



Information Society
Technologies

The 6DISS Project: IPv6 Dissemination and Exploitation



IPv6 Summit, Beijing, China – 14/04/2006

IPv6DISSEmination and Exploitation



Programme

- 1 6DISS Key Data**
- 2 6DISS Objectives**
- 3 6DISS Toolkit**
- 4 Experiences from the 1st 6DISS Workshops**





6DISS Key Data

- Partners:



- Start date: 1st April 2005
- Duration: 30 months
- Total cost: € 1'053'265.00 (76.5PMs)
- EC funding: € 899'908.00
- Type of project: Specific Support Action





Types of EU Projects

- Specific Support Actions (SSAs):
 - Non-technical (strategic, EU policy, dissemination, workshops, building contacts, ...)
 - „100%“ funded by the EU
 - Total budget less than €1M
 - Typically less than 10 partners
- Co-ordination Actions (CAs):
 - Non-technical (co-ordinating „Clusters“ of projects, organising conferences, workshops, ...)
 - „100%“ funded by the EU
 - Total budget less than €1M
 - Typically less than 10 partners
- Networks of Excellence (NoEs):
 - Targeted at Universities/Institutes
 - €20K per researcher per year (the money is essentially for travelling and „collaborating“: papers, conferences, workshops)
 - Typically around 40 partners





Types of EU Projects

- Specific Targeted REsearch Projects (STREPs):
 - Technical
 - 50% funded for industry, 100% funded for Universities
 - Total financing from EU €1-5M
 - Typically 5-15 partners
- Integrated Projects (IPs)
 - Big ! (in scope, number of partners and budget)
 - Technical + Training + Demonstration
 - 50% funded for industry, 100% funded for Universities
 - Total financing from EU €5-10M
 - Typically 15-40 partners



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4 **Experiences from the 1st 6DISS Workshops**



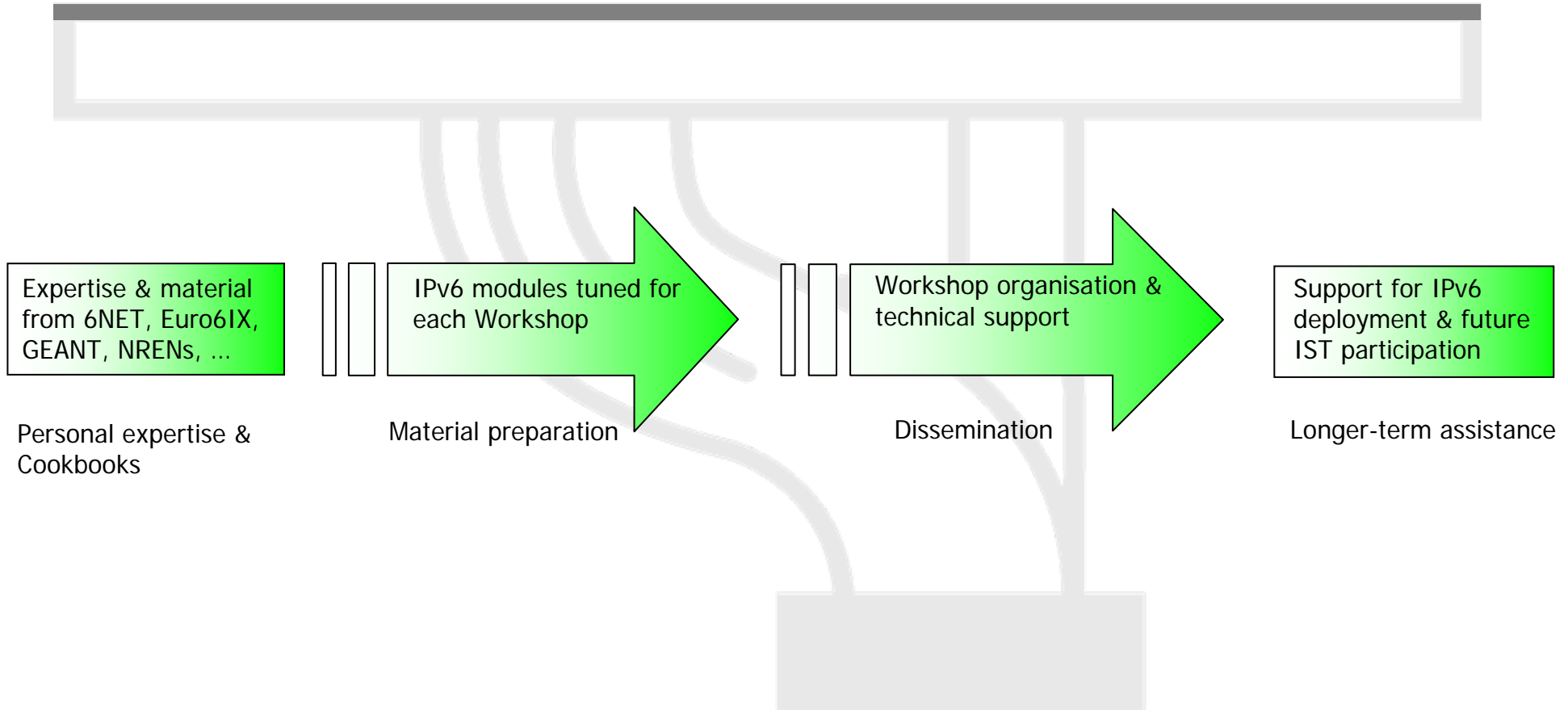


6DISS Objectives

- To transfer knowledge on Internet deployment and evolution to NRENs, Universities, commercial organisations, ISPs, governments and regulators in:
 - Asia Pacific Region
 - Africa
 - SE Europe
 - Mediterranean countries
 - South and Central America
 - Newly-Independent States
 - The Caribbean
- To exchange deployment experiences with India and China



Technical Approach





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6DISS Toolkit

- Workshops (slideware + access to remote labs)
- E-learning package
- Training the Trainers manual
- IPv6 Technical Training course
- Tiger Team
- Website



6DISS Toolkit – “Slideware”

- 400 slides inherited from RENATER. 6DISS partners then:
 - harmonised the style
 - reviewed the content
 - added new topics/modules (provided by partners)
 - split them into 20 modules
 - More convenient to handle and update
 - Easier to build up a workshop programme selecting the appropriate modules.
- Each module has an owner, responsible for the updates
- Modules continue to be added or expanded (eg. lab exercises, deployment scenarios, applications, ...)





6DISS Toolkit – “Slideware”

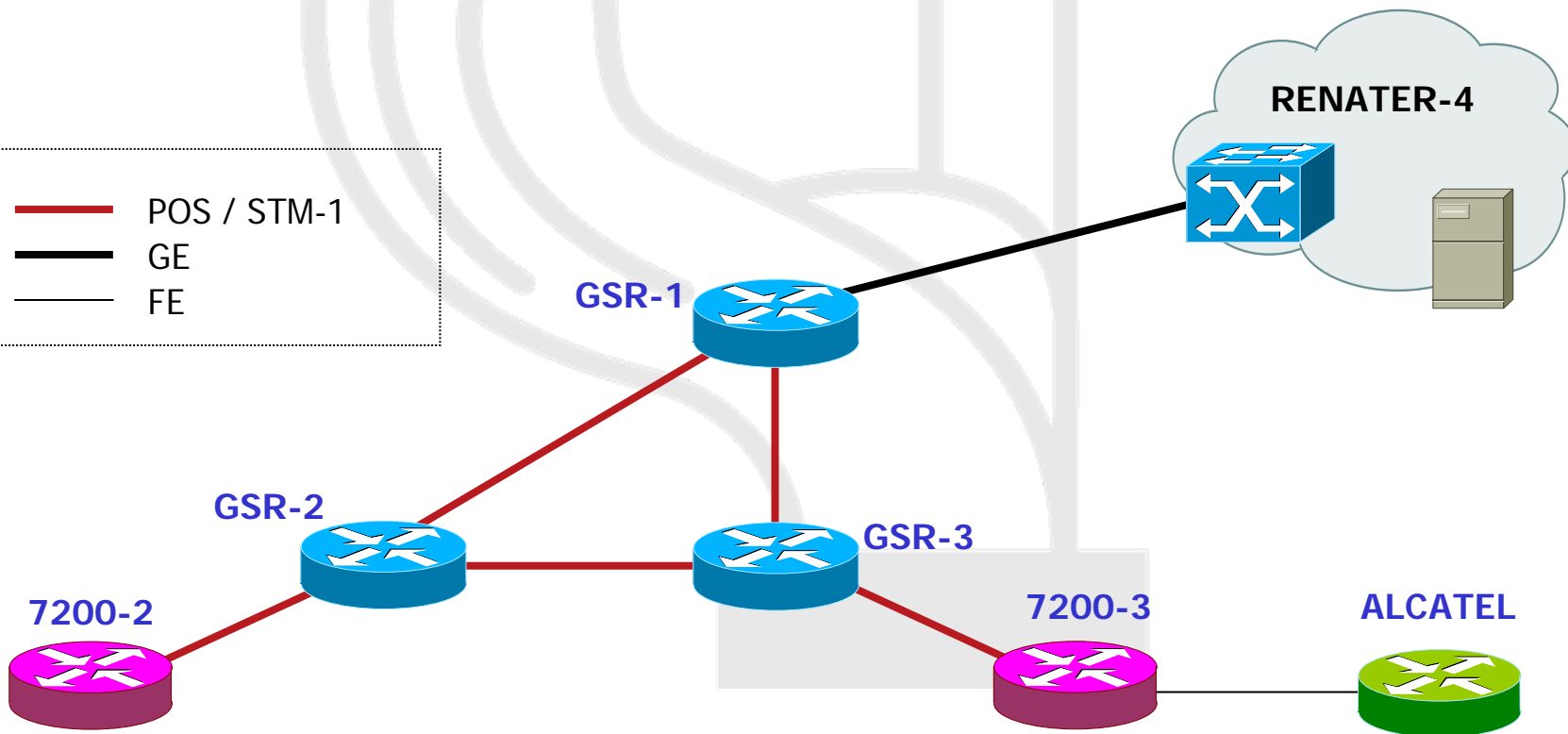
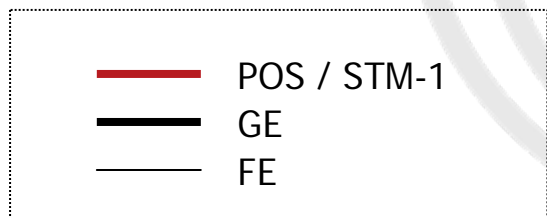
Module Topic	Partner responsible		Module Topic	Partner responsible
6DISS presentation	Martel		IPv6 DNS	FCCN
IPv6 Introduction	RENATER		IPv6 Routing protocols	FCCN
IPv6 Protocol	RENATER		RPSLNg	FCCN
IPv6 Addressing	RENATER		IPv6 Security	UCL
IPv6 Addressing case studies	HUNGARNET/ RENATER		IPv6 Mobility	Cisco
IPv6 Associated protocols	RENATER		IPv6 - IPv4 Co-existence	Soton-ECS
IPv6 Network Management	RENATER		Deployment scenarios	HUNGARNET
IPv6 Multicast	RENATER		IPv6 Applications	UCL
M6Bone	RENATER		Equipment configuration	HUNGARNET
IPv6 Autoconfiguration	FCCN		IPv6 QoS	GRNET





6DISS Toolkit – Access to remote labs

Paris lab





6DISS Toolkit – Reserving the labs

Booking and usage procedures...

- <http://www.6diss.org/labs>
- labs@6diss.org

RENATER Testbed availability

Testbed is already booked for the following dates and events :

Dates :	Events :
September 12th - 24th 2005	CIREN IP multicast tutorial
December 14th - December 27th 2005	NOC-RENATER / tests COS
January 16th - January 20th 2006	6DISS meeting
January 23rd - January 27th 2006	NOC-RENATER / tests COS
January 30th - February 3rd 2006	6DISS review
February 6th - February 10th 2006	NOC-RENATER / tests COS
February 13th - February 20th 2006	EUMEDCONNECT multicast training
March 1st - March 5th 2006	6DISS workshop - South east Europe
March 6th - March 8th 2006	RENATER multicast workshop
April 3rd - 7th 2006	6DISS workshop - EUMEDCONNECT

In order to book the testbed, please, send an email to durand@renater.fr



6DISS Toolkit – E-learning package

Available from anywhere (accessible via <http://www.6diss.org/e-learning>)

Attractive content

- well-balanced combination of audio, graphical and animation components

Effectiveness is ensured through:

- an integrated instructional design, including a modular structure
- interactivity
- individual learning flexibility
- subtitles (http://web.instruxion.com/6diss/SubsDemo/6diss_ipv6.html)

The e-learning package is used:

- as a “teaser” for the workshops
- for assessing the suitability of participants for the workshops
- for training the trainers





6DISS Toolkit – Training other Trainers

We cannot visit each region more than once, but we can train other people to make the workshops.

The “Training the Trainers” course and manual is intended for persons who are not fully familiar with all the aspects of IPv6 covered by the 6DISS material. The attendees of these courses get the full set of 6DISS presentations, together with supplementary information. They can access the labs in Brussels and Paris, and support will be available for answering specific technical questions. The “Training the Trainers” manual comprises:

- Guidelines regarding the fundamentals of teaching
- Guidelines on how to organize a workshop on IPv6
- Information on where to find the latest workshop module material
- An instructors’ guide to accompany each module
- Information on the e-learning package
- Information about the Tiger Team
- The feedback questionnaire
- Description of other material available from 6DISS





6DISS Toolkit – IPv6 Technical Training

The courses can be oriented towards whatever specific training is required (e.g. deployment engineers, maintenance engineers, NOC personnel).

The first one will be held in conjunction with AfriNIC-4 (Kenya, May).

Topics are likely to include:

- IPv6 details
- IPv6 routing protocols
- IPv6 transitioning with tunnels
- 6PE
- Multicast
- Security
- QoS
- Management and monitoring

Target audience:

- ISP operational staff



6DISS Toolkit – Tiger Team

The “Tiger Team” is a channel to experts (within or outside the project). It operates via a *help desk* service (helpdesk@6diss.org), concerning aspects such as:

- state-of-the-art, eg:
 - IPv6 IETF RFCs that are released or still in progress
 - IPv6 deployments
 - IPv6 applications
- how to configure equipment
- hardware and software requirements and releases
- transition scenarios
- management and monitoring tools
- applications



6DISS Toolkit – Website

At www.6diss.org, you can find:

- All the presentations that have been made at the workshops and in conferences, reports from the workshops, deliverables, press releases, news, etc.
- A calendar of upcoming events especially related to IPv6, and the upcoming 6DISS workshops.
- The link to the e-learning package.
- Links to related sites.

Workshop hosts can also download the information they need regarding the organisational details.





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Experiences from 1st Workshops

- Asia (August 2005, in conjunction with APAN meeting and Taiwan IPv6 Forum)
- South Africa (September 2005, in conjunction with DITCHE conference)
- AfriNIC-3 (Cairo, December 2005)





Experiences from Taiwan

- Government networks were scheduled to be deploying IPv6 by the end of 2005
- A nationwide native IPv6 network will be deployed by 2007
- They are just bringing to the market:
 - IPv6 embedded Internet Appliances, and
 - 3G and WLAN products with IPv6
- As a result of the workshop, research co-operation MOUs have been established between the 6DISS partners Uni Southampton and Uni College London and:
 - Academia Sinica Taiwan, NTU Taiwan and the Vietnamese NREN, on IPv6 Multicast, and
 - National Dong Hwa University, on:
 - Development of IPv6 Security Practices
 - Experimenting with p2p Protocols in IPv6





Lessons Learned from Taiwan

- Relative incapability of the attendees to speak technical English
 - Solution: To use native language speakers for some presentations. It is also being considered to extend the e-learning package with subtitles in the local languages
- The training material was in an early phase of construction at the time
 - has been much improved since
- The feedback questionnaire is a good mechanism for obtaining opinions from the participants, but this was not available for this event
 - and anyway not in Chinese!
- It is always best to have a close involvement in the preparation of the programme, and for this workshop we were invited quite late, when many programming decisions had already been taken.





Experiences from S. Africa

The audience comprised mainly network administrators from South African Higher Education institutions that have been granted an IPv6 address space assignment or intend to apply for such an assignment in the next six months.



23 attendees, including representatives of:

- 2 ISPs (Telkom and Internet Solutions – the 2 major providers in South Africa)
- 4 Universities with a strong technical backgrounds
- 1 University with a less strong technical background





Experiences from S. Africa

As a result of the workshop, the TENET chief technical officer met with 6DISS partners and the EC in Brussels on 9th December. Opportunities for further collaboration were discussed, in terms of:

- improving the connectivity between Europe and SA
- joint R&D on network services and/or applications within an EC project in the 6th Call (a proposal is being prepared)

Furthermore, TENET has:

- set up an IPv6 link to GÉANT
- requested to GÉANT/RENATER for an IPv6 Multicast connection



Lessons Learned from S. Africa

It was decided to write 2 additional guidelines for the local organisers:

1. Hosting guide (what we expect from the hosts):
 - Infrastructure:
 - Equipment
 - Connectivity
 - Attendee pre-requisites
2. What the hosts can request from us:
 - Topics
 - Hands-on sessions
 - Remote laboratory access
 - Level of detail
 - Specific requirements for special subjects





Experiences from Egypt

6DISS supported an one-day IPv6 training session in the AfriNIC-3 meeting (Cairo, 12th December, 2005).

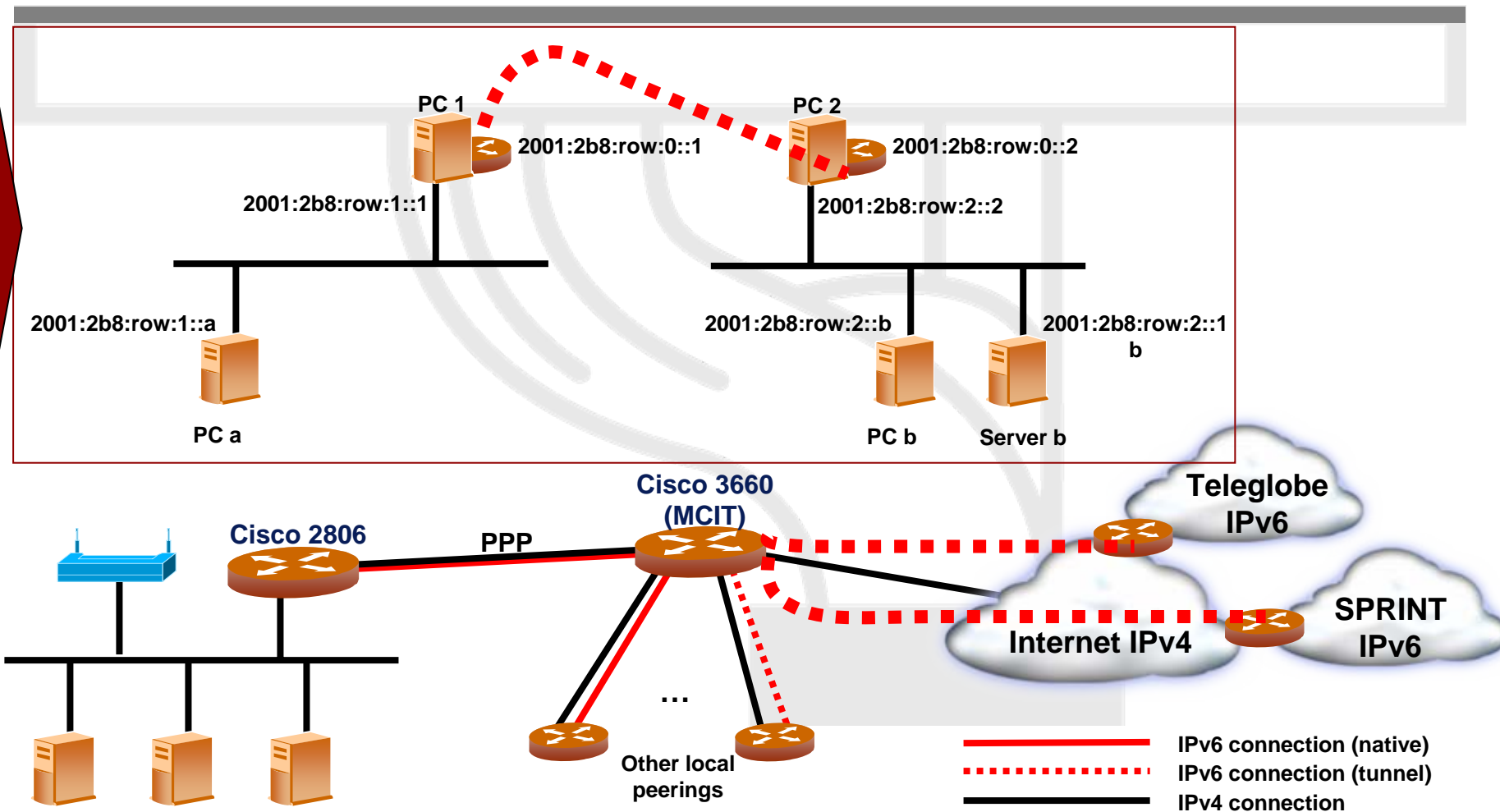
The session consisted of both theoretical presentations and hands-on exercises.

For the hands-on sessions, the participants were first shown how to enable IPv6 in their PCs. Afterwards, groups of 5 participants were asked to interconnect two separate local IPv6 LANs using a WinXP router and tunnels.





Local Setup in Cairo



Experiences from Egypt



- Most of the participants asked for further cooperation and support, and were referred to 6DISS and participants in other EC projects, such as EUMEDCONNECT
 - 6DISS will support an IPv6 training workshop in Kenya in May (at AfNOG/AfriNIC-4)
-
- The ISPs asked a lot of questions about IPv6 addressing best practices
 - For its future events, 6DISS will re-use some of the ideas from these hands-on sessions, particularly in cases where the participants want to start from the very basics.

A large, faint, light-gray graphic in the background depicts a hand holding a tray. The hand is at the bottom, and the tray is at the top, with several curved lines representing the hand's fingers supporting the tray.

Thank you for your attention

