

GIP Renater

Videoconferencing over IP :

High end news ...

and some other news

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Content

Networking context today

Videoconferencing and IP multicast

Videoconferencing with H.323

Videoconferencing with VRVS

Videoconferencing with : others

**Videoconferencing over IP : what should we choose
?**

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Networking context today :

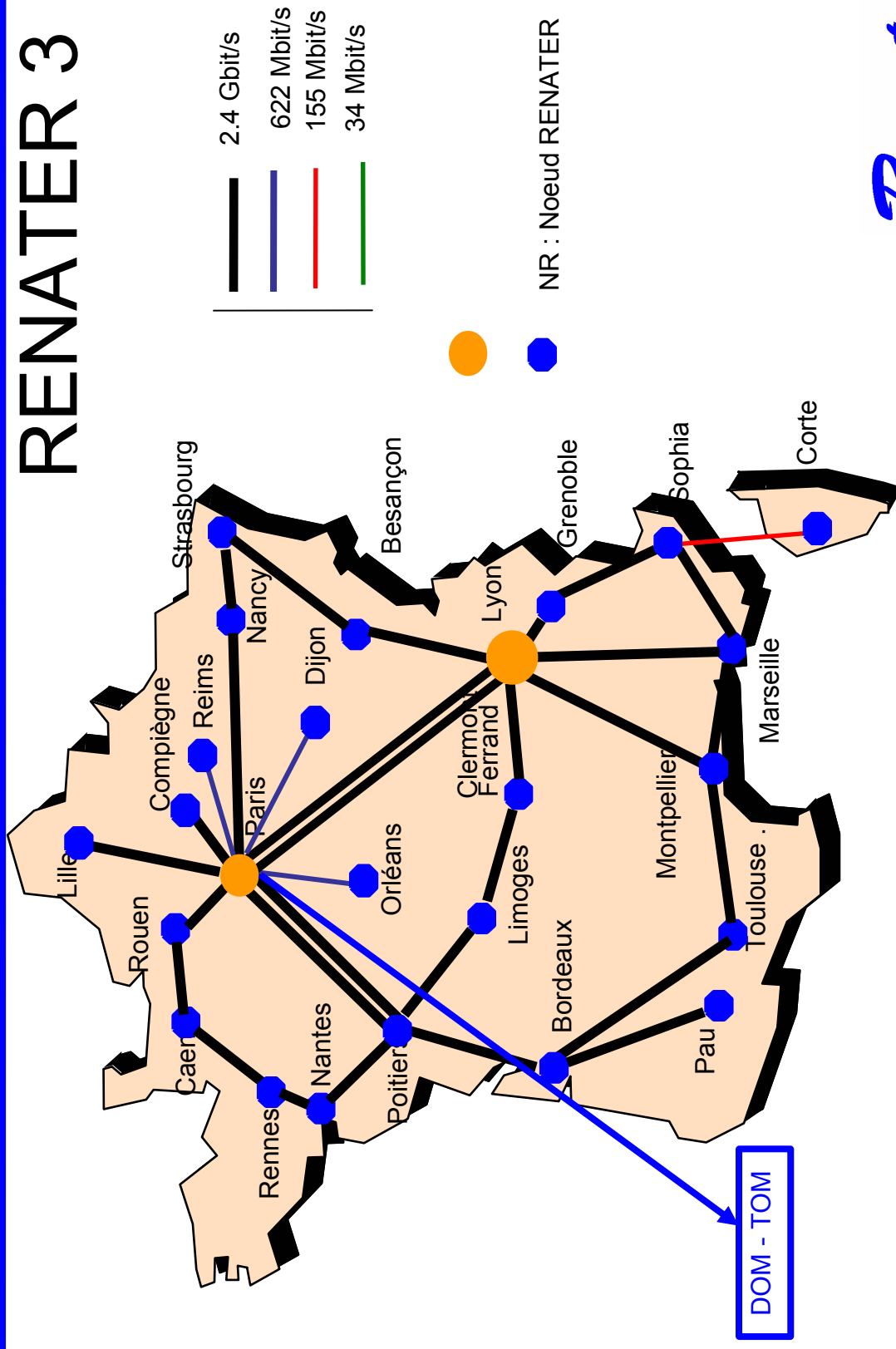
Networking context :

- **Wide band (multi Gbit/s) research networks**
 - RENATER, GEANT and others
 - Easily supports high quality videoconferencing
 - But in many cases the last mile problem is still here...
- **Increasing usage of IPv6 at least for some international events**

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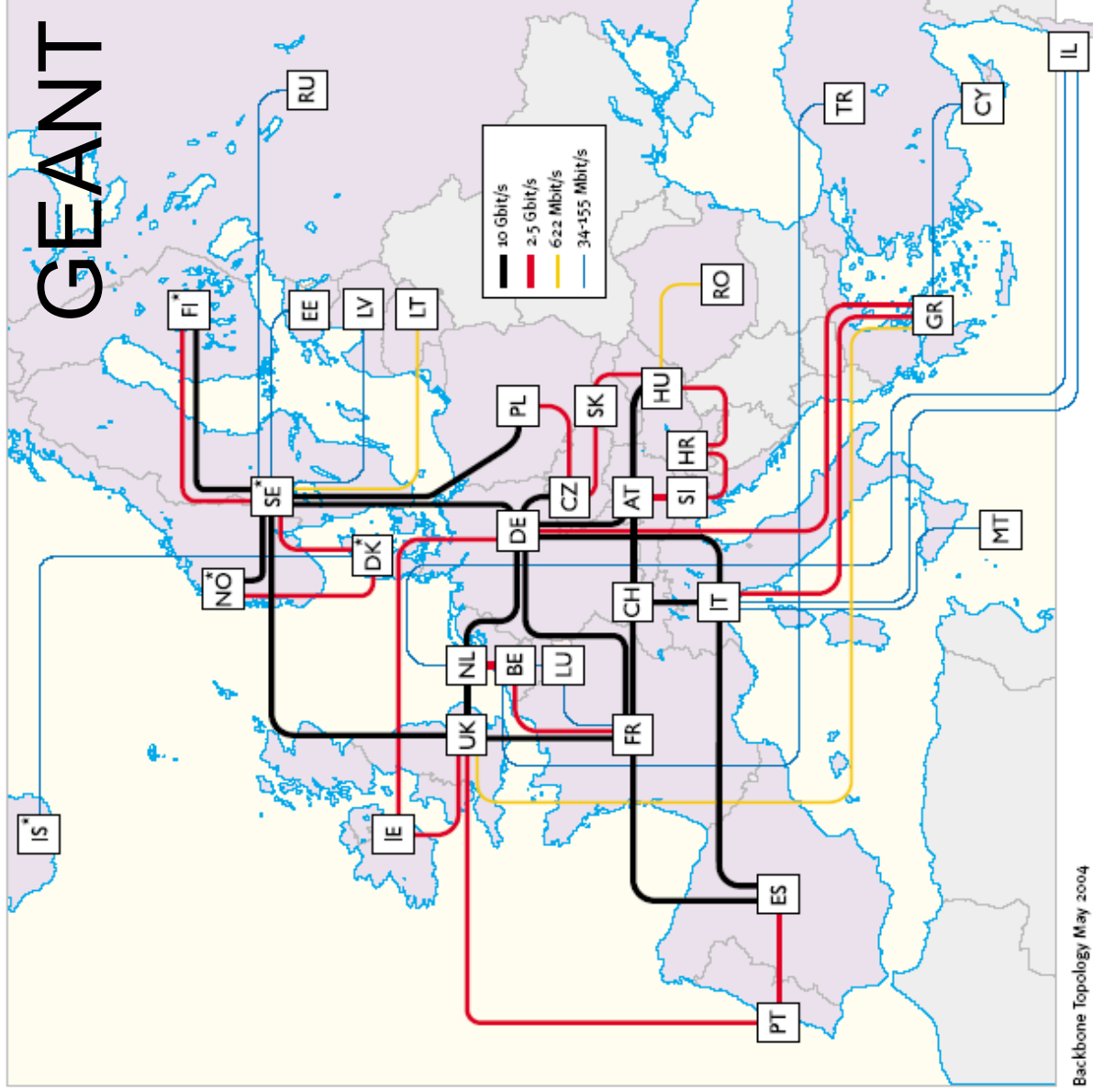
Networking context today : multi Gbit/s networks :

RENATER 3



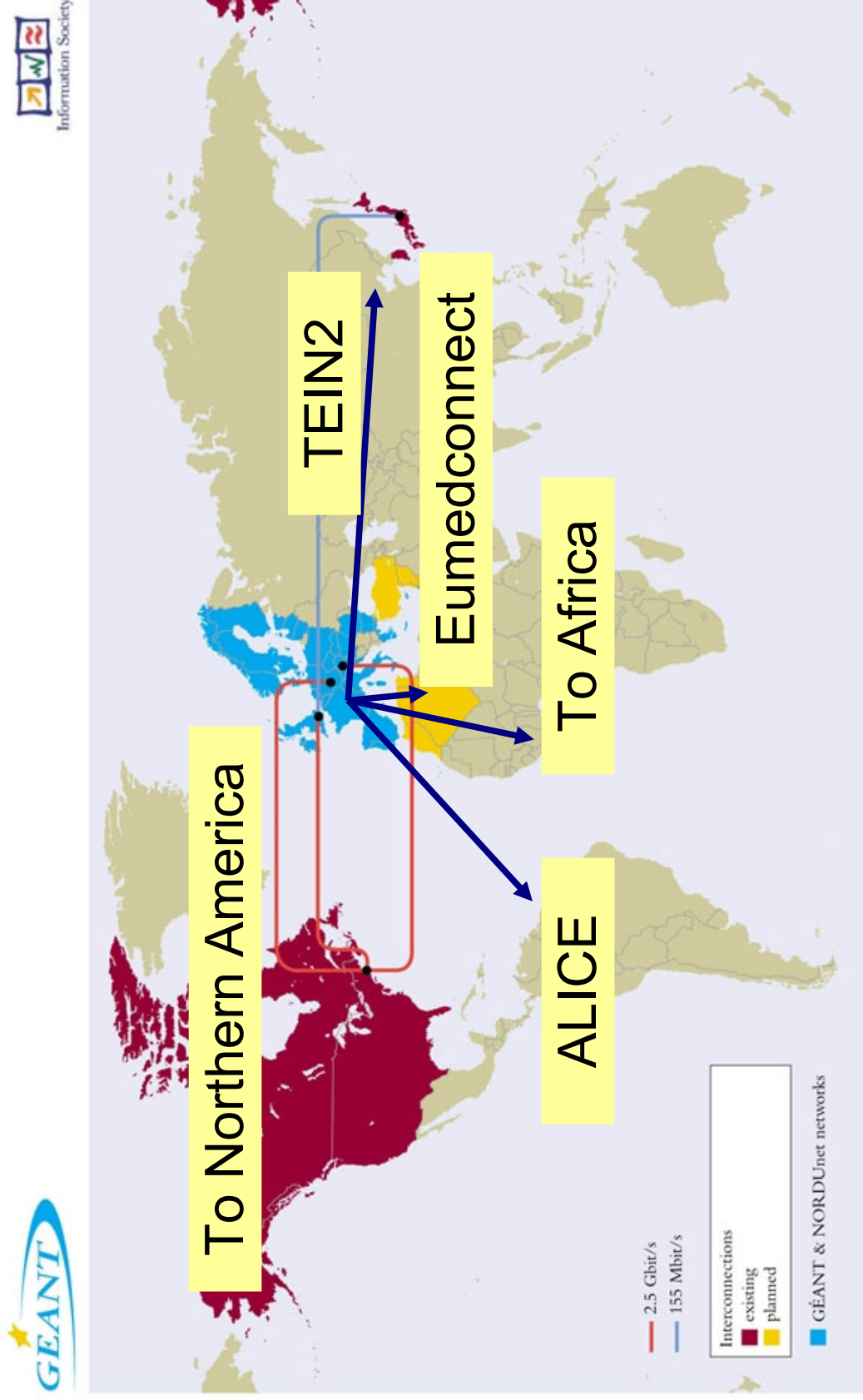
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Networking context today : multi Gbit/s networks :



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Networking context today :



Multi-Gigabit pan-European Research Network
Global Connectivity August 2002



For e-learning :

Videoconferencing and IP multicast :

- **Introducing high quality for video and voice**
 - ◆ Up to now : bad or medium
 - ◆ Now : Mpeg4 (with 4CIF image), voice encoding with MP3 or soon with MP4 audio.
 - ◆ cf.: <http://www.iis.fraunhofer.de/index.html>
- **Increasing usage of IPv6 at least for some international events**

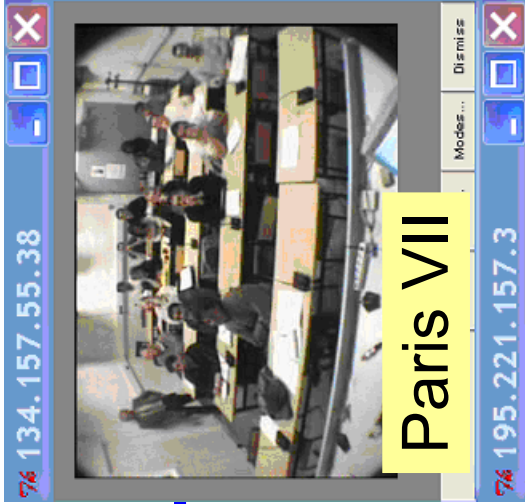
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For e-learning :

Technology: multicast IP

- **Services : audio, video, slides**
- **News :**
 - High quality video
 - Importance of IPv6
- **Examples : DIM (e-learning), Aristote seminars, RENATER talks ...**
 - Typically : 10 reception sites in France, 40 to 60 remote participants.

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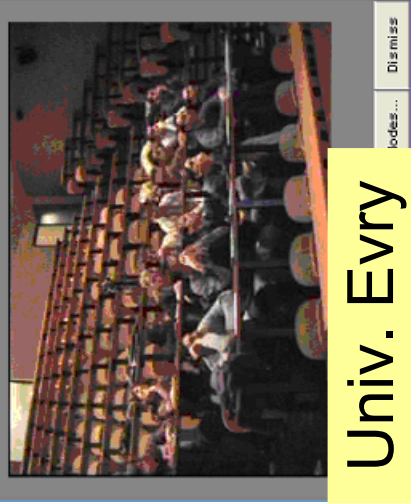
Paris VII



INT Evry



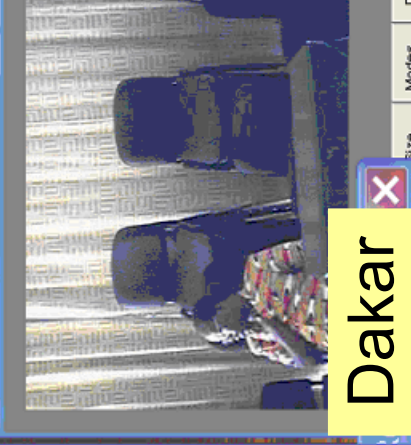
Valenciennes



Univ. Evry

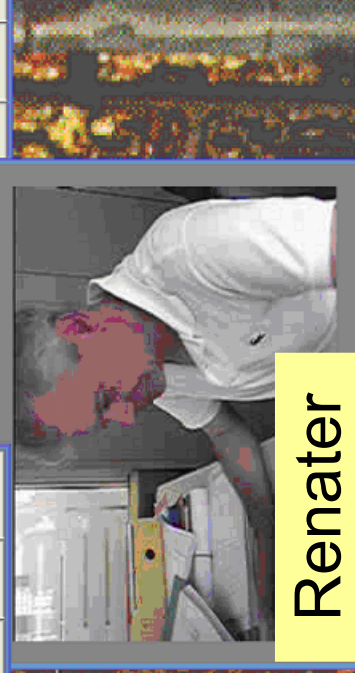


Dakar



Dakar

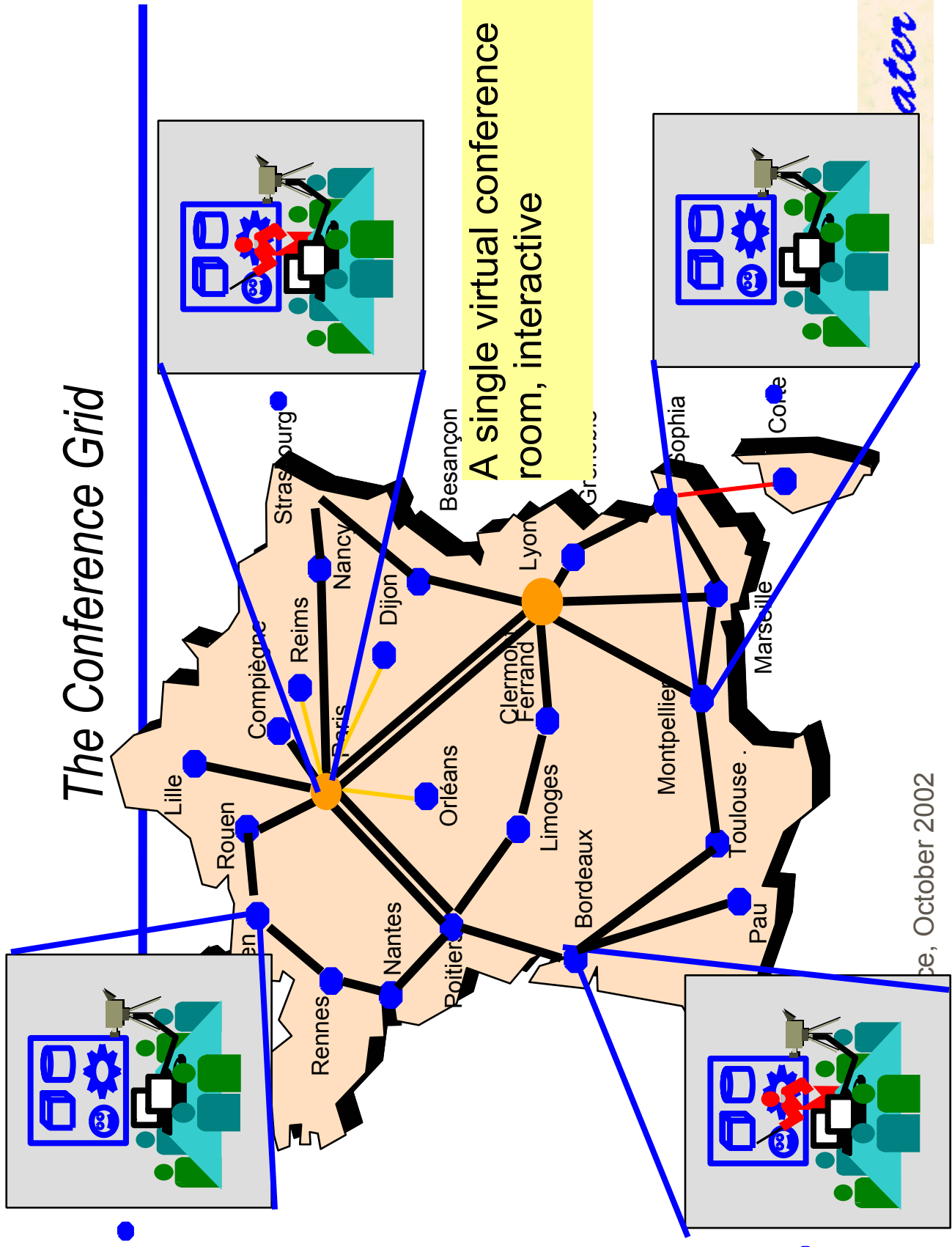
The opening session of
,DIM on October 1rst,
2002



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er

The Conference Grid



October 2002

ater

The Conference Grid : Aristote, January 22 , 2004



At Ecole
Polytechnique
(Paris) :
transmitting

At Caen : receiving



Towards high quality video :

On RENATER and GEANT : broadcasting high quality video

- Using standards, not proprietary : MPEG2 or MPEG4, 0.5 to 2 (or more) Mbit/s, multicast
 - DVD quality
 - Popular open source tool (for broadcast, live or from file, and as player) : VideoLAN
 - <http://www.renater.fr/GC/VideoLAN/Index.htm>
 - and www.VideoLAN.org
 - IPv4 and IPv6 (almost mandatory)!

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IPv6 : Paris – Dakar, June 2003 :

RAT v4.2.19: Untitled session

Listen 128.8 kb/s Talk 0.0 b/s

Speaker Vol 52 Gain 91

PREVDST
Administrator
ESMT (Dakar)
BONGO Kader
Jaime Olmos, NDC UdeG (IPv6, México)
Administrator

"Untitled session"
Address: 224.2.218.95 Port: 17362 TTL: 127

Options... About... Quit

Paris : IPv4

74 Salle

Video conference window showing participants in a meeting room.

74 224.2.160.11/58842

	Salle visio2000 (esmt) Administrateur@3fe:304:1001:z 4.6 f/s 64 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	PRESIDENCE (ESMT) Administrateur@3fe:304:1001:bf 6.4 f/s 34 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	cles4 (esmt) Administrateur@3fe:304:1001:z 2.7 f/s 124 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	BONGO Kader (esmt) kader@3fe:304:1001:4000:200 7.8 f/s 21 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	GIPRenater PREVDST@193.49.160.4h261 7.7 f/s 65 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	GIPRenater PREVDST@193.49.160.4h261 7.7 f/s 65 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	Jaime Olmos, NDC UdeG (IPv6) Jai me@3fe:82f0::201:2ff:fe29:a: 0.6 f/s 20 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...
	esmt (esmt) Administrateur@3fe:304:1001:1: 1.3 f/s 29 kb/s (0%) <input type="checkbox"/> mute <input checked="" type="checkbox"/> color info...

VIC v2.8ucl-1.1.3 Menu Help Quit

Dakar : IPv6

74 PRESIDENCE (ESMT)

Video conference window showing a meeting room with a map on the wall.

esmt (esmt)

Video conference window showing a meeting room with a map on the wall.

Workgroup meetings and e-learning :

Videoconferencing over IP with H.323 :

- **Going towards high quality**
 - ♦ (today : medium)
- **Difficulties :**
 - ♦ Very costly (regardless of quality)
 - ♦ Security (usually blocked by firewalls ; proxies are costly and complex)

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Workgroup meetings and e-learning :

With up-to-date dedicated equipments (terminal equipments, MCUs) :

- **It works nicely over IP, and quality can be really good**
 - ◆ Video : H.264 (with 4CIF image), equivalent (and similar) to Mpeg4
 - ◆ High quality voice codecs..

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Workgroup meetings and e-learning :



Easy to
interface with
ISDN
videoconferen
cing

It works nicely !

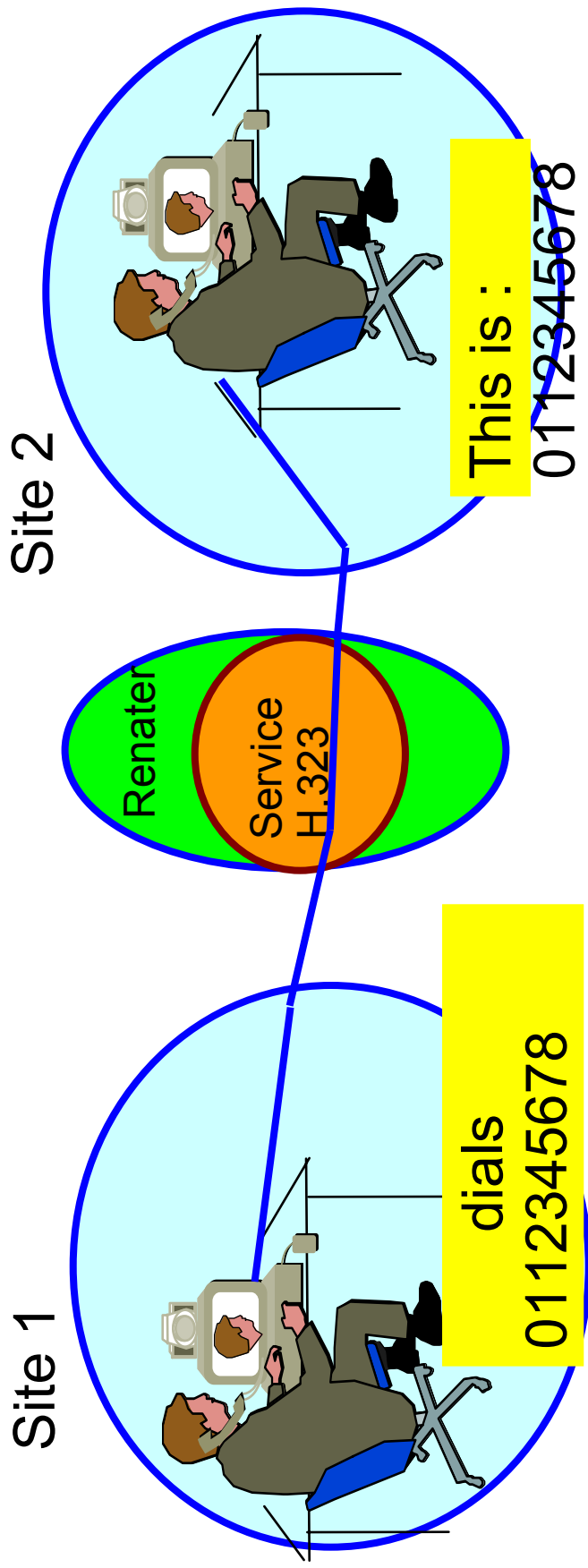
ewater

How to connect to another user or to a conference with H.323 :

- **By connecting directly to its IP address**
 - ◆ Most frequently used
- **Or by dialing its E.164 number after connecting to a local gatekeeper (which should be part of the GDS service).**
 - ◆ Not frequently used at present :
 - more complex at the administrator's level,
 - no clear benefit at the user's level : not conformant to the Internet philosophy or traditions...

Workgroup meetings and e-learning :

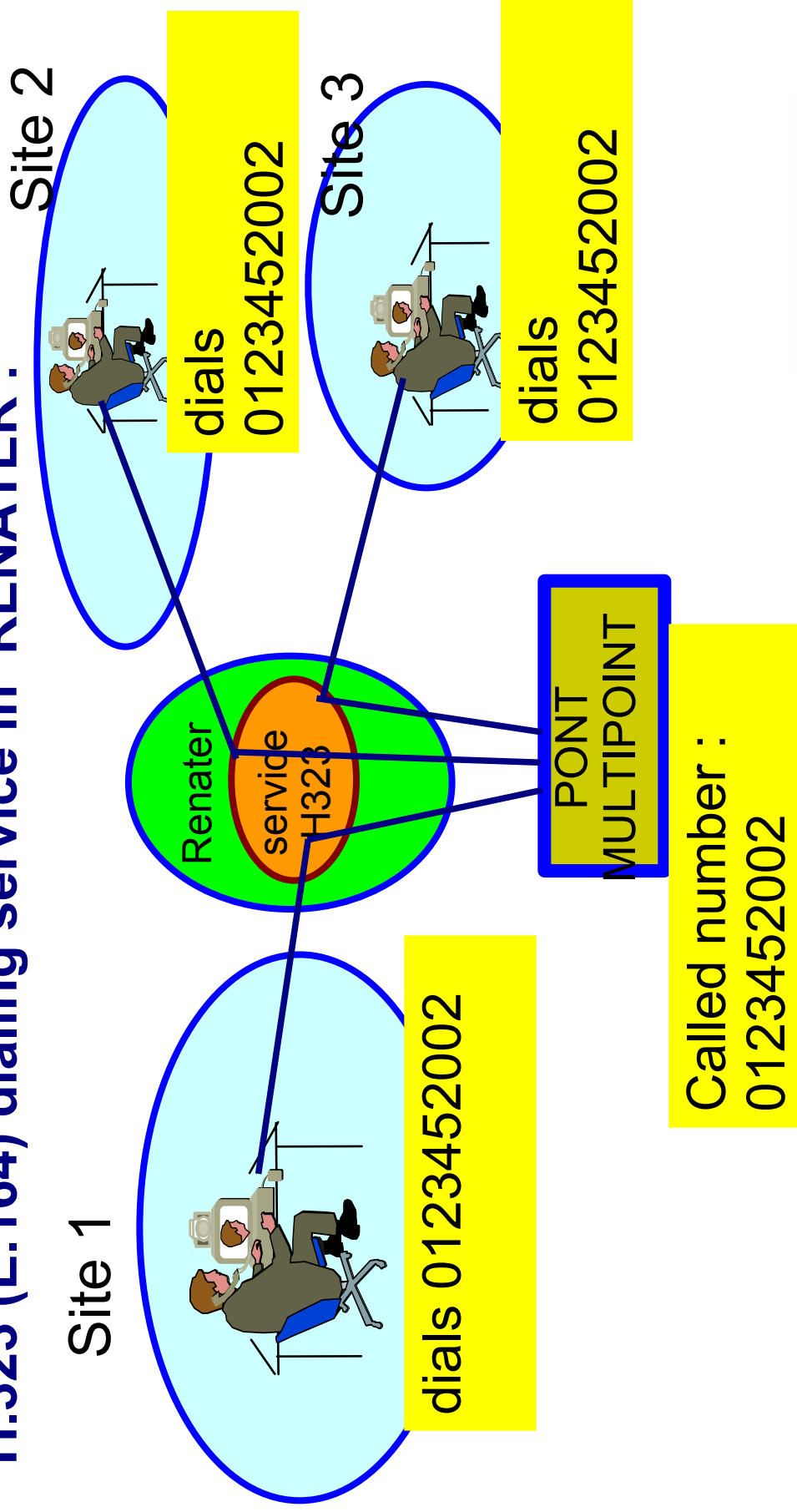
H.323 (E.164) dialing service in RENATER :



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Workgroup meetings and e-learning :

H.323 (E.164) dialing service in RENATER :



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H.323 : components for the future :

SIP

- **Replaces today's session set-up protocols.**
 - Today : yes for voice over IP (telephony). Not yet for videoconferencing..

H.350

- **Interfacing with LDAP**

IPv6

- **Will be mandatory, but implementations not yet here.**

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VRVS videoconferencing

- I do not have informations concerning :
 - ◆ Its future?
 - ◆ Does it go towards high quality ?

Others, becoming popular :

Others :

- **High end : quality : no**
 - ◆ Target is low to medium
- **High end : number of users : yes !**
 - ◆ Easier to use and cheap (with respect to H.323),
 - ◆ No security problems (or easier to solve)
 - ◆ Proprietary : not a real problem for users ?
- **Could well be predominant in the not-too-far futur !**

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Others, becoming popular :

Web conferencing :

must be click – and – play from within a Web page !

- **FVC**
- **CISCO**
- **And many others...**

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Strategies...

Which choice for visioconferencing ?

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Which choice(s) ? Depends on : intended usage, user community ...
There is NO single choice !

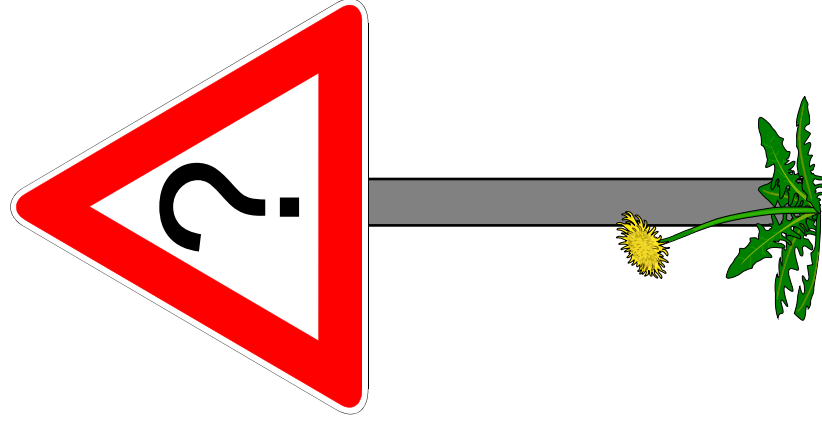
	Quality	Cost	IPv6
Video over multicast IP	Medium - High	Low	Yes
Video with H.323	Medium - High	Low - High	No
Video with VRVS	Medium	Low	No
Others, Web conferencing	Medium	Low	No

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Fin de la présentation

Questions ?

- **Answers (maybe) !**



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