Practical aspects of deploying IPv6 in Luxembourg
EPT IPv6 Roadmap

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IPv6 Key Benefits over existing IPv4 technology

- Larger IP Address Space
- Inherent Mobility Support
- Improved routing techniques
- Multicast supported as native communication mode
- Extended authentication and privacy capabilities
- Auto configuration – Plug and Play Networking
- Integrated Quality of Services (QoS)
- Enabler for RFID technologies
- ...
IPv6 Initiatives

- US is moving to real utilization of IPv6
- Asia has deployed IPv6 at a large scale
- Europe has to move to IPv6 in order to keep up with technological developments and for global communication:
  - Internet-enabled wireless devices
  - Web 3.0
  - Intelligent sensors, RFID
  - Hosted & virtual services, Cloud computing, gaming
- Luxembourg: U2010 research project
EPT IPv6 Roadmap

• EPT IPv6 Evolution and Roadmap

  – Network elements to be considered or to be upgraded
    • IP backbone
    • IPv6 address range
    • Internet international Transit Links
    • Internet Peering
    • National IP access network (DSL)
    • Enduser equipment (CPE’s)
    • Network security
    • Running IT applications and systems
EPT IPv6 Roadmap

• EPT IP Backbone

  – **Q1/2009** - All EPT core routers are IPv6 enabled
    • Full hardware forwarding of IPv6 on EPT Backbone Routers
    Same forwarding capacity as for IPv4

    • EPT Backbone supports full suite of IPv6 Protocols
      OSPFv3, BGPv6, DHCPv6, ICMP6, etc...

  – **Q4/2009** – Our goal is to have end of 2009 IPv6 or dual stack IPv4/IPv6 running for:
    Professional BGP Internet Access
    MPLS IP VPN
    DSL lines
EPT IPv6 Roadmap

• EPT IPv6 address space is available
  – IPv6 addresses reserved in 2002
    – Address format
      2001:07e8::/32
      /48 for corporate customers
      /64 for DSL like customers
EPT IP Backbone - International Interconnects
EPT IPv6 Roadmap

- Internet Transit Links
  - Q1/2009 - IPv6 active on 10Gb/s Transit Link with Global Crossing in Amsterdam
  - Q3/2009 – Upgrade of EPT Transit Link with Tiscali in Frankfurt to IPv6

- Internet Peering
  - Q4/2009 - EPT will start IPv6 Peering in Amsterdam and Frankfurt
EPT IPv6 Roadmap

• LuxDSL
  - Q2/2009 - Dual Stack LuxDSL available for internal testing and friendly users
    • DSLAM (Digital Subscriber Line Access Multiplexer)
    • IPv6 for LuxDSL pppoe transparent
    • Ethernet based Isam’s supporting IPv6 today
    • CPE’s New AVM VDSL2/ADSL2+ HAG with IPv6 in introduction phase

• Broadband remote access platforms
  - Q4/2008 - First IPv6 capable Juniper ERX 320s installed and in service

  - Q1/Q2 2009 - ATM based Juniper ERX 1410 will be replaced with new
    Juniper ERX 320s, supporting IPv6
**EPT IPv6 Roadmap**

- EPT residential servers and services
  - **Q3/2009** - IPv6 name servers (DNS)
  - **Q4/2009** - Application Servers dual stack
    (VMware, hosted servers..)
  - **Q2/2010** - IPv6 hostpack service

- EPT Security Services
  - **Q2/2009** - New hardware based dual-stack Fortinet Firewalls
• Conclusion

– IPv6 deployment will occur as an evolution, not as a bang!
– EPT will make transition as easy as possible for end-users and system administrators
– IPv6 End to End connectivity possible Q4/2009
Thank You