

## GLOBAL IPv6 SERVICE LAUNCH EVENT



# IPv6 Large Scale Field Trials

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# *6net* *A large-scale International IPv6 Testbed*

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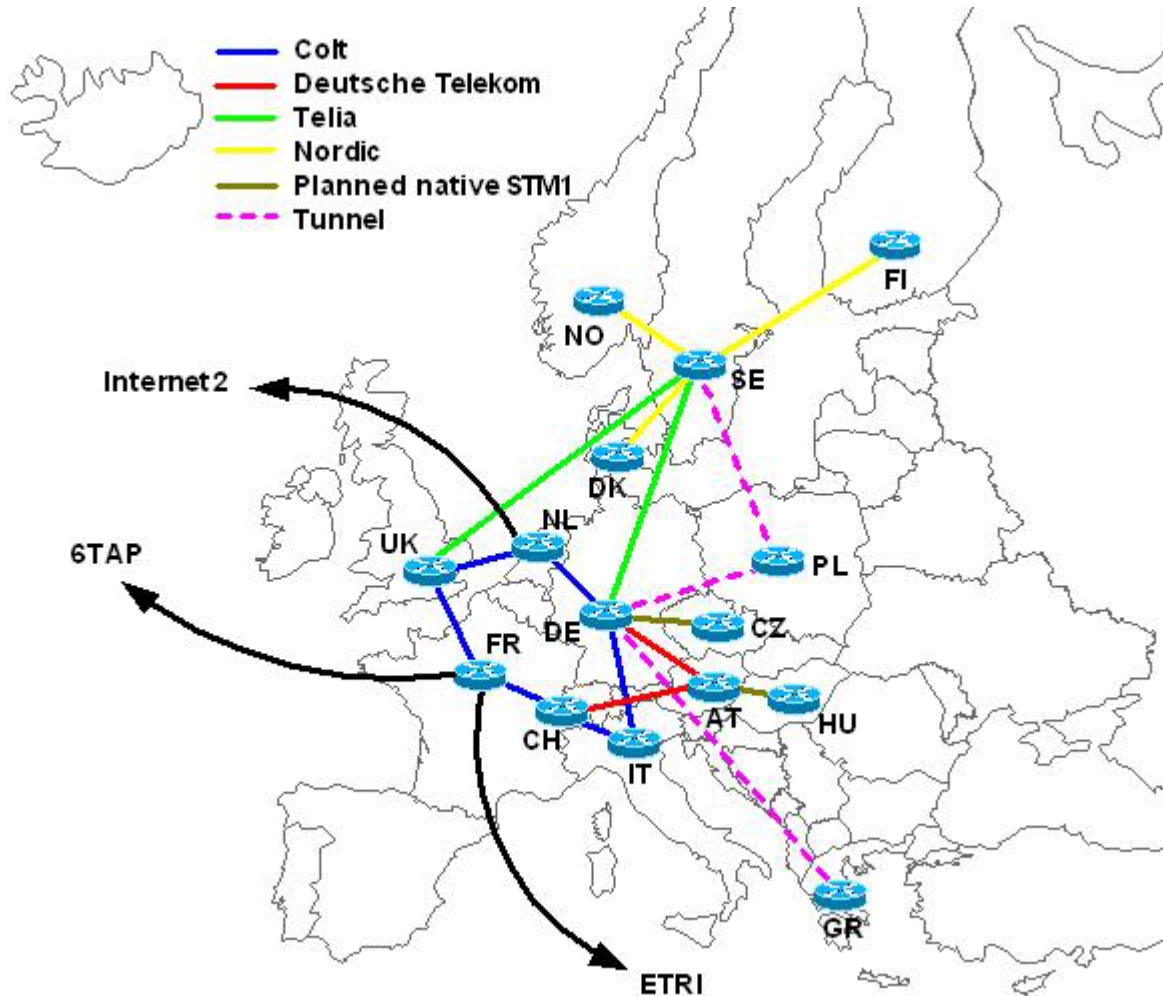


- **IST FP5 research project**
- **To prepare the Next Generation Internet**
- **A major global IPv6 field trial**
- **3 year project (started 1-1-2002)**



6net

# *A large-scale International IPv6 Testbed*





# 6net *A large-scale International IPv6 Testbed*



## Industrial Partners





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## *A large-scale International IPv6 Testbed*



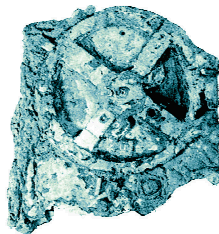
UNIVERSITÄT WIEN



ULB



Telematica  
Instituut



Fraunhofer  
Institute for Open  
Communication Systems



GLOBAL IPv6 SERVICE  
LAUNCH EVENT

*A large-scale International IPv6 Testbed*

*National Research Networks*



NORDUnet



SWITCH  
SWITCH



*Renater*



Forskningsnettet  
The Danish Research Network





## *The value of large scale field trials*

- *Research networking, science and academia shape the future of IPv6 by*
  - **real trials and showcasing solutions**
  - **validating scaling of IPv6 functions and features**
  - **facilitating real exploitation**
  - **providing guidance to network equipment vendors, commercial service providers and many sectors of business**
  - **leading the standardisation process**





## *The value of large scale field trials*

- *Network equipment vendors such as Cisco shape the future of IPv6 and benefit from field trials by*

- **Listening and being guided by the research networking, scientific and academic community**
- **Turning trials into engineering reality**
- **Linking current commercial deployment work with the activities in the large scale field trials**
- **Assisting in standardisation process and interoperability**





## *The value of large scale field trials*

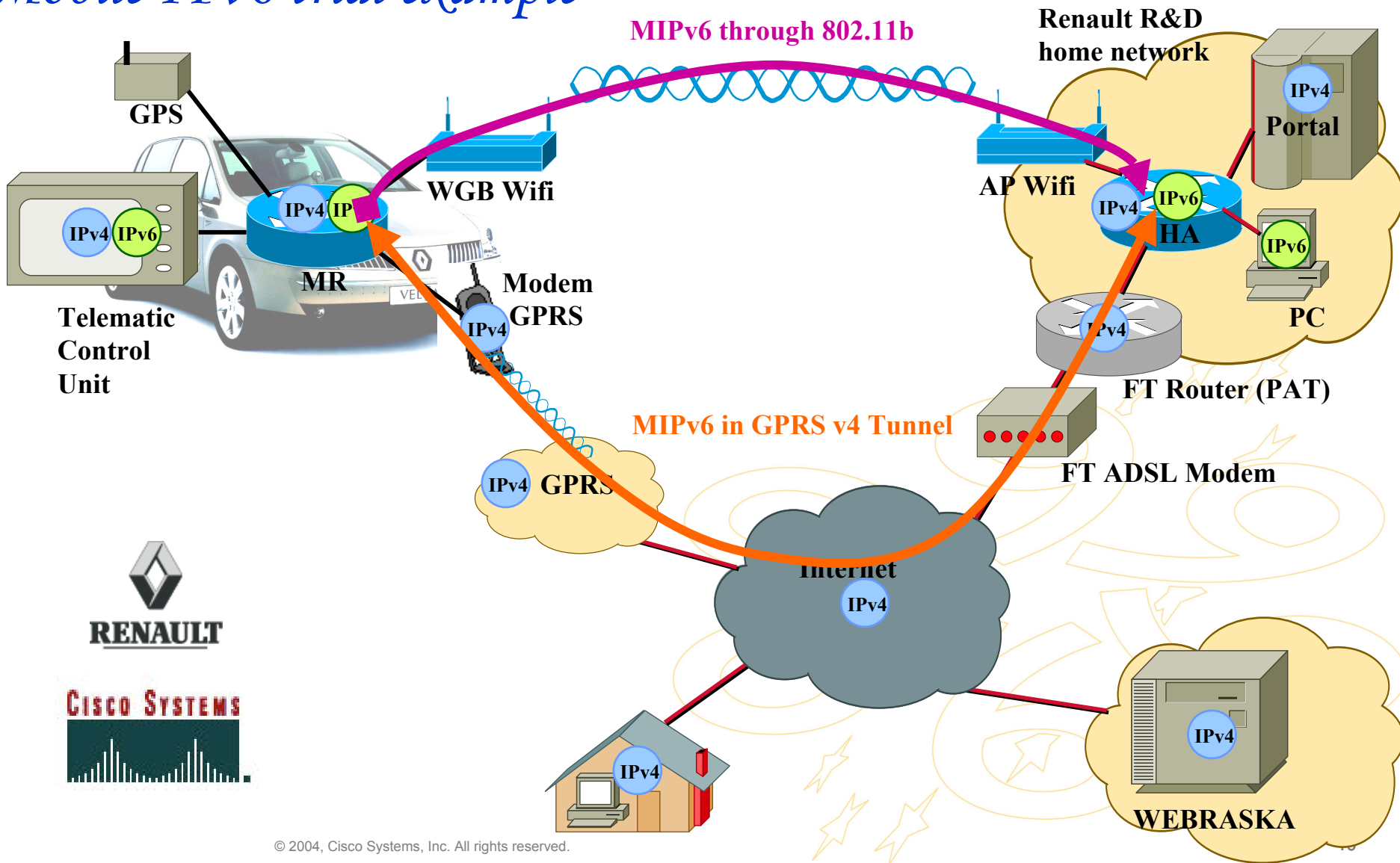
- *Exploitation of IPv6 large scale field trials means that the Next Generation of the Internet will be defined by them through -*

- **Experienced Cookbooks and Design Guides**
- **Active involvement of commercial SPs by research networks**
- **Sharing ideas within experienced Consortium**
- **Training, dissemination and dialogue with all interested parties**
- **Driving protocol standardisation**



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## Mobile IPv6 trial example





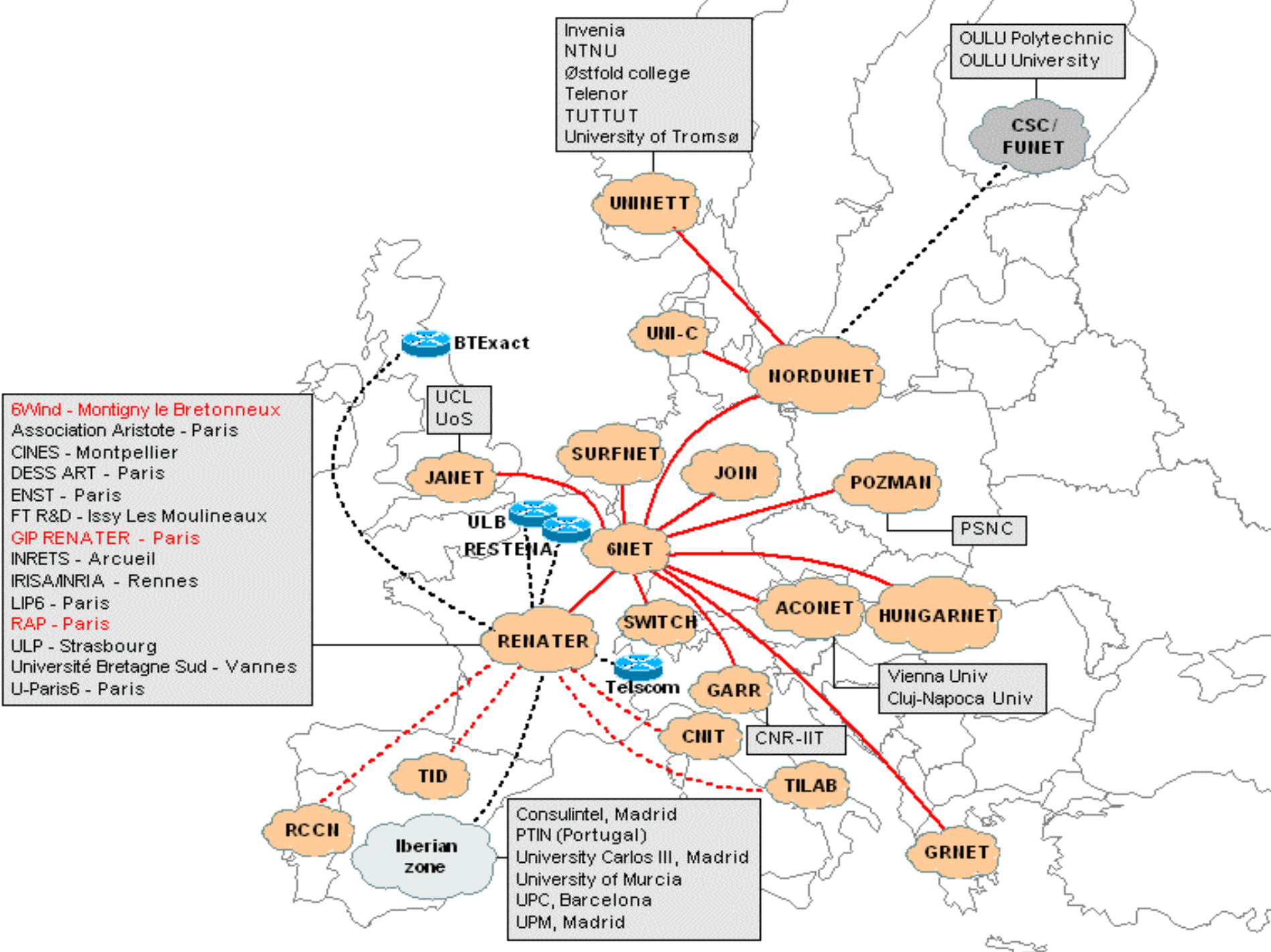
## *Leading edge Multicast work*

6NET pushes the boundaries of IPv6 technology innovation with IPv6 Multicast

The 6NET project has deployed the world's first large-scale international native IPv6 multicast network, spanning nine countries, and based on technology proposed by members of the project consortium.

The use of the technology known as 'Embedded RP' offers a number of advantages over previous IPv4-based multicasting techniques, particularly with respect to scalability across multiple domains.

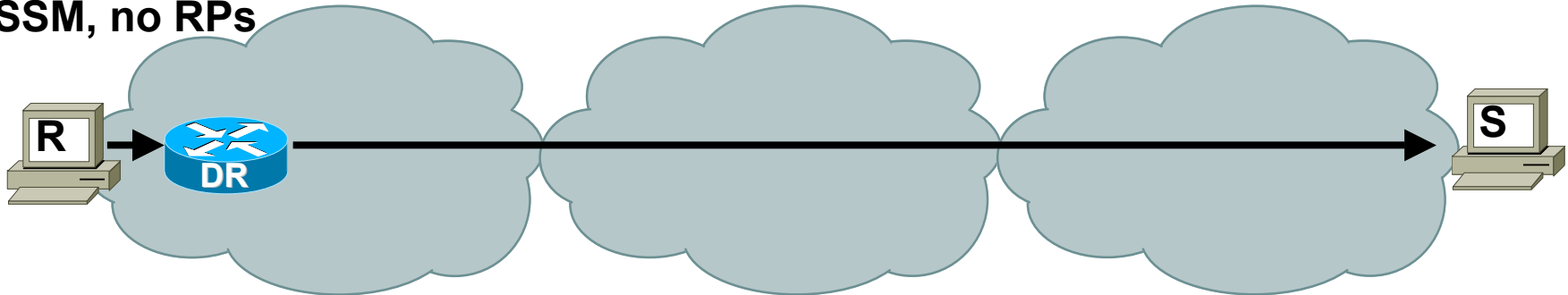
IPv6 multicast running on 6NET has already been demonstrated to great effect during technology conferences such as IST 2003, IETF 57 and the Global IPv6 Summit. 6NET is also pioneering other innovative multicast technologies that include SSM (PIM-SSM and MLDv2), BSR global and scoped RP mapping, bi-directional PIM, and an IPv6 multicast gateway that allows communication between IPv4 and IPv6 multicast networks.



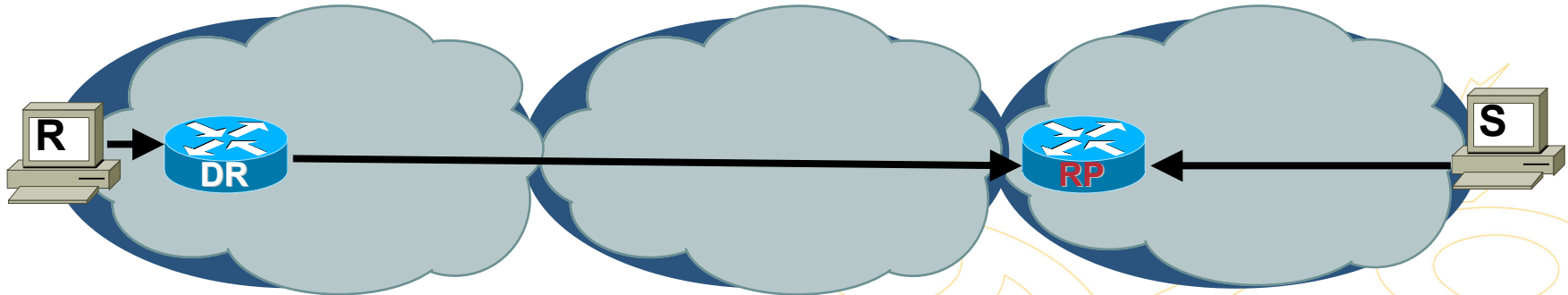


# IPv6 Interdomain Options

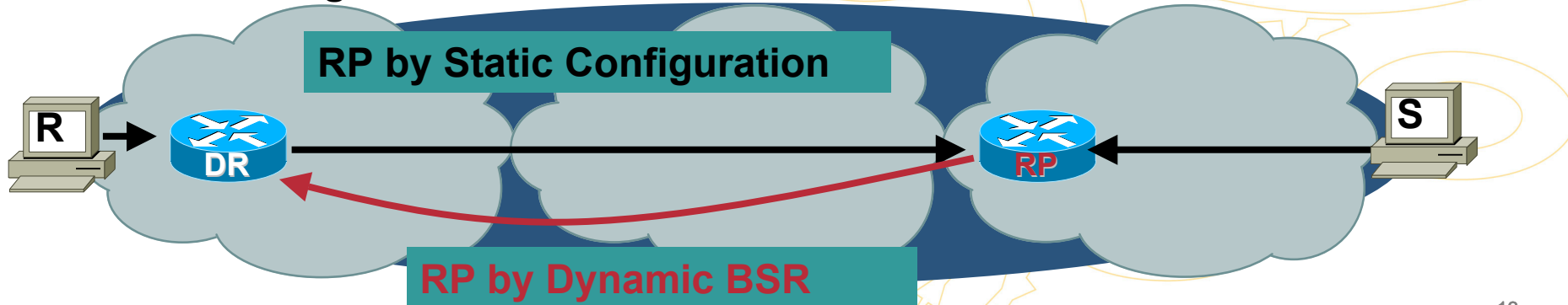
SSM, no RPs

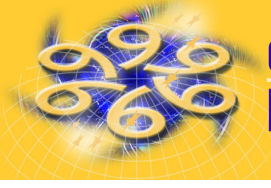


ASM across multiple separate PIM domains, each with RP, **Embedded-RP**



ASM across single shared PIM domain





# RP Distribution Methods

- Static RP assignment
- Boot-Strap Router (BSR)
- Embedded-RP
- Source Specific Multicast (SSM)





## *The value of large scale field trials*

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In summary as a result of the valuable work of IPv6 large scale field trials

IPv6 is now ready for general deployment in global networks

It is time to move from research to commercial deployment in public and private networks.