

M6Bone...
... moving forward ...
... slowly ...

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PIM Hello option

- Option used to exchange global addresses in PIM messages
 - link-local addresses are used as sources of PIM messages
 - Need to have info about global address for RPF
- 65001 → 24
- Need to upgrade all routers

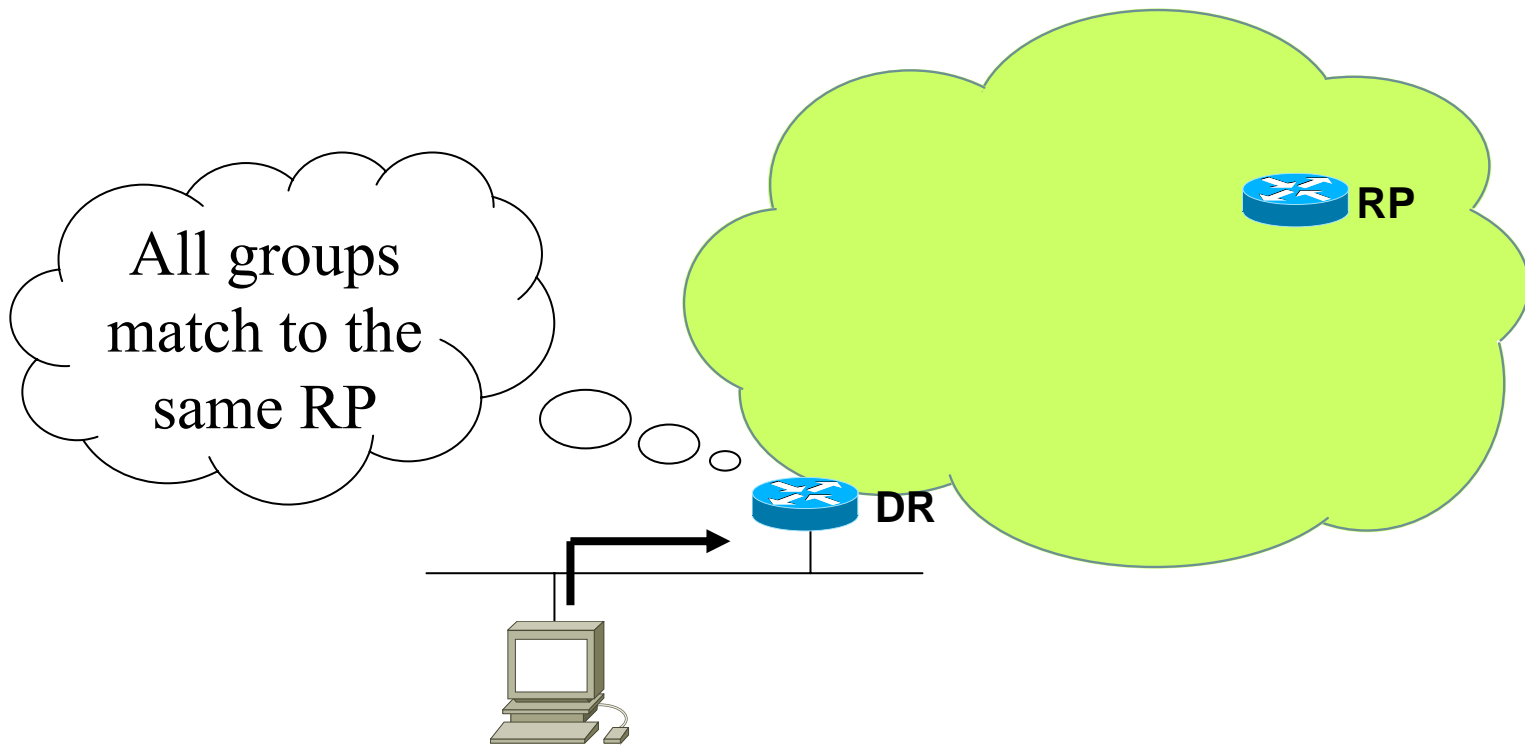
MLDv2

- Wrong ICMP type used in Linux before kernel 2.6.6
 - 206 used instead of 143 in specifications
 - Need to patch all the Linux workstations
- Also MLDv2 used by hosts while MLDv2 is not always supported on the routers
 - Need to upgrade all the routers
 - Need to force MLDv1 ☹

Embedded-RP

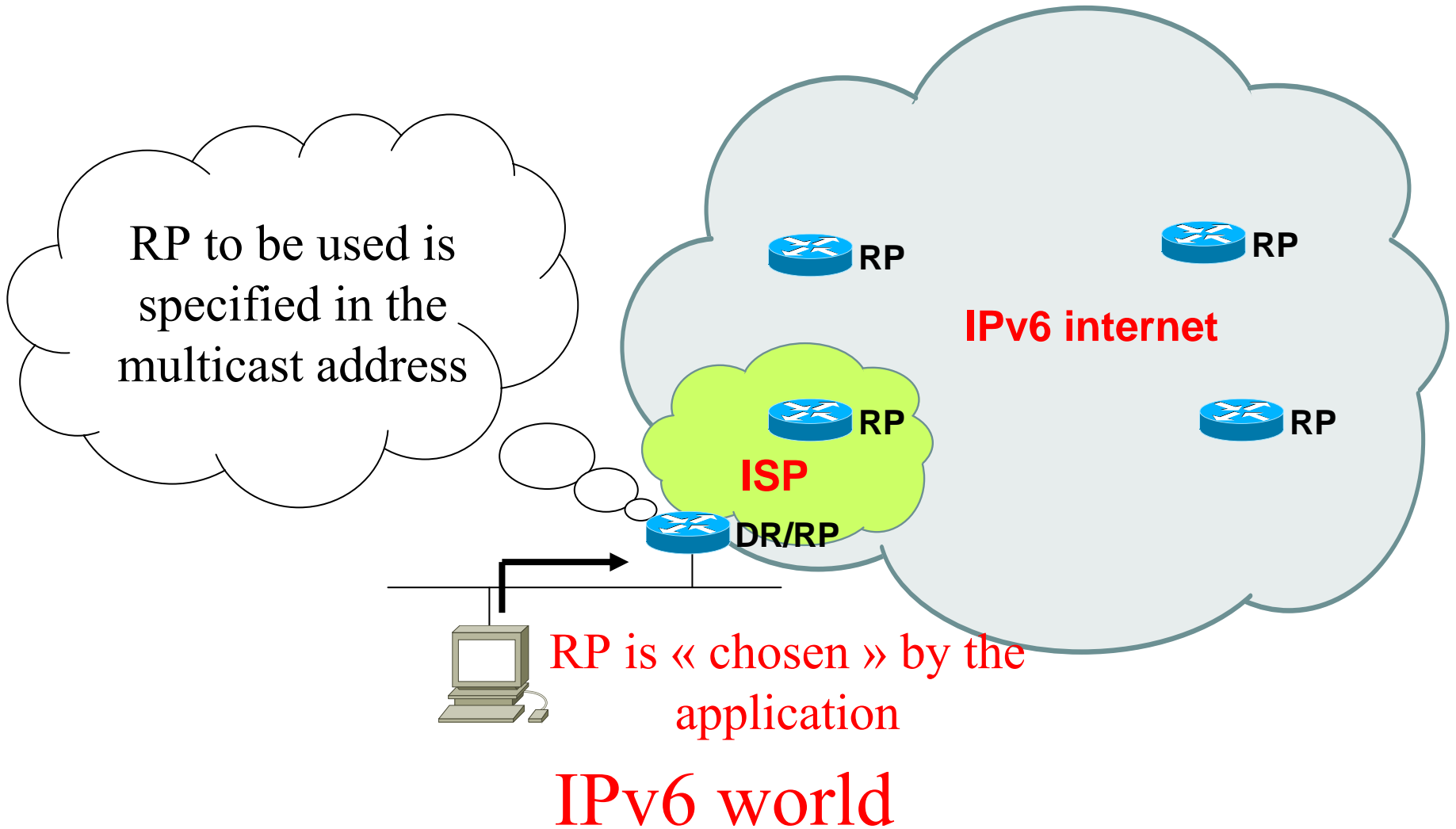
- Address of the RP embedded in the multicast address
- Great, is now PS !

Embedded-RP



IPv4 world

Embedded-RP



Embedded-RP

But need to have all the routers supporting the feature

How do applications find the RP address to use ?

- End-users cannot manually create a multicast address from an RP address:

RP Address 2001:660:3001:104::8/64

Multicast address FF7E:0840:2001:660:3001:104:1234:abcd

- Kind of IPv6 multicast address assignment is necessary

BSR

- New BSR draft or PIM specifications ?
- Need to have all equipments implementing the same
- Need of BSR as we have Embedded-RP?
 - Not sure → need to move forward with embedded-RP
- If we decide to use BSR, need to have a negociation of BSR type to use (old or scoped BSR) ?

Group-to-RP mapping

- pim6sd still implementing the RFC
- Draft updating PIM mentions explicitly that longest match must be done first

Static multicast routes redistribution in MBGP – IPv6 multicast SAFI

- Still not possible on CISCO routers
- Works fine on JUNIPER as inet6.2 table
- Real problem in environment when non congruent topology is needed
- Difficult to connect sites willing to experiment the technology

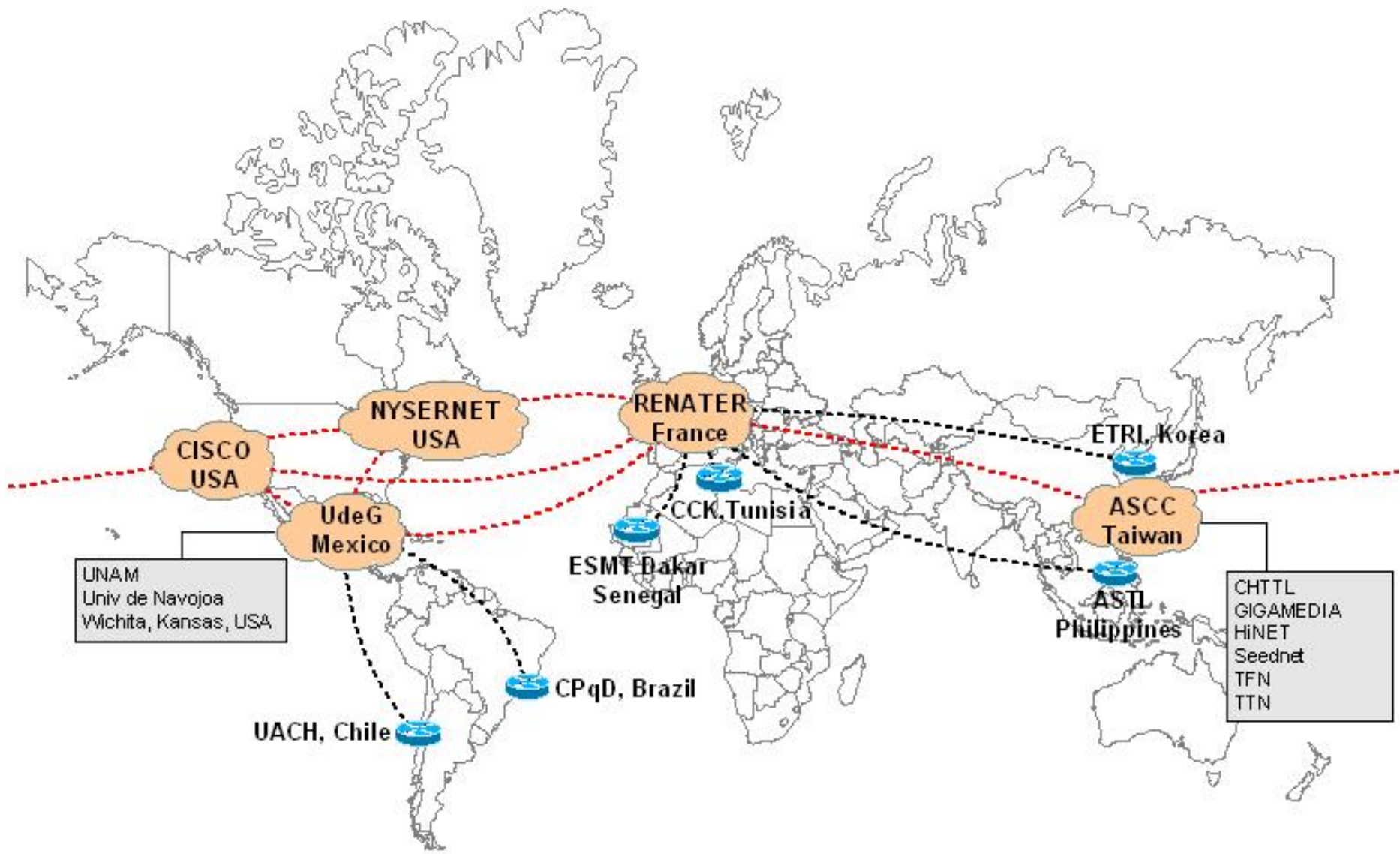
JUNIPER progresses

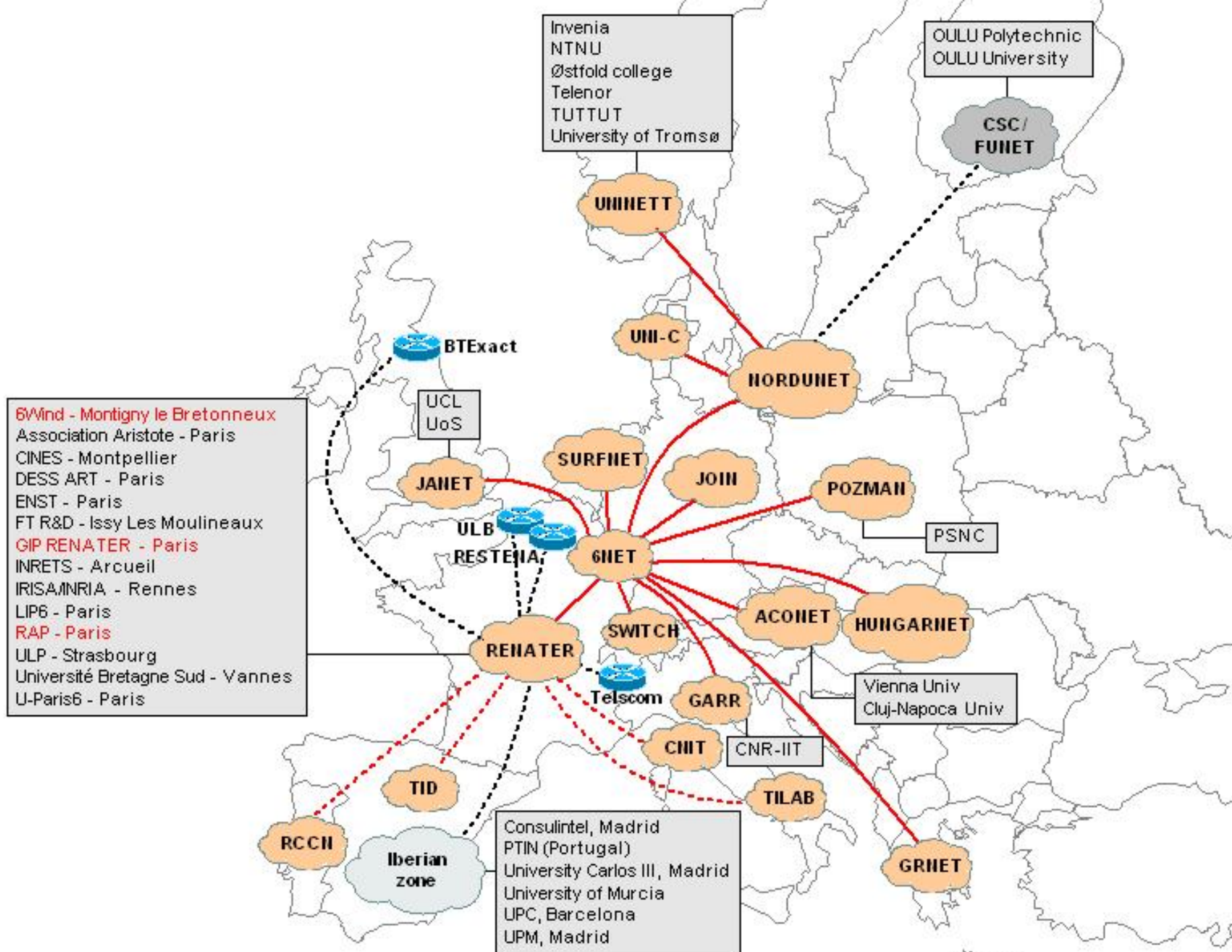
- BSR and Embedded-RP
 - Implementation status ?
- IPv6 in IPv6 tunneling ?
 - Software or Hardware problem ?

Multicast Beacon

- Perl or Java based ?
- Perl Beacon not working properly
- Not sure Java one works better
- Problem when 2 different versions are used
 - Kind of DoS attack!

Loss [%]	S0	S1	S2	S3	S4	S5	S6
R0 zephyr.ipv6.unige.ch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R1 UoS	0.0	0.0	0.0	0.0	2.0	0.0	0.0
R2 merapi.switch.ch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R3 UdeG-Mexico	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R4 tut.fi_telecom_lab	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R5 RENATER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R6 beacon-test.geant.net	0.0	0.0	0.0	0.0	0.0	0.0	0.0

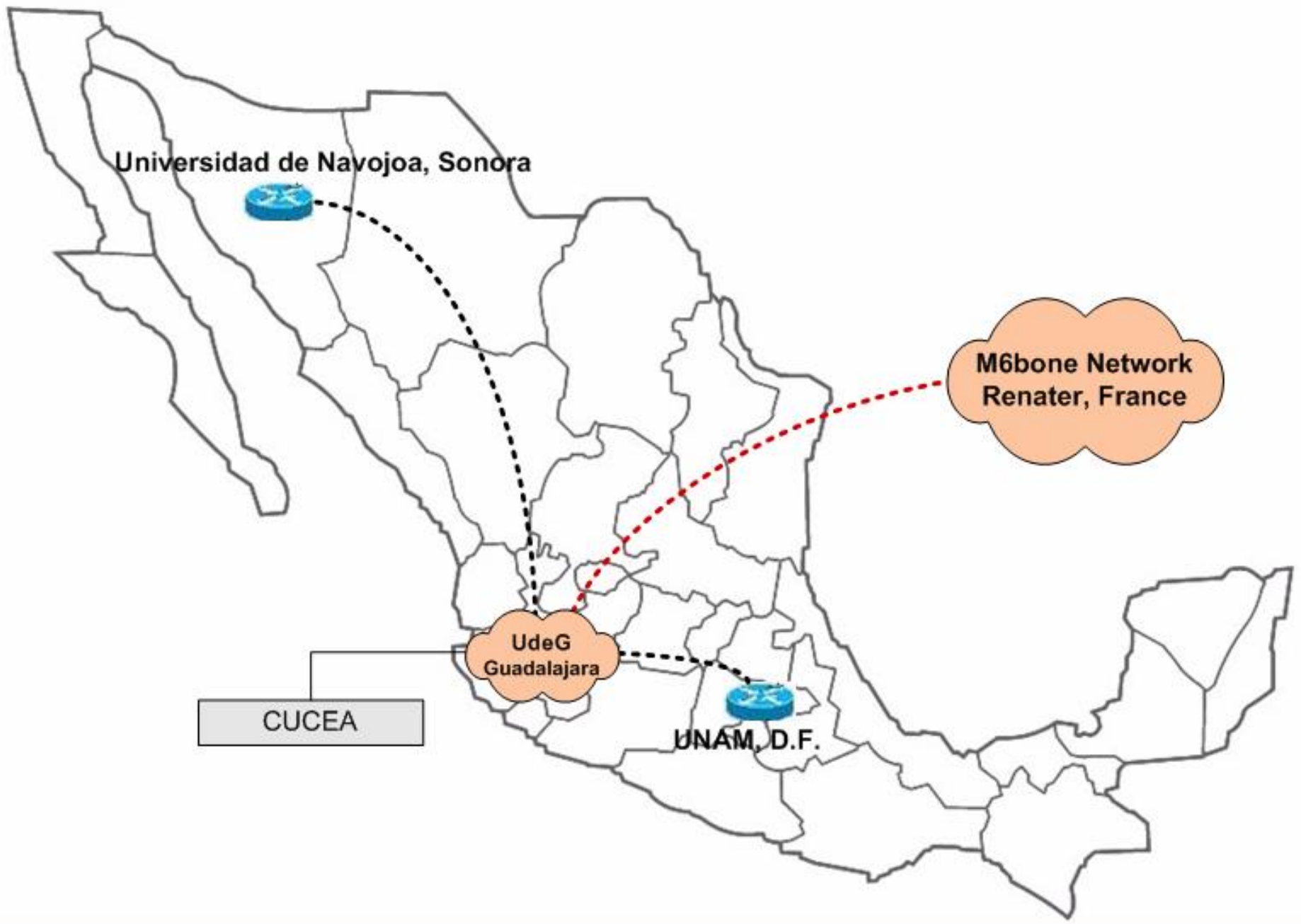






Taiwan Zone of M6Bone

- ASCC. Academia Sinica Computing Centre
- TFN. Taiwan Fixed Network
- SeedNet. Digital United Inc.,
- NCKU. National Cheng Kung University
- TTN. Taiwan Telecom Network Inc.,
- CHT-TL. ChungHwa Telecom Telecom Lab.,
- GigaMedia. GigaMedia Inc.,
- NCU. National Central University
- MCU. Ming Chuan University



Universidad de Navojoa, Sonora



M6bone Network
Renater, France

UdeG
Guadalajara

CUCEA



UNAM, D.F.

M6Bone...

... moving forward ...

... slowly ... **but cautiously !**

- It is the perfect time to start considering deployment
 - Pilot services in production networks (UNINETT, GEANT)
 - Write down eventual issues and give feedback to manufacturers / IETF / M6Bone community
 - Write recommendations for deployment
 - Monitoring !!!