



Information Society  
Technologies



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<b>Abstract:</b>  This document is a guide to the 6QM project web site <a href="http://www.6qm.org">www.6qm.org</a> .  It describes its general outline and structure, the rationale and the type of information contents that is found on the web pages and contains exemplary screen snapshot of selected pages.
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# Revision History

The following table describes the main changes done in the document since its creation.

<b>Revision</b>	<b>Date</b>	<b>Description</b>	<b>Author (Organization)</b>
v0.1	17/02/2003	Document compilation	Rudolf Roth (FOKUS)
v0.2	18/02/2003	Document updated to match Project Deliverable Template and modified with minor changes	David Diep (HIT)
v0.3	23/02/2003	Info on Private Area added	Rudolf Roth (FOKUS)
v0.4	07/03/2003	Update on Screen Snapshots	Rudolf Roth (FOKUS)
v1.0	17/04/2003	Update to new layout and according modification of description to the current status	Rudolf Roth (FOKUS)
v1.1	18/05/2003	Final Updates and Review	Jordi Palet (Consulintel)

# Executive Summary

The project web site ([www.6qm.org](http://www.6qm.org)) has been established for on-line information exchange. This document describes its general outline and structure, the rationale and the type of information that has already been made available and what will be published as the project further progresses. All public information will be made accessible through this site. The web site has both IPv6 and IPv4 capability, so that the IPv6 connectivity can be demonstrated across several IPv6 networks. The site serves as repository for presentations and publications of the project partners. It acts as a public information service on topics related to IPv6 QoS Measurement offering links to other relevant projects and initiatives worldwide.

The portal also holds a password protected private workspace for the 6QM project partners for on-line information management.

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## 1. INTRODUCTION

The project web site ([www.6qm.org](http://www.6qm.org)) has been established for on-line information exchange. In this document we describe the general outline and structure that has been selected by the 6QM consortium for organizing the publication of 6QM results. We explain the rationale and information policies for its pages, and specify the type of information that is subsumed under each page. The web site has both IPv6 and IPv4 capability, so that the IPv6 connectivity can be demonstrated across several IPv6 networks. A short paragraph details the connectivity realized in the present phase and describes the upgrade that is currently in preparation to become operational in the next future. Screen captures of selected pages provide a snapshot view of the web site's momentary state, however it is obvious that the site will grow and become more information rich as the project progresses and more results become available.

## 2. 6QM WEBSITE ORGANIZATION

### 2.1 Website Layout

A general layout has been chosen that it consistently used on all project pages. It employs an esthetically appealing design that is intuitive and easy to navigate.

The top banner contains the project logo in the middle, the IST logo to the left and IPv6 Cluster Logo, of which 6QM is a member, to the right. It creates an identifiable and recognizable signal to the viewer. A small bar separating the top banner from the main text body contains the page heading and buttons linking to central information and navigation functions viz. a back button to the home page, a button linking to contact information and a button leading to an interface of a site search engine.

In the main text body window, a left column has been split off containing the site navigation menu. The bottom corner of the left column contains a link to the password protected private work area, and the link on the bottom bar opens a mail window for sending requests to the web-master.

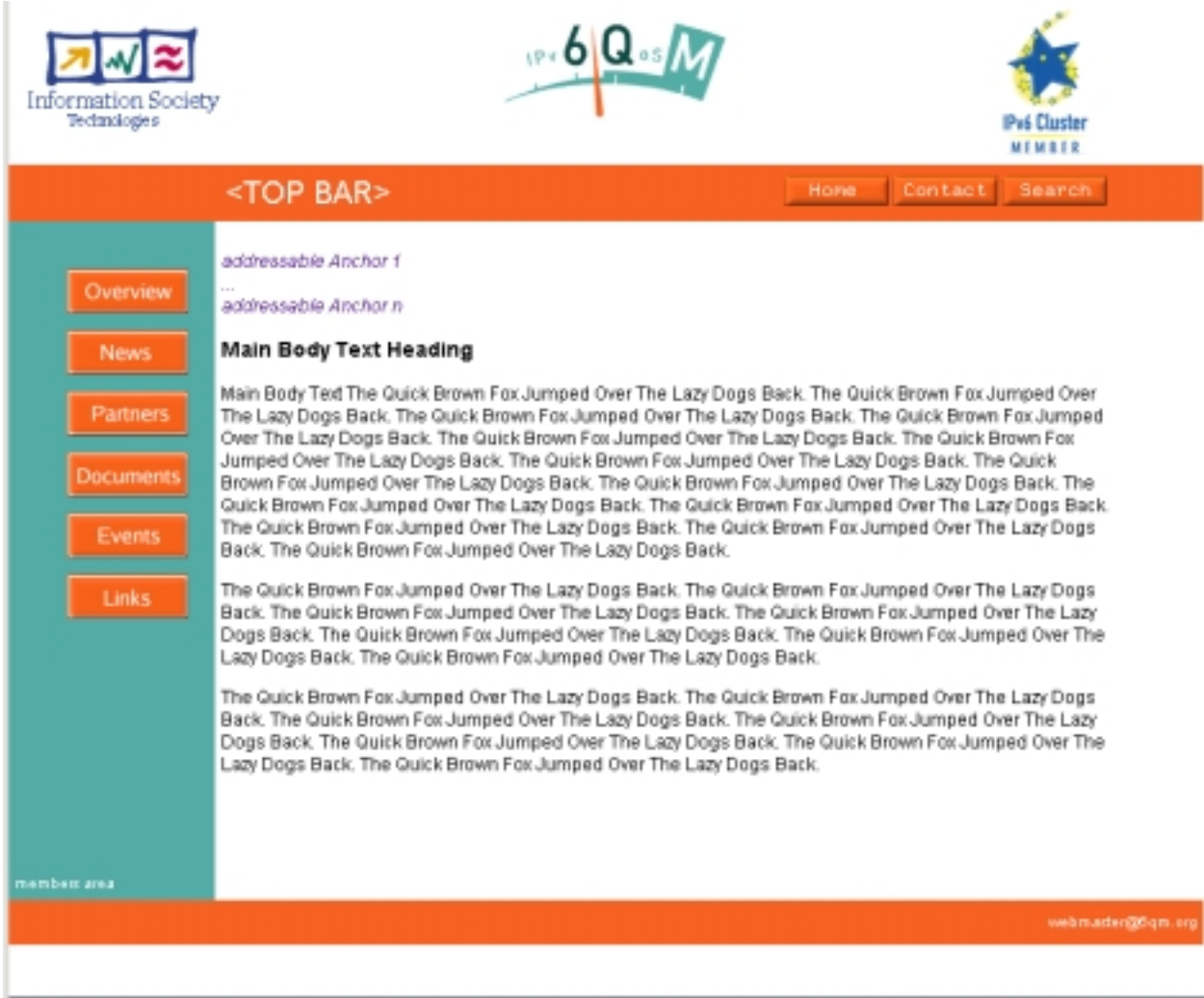


Figure 2-1: 6QM Web Page Layout

## 2.2 Site Map

For the structure of the web-site the following page organization had been realized

- Project Home Page
- Project Overview
- Project News
- Partner Information
- Documents
- Events
- Links

In addition general navigation support is provided by

- Site Search Page
- Contact Information

The portal also holds a password protected private workspace containing:

- Web interface to the project ftp-site for up- and downloading files
- Various access statistics of web-site usage
- Mail archive (currently under construction)
- Access control and management for private area

## 2.3 Rationale and Content Organization

### 2.3.1 Project Home Page

The project home page contains a short textual introduction to the 6QM project describing scope, objectives and expected project results. The text is organized to provide a quick orientation to the site visitor, therefore care is taken that information presented on the starting page is clear and concise to fit on a single monitor page with no requiring of scrolling text.

### 2.3.2 Project Overview

More expanded information is presented under the header of project overview. It gives an detailed description of project objectives, technical approach and organizational work package structure of the project. Graphical diagrams support the presented project presentations.

### 2.3.3 Project News

This page informs about important events occurring during the runtime of the project. It announces major project achievement, participation and demonstration in public events and includes projected related news events from partners in the consortium. The page will list summarizing headlines with short abstracts and links to further information such as press releases and short articles.



### **2.3.4 Partner Information**

On this page interested parties find the contact points and address information for the participating partners of the 6QM consortium

### **2.3.5 Documents**

The Documents sub-pages lead to the core information contents on the web site.

Project documentation includes

- General information explaining to a wider public project scope, context, potential impact and application of results offering downloadable leaflets, brochures, etc.
- Technical information in form of:
  - Public project deliverables and derived excerpts of hyperlinked web versions.
  - Articles, papers and presentations given at public events and conferences
  - Documentation to software tools developed in the project.
  - Experiment descriptions and measurement results
  - Links to Supporting research material such as collected traces from experiments

### **2.3.6 Events**

This page contains a selection of links to event announcements with particular relevance for 6QM related topics, such as conferences, workshops or fair exhibitions. The emphasis will focus on events with 6QM participation and active representation. In addition linkage to more general Events Calendars will supplement this information service offer.

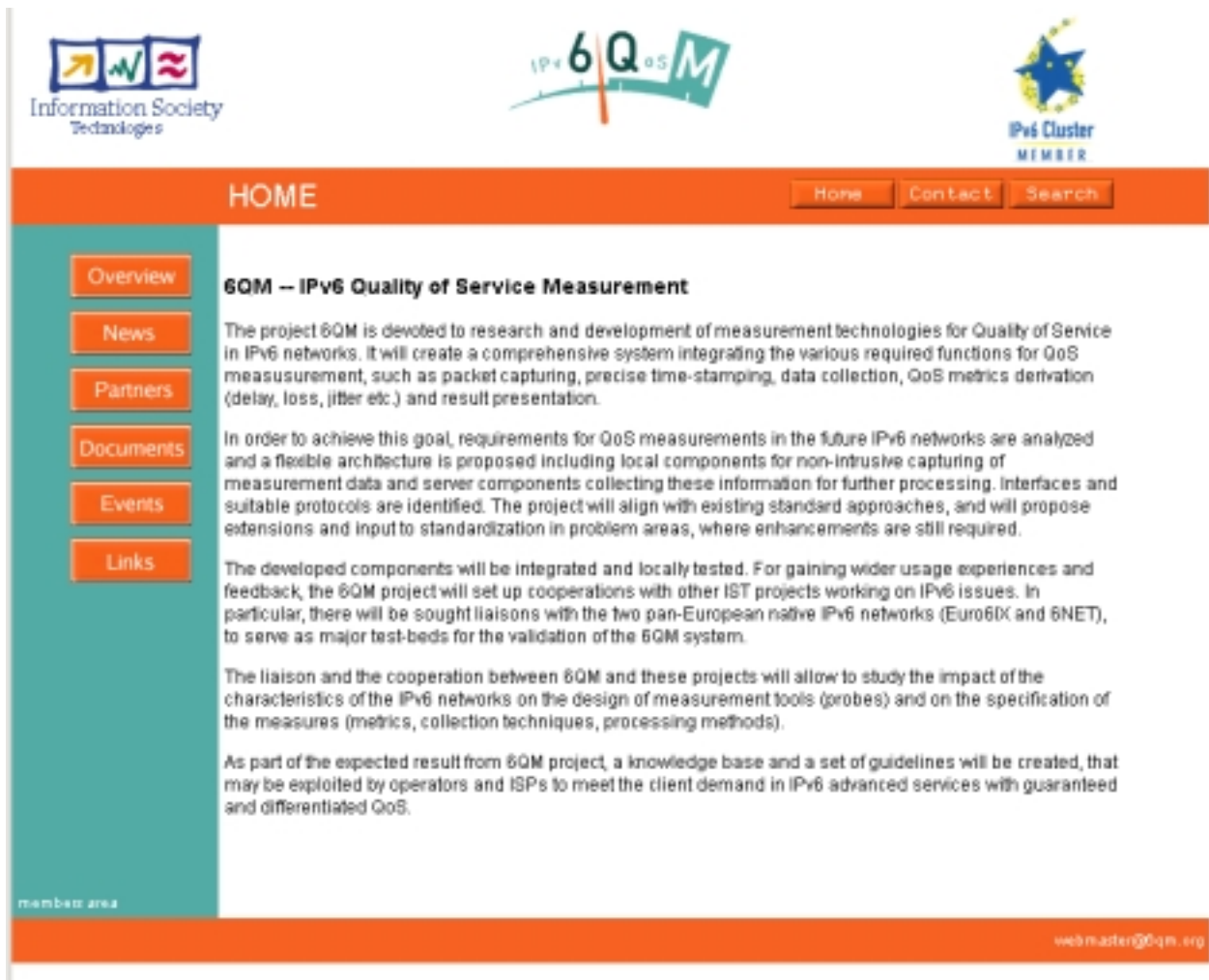
### **2.3.7 Links**

The Links page contains a rich collection of links towards other web pages with material relevant for 6QM related topics.

## **2.4 Connectivity**

The 6QM project web site is hosted by Fraunhofer FOKUS. It is considered of high priority to offer access to the project pages through IPv4 and IPv6 connectivity. Since Fraunhofer FOKUS is also partner within 6NET, the opportunity is taken to realize web site connectivity through native IPv6 across 6NET. During the time of installation the attachment of FOKUS underwent a change, which replaced a subnet via the provisional German IPv6 showcase network by a direct attachment to the German DFN 6WiN network with a corresponding assignment of address space. Therefore it was chosen to use during the transition a solution via the tunneled 6Bone, which has been migrated recently towards native IPv6 since then.

## 2.5 Screen Captures of the 6QM Web Site



The screenshot shows the 6QM Home Page. At the top, there are logos for Information Society Technologies, IPv6 QoS M, and IPv6 Cluster Member. Below the logos is an orange navigation bar with the word "HOME" and buttons for "Home", "Contact", and "Search". On the left side, there is a teal sidebar with buttons for "Overview", "News", "Partners", "Documents", "Events", and "Links". The main content area features the title "6QM -- IPv6 Quality of Service Measurement" and three paragraphs of text describing the project's goals, architecture, and future plans. At the bottom left of the sidebar, there is a "member area" link, and at the bottom right of the page, there is a contact email address: "webmaster@6qm.org".

**HOME** Home Contact Search

**Overview** **6QM -- IPv6 Quality of Service Measurement**

**News** The project 6QM is devoted to research and development of measurement technologies for Quality of Service in IPv6 networks. It will create a comprehensive system integrating the various required functions for QoS measurement, such as packet capturing, precise time-stamping, data collection, QoS metrics derivation (delay, loss, jitter etc.) and result presentation.

**Partners**

**Documents** In order to achieve this goal, requirements for QoS measurements in the future IPv6 networks are analyzed and a flexible architecture is proposed including local components for non-intrusive capturing of measurement data and server components collecting these information for further processing. Interfaces and suitable protocols are identified. The project will align with existing standard approaches, and will propose extensions and input to standardization in problem areas, where enhancements are still required.

**Events**

**Links** The developed components will be integrated and locally tested. For gaining wider usage experiences and feedback, the 6QM project will set up cooperations with other IST projects working on IPv6 issues. In particular, there will be sought liaisons with the two pan-European native IPv6 networks (Euro6IX and 6NET), to serve as major test-beds for the validation of the 6QM system.

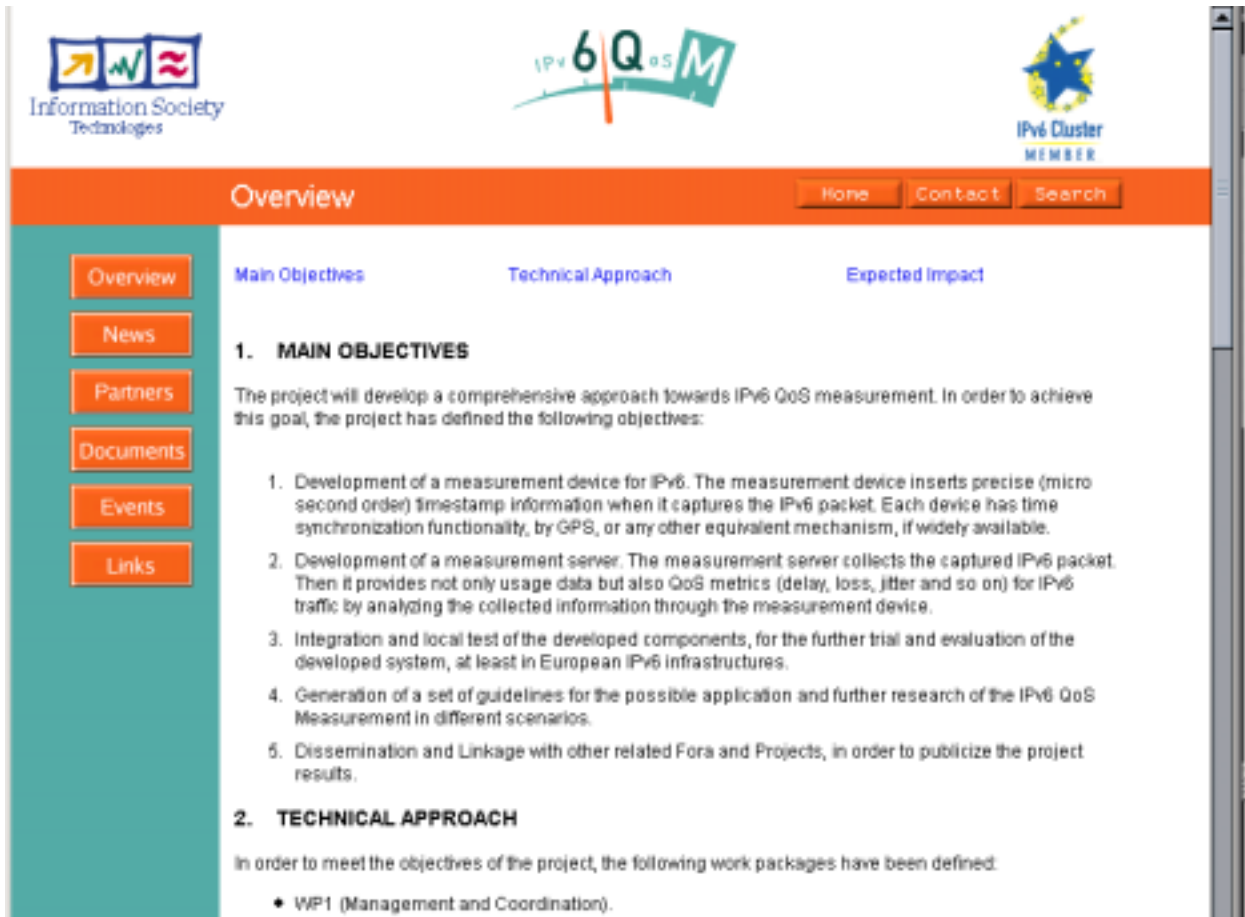
The liaison and the cooperation between 6QM and these projects will allow to study the impact of the characteristics of the IPv6 networks on the design of measurement tools (probes) and on the specification of the measures (metrics, collection techniques, processing methods).

As part of the expected result from 6QM project, a knowledge base and a set of guidelines will be created, that may be exploited by operators and ISPs to meet the client demand in IPv6 advanced services with guaranteed and differentiated QoS.

member area

webmaster@6qm.org

Figure 2-2: 6QM Home Page



Information Society Technologies

IPv6 QoS M

IPv6 Cluster MEMBER

## Overview

Home Contact Search

Overview News Partners Documents Events Links

Main Objectives Technical Approach Expected Impact

### 1. MAIN OBJECTIVES

The project will develop a comprehensive approach towards IPv6 QoS measurement. In order to achieve this goal, the project has defined the following objectives:

1. Development of a measurement device for IPv6. The measurement device inserts precise (micro second order) timestamp information when it captures the IPv6 packet. Each device has time synchronization functionality, by GPS, or any other equivalent mechanism, if widely available.
2. Development of a measurement server. The measurement server collects the captured IPv6 packet. Then it provides not only usage data but also QoS metrics (delay, loss, jitter and so on) for IPv6 traffic by analyzing the collected information through the measurement device.
3. Integration and local test of the developed components, for the further trial and evaluation of the developed system, at least in European IPv6 infrastructures.
4. Generation of a set of guidelines for the possible application and further research of the IPv6 QoS Measurement in different scenarios.
5. Dissemination and Linkage with other related Fora and Projects, in order to publicize the project results.

### 2. TECHNICAL APPROACH

In order to meet the objectives of the project, the following work packages have been defined:

- WP1 (Management and Coordination).

Figure 2-3: 6QM Project Overview



Information Society Technologies

IPv6 QoS M

IPv6 Cluster MEMBER

## News

Home Contact Search

Overview News Partners Documents Events Links

- [6QM presented at the IST Intermon Workshop \(20-02-2003\)](#)  
The International Workshop on Inter-domain Performance and Simulation, will be held in Salzburg, Austria, on 20-21 February, 2003. Carsten Schmolli (Fraunhofer FOKUS) will give a talk on [Non-intrusive delay measurements with IPFDX data export](#), which presents work performed in the context of IST 6QM and Intermon. The scope of the Workshop encompasses novel toolkits for inter-domain topology and performance analysis, monitoring, traffic engineering, visualisation, modeling and simulation to meet requirements of ISP operators for inter-domain performance management and planning and end-user needs for inter-domain QoS analysis and verification.
- [6QM presented at the 10th TF-NGN Meeting \(06-02-2003\)](#)  
Rudolf Roth (Fraunhofer FOKUS) presented the IST projects 6QM and Intermon to the TF-NGN working group during the 10th TF-NGN Meeting in Rome. TF-NGN is a task force established under the auspices of the TERENA Technical Programme to investigate the suitability of advanced networking technologies for future implementation in research and education networks in Europe. It is composed of representatives of the National Research Networks and of research institutions with the aim to study and develop technologies which are viewed as strategically important for the NRENs and the GEANT project.
- [Representatives of 6QM participating in the 7th IPv6 Cluster Meeting \(04-02-2003\)](#)  
Several representatives of the 6QM consortium participated at the 7th IPv6 Cluster Meeting held 4 February 2003 in Brussels, Belgium. Rudolf Roth (Fraunhofer FOKUS) took over editorship for the

Figure 2-4: 6QM Project News

**Partners** [Home](#) [Contact](#) [Search](#)

**Overview**  
**News**  
**Partners**  
**Documents**  
**Events**  
**Links**

**HITACHI**  
Inspire the Next  
[www.hitachi-eu.com](http://www.hitachi-eu.com)  
 Hitachi Europe  
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[lidia.yamamoto@hitachi-eu.com](mailto:lidia.yamamoto@hitachi-eu.com)

[www.hitachi.co.jp](http://www.hitachi.co.jp)  
 (English: [global.hitachi.com](http://global.hitachi.com))  
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member area [webmaster@6qm.org](mailto:webmaster@6qm.org)

Figure 2-5: 6QM Project Partners Page

**Documents** [Home](#) [Contact](#) [Search](#)

**Overview**  
**News**  
**Partners**  
**Documents**  
**Events**  
**Links**

General Project Information | Public Project Deliverables | Presentations, Papers, Articles

**General Project Information**

**Public Project Deliverables**  
 document titles in gray planned to be published by the project

**WP1 Management and Coordination**

- D1.1 [Project Presentation](#)
- D1.4 [Final Project Report](#)

**WP2 Requirement Study for IPv6 QoS Measurement**

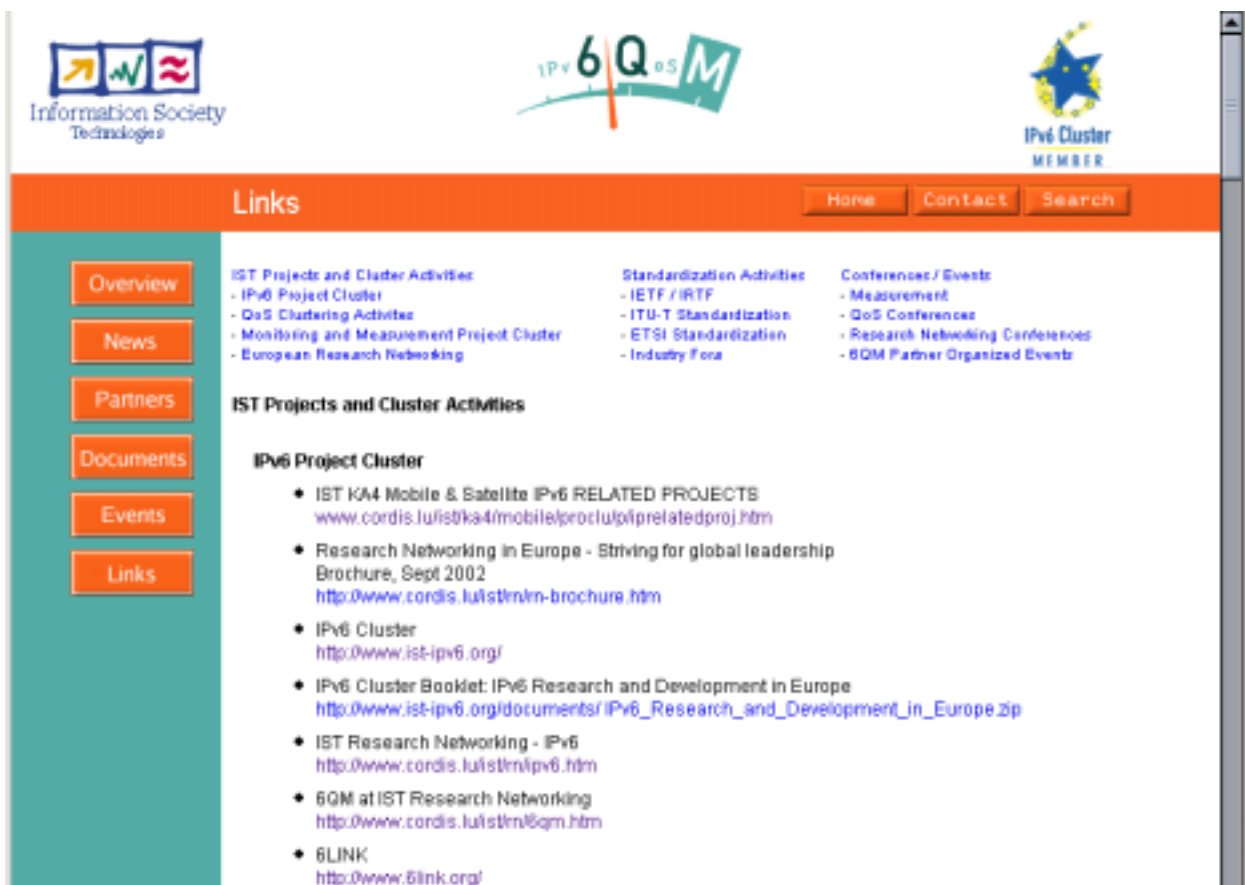
- D2.2 [Global management architecture of measurement](#)
- D2.3 [Operational Interoperability Needs](#)
- D2.4 [The Needs of Consolidation](#)
- D2.5 [Requirements on security in 6QM project](#)
- D2.6 [6QM and ITU-T activities](#)
- D2.7 [6QM and IETF activities](#)

Figure 2-6: 6QM Project Documents Page



Date	Event	Venue
27 January	1st IST Scampi Workshop	Amsterdam, NL
4 February	IST IPv6 Cluster Meeting	Brussels, Belgium
6-7 February	10th TF-NGN Meeting	Rome, Italy
20-21 February	IST Intermon Workshop	Salzburg, Austria
10-12 March	10th Concertation Meeting IST Communication & Network Technologies	Brussels, Belgium
12-19 March	CeBIT	Hannover, Germany
16-21 March	IETF 56	San Francisco, USA
8-9 May	11th TF-NGN Meeting	Poznan, Poland
12-14 May	Madrid 2003 Global IPv6 Summit / ETSI IPv6 Plugtests™	Madrid, Spain
19-22 May	TERENA Networking Conference 2003	Zagreb, Croatia
13-18 July	IETF 57	Vienna, Austria
15-18 September	12th TF-NGN Meeting	Cambridge, UK

Figure 2-7: 6QM Project Events Page



**IST Projects and Cluster Activities**

- IPv6 Project Cluster
- QoS Clustering Activities
- Monitoring and Measurement Project Cluster
- European Research Networking

**Standardization Activities**

- IETF / IRTF
- ITU-T Standardization
- ETSI Standardization
- Industry Fora

**Conferences / Events**

- Measurement
- QoS Conferences
- Research Networking Conferences
- 6QM Partner Organized Events

**IST Projects and Cluster Activities**

**IPv6 Project Cluster**

- IST KA4 Mobile & Satellite IPv6 RELATED PROJECTS  
[www.cordis.lu/ist/ka4/mobileproj/ulqip/relatedproj.htm](http://www.cordis.lu/ist/ka4/mobileproj/ulqip/relatedproj.htm)
- Research Networking in Europe - Striving for global leadership  
Brochure, Sept 2002  
<http://www.cordis.lu/ist/rn/brochure.htm>
- IPv6 Cluster  
<http://www.ist-ipv6.org/>
- IPv6 Cluster Booklet: IPv6 Research and Development in Europe  
[http://www.ist-ipv6.org/documents/IPv6\\_Research\\_and\\_Development\\_in\\_Europe.zip](http://www.ist-ipv6.org/documents/IPv6_Research_and_Development_in_Europe.zip)
- IST Research Networking - IPv6  
<http://www.cordis.lu/ist/rn/ipv6.htm>
- 6QM at IST Research Networking  
<http://www.cordis.lu/ist/rn/6qm.htm>
- 6LINK  
<http://www.6link.org/>

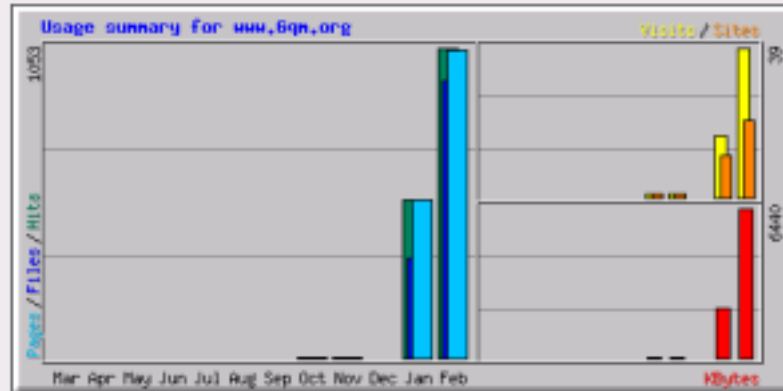
Figure 2-8: 6QM Project Links Page



Figure 2-9: Web Interface to ftp Server in Private Area of Site

## Usage Statistics for www.6qm.org

Summary Period: Last 12 Months  
Generated 23-Feb-2003 00:15 CET



Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
<a href="#">Feb 2003</a>	47	42	47	1	20	6440	39	1045	941	1053
<a href="#">Jan 2003</a>	17	11	17	0	11	2145	16	535	340	538
<a href="#">Dec 2002</a>	0	0	0	0	0	0	0	0	0	0
<a href="#">Nov 2002</a>	0	0	0	0	1	2	1	1	1	2
<a href="#">Oct 2002</a>	0	0	0	0	1	2	1	1	1	1
<b>Totals</b>						<b>8589</b>	<b>57</b>	<b>1582</b>	<b>1283</b>	<b>1594</b>

Generated by [Webalizer Version 2.01](#)

Figure 2-10: Usage Statistics in the Private Area of the Site

### 3. SUMMARY AND CONCLUSIONS

The project web site ([www.6qm.org](http://www.6qm.org)) has been established for on-line information exchange and has been operational since mid Jan. 2003. It gives access to public project information and in addition acts as a general information switchboard on topics related to IPv6 QoS Measurement. The 6QM consortium is an active participant in the IPv6 Project Cluster initiative. This interaction and concertation is reflected in the organization of the web site which is one of the means to integrate and interlink with that networked group of IST projects devoted to IPv6 topics, to which 6QM brings an added value with its unique scope and profile.