

IPv6 Strategy: A Global Approach

C. Jacquenet

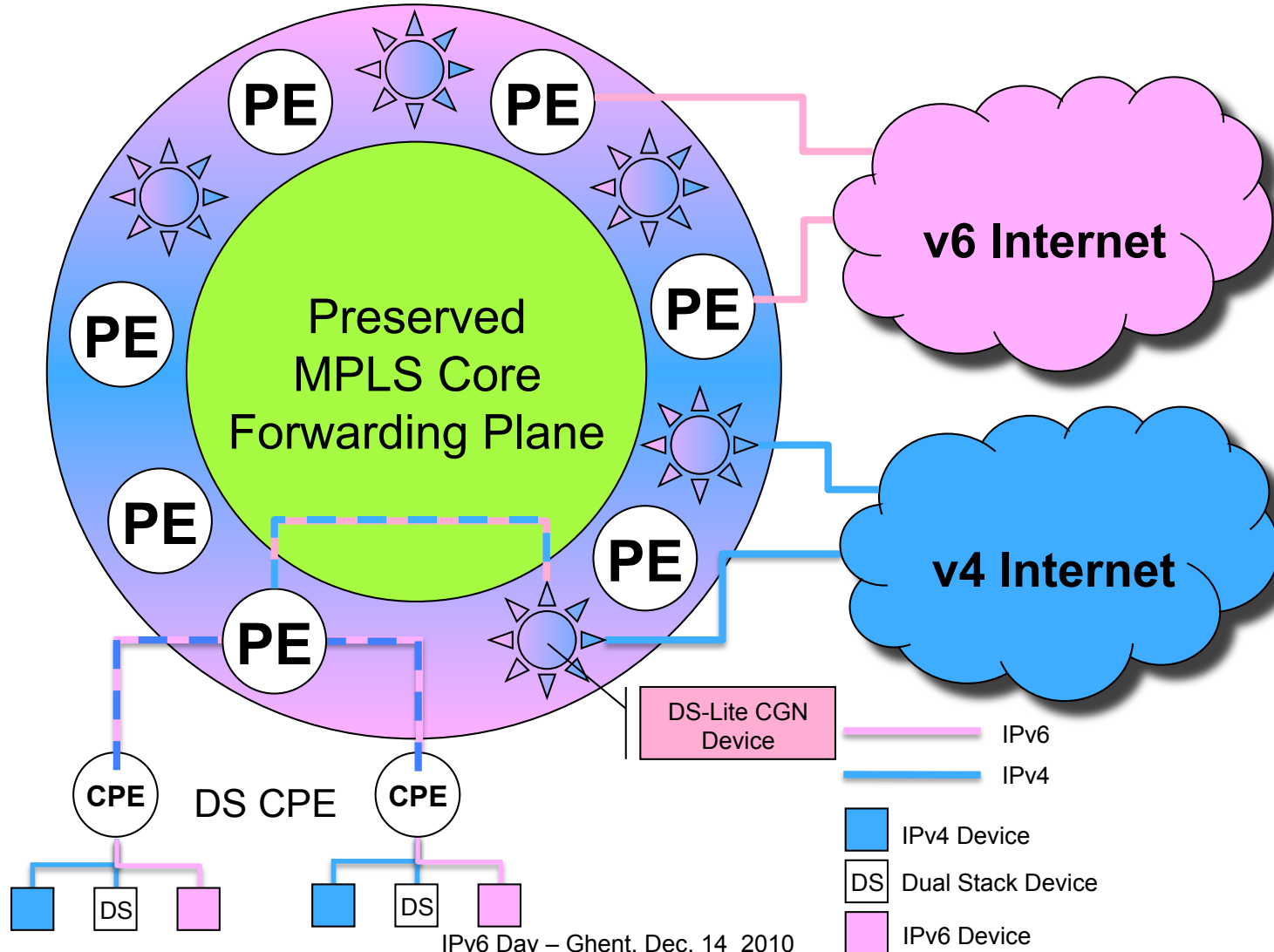
christian.jacquenet@orange-ftgroup.com

- FT Group-wise IPv6 program
- Design principles
- Lessons learnt
- Status

A Phased Approach

- Phase 1 (2008-2009): IPv6 Introduction
 - Focus on IPv6 “elementary” capabilities
 - Service scope is restricted to Internet (fixed) access
- Phase 2 (2009-2012): IPv6 Migration
 - Cover the whole service spectrum (VoIP, IPTV, M2M, *etc.*)
 - Spanning fixed and mobile environments, addressing both residential and corporate markets
- Phase 3 (2012-): IPv6 Production
 - Customers are provisioned with IPv6 connectivity only

Global Networking Picture



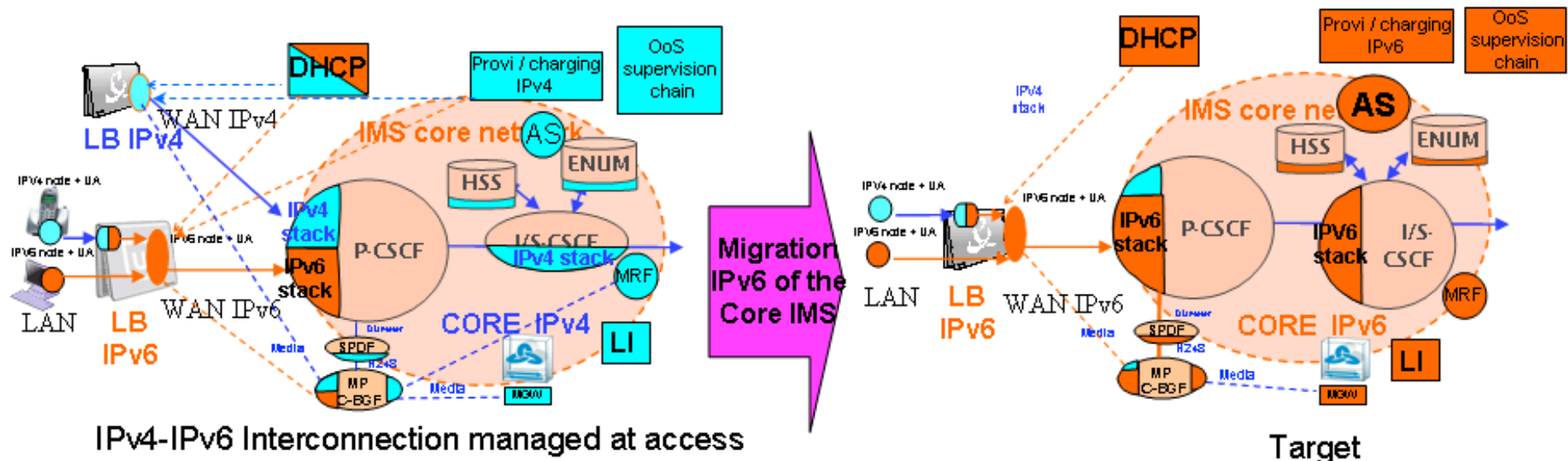
The Choice of DS-Lite

- A **catalyst** of IPv6 deployment
- Maintains only one level of NAT
- Technology is commercially available
- This is meant to **rationalize** usage of remaining IPv4 address space during the transition period
 - For the sake of **IPv4 service continuity**

This does NOT question IPv6 deployment

VoIP Migration Scenario

- Smooth and incremental
 - First step is to deploy IPv6 in the access segment only
 - Then encourage IPv6 generalization in core and border segments



- First allocate IPv6 prefixes *and* IPv4 addresses to UEs
 - Dual PDP contexts
- Then assign IPv6 prefixes *only*
 - NAT64 design is recommended to access IPv4 services during transition period
- Applications must be Address Family-independent

IPv6 is Good for M2M

- A federative layer
 - Cornerstone of the “Internet of Things”
- An (almost) unlimited addressing capacity
 - M2M-inferred environments assume tens (*e.g.* home services) to thousands (*e.g.* urban services) of devices
- Advanced self-configuration capabilities
 - ICMPv6 is the base protocol that allows automatic numbering and connectivity with different levels of security
- IP is ubiquitous and scalable
 - IPv6 is lightweight
 - IPv6-enabled sensor technology is already available

(Some) Lessons Learnt

- Communication is **key**
 - Think **IPv6** as an **opportunity** not a constraint
- Information systems (OSS/BSS) should be upgraded **first**
- **Transition** is where technical challenges reside
- Some vendors are not IPv6-minded **yet**
 - This sometimes mandates in-house workarounds that delay generalized deployment
 - Encourages service providers' community to unite and consolidate (functional) requirements
- Standardization **must** help, **not blur** the message

This is All Happening

- IPv6 VPN service offering was launched in 2009
 - See http://www.orange-business.com/en/mnc2/footer/news/enterprise_briefing/april2009/technology.html
- 2010 is the year of pilot deployments for the residential market
 - France started in March
 - Senegal started in May
 - Armenia, Belgium, Moldavia, Poland, Slovakia and Switzerland IPv6 pilot deployments are underway

Thank You!