

IPv6: from experimentation to services

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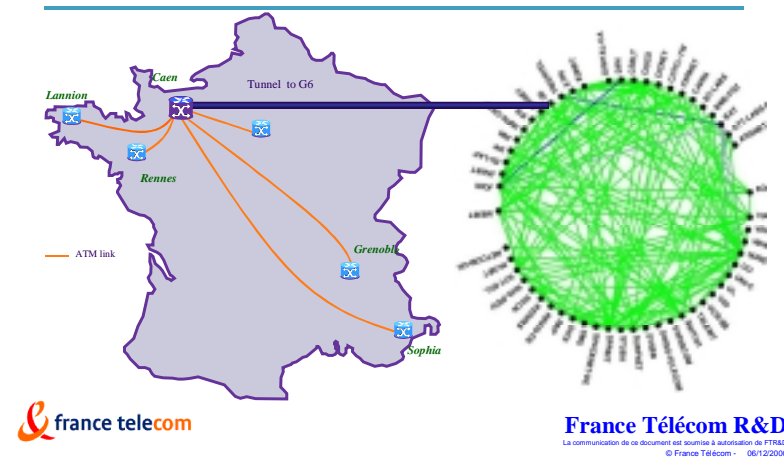
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IPv6: an already old experience in FTR&D



- Participation in IETF work since the early « IPnG » phase
- Test of first IPv6 routers (Telebit) in 1996
- development of an IPv6 conformance test suite for IPv6 router assessment (*IPv6, ICMPv6/Neighbor Discovery*)
- Participation to G6 Bone – founding member of the G6 group
- An IPv6 network internal to FTR&D (RIMBAUD) connected to the 6Bone

Rimbaud : FT R&D's native IPv6 Network





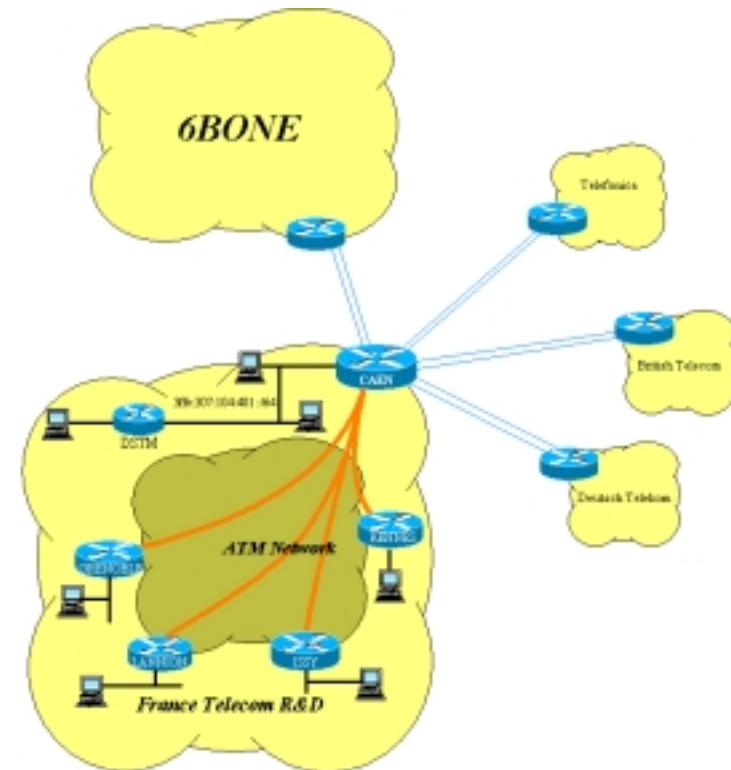
IPv6: Today's studies and interests

- ➡ Mobility
 - Evolution toward UMTS, macro & micro mobility
- ➡ Security application
 - IPSec, firewalls....
- ➡ End to end QoS
- ➡ Auto configuration
 - Application to domestic appliances, nomadism
- ➡ Interoperability IPv4/IPv6
- ➡ Transition strategies
- ➡ Routers: CN Routers, access routers like RAS or BAS and SGSN, GGSN for GPRS/UMTS
 - Hosts
 - Operating Systems
 - Firewalls, DNSv6, DHCPv6

IPv6: Participation to Eurescom projects



- ➡ P912 : (till end of 1999) Security & IPv6
 - ➡ P1001: PKI for Mobile IP
 - ➡ P1013: Mobile IP in the core of UMTS Networks
- ➡ P1009: IPv4/IPv6 transitions strategies, inter provider peering, IPv6 for 3G mobile networks



P1009 experimental network

Toward services



➡ Addressing

- On June 23rd France Telecom becomes Sub-TLA according to our demand to RIPE-NCC **2001:0688::/35**
- Mobile Network...
- But also permanent ADSL Access

➡ Experimental services

- Development of IPv6 over VTHD Network
- International connectivity (a bit more than experimental)
 - Today between Paris, London and Brussels
 - New locations under development
- Planning of IPv6 GPRS/UMTS experimentation in Labs and field trial during 2001 with two goals:
 - IPv6 addressing services
 - IPv6 Mobile services

What is VTHD



- A nation wide experimental network developed by FT in the frame of an RNRT project (with academic partners: INRIA, GET, Pompidou Hospital)
- A multi vendor High speed platform: CISCO GSR, JUNIPER M40, AVICI, SYCAMORE optical cross connect
- IP/WDM: each internal link is as a minimum one 2,5Gbit/s operated
 -
- End to End high speed : Most sites attached to the network through Gig Ethernet
- A number of experiments
 - Application: Distance Learning, Virtual reality, Distributed Computing, Video-conferences, Network Gaming
 - Network: QOS, High speed networking , distributed caching, ● switching & IP networking interaction, MPLS

IPv6 & VTHD



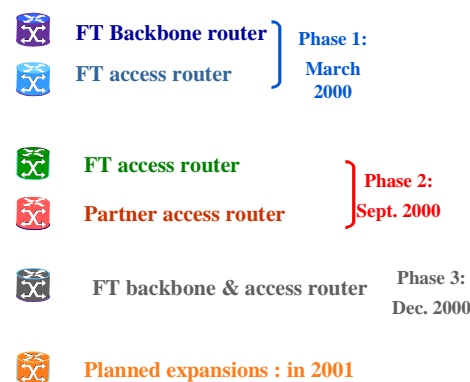
➡ First Step

- IPv6 encapsulated in a VTHD MPLS based VPN
- Specific IPv6 POPs
- To be peered with RENATER

➡ Second Step

- Driver IPv6 interoperability (double stack)
- ADSL IPv6 BAS
- To be peered with others networks
- Update of the network if new features available in the the new release of the equipments
- Enhancement of services deployed on first step
 - nb of POPs
 - DNS services (redondancy)
 - multicast, mail server, web sites, new peerings

VTHD : France Telecom NGI initiative



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Thanks For your Attention

Questions

