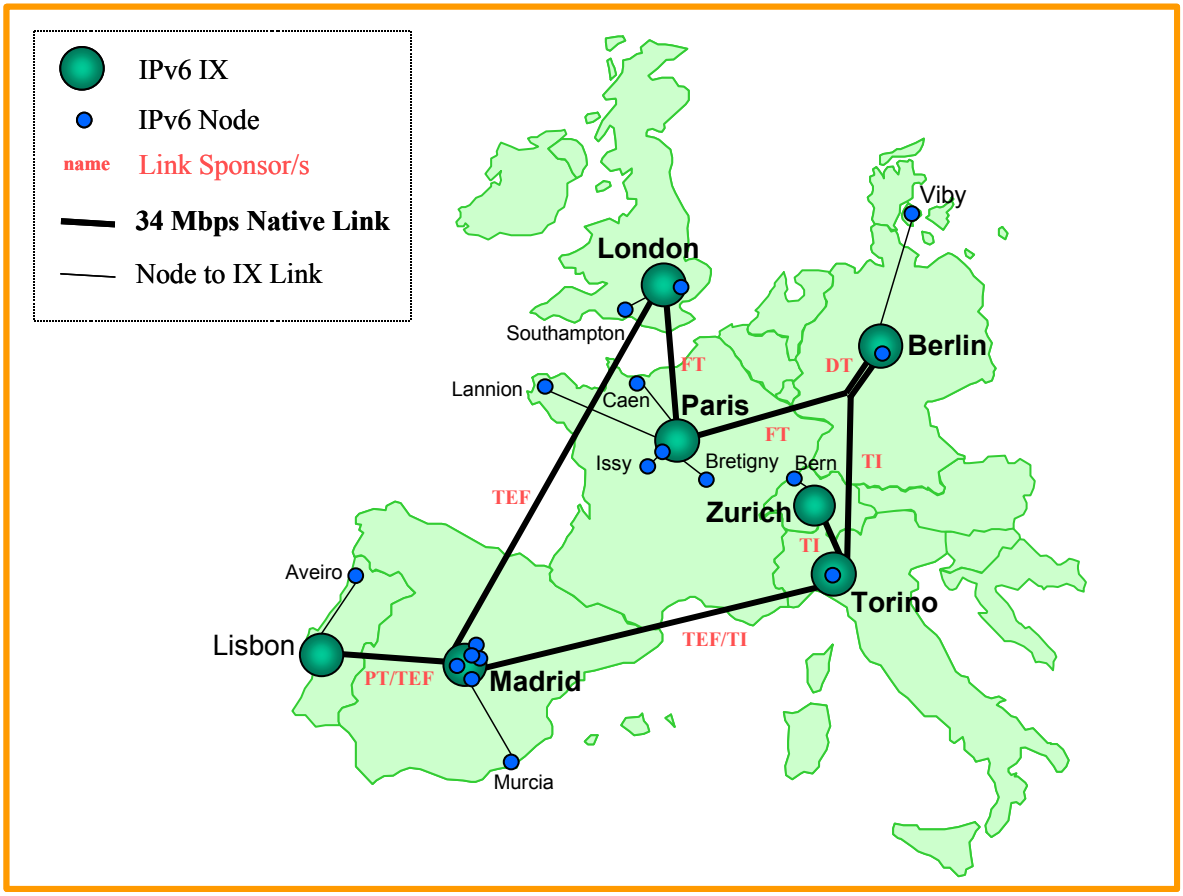

Figure 2-1: Planned Euro6IX international links as of July 2002

3. NETWORK STABILITY AND GLOBAL TRAFFIC REPORTS

This section is intended to compile the traffic statistics diagrams automatically generated in order to have a global view of the Euro6IX network usage.

The following subsections show the global statistics systems that have been identified as necessary to characterize the Euro6IX network usage in each month after July 2002.

3.1 Hosts/Networks Reachability Statistics from TID

The “ping_stat” tool automatically generates these statistics.

This tool has been developed by TID in the context of the LONG project and allows checking the reachability of network elements by executing "ping" to a list of IPv6 addresses every 15 minutes. The results are transferred to another machine using the "wget" IPv6 enabled tool. This second machine shows through a WEB interface the graphics generated using the information retrieved each 60 minutes.

It has been noted that other partners have similar tools already deployed (i.e. TILAB). These partners are suggested to show their own statistics in the WEB servers located in their premises.

The installation and configuration of this system at TID's Euro6IX local network is scheduled for M9 (September 2002).

All local sites should provide before the end of September 2002 a stable host/router interface, which will be checked by "ping_stat" tool.

3.2 Links Traffic Measurement Statistics

As of July 2002 no Links Traffic Measurement system has been defined.

In the future, this section will compile the traffic sent by Euro6IX international and national links. It will include also the traffic sent and received in the links connecting Euro6IX to other IPv6 backbones.

A concrete definition of such a system should be ready as of January 2003.

3.3 Euro6IX Services Statistics

As of July 2002 no IPv6 stable services have been defined.

In the future, this section will include concrete servers statistics related to the usage of a set of stable services implemented in Euro6IX.

As an example, this section will contain the statistics related to IPv6 accesses to Euro6IX official WEB page, that are already being logged in advance to the start of the project, so it can be processed and displayed at any time.

4. DETAILED NETWORK AND SERVICES USAGE IN EVENTS/TRIALS

This section is intended to study and analyze the network traffic generated in the following situations:

- **Internal Trials:** Internal Euro6IX trials performed in the context of activity A4.3 will generate traffic within the Euro6IX networks. In some of these trials, the detailed study and analysis of the traffic generated could be interesting. In such cases, particular diagrams and statistics will be shown in this section although they could be included in the general statistics showed in previous sections.
- **Public Events:** After a public event has been performed, the traffic processed by the network during it must be studied and analyzed. The study must be focused in the traffic obtained as a result of this concrete event.

During July 2002 neither internal trials nor public events have been performed.

5. SUMMARY AND CONCLUSIONS

Up to end of July 2002, only a few links of the Euro6IX network are active and fully operational, so the network usage reporting activity is just starting.

Several tools are planned to be deployed in order to accomplish this task, and the basic set is described in this document, including network stability, global traffic, and network/services usage in trials and events.

Considering that new data could be collected from time to time, and then new tools will be needed, in order to complete the proper reporting.