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<b>Abstract:</b>          Deliverable D3.3.15 is produced when almost Euro6IX network infrastructure is up and running. The main goal of these documents is to report Euro6IX networks status, deployment stage and usage by internal activities as well as public events.
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<b>Keywords:</b>  Euro6IX, IPv6, Network Maps, Network Reports, Network Status, Statistics, Traffic.
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# Revision History

Revision	Date	Description	Author (Organization)
v0.1	01/05/2003	Document creation and Addition of Stat6 graphics	Jesus Lopez (TID) Carlos Ralli Ucendo (TID)
v1.0	08/05/2003	Addition of WP3 “Stable” Services List	Aurora Ferrandiz (TID)
v1.1	20/05/2003	Added IPv6 Euro6IX’s web statistics	Alvaro Vives (Consulintel)
v1.2	25/05/2003	Final Review	Jordi Palet (Consulintel)

# Executive Summary

D3.3.14 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 are being produced every month, and this document corresponds to month number 15 (March 2003).

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 network monthly reports are intended to show network and services evolution, current status, stability and usage.

Until D3.3.14 these reports did not include useful information regarding end user services but in D3.3.15 this issue appears for the first time as a primary objective. In this way, a list of stable services per partner has been compiled and included as part of WP3 activities.

It is important to know that this list is a preliminary one, since all partners have been asked to check and update it in the project repository (WP3 area). Also, only stable and operational services are listed, since there are other lists for specific trials/tests within A4.1, A4.2 & A4.3 including also unstable services.

In next D3.3.x documents this list of services will be updated and also it will be checked if some of these services are using advanced network services studied and tested within A4.1.

## 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 (March 2003, M15) the relevant news include:

- **TOR6IX-ZUR6IX:** Same as in Feb 2003: Physical connection Up & Running thanks to a link provided by Swisscom/Fixnet. It stills need some configuration to be IPv6 reachable.
- **LON6IX and MAD6IX** have started to configure the Routing policy agreed in WP2. This policy is necessary to keep Euro6IX traffic within Euro6IX links and establish useful peerings with external networks (such as 6NET, Abilene, etc).

### 2.2 Status of International Links

The updated status of the links is as follows:

- **LIS6IX-MAD6IX:** Up and running.
- **MAD6IX-LON6IX:** Up and running.
- **LON6IX-PAR6IX:** Up and running.
- **PAR6IX-BER6IX:** Up and running.
- **BER6IX-TOR6IX:** Up and running.
- **TOR6IX-ZUR6IX:** Physical connectivity OK thanks to Swisscom/Fixnet.
- **TOR6IX-MAD6IX:** It was decided to use a tunnel to enable routing tests depending on a ring topology. Not configured yet.

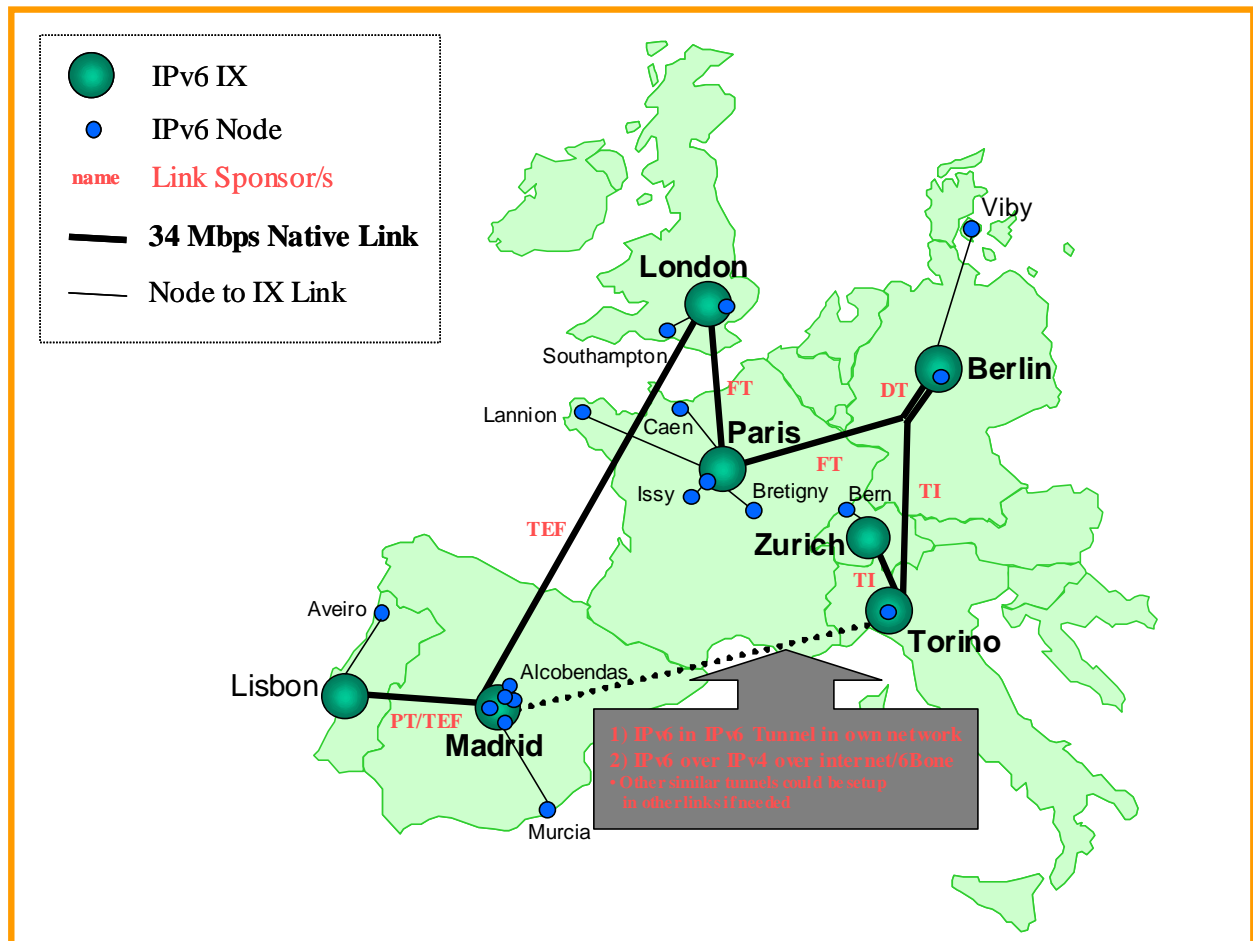


Figure 2-1: Planned Euro6IX International Links as of March 2003

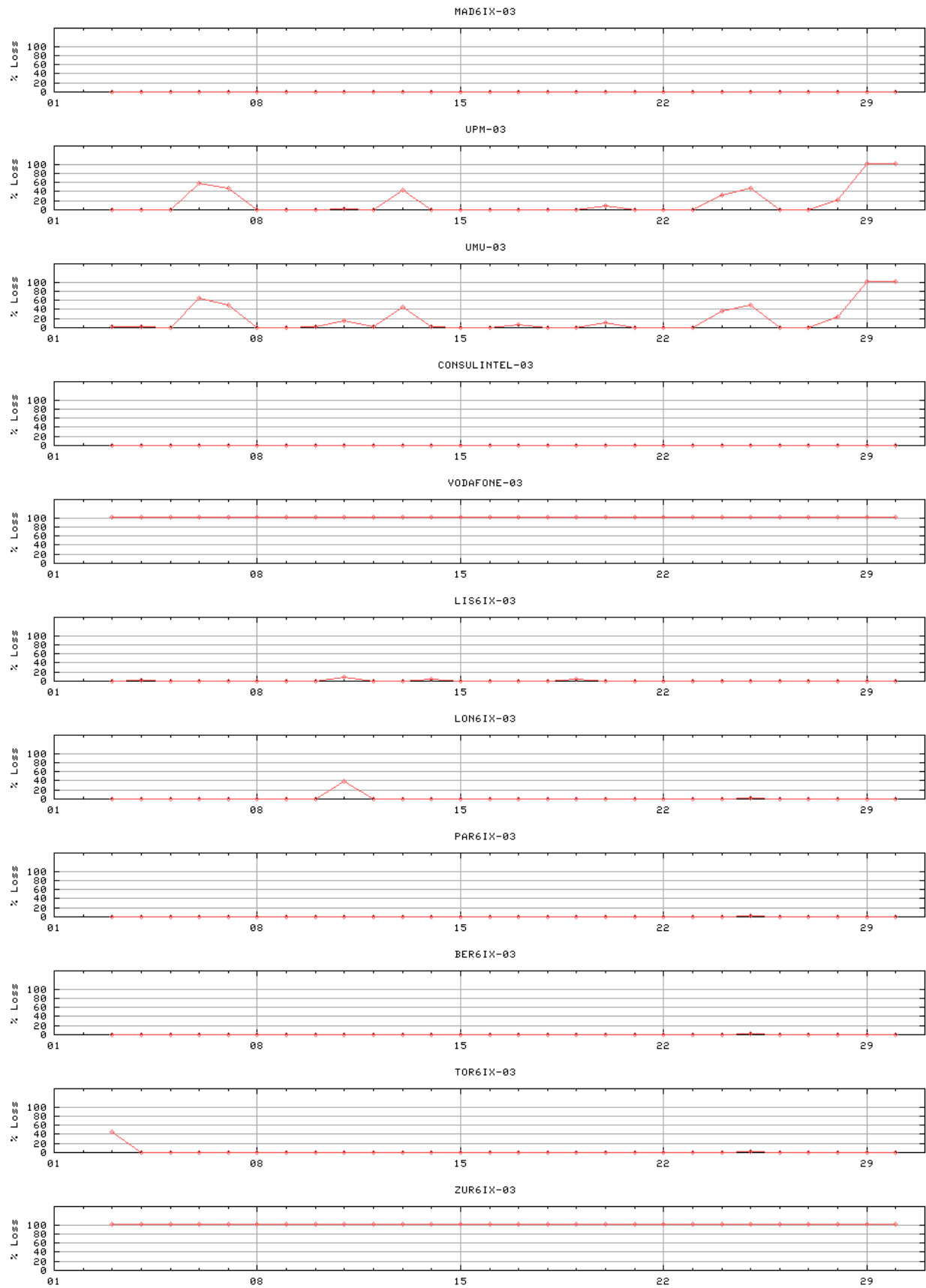


### **3. NETWORK STABILITY AND GLOBAL TRAFFIC REPORTS**

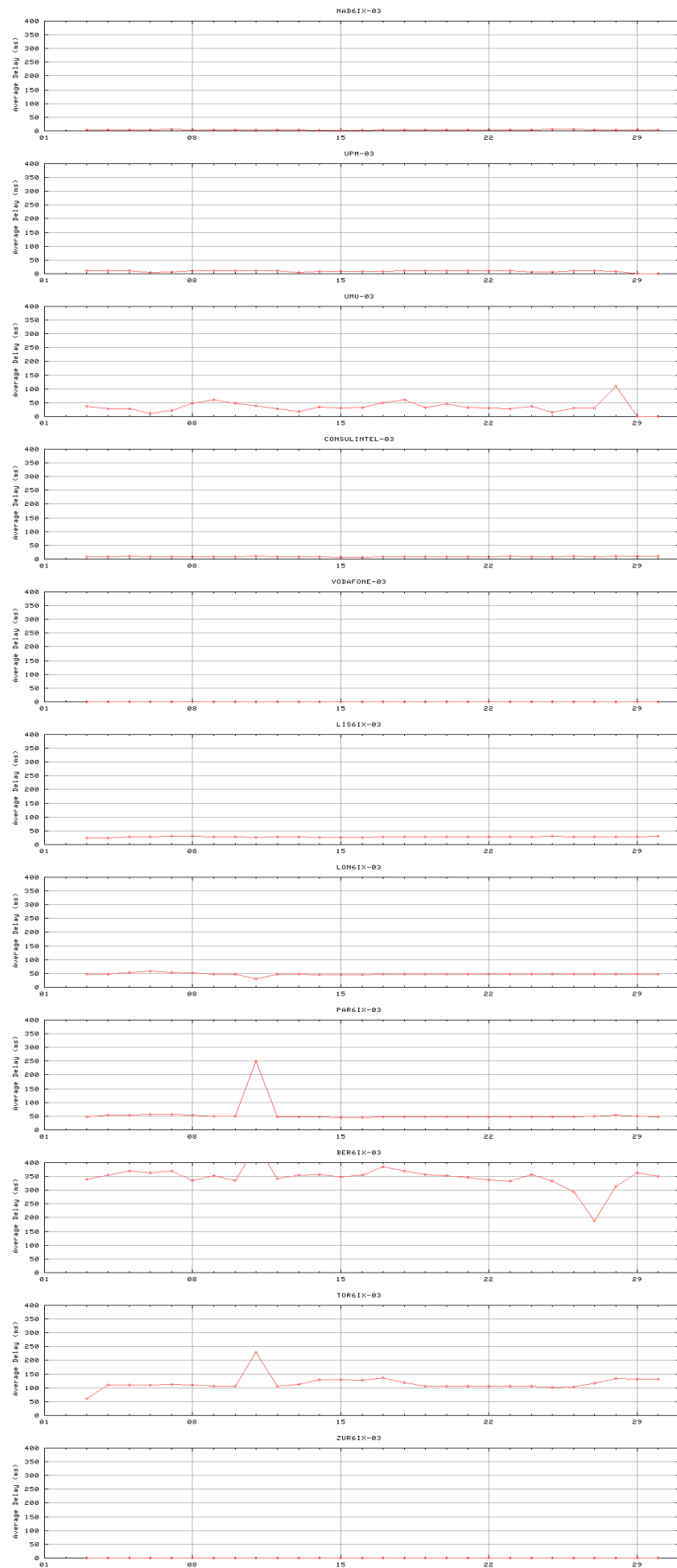
The following subsections show the global statistics systems that have been identified as necessary to characterize the Euro6IX network stability and usage each month.

#### **3.1 Hosts/Networks Reachability Statistics from TID**

The “ping\_stat” tool, or simply “stat6”, automatically generates these statistics from TID premises (<http://stat6.tid.euro6ix.org/>). As stated in D3.3.14, this system allows through the WEB interface to display any day or month graphic on demand.



**Figure 3-1: Euro6IX IXs LOSS Measured from TID Premises in March 2003**



**Figure 3-2: Euro6IX IXs DELAY Measured from TID Premises in March 2003**

### 3.2 Other Tools to verify Network Stability: Looking Glass

As UPM has produced a first stable release of the “Looking Glass” software within A4.2 activity, some partners have installed this application in an operational and stable way.

This tool allows to make ping and traceroutes and also to verify routers status and operation performing commands over telnet sessions. As an example of UPM’s Looking Glass, here is a capture of TID installation:

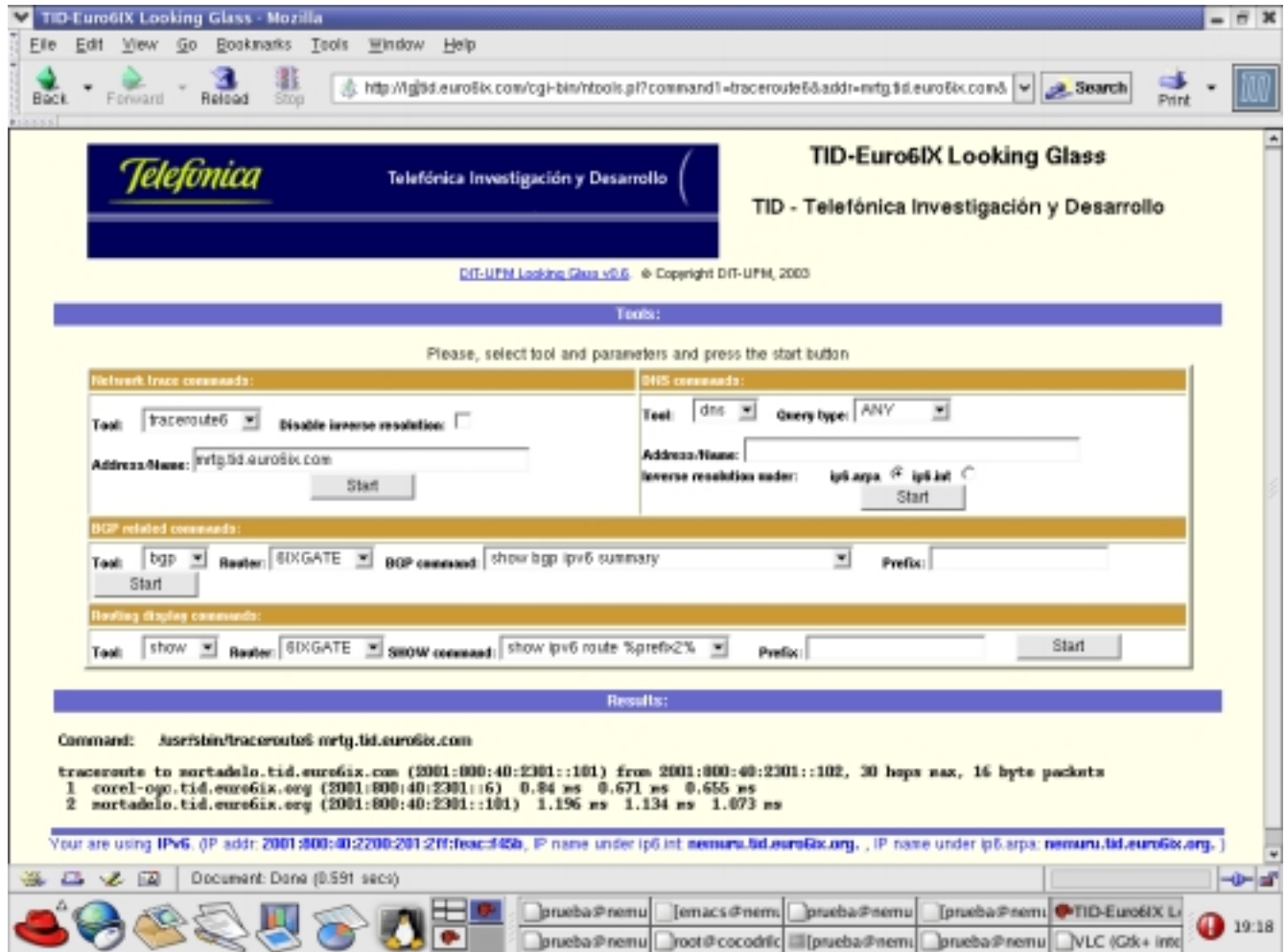


Figure 3-3: Looking Glass Developed by UPM (A4.2)

BT is also improving other Looking Glass developed previously in other projects. The idea is to install both and incorporate new facilities taking advantage of each one’s architecture and possibilities.

### 3.3 Links Traffic Measurement Statistics

Until today, only an IPv4 MRTG tool has been installed in TID premises. When nGn porting of MRTG to IPv6 is ready more partners will install it obtaining useful link traffic statistics.

Although MRTG IPv4 is used at TID, it measures only IPv6 traffic since it is configured to show all ATM interface throughputs and there is no IPv4 traffic on those ATM PVCs.

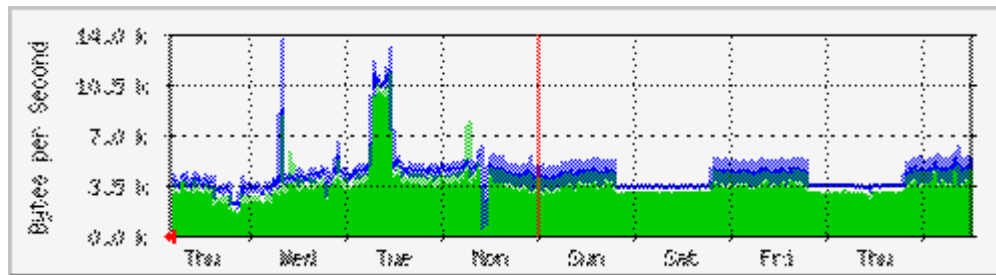


Figure 3-4: Weekly Graph: IPv6 Traffic, TID to Euro6IX (March 2003)

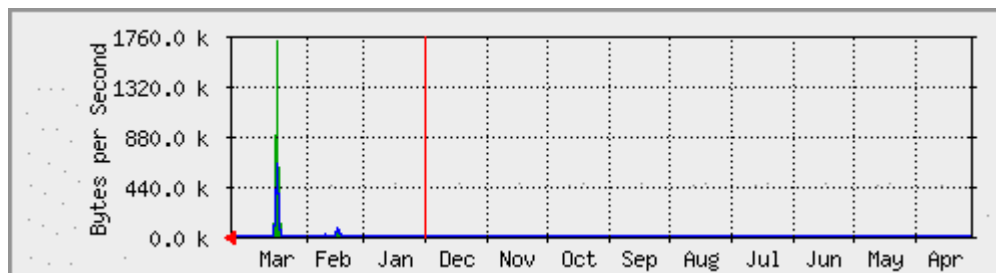


Figure 3-5: Monthly Graph: IPv6 Traffic, TID to Euro6IX (March 2003)

As seen in the graphics above, there is more or less 3,5 Kbytes/s traffic from TID to Euro6IX and vice-versa (symmetric. Blue = TID to Euro6IX, Green = Euro6IX to TID) due to M6Bone tests mainly. In the monthly graphic a peak of 500 Kbytes/s (4 Mbps approximately) can be seen. This peak corresponds to some tests of other partners IPv6 video servers.

### 3.4 Euro6IX Servers List and Stability Statistics

In this section a first release of the Euro6IX server/services list is included. In these tables all **stable** services per partner are described. It is important to remark that some partners have more services in their premises but they are installed only for testing purposes. On the contrary, the services listed in the tables below are intended to be stable enough to be used in any trial or demonstration of Euro6IX.

#### 3.4.1 BT

Server	URL IPv6	Recommended Client
Web	<a href="http://www.uk6x.com/">http://www.uk6x.com/</a>	IPv6 Web Browser
Looking Glass	<a href="https://lg.ipv6.btexact.com/">https://lg.ipv6.btexact.com/</a>	IPv6 Web Browser
Nagios		IPv6 Web Browser
Jabber		
Quake 1 and Quake 2	quake.ipv6.btexact.com	Quake
Video Streaming	<a href="http://vod.ipv6.btexact.com">http://vod.ipv6.btexact.com</a>	VLC
MP3 Streaming	<a href="http://radio.ipv6.btexact.com:8000/">http://radio.ipv6.btexact.com:8000/</a>	Winamp

		<a href="http://www.uk6x.com/applicationservices/radio.m3u">http://www.uk6x.com/applicationservices/radio.m3u</a> Windows Media 9 <a href="http://www.uk6x.com/applicationservices/radio.asx">http://www.uk6x.com/applicationservices/radio.asx</a> mpeg123 for Unix Systems xmms for Unix and Linux Systems Freeamp, now called <a href="#">zinf</a> is a multimedia player for Linux or Windows systems. It has been tested under Linux and Windows 2000/XP. VLC
Tunnel Broker		

### 3.4.2 Consulintel

Server	URL IPv6	Recommended Client
Euro6IX web site	<a href="http://www.euro6ix.com">www.euro6ix.com</a> <a href="http://www.euro6ix.org">www.euro6ix.org</a> <a href="http://www.euro6ix.net">www.euro6ix.net</a>	IPv6 Web Browser
Web Site Statistics	<a href="http://www.consulintel.euro6ix.net/_private_euro6ix/statistics/statistics.htm">http://www.consulintel.euro6ix.net/_private_euro6ix/statistics/statistics.htm</a>	IPv6 Web Browser
Project Repository	<a href="ftp://ftp.euro6ix.org">ftp://ftp.euro6ix.org</a>	IPv6 Web Browser
Web Mail Tool	<a href="http://webmail.novagnet.euro6ix.org/">http://webmail.novagnet.euro6ix.org/</a>	IPv6 Web Browser
Video Streaming	<a href="mms://6stream.consulintel.euro6ix.com/">mms://6stream.consulintel.euro6ix.com/</a>	Windows Media 9
DNSSec	<a href="https://pki.umu.euro6ix.org">https://pki.umu.euro6ix.org</a>	IPv6 Web Browser
Tunnel Broker		

### 3.4.3 FTRD

Server	URL IPv6	Recommended Client
Webcam	<a href="http://webcam.ftird.euro6ix.org">webcam.ftird.euro6ix.org</a>	
Proxy Web	<a href="http://proxy.ftird.euro6ix.org">proxy.ftird.euro6ix.org</a>	
Quake2	<a href="http://quake2.ftird.euro6ix.org">quake2.ftird.euro6ix.org</a>	Quake
Teg	<a href="http://teg.ftird.euro6ix.org">teg.ftird.euro6ix.org</a> (not running yet)	

### 3.4.4 nGn

Server	URL IPv6	Recommended Client
MRTG	<a href="http://www.euro6ix.org">www.euro6ix.org</a>	IPv6 Web Browser
Project Repository	<a href="ftp://ftp.euro6ix.org">ftp://ftp.euro6ix.org</a>	IPv6 Web Browser
Web Mail Tool	<a href="http://webmail.novagnet.euro6ix.org/">http://webmail.novagnet.euro6ix.org/</a>	IPv6 Web Browser

### 3.4.5 PTIN

Server	URL IPv6	Recommended Client
Web	<a href="http://www.ptin.euro6ix.com">http://www.ptin.euro6ix.com</a>	IPv6 Web Browser
Chat/IRC	irc.ptin.euro6ix.com irc.ptin.euro6ix.org irc.ptin.euro6ix.net	Ipv6 Chat Client
Jabber	jabber.ptin.euro6ix.com jabber.ptin.euro6ix.org jabber.ptin.euro6ix.net	
Quake 1 and Quake2	quake.ptin.euro6ix.com quake.ptin.euro6ix.org quake.ptin.euro6ix.net	Quake
MP3 Streaming	mp3server.ptin.euro6ix.com mp3server.ptin.euro6ix.org mp3server.ptin.euro6ix.net	
Video Streaming	vic.ptin.euro6ix.com vic.ptin.euro6ix.org vic.ptin.euro6ix.net	Vic
6to4	6to4.ptinovacao.pt	

### 3.4.6 Telscom

Server	URL IPv6	Recommended Client
Web	<a href="http://www.telscom.ch">http://www.telscom.ch</a>	
Video Streaming	<a href="http://dsv6.telscom.ch:8100/mediaplayer6.html">http://dsv6.telscom.ch:8100/mediaplayer6.html</a> rtsp://dss6.ipv6.telscom.ch	WindowsMedia MPEG4IP
6Voice		

### 3.4.7 TID

Server	URL IPv6	Recommended Client
Magalia	Running at:	
Looking Glass	<a href="http://lg.tid.euro6ix.com">http://lg.tid.euro6ix.com</a>	IPv6 Web Browser
Nagios		
Web Statistics Tool	<a href="http://stat6.tid.euro6ix.com">http://stat6.tid.euro6ix.com</a>	IPv6 Web Browser
Topaz	Running at: not running yet	
Chat/IRC	irc6.tid.euro6ix.com	Chat IPv6 Client
Video Streaming	vod.tid.euro6ix.com:9999	VLC

Server	URL IPv6	Recommended Client
Free Radius IPv6	mortadelo6.tid.euro6ix.com:4444	
Digital TV Multicast	dtv.tid.euro6ix.com:1234	
New Terminals		
Access to a Digital Home through a NAT-PT	<a href="http://hogardigital6.tid.euro6ix.com">http://hogardigital6.tid.euro6ix.com</a>	IPv6 Web Browser
Access to a Multimedia IPv4 Portal through a NAT-PT	<a href="http://cba.tid.es">http://cba.tid.es</a>	IPv6 Web Browser

### 3.4.8 TILAB

Server	URL IPv6	Recommended Client
Web	<a href="http://www.ngnet.it">http://www.ngnet.it</a>	
Web Statistics Tool	Running at TILAB's IPv6 laboratory	IPv6 Web Browser
TILAB AS-Path Tree	Running at TILAB's IPv6 laboratory	
Chat/IRC	<a href="http://irc6.ngnet.it">irc6.ngnet.it</a>	IPv6 Chat Client
News	<a href="http://news6.ngnet.it">news6.ngnet.it</a>	IPv6 News Client
Mail for IPv6 Users	<a href="http://mail.ngnet.it/e/">http://mail.ngnet.it/e/</a>	IPv6 Web Browser (mail server available from Web)
Jabber	<a href="http://jabber.ngnet.it">jabber.ngnet.it</a>	
Quake 1 and Quake 2	<a href="http://games.ngnet.it">games.ngnet.it</a>	Quake
Tunnel Broker	<a href="http://tb.ngnet.it/">http://tb.ngnet.it/</a>	

### 3.4.9 UMU

Server	URL IPv6	Recommended Client
Web	<a href="http://www.umu.euro6ix.org">www.umu.euro6ix.org</a>	IPv6 Web Browser
Looking Glass	<a href="http://www.umu.euro6ix.org/cgi-bin/router-wan/ntools.pl">http://www.umu.euro6ix.org/cgi-bin/router-wan/ntools.pl</a> <a href="http://www.umu.euro6ix.org/cgi-bin/router-lan/ntools.pl">http://www.umu.euro6ix.org/cgi-bin/router-lan/ntools.pl</a>	IPv6 Web Browser
Nagios	<a href="http://nagios.umu.euro6ix.org/nagios/">http://nagios.umu.euro6ix.org/nagios/</a>	IPv6 Web Browser
Chat/IRC	<a href="http://www.uc3m.ist-long.com/irc/">http://www.uc3m.ist-long.com/irc/</a>	IPv6 Chat Client
Free Radius IPv6		
VPN Enforcement Tool	<a href="https://shire.umu.euro6ix.org">https://shire.umu.euro6ix.org</a>	IPv6 Web Browser



Server	URL IPv6	Recommended Client
PKIv6	<a href="https://pki.umu.euro6ix.org">https://pki.umu.euro6ix.org</a>	IPv6 Web Browser
DNSSec	<a href="https://pki.umu.euro6ix.org">https://pki.umu.euro6ix.org</a>	IPv6 Web Browser
PMTv6	<a href="https://shire.umu.euro6ix.org/pmtol">https://shire.umu.euro6ix.org/pmtol</a>	
DHCPv6		

### 3.4.10 UoS

Server	URL IPv6	Recommended Client
Surge Radio	<a href="http://surge.ecs.soton.ac.uk:8090">http://surge.ecs.soton.ac.uk:8090</a>	
P2P Unified Messaging System		

### 3.4.11 UPM

Server	URL IPv6	Recommended Client
Web	<a href="http://www.upm.euro6ix.org">http://www.upm.euro6ix.org</a>	
Magalia		
Free Radius		
Looking Glass	<a href="http://www.upm.euro6ix.org/cgi-bin/looking-glass-upm-v0.6/ntools.pl">http://www.upm.euro6ix.org/cgi-bin/looking-glass-upm-v0.6/ntools.pl</a> <a href="http://wamba.dit.upm.es">http://wamba.dit.upm.es</a>	IPv6 Web Browser
Nagios		IPv6 Web Browser
Chat/IRC	irc.upm.euro6ix.org:7000	IPv6 Chat Client (i.e. xchat)
Quake 1 and Quake 2	quake2.upm.ist-long.com	
DNSSec	<a href="https://pki.umu.euro6ix.org">https://pki.umu.euro6ix.org</a>	

TID Euro6IX Statistics Service (“Stat6”) will show in the future the availability of some relevant or public Euro6IX IPv6 servers listed above (to be included also in <http://stat6.tid.euro6ix.org/>).

### 3.4.12 Euro6IX Web Server Statistics

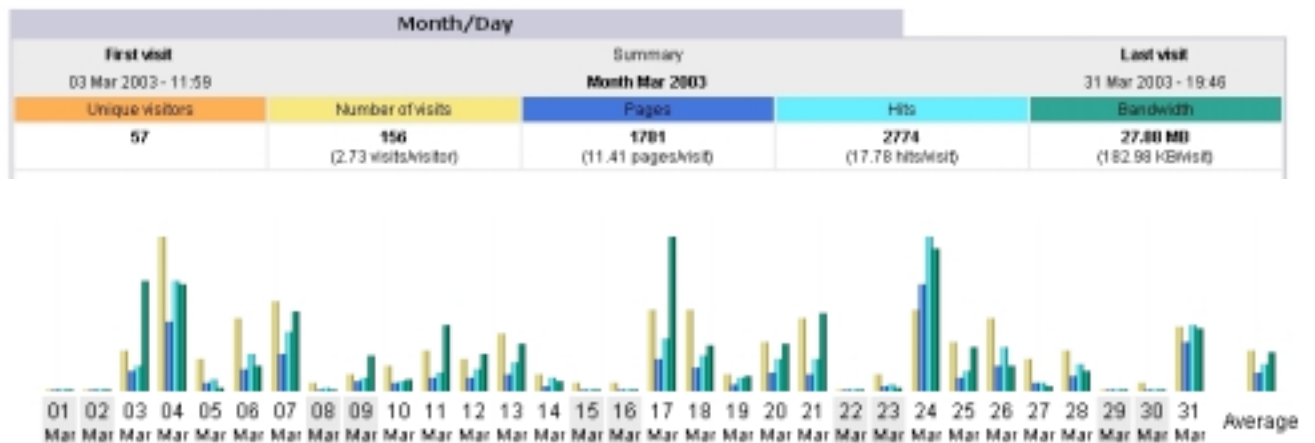
This section contains the statistics related to IPv6 accesses to Euro6IX official WEB page, that are already being logged in advance to the start of the project, so it can be processed and displayed at any time.

The tool used to generate the statistics is AWSTATS, which is freely available (<http://awstats.sourceforge.net>), and it seems to be the one that best supports IPv6. Using this tool we obtain yearly and monthly statistics about:

- Summary: unique visitors, number of visits, pages, hits and bandwidth
- Statistics for each day of the month

- Statistics for each day of the week
- Hourly statistics
- Visitors domains/countries
- Visitors hosts
- Robots/spiders visitors
- Visits duration
- File types
- Pages-URLs
- OS
- Browsers
- Connect to site from
- Search keyphrases and keywords
- HTTP error codes

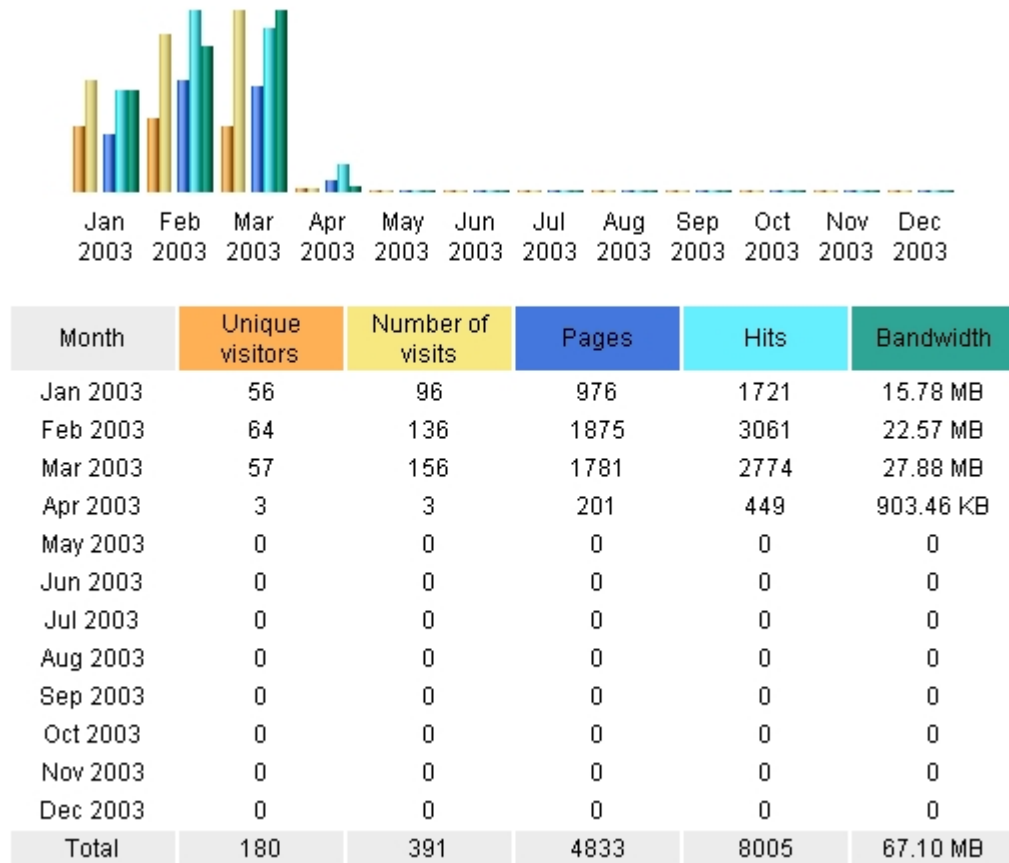
Euro6IX partners can see more details in <http://www.consulintel.euro6ix.org> in Private Euro6IX section.



**Figure 3-6: Web Usage Summary for March 2003**

Day	Number of visits	Pages	Hits	Bandwidth
01 Mar 2003	0	0	0	0
02 Mar 2003	0	0	0	0
03 Mar 2003	5	66	83	2.62 MB
04 Mar 2003	19	231	362	2.54 MB
05 Mar 2003	4	23	39	61.90 KB
06 Mar 2003	9	71	123	596.33 KB
07 Mar 2003	11	124	195	1.89 MB
08 Mar 2003	1	4	7	24.35 KB
09 Mar 2003	2	32	43	854.01 KB
10 Mar 2003	3	25	32	253.33 KB
11 Mar 2003	5	41	57	1.58 MB
12 Mar 2003	4	45	68	900.48 KB
13 Mar 2003	7	52	95	1.14 MB
14 Mar 2003	2	16	41	219.79 KB
15 Mar 2003	1	4	5	11.32 KB
16 Mar 2003	1	4	5	11.33 KB
17 Mar 2003	10	107	174	3.68 MB
18 Mar 2003	10	75	115	1.10 MB
19 Mar 2003	2	18	43	354.17 KB
20 Mar 2003	6	60	105	1.11 MB
21 Mar 2003	9	53	103	1.85 MB
22 Mar 2003	0	0	0	0
23 Mar 2003	2	13	18	73.04 KB
24 Mar 2003	10	354	509	3.42 MB
25 Mar 2003	6	43	66	1.05 MB
26 Mar 2003	9	83	146	593.84 KB
27 Mar 2003	4	23	28	92.29 KB
28 Mar 2003	5	48	90	468.62 KB
29 Mar 2003	0	0	0	0
30 Mar 2003	1	3	3	14.28 KB
31 Mar 2003	8	163	219	1.49 MB
Average	5.03	57.45	89.48	920.82 KB
Total	156	1781	2774	27.88 MB

**Figure 3-7: Web Daily Usage for March 2003**



**Figure 3-8: Web Usage Summary for 2003**

## 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 March 2003 there was no relevant events with the participation of Euro6IX but some tests in order to start using ISABEL IPv6 multi-videoconference tool.

## 5. SUMMARY AND CONCLUSIONS

As seen in this report, WP3 is now focusing in stable services deployed in an operational manner throughout Euro6IX network. Next steps within WP3 include not only to request a list of installed services to the partners but also to coordinate this deployment to reach two main objectives:

- A correct deployment of Euro6IX own services: As soon as A4.1 and A4.2 updates the list of stable network and end-user services, WP3 will study this feed-back and will talk and discuss with all partners who are going to install them. At least 3 or more partners would be interesting to have a minimum testing.
- A correct geographical distribution of IPv6 stable services: With this measurement all partners will be involved in a more equal manner in project experiments and demonstrations. Also traffic among exchanges will be more balanced improving routing experiments.

After these two objectives are achieved, WP3 will focus on the introduction of beta-testers access test-beds (Real users).