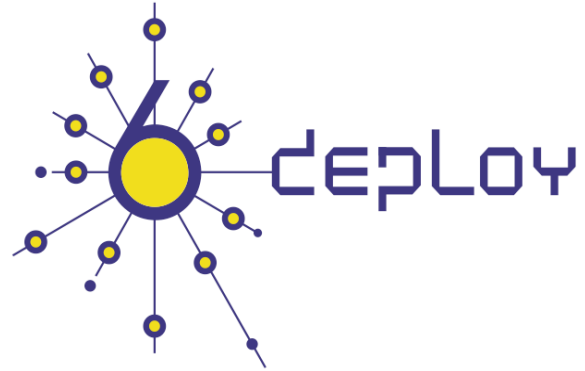




e-infrastructure



<b>Title:</b>	<b>Deliverable D1.19</b> <b>Report from the 18<sup>th</sup> Workshop (Morelia, Mexico)</b>	<b>Document Version:</b> 1.0
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<b>Project Number:</b> 223794	<b>Project Acronym:</b> 6DEPLOY	<b>Project Title:</b> IPv6 Deployment Support
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<b>Contractual Delivery Date:</b> Not in the original project schedule	<b>Actual Delivery Date:</b> 07/10/2010	<b>Deliverable Type* - Security**:</b> R – PU
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- Type: P – Prototype, R – Report, D – Demonstrator, O – Other
- \*\* Security Class: PU- Public, PP – Restricted to other programme participants (including the Commission Services), RE – Restricted to a group defined by the consortium (including the Commission Services), CO – Confidential, only for members of the consortium (including the Commission Services)

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<b>Abstract:</b>  This deliverable presents a report from the workshop held in Morelia (Mexico) from 19 <sup>th</sup> to 21 <sup>st</sup> April 2010, during the Mexico Internet2 Spring 2010 Meeting. The presentation material is listed, the attendees and their affiliations are given, and the opportunities for further co-operation and follow-up actions are described.
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<b>Keywords:</b>  IPv6, Support, LAC, Training, Testbeds, Modules, 6DISS, 6DEPLOY, Hands-on exercises
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# Revision History

The following table describes the main changes to the document since created.

Revision	Date	Description	Author (Organization)
v0.1	15/06/2010	Document creation	Cesar Olvera (Consulintel)
v0.2	24/08/2010	1 <sup>st</sup> document revision	Alvaro Vives (Consulintel)
V1.0	02/10/2010	Final document review	A. Higa, M. Potts (Martel)

## Executive Summary

One of the main activities in the 6DEPLOY project is to organise workshops to train the different Internet communities in the areas of IPv6 deployment, configuration, and usage. This project is a follow up of previous project activities within and outside the Framework Programmes of the European Commission.

This deliverable presents a report from the workshop held in Morelia (Mexico) from 19<sup>th</sup> to 21<sup>st</sup> April 2010, during the Mexico Internet2 Spring 2010 Meeting. The following workshop details are described in this report: a) the workshop attendees and their affiliations, b) the programme outline, c) the material presented, d) an assessment of the opportunities for further co-operation and follow-up actions planned, and e) an analysis of the feedback questionnaires from the participants.

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## 1. INTRODUCTION

### 1.1 6DEPLOY Objectives

The following comprise the 6DEPLOY objectives:

- organize workshops for the e-Infrastructure community and give practical advice and hands-on support for deploying IPv6 in their environments;
- work on deployments in Europe and in developing countries, exchanging experiences and best practices;
- improve the competitiveness of European industry by sharing experiences from IPv6 deployments in other regions;
- gain expertise with which to support *more commercial* deployments in European industries (e.g. Emergency Services, Health, Broadcast, Transport, Schools, Environment, Gaming, etc.);
- help to build consensus between European researchers by enabling and exploiting synergy among related projects (e.g. GÉANT-2, SEEREN-2, SEE-GRID, EUMEDCONNECT, CLARA, ALICE);
- encourage and enhance the effectiveness of the coordination between National and pan-European e-Infrastructure initiatives by being a focal point for IPv6 activities, giving IPv6 training, and supporting IPv6 deployments;
- open up the ICT programme to the participation of third country organisations in International Cooperation Partner Countries, including countries in Africa, Asia, and Latin America, by involving organisations that influence e-Infrastructures on those continents;
- improve scientific cooperation between Europe and the declared target regions (Africa, Asia, and Latin America) by exchanging knowledge and experiences through direct practical support for deployment, training events, etc. The project therefore also helps support other Community policies, most notably the development policy. Telecommunications infrastructures and the capability to access information worldwide are key measures of a country's progress. IPv6 has been a cornerstone of European Internet policy for several years; and
- support interoperability and standards by sharing information on the latest IPv6 standards, equipment hardware and software releases, and IPv6 policies (RIRs).

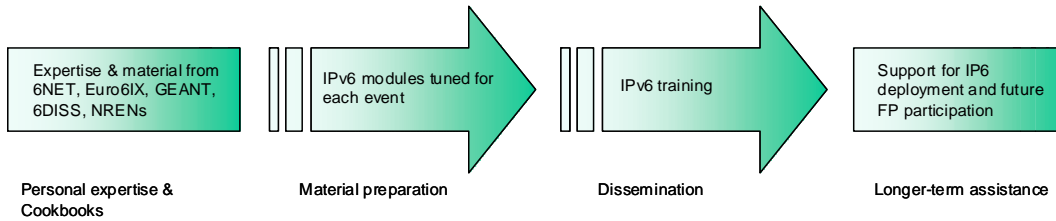
One of the main activities in the 6DEPLOY project is therefore to organise workshops to train the different Internet communities in the areas of IPv6 deployment, configuration,



operation, and management. This activity is a follow up of previous project's activities within and outside the Framework Programmes of the European Commission.

## 1.2 6DEPLOY Workshop Methodology

The 6DEPLOY methodology relating to the workshops is shown in the diagram below:



**Figure 1-1: 6DEPLOY methodology (diagrammatically)**

The approach is to use course material available from 6DISS and elsewhere that relates to IPv6, the e-learning course, and the 6NET IPv6 Deployment Guide book, together which will form the basis of the training material. This training material is supplemented with knowledge from partners' participation in events such as IPv6 Forum meetings, IPv6 Task Force meetings, Internet2 meetings, and the IETF, and from the experience of similar activities brought to the project by the representatives of the Internet Registries in North and South America, the Asia-Pacific region, Africa, and Europe. The knowledge is disseminated through training sessions that, for practical reasons, are often held in conjunction with AfriNIC, LACNIC, APNIC, AfNOG, APRICOT, and ISOC meetings.

After each workshop, feedback reports are collected from the participants, enabling 6DEPLOY to assess the impact of the presentations and to identify any areas that need improvement.

The full set of dissemination materials (including the e-learning course and 2 managed testbeds) is available from 6DISS and partners' own sources. This includes presentation slides on all issues of Internet deployment and evolution; especially IPv4-IPv6 transition strategies, DNS, DHCP, routing, QoS, MobileIP, multicast, renumbering, auto-configuration, security, monitoring and management tools, and applications. This material was described in the deliverable D1.1: "IPv6 training material and related usage procedures".

This deliverable presents a report from the workshop held in Morelia (Mexico) from 19<sup>th</sup> to 21<sup>st</sup> April 2010. The workshop comprised both slide presentations and hands-on exercises (using local equipment and the remote 6DEPLOY testbeds in Paris and Sofia).

Chapter 2 of this document explains the general motivation for running IPv6

workshops, and Chapter 3 describe the specific details of this workshop, in terms of the attendees, the modules that were presented, and the “hands-on” exercises that were performed, using both local equipment and the remote testbeds in Paris and Sofia. Chapter 4 identifies opportunities for further collaboration in the region and follow up actions, Chapter 5 summarises the analysis of the feedback questionnaires that were filled in by the participants, and Chapter 6 provides some general conclusions.

## 2. THE WORKSHOPS (GENERAL)

Workshops are one of the main mechanisms used by 6DEPLOY to transfer information and to build collaboration.

6DEPLOY is structured to provide an ideal platform for the discussion of deployment scenarios and the exchange of best practices, thereby avoiding duplication of effort, by preventing the waste of time on techniques that are known not to have been deprecated, and generally making the most efficient use of the available resources in a region. Partners in 6DEPLOY have deployed IPv6 on a production basis in their own NRENs and University networks, and have documented their experiences in Cookbooks and in IETF informational/best common practice RFCs. The manufacturer in the consortium is building IPv6 products.

The workshops are not only intended to lead to an improved quality of the Internet infrastructure in developing countries, but will also raise the competence of the attendees and, in exploiting the personal contacts made through 6DEPLOY, facilitate and encourage the participation of their organisations in future FP7 calls and beyond.

Impacts from the workshops will include:

- a positive effect towards preventing the “brain drain” from developing countries by bringing interesting and state-of-the-art activities into these regions, thus making information and knowledge resources accessible to scholars both locally and globally;
- an expansion of the conditions for growth by enabling the exchange of ideas, launching joint experiments and projects, disseminating RTD results, and activating market forces; all of which are substantial elements in the process of regional development;
- making European research and industrial concerns aware of the highly skilled personnel who can contribute to the urgently needed improvement of ICT infrastructures, resulting in an increase of the demand for specialized services provided by the highly skilled academics and researchers of the region; and
- the identification of IPv6 deployment activities in the region and an exchange of information about deployment experiences.

While IPv6 standards and services are quite stable, regional variations in practices and operations will require slightly different approaches for collaboration and dissemination. Therefore, the material for these workshops was collected, and the workshop

schedules, formats, and contents were tailored in conjunction with the local organisers so as to suit the type of participants, the subjects to be addressed, the location, the host organisation, the sponsors, etc.

### 3. THE 6DEPLOY WORKSHOP IN MORELIA (MÉXICO)

This IPv6 Workshop was held in Morelia (Mexico) from 19<sup>th</sup> to 21<sup>st</sup> April 2010. The workshop was part of the Mexico Internet2 Spring 2010 Meeting ([http://www.cudi.edu.mx/primavera\\_2010/](http://www.cudi.edu.mx/primavera_2010/)). CUDI (in Spanish: Corporación Universitaria para el Desarrollo de Internet) organized the meeting, meanwhile the IPv6 working group of the UNAM (in Spanish: Universidad Nacional Autónoma de México) (<http://www.ipv6.unam.mx>), and 6DEPLOY organized and supported the IPv6 workshop. In the following paragraphs we provide information about the workshop, including the programme outline, and the material that was presented.

Details of the workshop and the training material used could be found in 6DEPLOY's project web site:

[http://www.6deploy.eu/index.php?page=20100419\\_morelia\\_mexico](http://www.6deploy.eu/index.php?page=20100419_morelia_mexico)

#### 3.1 Overview

Individuals leading the IPv6 workshop included Cesar Olvera, from Consulintel representing 6DEPLOY, and Azael Fernandez from UNAM.

During the first morning, the IPv6 workshop was presented, including some words from representatives of CUDI, UNAM and 6DEPLOY.

Then, the IPv6 workshop started, which included several IPv6 related issues, both theoretical and practical.

The presentations were conducted in Spanish, in order to accommodate the local audience.

#### 3.2 Attendees

Below is a list of people that attended at least one session:

No.	Surname	First name	Affiliation
1	Martinez	Adriana	Secretaria de Salud de Zacatecas
2	Cruz	Alberto	UV
3	Martinez	Alexander	IT Morelia
4	Cardenas	Alonso	UAQ
5	Alonso	Eduardo	IT Culiacan
6	Garcia	Eduardo	Secretaria de Salud de Zacatecas
7	Alfonso	Edy	UV
8	Lopez	Elifelet	UM
9	Godoy	Emigdio	IT Celaya
10	De la Rosa	Enrique	INEGI

11	Escalante	Evodio	INE
12	Molina	Felix	UAGRO
13	Aranda	Fernando	CUDI
14	Garcia	Franco Fabio	IT Celaya
15	Gonzalez	Jorge	IT Toluca
16	Castro	Jose Fernando	UT Guerrero
17	Gutierrez	Jose Luis	IT Pachuca
18	Toral	Juan Leon	UV
19	Nevarez	Martin	IT Culiacan
20	Ramírez	Octavio	IT Jiquilpan
21	Moreno	Pedro	UAEM
22	Barajas	Sandokan	Investigacion Ecologica
23	Gallegos	Tobias	INAOE

**Table 3-1: Morelia (Mexico) Workshop list of participants**

The participants represented a wide range of the Academic IT community. They were technical people whose knowledge about IPv6 ranged from almost no knowledge at all to having significant experience with IPv6 deployment. Some had already performed IPv6 experiments or were planning some level of deployment at their institutions.

### 3.3 Workshop programme

The agenda was agreed on after close collaboration with the local organisers. The meeting agenda and the related material were submitted in advance so that the local organisers could decide which topics should be prioritised and so manage the logistics accordingly. The programme of the workshop is presented in the following table:

Date	Time	Title of session
19/04/2010	8:00	Registration
	8:30	Event Opening (Words from CUDI representatives)
	8:45	Introduccion
	10:30	Coffe Break
	11:00	Introduccion y practica 1
	13:00	Lunch
	14:00	Transición de IPv4 a IPv6
	16:00	Coffe Break
	16:30	Transición de IPv4 a IPv6 y practica 2
20/04/2010	18:00	Day Closing
	8:30	Multicast en IPv6
	10:30	Coffe Break
	11:00	Estado actual de IPv6
	13:00	Lunch
	14:00	Ruteo en IPv6 y practica 3
	16:00	Coffe Break
	16:30	Ruteo en IPv6 y practica 3
21/04/2010	18:00	Day Closing
	8:30	Servicios y Aplicaciones
	10:30	Coffe Break
	11:00	Servicios y practica 4
	13:00	Lunch
	14:00	Seguridad con IPv6

223794	6DEPLOY	D1.19: Report from the 18th Workshop
	16:00	Coffe Break
	16:30	IPv6 Movil
	18:00	Event Closing

Table 3-2: Morelia (Mexico) Workshop programme

### 3.4 Presentation material

The following material was presented:

Modules	Presented by	Affiliation
Introduccion a IPv6 Formatos de cabeceras y tamaño de paquetes Direccionamiento IPv6 ICMPv6, Neighbor Discovery y DHCPv6	Cesar Olvera	Consulintel
Practica 1 (Hosts)	Cesar Olvera Azael Fernandez	Consulintel UNAM
Mecanismos de transición de IPv4 a IPv6	Cesar Olvera Azael Fernandez	Consulintel UNAM
Practica 2 (Transition mechanisms)	Cesar Olvera	Consulintel
Multicast en IPv6	Cesar Olvera	Consulintel
Estado actual de IPv6	Cesar Olvera Azael Fernandez	Consulintel UNAM
Ruteo en IPv6	Cesar Olvera	Consulintel
Practica 3 (Routing)	Cesar Olvera	Consulintel
Servicios y Aplicaciones	Cesar Olvera Azael Fernandez	Consulintel UNAM
Practica 4 (Hosts applications and servers applications (Apache and BIND))	Cesar Olvera Azael Fernandez	Consulintel UNAM
Seguridad con IPv6	Cesar Olvera Azael Fernandez	Consulintel UNAM
IPv6 Movil	Cesar Olvera	Consulintel

Table 3-3: Morelia (Mexico) Workshop list of modules used

#### 3.4.1 Modules

Below is a brief description of each module's content:

- **Introducción a IPv6:** This module explains why a new version for IP, IPv6, has been developed. A brief history of IPv6, its motivation and benefits are given.
- **Formatos de cabeceras y tamaño de paquetes:** This module describes IPv6 packet header, extensions headers and differences with IPv4 headers. Packet

size issues and upper layer considerations are also treated.

- **Direccionamiento IPv6:** This module explains the IPv6 addressing architecture, the different types of addresses (unique local IPv6 addresses, interface IDs, multicast addresses), their textual representation, how these are built and related to a layer 2 address.
- **ICMPv6, Neighbor Discovery y DHCPv6:** This module describes new protocols associated to IPv6: e.g. Neighbour Discovery Protocol, SEND, ICMPv6, MLD, DHCPv6, etc.
- **Mecanismos de transición:** This module explains different approaches to deploy IPv6 in an IPv4 environment. Transition concepts are introduced and several transition mechanisms are covered: Dual Stack, tunnels, tunnel broker, 6to4, Teredo, Softwires and translation (at various layers).
- **Multicast IPv6:** After giving some multicast concepts the following topics are covered: multicast addresses, Multicast Listener Discovery (MLD) protocol, multicast routing, PIM-ASM and PIM-SSM. Some practical issues are included as well.
- **Ruteo con IPv6:** This module mainly describes the differences between IPv4 and IPv6 routing protocols for OSPFv3, EIGRP, RIPng, BGP4+, ISIS and MPLS.
- **Seguridad con IPv6:** Several issues are covered like the IPsec model, privacy extensions, ND threats, IPv4 vs. IPv6 Threat Analysis, IPv6 security issues, practical IPv6 security issues and firewalling IPv6. The distributed security model is introduced. Security issues from transition and coexistence point of view are also provided.
- **IPv6 Movil:** This module describes IPv6 mobility and news features compared to IPv4 mobility.

### 3.4.2 Hands-on exercises

To help ensure the workshop attendees will be able to install IPv6 in their own environment after the course is over, a set of practical exercises has been designed, known as 'hands-on modules'. These exercises are performed both on local equipment and on remote testbeds, some of which were originally established in the 6DISS project, thanks to a Cisco donation. Two of these labs are installed in Paris (RENATER premises) and Sofia (BREN premises).

Below is a brief description of the hands-on exercises that were performed:

- **Práctica 1 con Hosts:** Exercises illustrate how to install IPv6 on several



platforms, mainly Linux, Vista, and Windows XP operating systems. Use of link-local addresses, ping and traceroute. Configuration of static addresses. Concepts like addresses, autoconfiguration, and neighbor discovery protocol using hosts.

- **Practica 2 sobre Mecanismos de Transición:** Basic Transition mechanisms such 6in4, TEREDO (Miredo) and 6to4 tunnels are configured and tested.
- **Prácticas 3 con Routing:** IPv6 routing protocols are configured by the trainees on the testbed routers. Internal Gateway Protocol (OSPF) and External Gateway Protocol (BGP) are tested.
- **Práctica 4 con Servidores IPv6:** Practice to install and configure IPv6-capable DNS (BIND) and web (Apache) servers. Also DHCPv6 (Miredo) server were tested.

### 3.4.2.1 Hands-on exercises using the IPv6 Testbed in Paris

Routers were configured beforehand to accept telnet connections from the training location. The IPv6 prefix which was then used to configure the testbed was 2001:660:3008::/48.

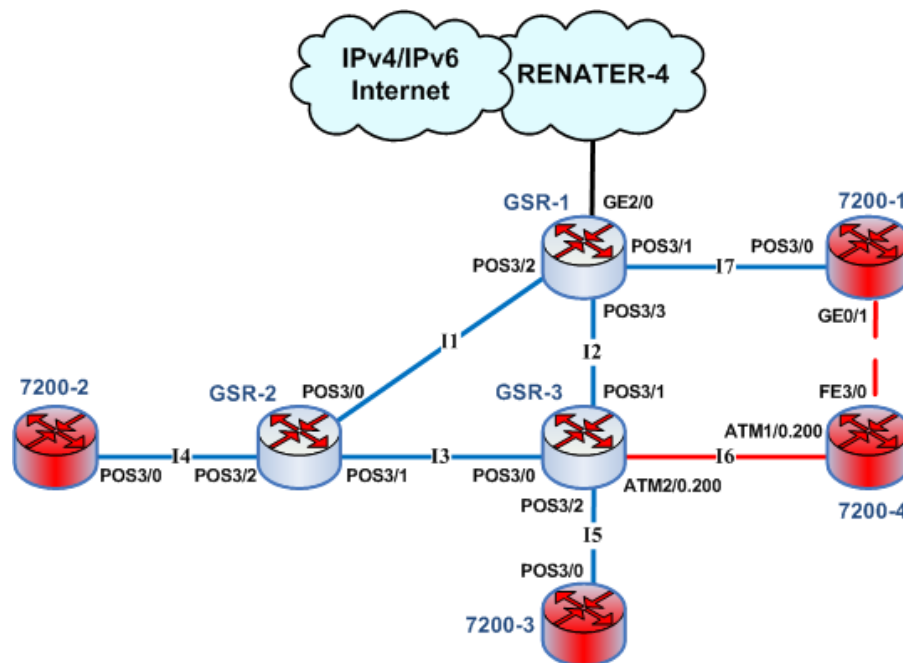


Figure 3-1: Paris testbed

### 3.4.2.2 Hands-on exercises using the IPv6 testbed in Sofia

The Sofia IPv6 installation more or less mirrors the procedures and functionality of the Paris testbed. Routers were configured beforehand to accept telnet connections from the training location. The IPv6 prefix which was then used to configure the testbed was

2001:4B58:42:400::/54.

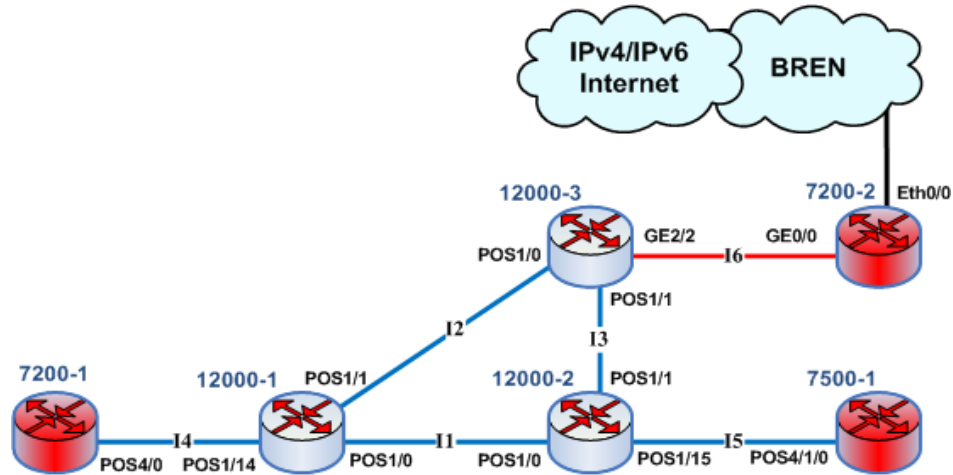


Figure 3-2: Sofia testbed

### 3.4.2.3 Common tasks

Because of some people missing almost one router was assigned to each attendee, just some of them were grouped in couples.

Three main tasks were proposed within the routing labs:

- Task 1: Configure Loopback and interfaces IPv6 addresses.
- Task 2: Configure OSPF routing.
- Task 3: Configure BGP routing.

### 3.5 Photographs taken at the event



Figure 3-3: IPv6 workshop group photo

#### 4. OPPORTUNITIES FOR FURTHER CO-OPERATION

In all the workshops, the attendees were informed on how to stay in contact with the 6DEPLOY partners in case they have questions regarding IPv6 deployment, addressing plans, etc. In this respect, the role of the *helpdesk* was explained as being the way to submit questions. An e-mail to [helpdesk@6deploy.org](mailto:helpdesk@6deploy.org) will be distributed to a mailing list composed of volunteers who are available to answer (or forward) any kind of questions, requests, etc. Also a web form can be used to send requests to the project.

Additionally, the attendees (and trainers from the region) can follow the e-learning course and/or check the availability of the 6DEPLOY remote labs and use these.

Due to the physical site limitation, it was possible to have only 20 attendees. CUDI and UNAM are very interested in having another IPv6 workshop in Mexico so that more persons can take advantage of the training. Further planning is under way.

## 5. ANALYSIS OF THE FEEDBACK QUESTIONNAIRES

A questionnaire has been specially designed for the purpose of getting feedback from the participants regarding the suitability of the course material, and the presenters' ability to convey information, and the relevance of the information to the expectations of the attendees.

Personal information was not mandatory, so as to allow for anonymous responses.

Each participant was first asked to indicate:

- his/her organisation and job responsibilities, and
- his/her plans for IPv6 deployment in his/her organisation.

Then, for each theoretical presentation and "hands-on" session, each participant was requested to assess "usefulness", "quality of presentation", "familiarity with the topic", "quality of the course documentation", "general organisation", etc.

### 5.1 General questions related to participants and IPv6

<b>About the participants</b>		
17 participants were present, 15 questionnaires were returned		
<b>Employment sector</b>	Government	3
	University or other higher education	12
	Schools or further education	2
	Research	2
	Health	2
	Commercial	2
	Other (please specify)	Several (0)*
<b>Job function</b>	Government Advisor	0
	Senior Manager	0
	IT Manager	2
	Systems Administrator	4
	Network Administrator	13
	Researcher / Postgraduate	2
	Undergraduate	0
	Other (please specify)	Several (2)*
<b>Usage of IPv6</b>		
Do you use IPv6 yourself?	Yes	5
	No	18
Does your organisation use IPv6?	Yes	3
	No, but planned in this year	13
	No, but planned in the next year	2
	No, but planned in the longer term	4
	No, and no plans as yet	1

\* See the graphics section for more information

**Table 5-1: General questions related to participants and IPv6**

## 5.2 Questions regarding the workshop

<b>About the Workshop</b>				
<b>Usefulness of the topic</b>	Very useful	Useful	Slightly useful	Not useful
Presentación 1 – Introducción a IPv6 (con practica)	14	9	0	0
Presentación 2 – Transición de IPv4 a IPv6 (con practica)	14	9	0	0
Presentación 3 – Ruteo en IPv6 (con practica)	17	6	0	0
Presentación 4 – Multicast en IPv6	12	11	0	0
Presentación 5 – Estado actual de IPv6	10	13	0	0
Presentación 6 – Servicios y aplicaciones IPv6 (con practica)	16	7	0	0
Presentación 7 – Seguridad con IPv6	11	11	1	0
Presentación 8 – IPv6 Móvil	10	11	2	0
<b>Quality of the presentation</b>	Excellent	Good	Average	Poor
Presentación 1 – Introducción a IPv6 (con practica)	12	11	0	0
Presentación 2 – Transición de IPv4 a IPv6 (con practica)	10	13	0	0
Presentación 3 – Ruteo en IPv6 (con practica)	14	8	1	0
Presentación 4 – Multicast en IPv6	14	8	1	0
Presentación 5 – Estado actual de IPv6	11	12	0	0
Presentación 6 – Servicios y aplicaciones IPv6 (con practica)	11	12	0	0
Presentación 7 – Seguridad con IPv6	6	16	1	0
Presentación 8 – IPv6 Móvil	8	13	2	0
<b>Familiarity with the topic?</b>	None	Some	Most	All
Presentación 1 – Introducción a IPv6 (con practica)	0	15	7	1
Presentación 2 – Transición de IPv4 a IPv6 (con practica)	6	13	2	2
Presentación 3 – Ruteo en IPv6 (con practica)	10	9	4	0
Presentación 4 – Multicast en IPv6	13	9	1	0
Presentación 5 – Estado actual de IPv6	6	14	3	0
Presentación 6 – Servicios y aplicaciones IPv6 (con practica)	11	8	4	0
Presentación 7 – Seguridad con IPv6	14	7	2	0
Presentación 8 – IPv6 Móvil	18	4	1	0
<b>Quality of the course documentation</b>	Excellent	Good	Average	Poor
	10	13	0	0
<b>General workshop organisation</b>	Excellent	Good	Average	Poor
	6	16	1	0
<b>Recommend to your colleagues?</b>	yes	no		
	23	0	0	0

Table 5-2: Questions regarding the workshop

### 5.3 Results graphics

Following are some graphics that represent the above results in a more friendly way, so as to ease their interpretation.

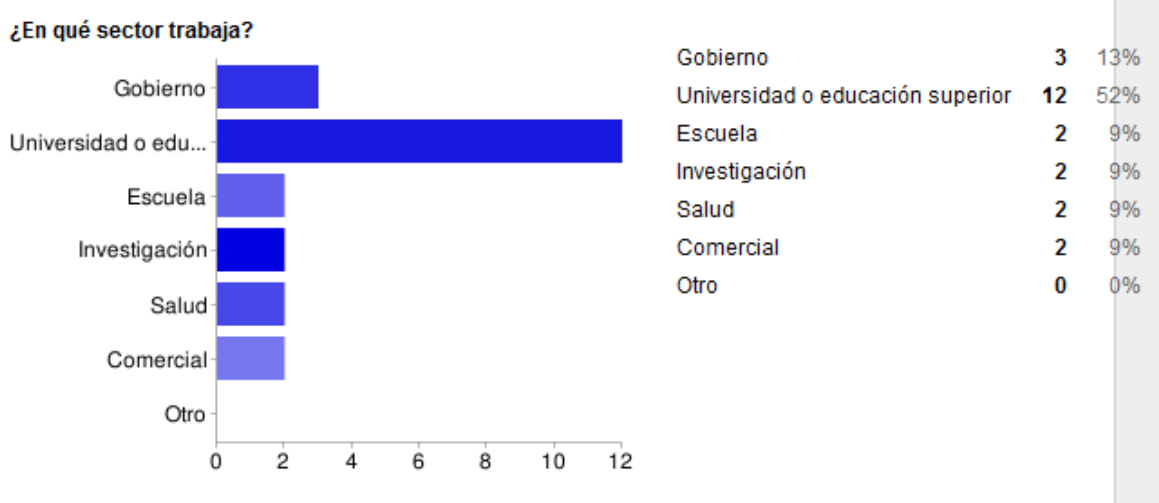


Figure 5-1: In which employment sector do you work?

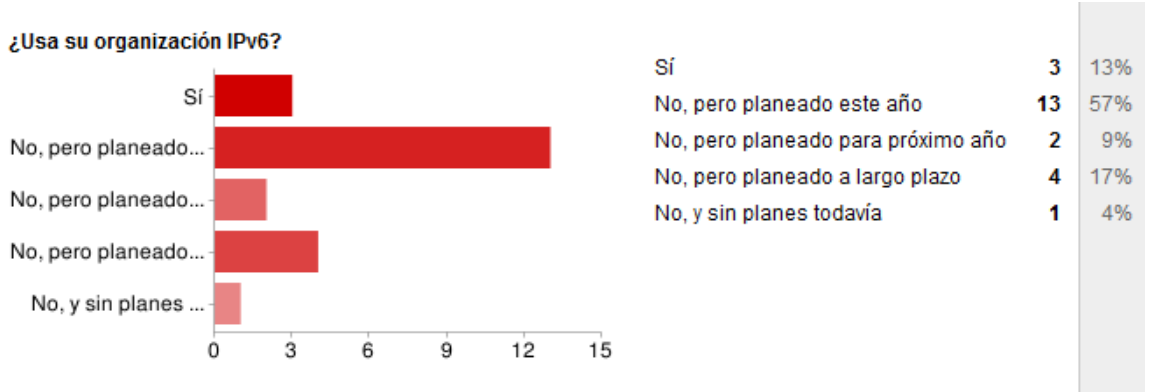


Figure 5-2: Does your organisation use IPv6?

¿Cuáles de los siguientes describe mejor sus funciones en el trabajo?

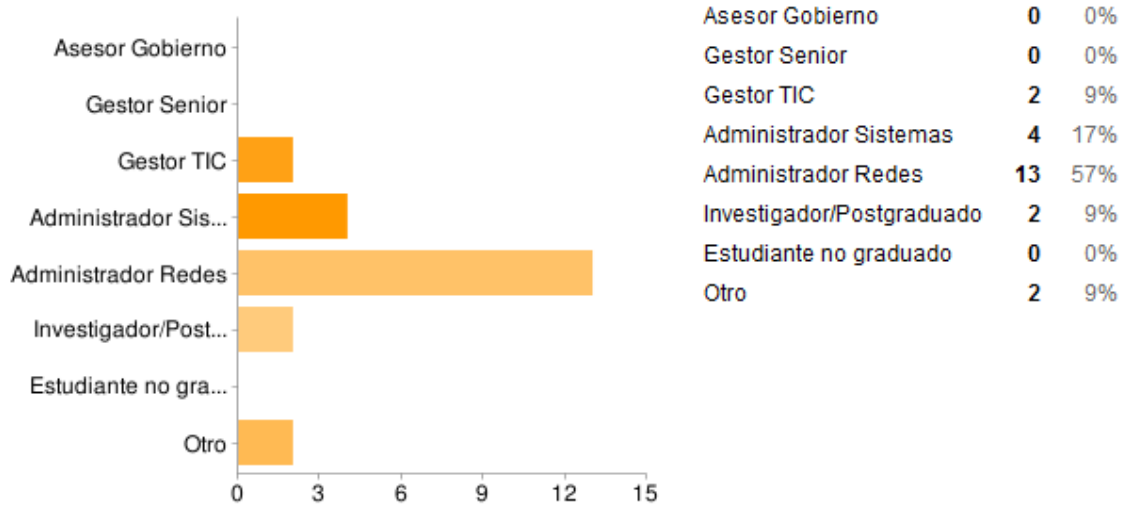


Figure 5-3: Which of the following best describes your job function?

¿Usa usted mismo IPv6?

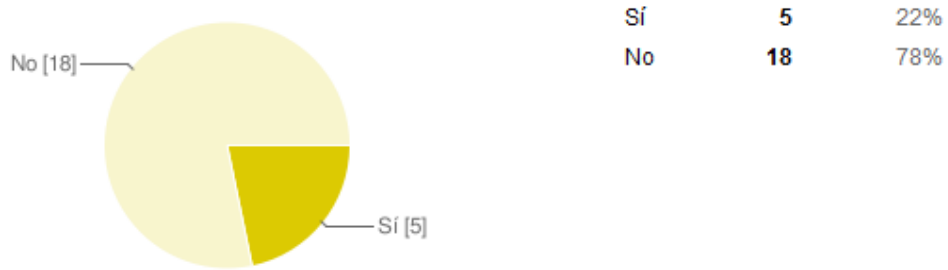


Figure 5-4: Do you use IPv6 yourself?

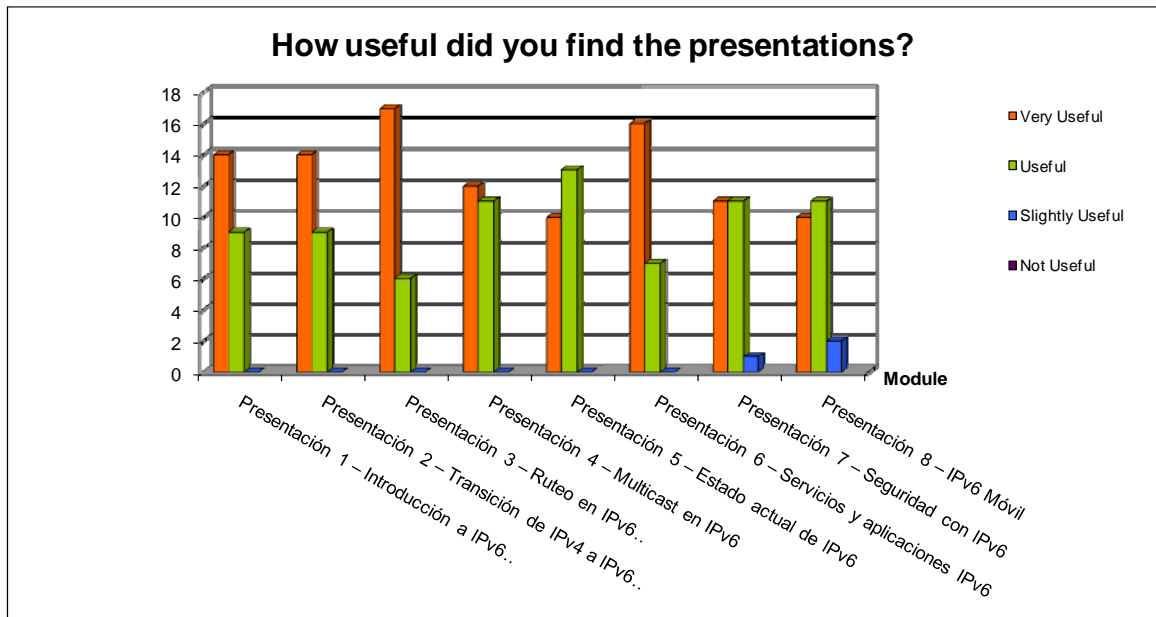


Figure 5-5: How useful did you find the presentations?



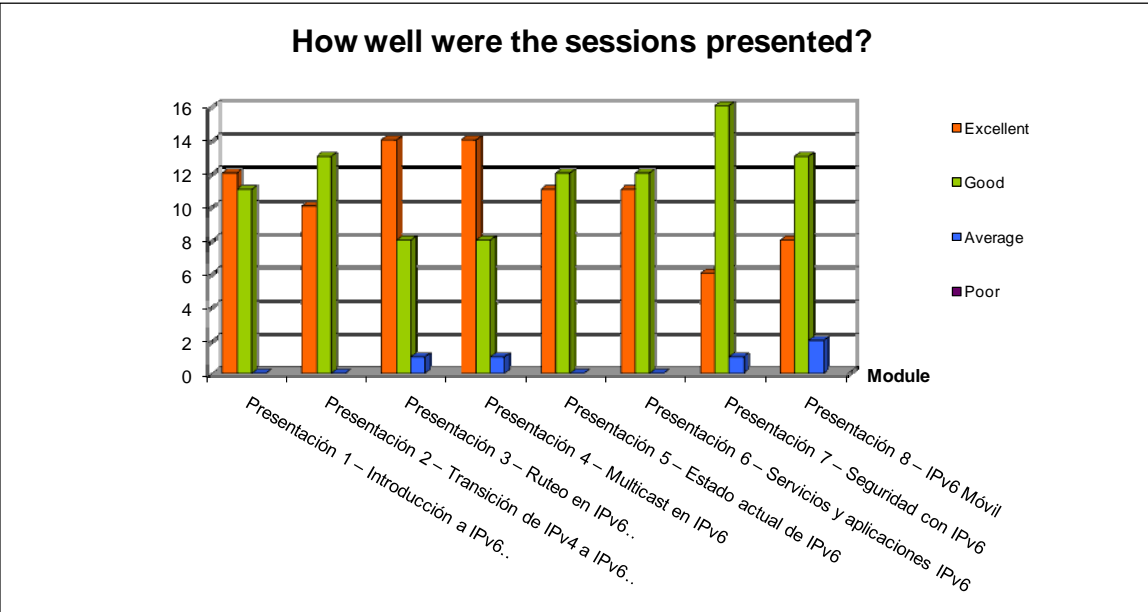


Figure 5-6: How well were the sessions presented?

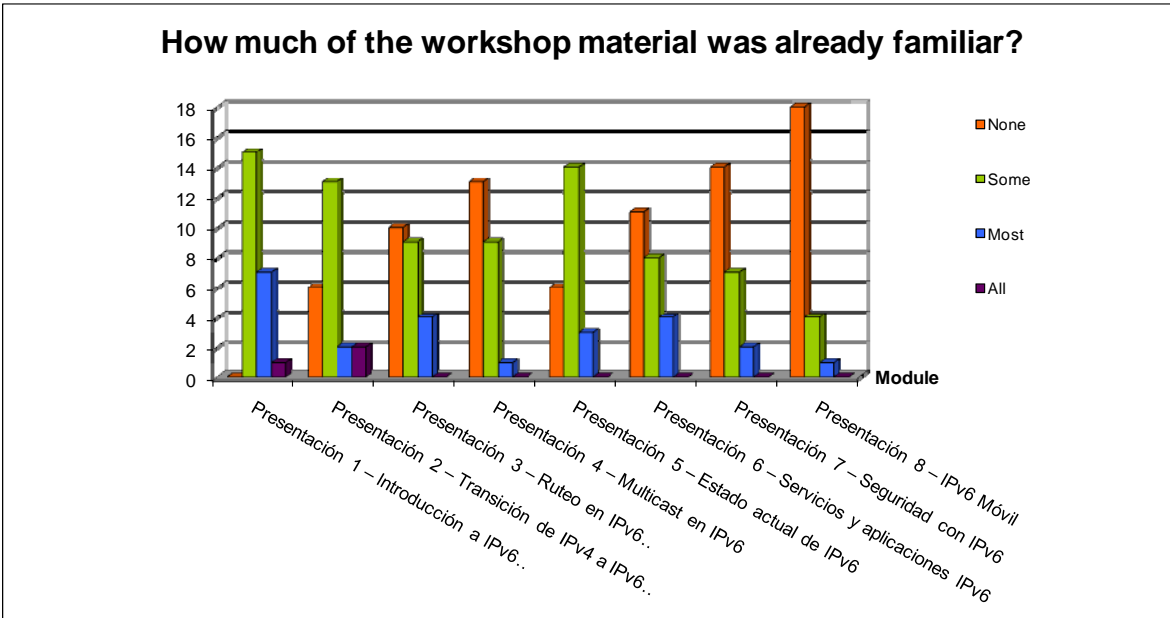


Figure 5-7: How much of the workshop material was already familiar?

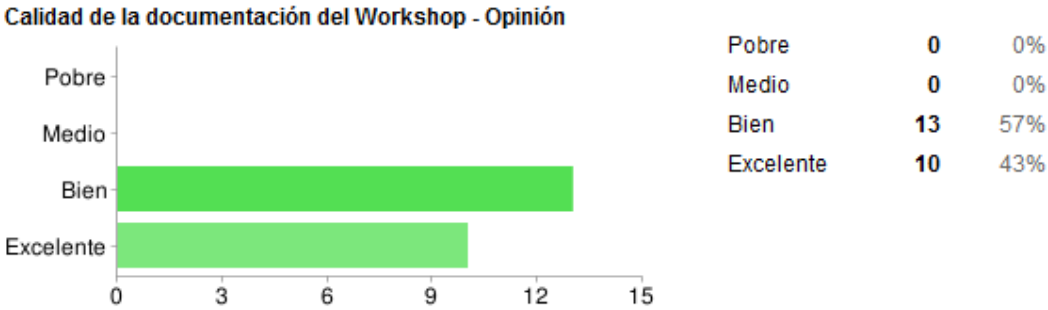


Figure 5-8: Quality of course documentation?

#### Organización general del Workshop - Opinión

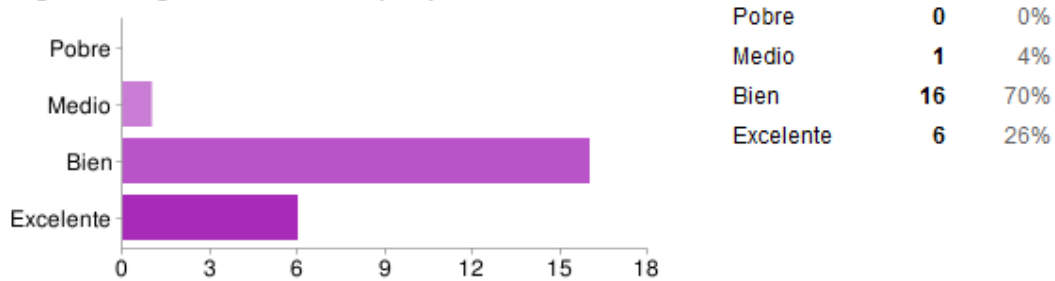


Figure 5-9: General organization of the workshop?

#### ¿Recomendaría el Workshop a sus colegas?

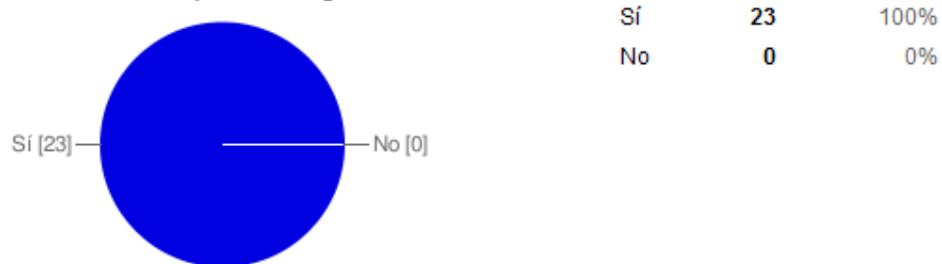


Figure 5-10: Would you recommend the workshop to your colleagues?

## 5.4 Participants comments

It should be noted that the participants had different technical backgrounds. For example, some were network engineers (and therefore more interested in routing protocols and troubleshooting practices) while others were system administrators (and therefore more interested in servers, applications and monitoring tools). Depending upon their background, some participants would have preferred to spend more time on Addressing, Applications, "hands-on", or to have a "hands-on" session related to security and mobility issues.

Within the questionnaire there were three open questions where the trainees could give their feedback on the workshop. Below are almost all of the responses. Note that some are repeated (number put between parentheses).

Here are some comments provided by the trainees:

== Begin of the excerpts

*What topics would you have liked to **hear more about**?:*

- (2) *Services Configuration.*
- (2) *IPv6 Security*
- (2) *IPsec*
- (2) *IPv6 Subnetting.*

- (2) *More practical experiences, real deployments issues.*
- (1) *IP Mobility.*
- (1) *IP on Mobile Phones (3G).*
- (1) *Routing.*
- (1) *VoIP, SIP.*
- (1) *Management over IPv6.*
- (1) *IPv6 Multihoming.*

*What topics would you have liked to **hear less about**?*

- (2) *Current Status of IPv6.*
- (1) *Transition.*

*Any **other comments**:*

- (1) *The workshop needs more days.*
- (1) *Present the slides before the workshop (at registration) so that attendees have a chance to read the content beforehand.*
- (1) *Provide a a better classroom.*
- (1) *Provide the routing equipment on site.*

End of the excerpts ==

## 6. CONCLUSIONS

Workshops are a key mechanism through which information, knowledge, and know-how are transferred to less experienced countries and participants. The workshops enable us to build constituencies and raise awareness; disseminate, benchmark, and validate the research results from the EU's Framework Programmes; promote European technologies; exchange best practices; and offer information related to standards and interoperability issues.

The 6DEPLOY workshop took place in Morelia (Mexico) from 19<sup>th</sup> to 21<sup>st</sup> April 2010, during the Mexico Internet2 Spring 2010 Meeting. Consulintel led this workshop with the support of UNAM.

Thanks to previous projects and training activities, most of the IPv6 education material needed to start 6DEPLOY workshop training was available from the very beginning. The material included most of the issues of Internet deployment and evolution, especially IPv6 introduction, IPv4-IPv6 transition/co-existence strategies, DNS, Autoconfiguration, Routing, Servers and Applications. 6DEPLOY Paris and Sofia testbeds were used for practical routing exercises.

23 network engineers, system administrators, and regulators participated in the workshops. The topics presented were selected according to the participants' requirements.

According to the evaluation forms and the comments from the participants at the workshop, it is clear that there is significant interest in the region for the IPv6 technology and it seems that since the project begun there are more people that know about and/or have used IPv6. The participants expressed positive comments on the workshop's usefulness and organisation. They also requested that 6DEPLOY organise more workshops in the region with more specific technical subjects.

During the 6DEPLOY lifetime, stakeholders will continue to enhance today's "knowledge database". The reader and interested parties are referred to the 6DEPLOY website to check for new material.

In summary, this workshop should be considered a success with regard to the dissemination of IPv6 in Mexico and LAC region, though this is only the first of many steps towards the deployment of real IPv6 networks and services in the region.

## 7. REFERENCES

6DEPLOY website: <http://www.6deploy.eu>

6DISS website: <http://www.6diss.org>

Hands-on modules: <http://www.6deploy.eu/index.php?page=hands-on>

How-to organise an IPv6 workshop:

<http://6diss.6deploy.eu/workshops/workshop-guidelines.pdf>

Training the trainers workshop: <http://6diss.6deploy.eu/workshops/ttt/>

e-learning package: <http://www.6deploy.eu/index.php?page=e-learning>

6DEPLOY Workshops Agenda and detailed information:

<http://www.6deploy.eu/index.php?page=workshops>