

# **ITU Workshop on IPv6**

**Geneva, Switzerland, 4 – 5 September 2008**

## **The 6DEPLOY Project for IPv6 Training and Support for Deployments**

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# Programme

- The Motivation for 6DEPLOY
- Project Objectives
- Approach, Methodology
- Anticipated Outcomes
- Conclusions

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# The Motivation for 6DEPLOY

## ■ The goal of Next Generation Networks

### Services

**ALL:** Voice, TV, VoD, Web-browsing, Games, E-health, E-government, E-learning, E-commerce, P2P, B2B, .....

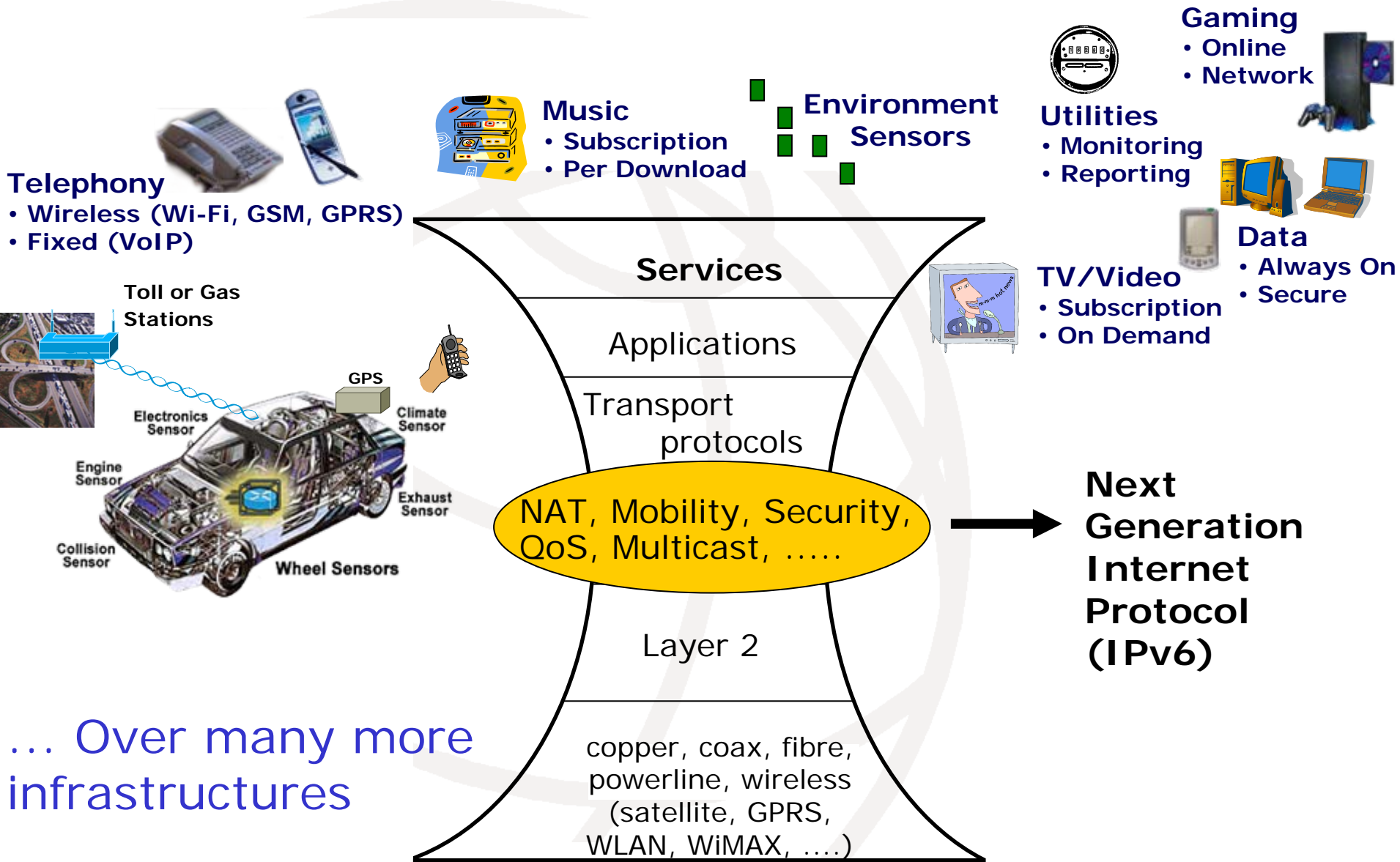
### Network Protocol

**ONE:** IP Packets

### Infrastructure

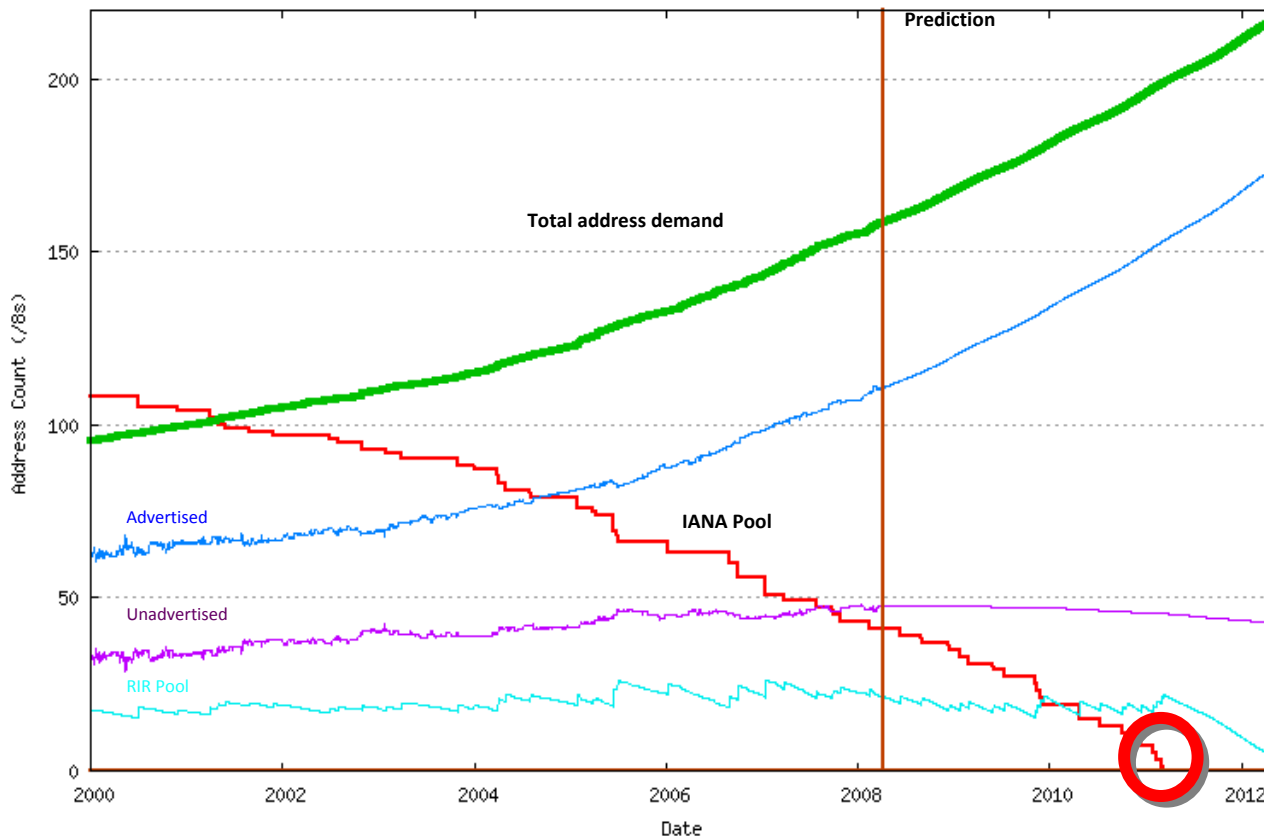
**ANY:** Copper pairs, Ethernet cable, Coax, Powerline, Wireless, Fibre, ....

# The Motivation for 6DEPLOY



# The Motivation for 6DEPLOY

- The pool of IPv4 addresses will be exhausted in **2010/2011**. Regional Internet Registries (AfriNIC, LACNIC, APNIC, RIPE, ARIN) will not be able to ask for IPv4 address blocks afterwards



Source: Geoff Hosten  
<http://www.potaroo.net/presentations/index.html>

# The Motivation for 6DEPLOY

- The Regional Internet Registries will still be able to allocate IPv4 addresses to their Local Internet Registries (for each country), but estimates are that the first RIRs will run out of addresses 12-18 months later
- Organisations will have to deploy IPv6, but many have still not considered how to move to IPv6. The later they leave it, the more expensive will be the changeover

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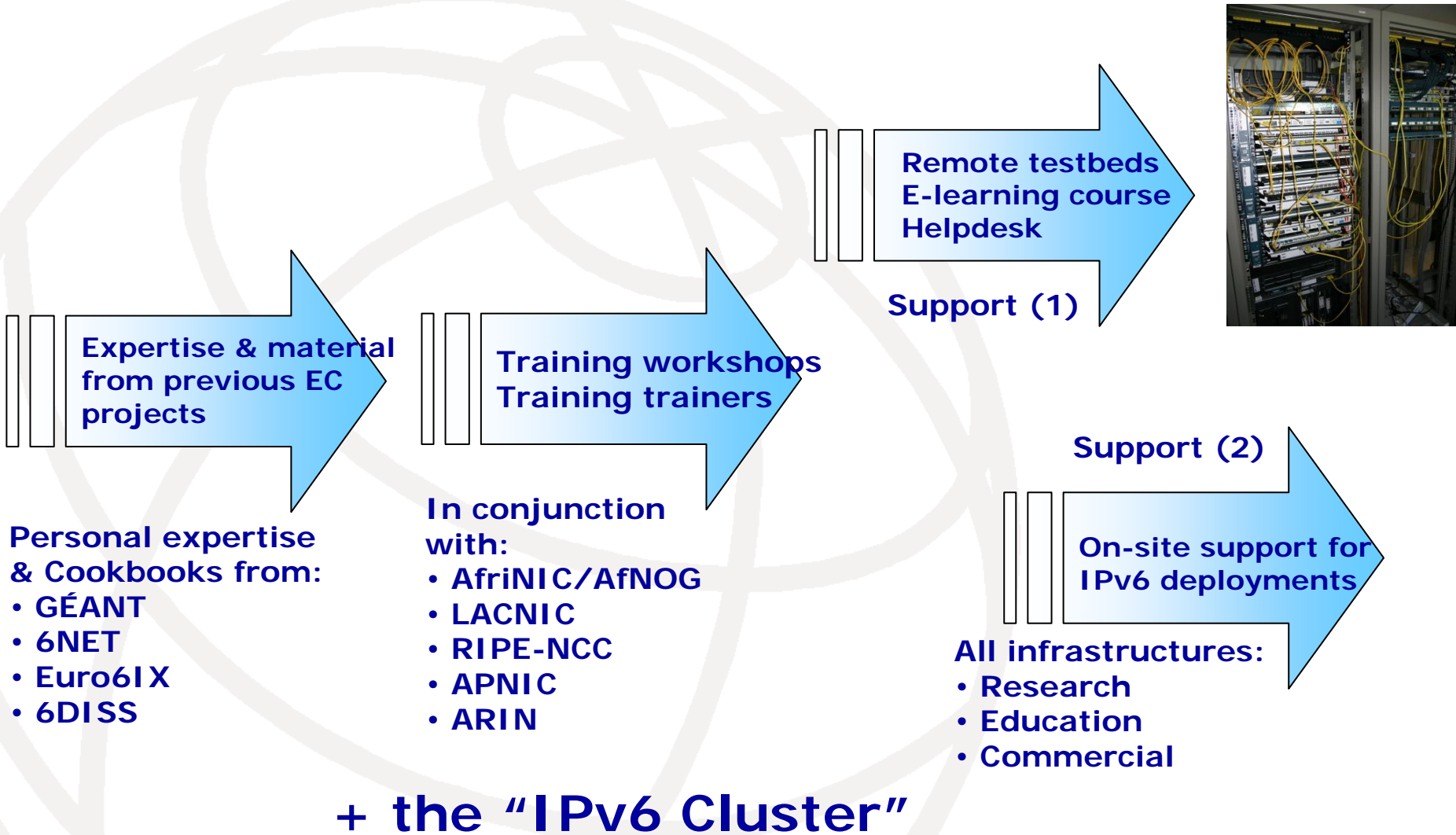
# Project Objectives

- Support of *EU policy*
  - The Internet is now the main telecommunications technology that underpins all aspects of business and leisure, and as such is central to the economic growth of a country. We raise awareness of the evolution of the Internet, and provide support for the introduction of IPv6 as this is a crucial part of ICT
  
- Support *the deployment of IPv6* in:
  - Research infrastructures, which support all fields of science and technology
  - EU FP7 projects
  - Countries such as Africa, Latin America, (parts of) Asia and E. Europe, where there is little legacy infrastructure
  - Commercial organisations (eg. in the areas of emergency services, healthcare, transport, gaming)

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# Approach, Methodology

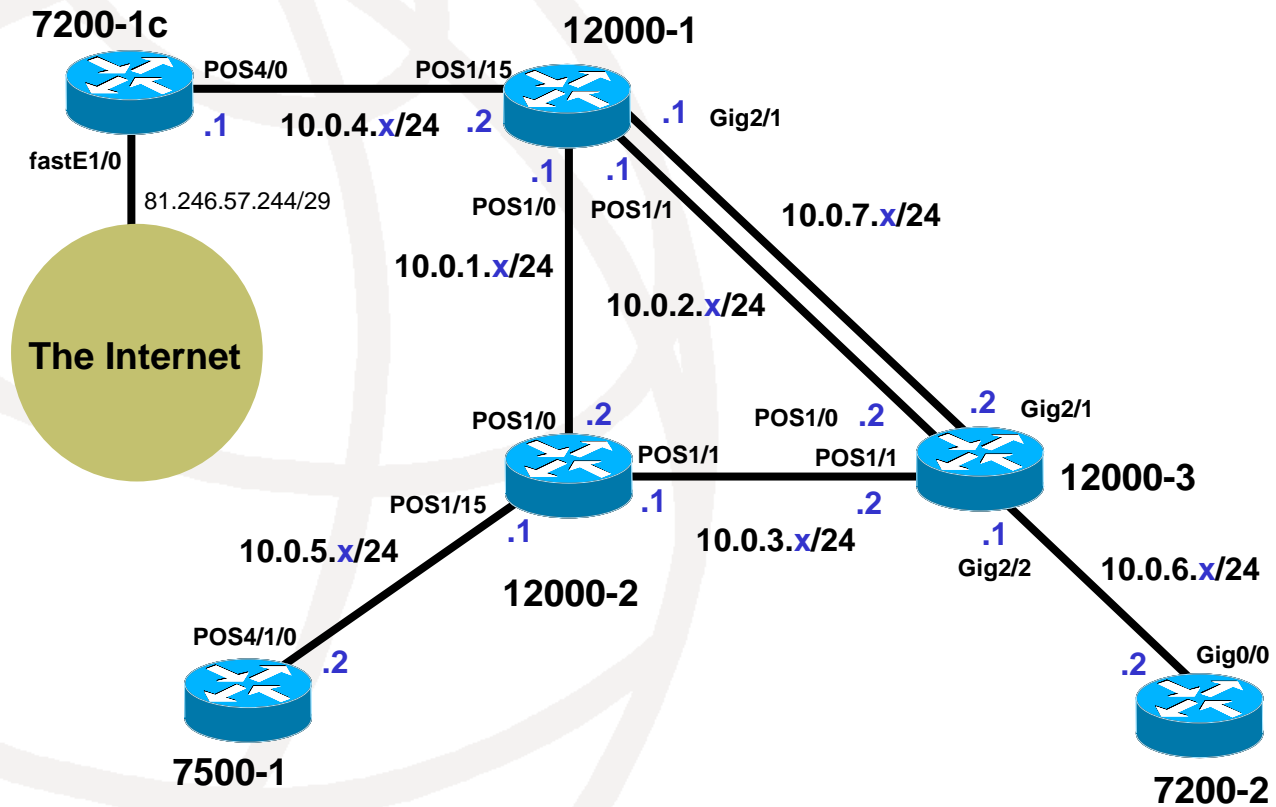
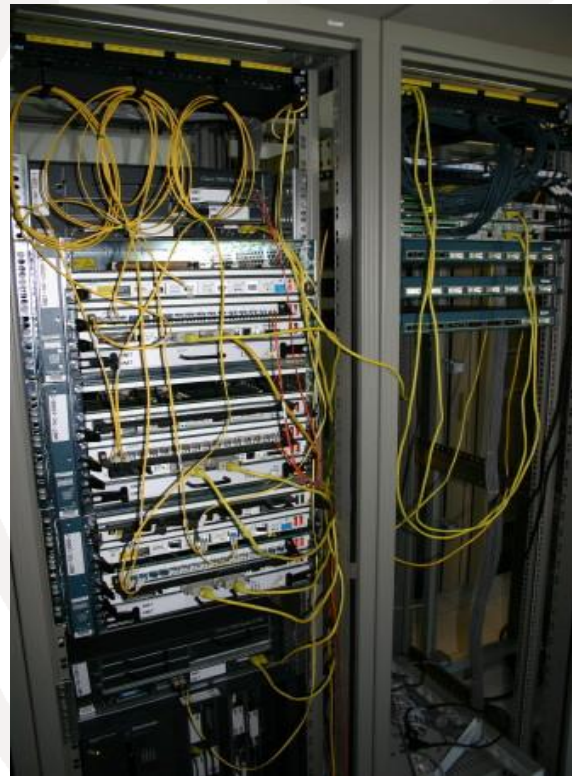


# Approach, Methodology

- Workshops for direct training, and for „training other trainers“
- Practical configuration exercises
- Professional e-learning package:  
[www.6diss.org/e-learning](http://www.6diss.org/e-learning)
- Remote testbeds in Paris, Sofia and Mauritius (under construction) for use inside and outside the workshops

# Approach, Methodology

## Testbeds





Rechercher

- 6DEPLOY
- 6DEPLOY project web site
- IPv6 Helpdesk
- RENATER Testbed availability
- Testbed deployment

## RENATER Testbed availability

Testbed is already booked for the following dates and events :

Oct 23th - Oct 26th 2007	PIP provisioning system (AMPS) : GN2 SA3 & PSNC
Nov 9th 2007	IPv6 Hands-on : RTBF - Belgium (training made by ULB)
Dec 4th 2007	IPv6 Hands-on : RTBF - Belgium (training made by ULB)
Dec 13th 2007	IPv6 Hands-on : RTBF - Belgium (training made by ULB)
Dec 17th - 21st 2007	PIP provisioning system (AMPS) : GN2 SA3 & PSNC
Jan 28th - Feb 15th 2008	PIP provisioning system (AMPS) : GN2 SA3 & PSNC
March 17th - March 21st 2008	Internal training : RENATER
March 28th 2008	UREC/CNRS
April 1st - April 12th 2008	BGP and IPv6 training in Cameroon
April 15th - April 16th 2008	IPv6 training preparation

In order to book the testbed, please, send an email to [durand@renater.fr](mailto:durand@renater.fr)

### Annonces

- Première phase de déploiement de GEANT2
- Projet TEIN2
- Nouvelle solution de connectivité
- Ouverture du domaine interne

### Appels d'offres

- Fourniture de liaisons et achat d'équipements de France et à Cadarache

### Formations

### Manifestations

- Journée Mob IPv6



Offres d'emplois  
Appels d'offres

Accès à l'ancien site web

Charte déontologique

# Approach, Methodology

- Presentation material on more than 20 topics associated with IPv6

Module Topics		
IPv6 Introduction	IPv6 Mobility	IPv6 Routing protocols
IPv6 Protocol	IPv6 Multicast	IPv6 - IPv4 Co-existence
IPv6 Addressing	IPv6 DNS	IPv6 DHCP
IPv6 Addressing case studies	IPv6 Associated protocols	Equipment configuration
IPv6 Network Management	IPv6 and cellular networks	IPv6 and DSL
IPv6 Autoconfiguration	IPv6 Security	Deployment scenarios
IPv6 and sensor networks	IPv6 QoS	"How to" guide for developers

# Approach, Methodology

- Book on technical deployment guidelines
- Helpdesk service ([helpdesk@6deploy.org](mailto:helpdesk@6deploy.org)) run by experienced persons
- Website ([www.6deploy.org](http://www.6deploy.org)) with links to 6DEPLOY documents and external sources



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# Anticipated Outcomes

- Training Workshops (2008):
  - LACNIC (Brazil, May)
  - AfriNIC (Nairobi, June)
  - Mozambique (Maputo, August)
  - RIPE (Moscow, September)
  - South-East Europe (Croatia, December)
- Demonstration and helpdesk at the ICT2008 event in Lyon (November)

# Anticipated Outcomes

- **1<sup>st</sup> Deployment Use Case:**
  - ➔ School networks in Greece and Bulgaria
- **2<sup>nd</sup> Deployment Use Case:**
  - ➔ Campus networks (experience from the UK)
- **3<sup>rd</sup> and 4<sup>th</sup> Deployment Use Cases:**
  - ➔ Large-scale commercial ISPs:
    - Costa Rica, Argentina, Andorra
  - ➔ Telecentres in Bulgaria
  - ➔ Public safety projects in Europe (Luxembourg) and US (Metronetv6)

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# Conclusions

- IPv6 resolves the shortage of IPv4 addresses
- IPv6 restores the “end-to-end” philosophy of the Internet (benefits for applications, maintenance of remote equipment, MobileIP)
- Whilst re-designing the protocol, improvements have been made for streamlining/future-proofing the header, auto-configuration, multicast
- Security (IPsec) has been mandated

# Conclusions

- Deployment needs planning:
  - ➔ Replacement strategy: networking equipment and Operating Systems in end devices have been IPv6 enabled since 5 years<sup>1</sup>
  - ➔ Transition strategy
  - ➔ Training (fundamentals, deployment, operation, maintenance)
- **6DEPLOY is here to help!**

Thank you for your attention .....  
and thanks to all the 6DEPLOY partners:

