

# ICT services eliminate distances : examples of applications

26 /11/04 ----- ETNO, Budapest

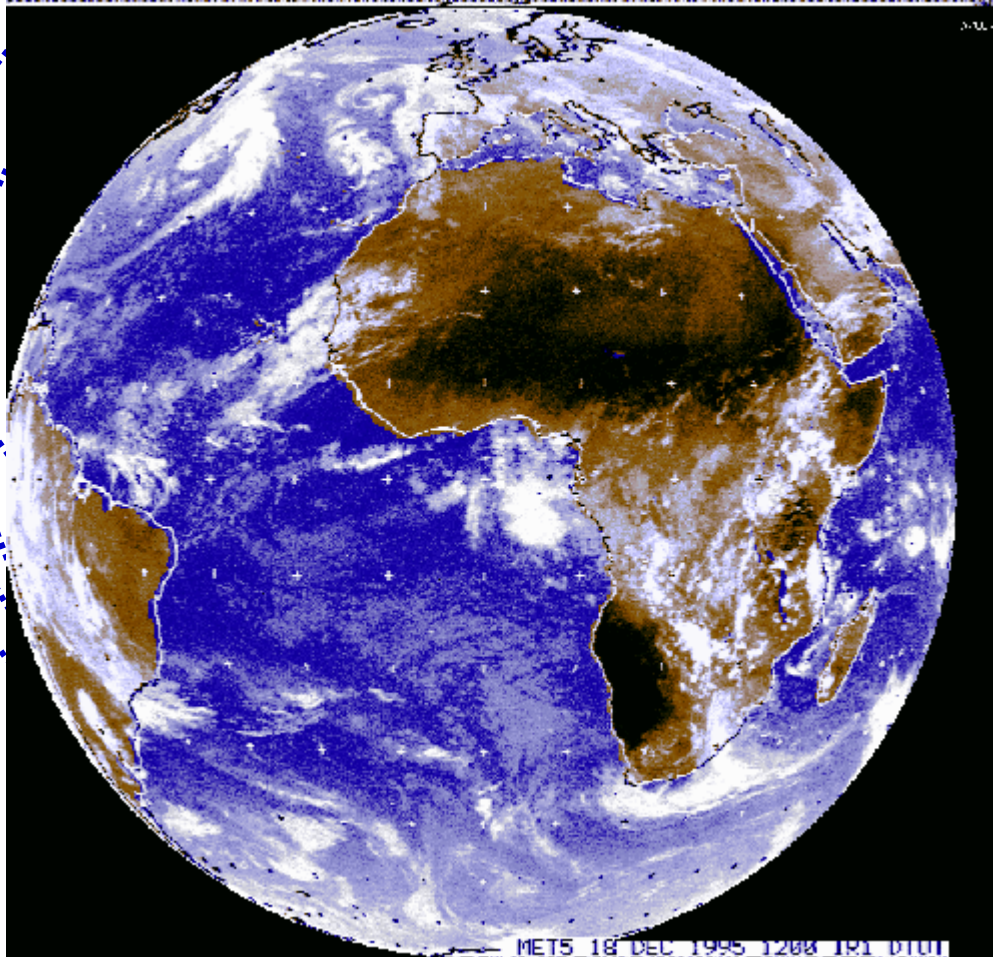
Temerson Jean-Marc

The present document contains information that remains the property of France Telecom. The recipient's acceptance of this document implies his or her acknowledgement of the confidential nature of its contents and his or her obligation not to reproduce, transmit to a third party, disclose or use for commercial purposes any of its contents whatsoever without France Telecom's prior written agreement.

(Unrestricted)

- S Distance : some useful definitions for our purpose
- S Examples of applications for ICT services
- S Did we, or do we, or will we ( or not, or partially) eliminate distances with ICT services ?

# Do ICT services really eliminate distances ?



(Unrestricted)

# Distance : $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]^{1/2}$

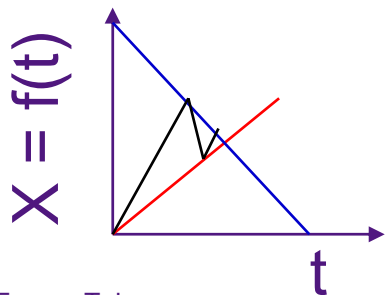


?

**S** Mathematical (Euclides) useful definition to solve this problem :

**Q**"Two trains, distant from 200 km are running one towards the other at a common speed of 50 km/h. A fly starts from the front of one train at a speed of 75 km/h until it meets the second train. At this time, it makes a U-turn, until it meets the first train , then makes a U-turn , until it meets the second train and so on, until the trains collide and kill the fly.

**What is the total distance flown by the fly ?" (John Von Neumann, (28 /12/ 1903 [Budapest] – 8/02/1957 [Washington])**



# Mathematically or physically



- S Another measure of distance is given by **time**
- S Another one is given by **speed**, for a given time
- S Both refer to **physical space**, our " **classical** " sense
- S But we can also use the " **space-time** " concept
- S Then comes the concept of **teleportation**...
- S Other way to think : **energy**, if mass , weight or forces are decreased, for a given distance. The "**dematerialisation**" concept also comes in...
- S Other meanings in pattern or voice recognition and more generally in **signal processing**





# But socially or in ethology



S Distance used in socioprofessionnal categories

S Distance used in ethology

Q Specific space between individuals of the same kind

– Swallows 10 cm , pigeons 20 cm

– A new , non " 3D " approach also suitable for us ?

S Is the title of this talk still true there ?

Q And here comes the notion of digital divide...

Q Consequence of digital inclusion ( cf matter/ antimatter)

S Geographically or socially

Q cost , technical barriers, access for handicaped people, non educated people, island, moutains....) are real distances

S Can we reduce also these distances with ICT ?



# Focussing on some service areas



## Healthcare

- ▶ Remote ultrasound exam
- ▶ Chamade
- ▶ Gluconet

## Transportation

- ▶ Interactive regulation
- ▶ Intermodal services

## Citizenship

- ▶ E-poll
- ▶ Telepresence wall
- ▶ Remote advisor

## Education/Culture /Tourism

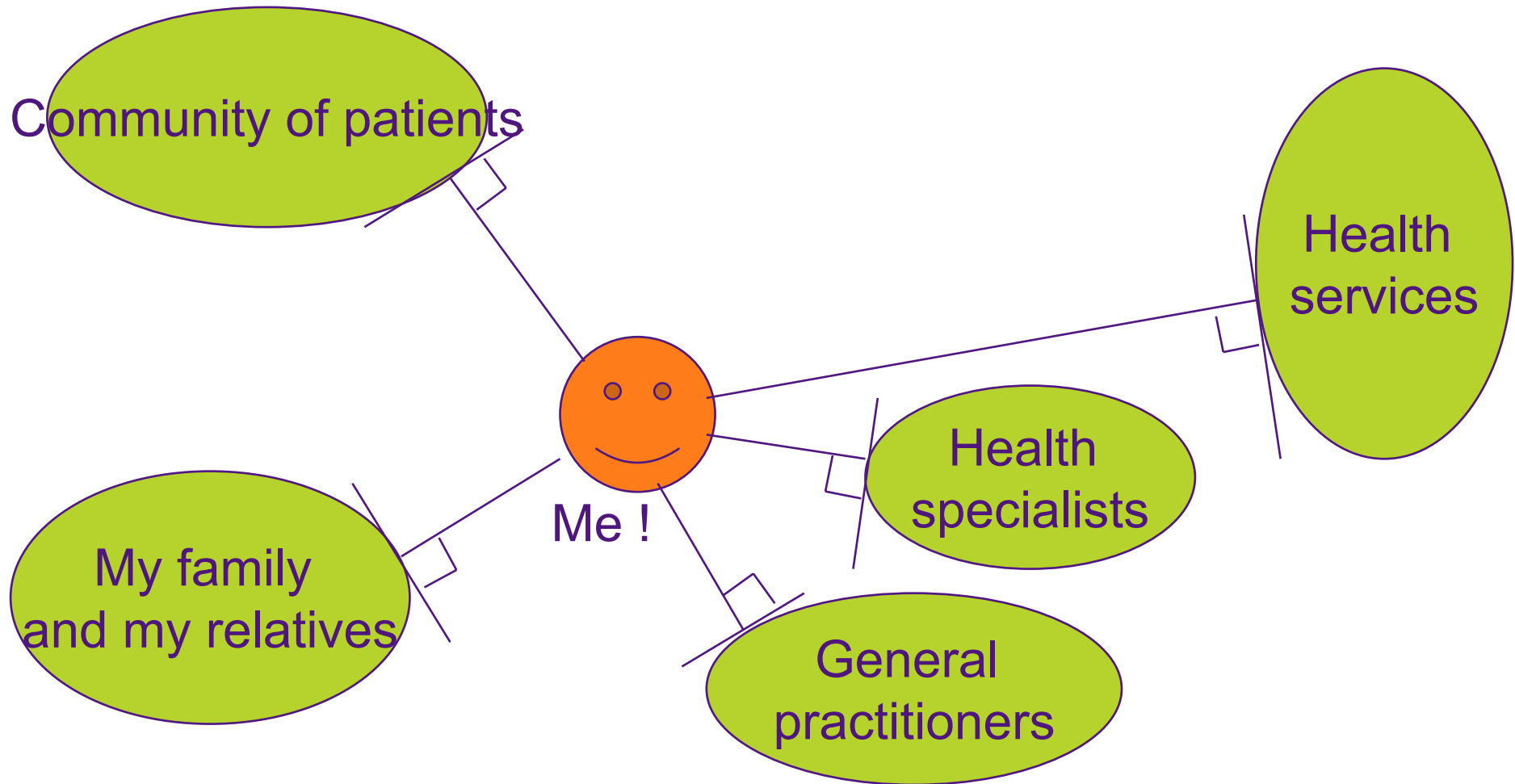
- ▶ Educaviz
- ▶ Cli-n-learn
- ▶ Quintesens<sup>®</sup>

## Teleactivities

- ▶ Photomessaging for business users
- ▶ Mobile real time datasharing



# Distance to healthcare



(Unrestricted)



# Distance to healthcare with ICT



- S Fixed telephone lines allow home telecare services
- S Mobile phone services enable patients to travel rather than staying at home or at hospital
- S Internet services make them closer from each other
- S Community of patients less isolated ( medical portals)



# Remote ultrasound exam

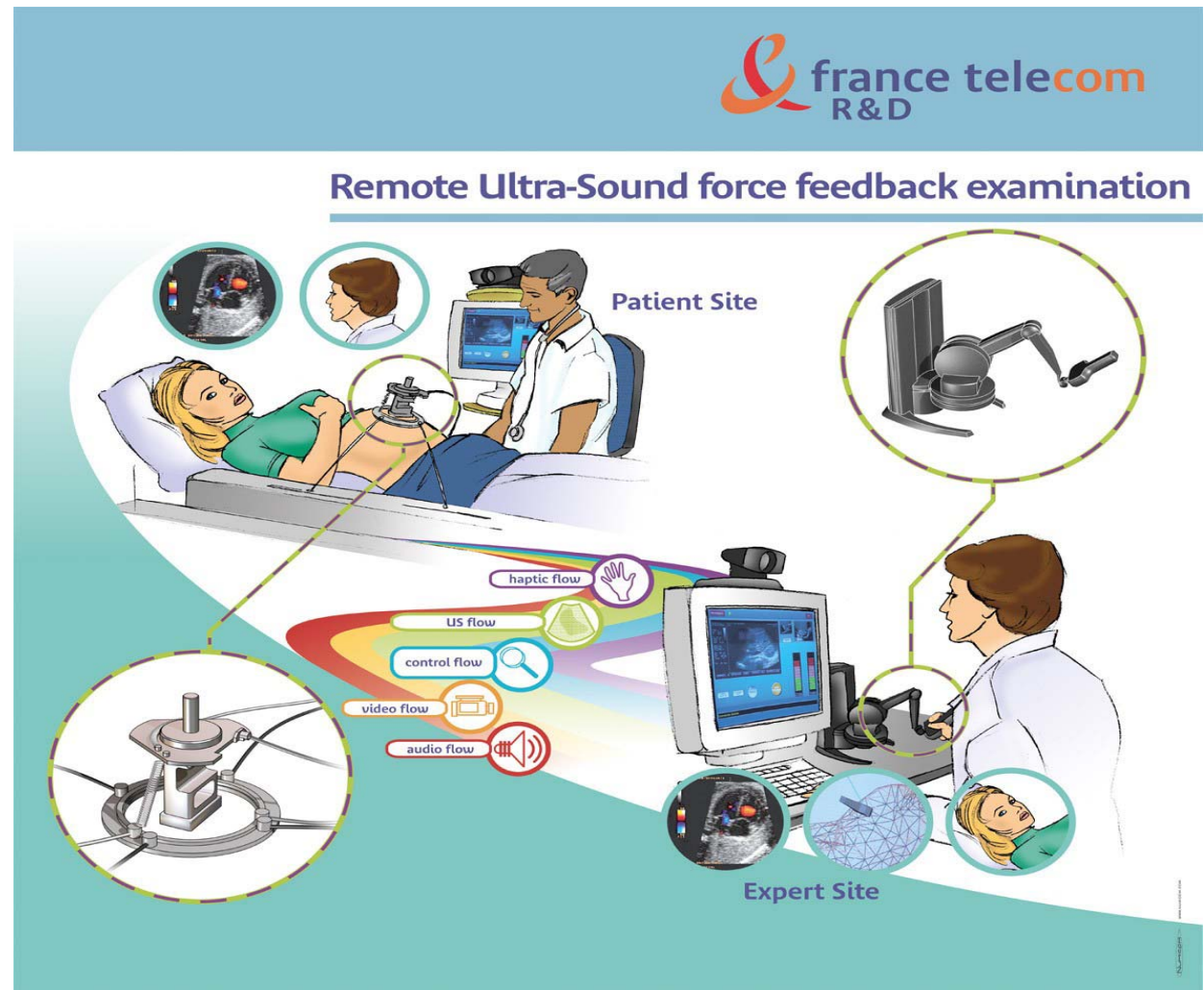


Achievement of force  
feedback remote  
ultrasound exam...

Same level of  
care wherever we  
live, cost saving  
by reducing  
travelling

Real time  
transmission

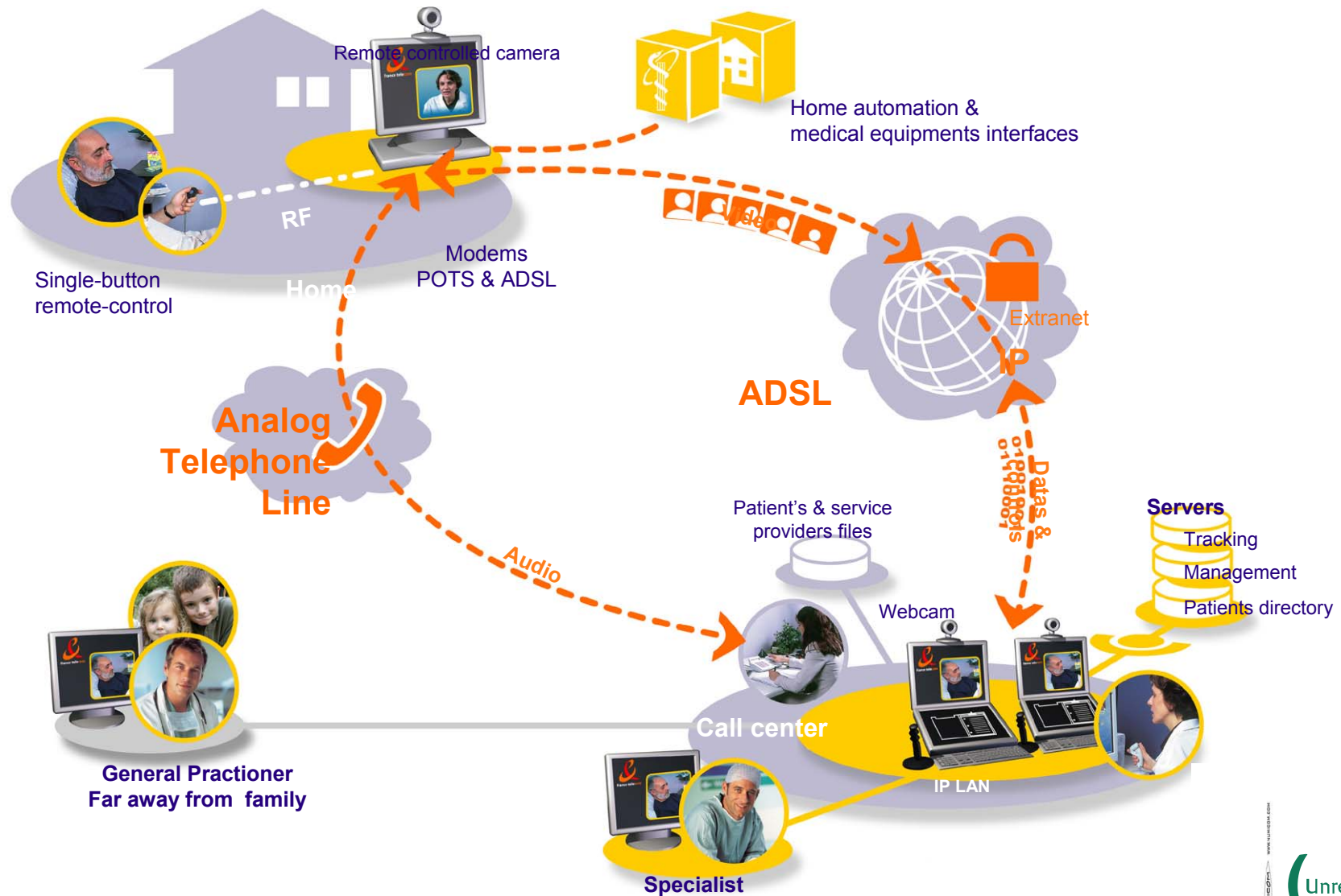
Image, sound,  
medical images  
and...touch



# An innovative home telecare service



# Chamade, general overview



www.francetelecom.com

(Unrestricted)

# A mobile health service for diabetics



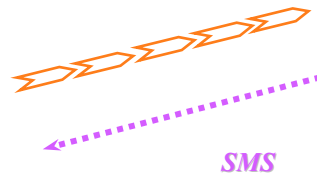
# Gluconet service



once a week



Mobile network  
GSM/GPRS



**Diabetic patient**



**Patient records Server  
(based on XML)**



3

Web browser



**Diabetic specialist or  
General Practitioner**

(Unrestricted)



# Distance to knowledge, education, culture



- S Books , libraries, and culture **more accessible** via Internet ?
- S Definitions, translations closer with web search engines
- S **Distant learning** used in education, within enterprises for some professional trainings
- S Good **trade off** can exist between physical distance and access to information for training purpose
- S Examples : On line library visit , Clic -n- learn, Digital workspace ,...



# On line library visit



- S Online service to visit and discover industrial or cultural locations
- S A service for students and teachers...
- S Including chat, taking notes, exercises, personal visit pacing, etc.



# al-Idrîsî la Méditerranée au XII<sup>e</sup> siècle



## Entrée de l'exposition

La Bibliothèque nationale de France présente une quinzaine d'expositions par an. La plupart sont accompagnées d'ateliers, de dossiers pédagogiques et de visites spécifiques pour les élèves et les enseignants.

Pour la première fois, une exposition peut se visiter à distance.

Tout est prechargé



se situer a voir annoter dialoguer visiter

Plan exercices aide quitter



< masquer tout

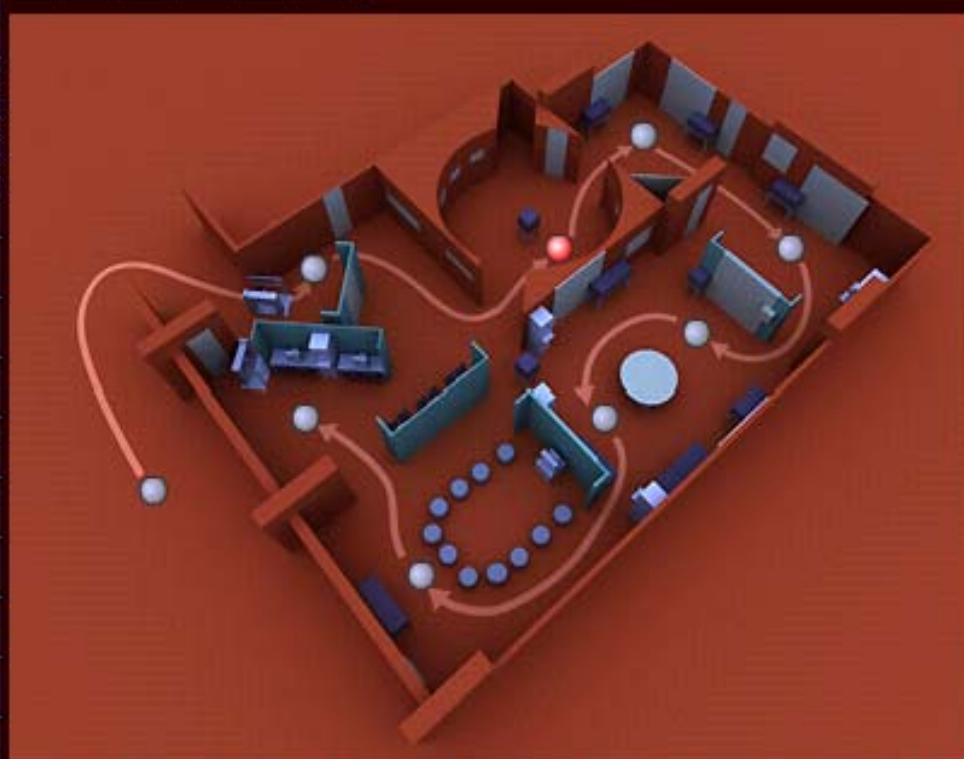
< les documents  
< les salles

Inrestricted



al-Idrîsî  
la Méditerranée  
au XII<sup>e</sup> siècle

La géographie  
d'al-Idrîsî,  
le livre de Roger



### La géographie d'al-Idrîsî. Le livre de Roger

Rédigée en langue arabe, vecteur d'unité et de continuité d'une civilisation musulmane épanouie, la Géographie affirme pleinement la gloire d'un prince chrétien serviteur du savoir. La part du texte est prépondérante et sert à décrire ce que la carte ne peut montrer : particularités géographiques ou architecturales, nature des activités dans les villes, mais aussi dans les campagnes, itinéraires commerciaux. Les



se situer a voir annoter dialoguer visiter

Plan exercices aide quitter



< masquer tout

< les documents  
< les salles

Unrestricted

# E learning : clic-n-learn



- S E learning within France Télécom : clic-n-learn
- S Internal use , but also by business customers
- S Virtual class with or without trainer
  - Q Synchronous or asynchronous ( on line with hotline)
  - Q Webcam, headphones, intranet and internet access
  - Q Plug in and softwares, content for several training subjects
- S Geographically close : 400 clic-n-learn spaces
  - Q Thus, close to employee's work location
  - Q Less travels, less wasted time, less accidents...
  - Q 50% trainings will use Clic-n-Learn within F.T. group in 2006



# Distance to work : ICTs...



- S** Reduce distances by decreasing the number of trips or avoiding them ( services for car pooling...)
- S** Ease activity distribution over land rather than concentration in cities (high rate broadband network).
- S** Teleworking reduces "distances" ( traffic jams, energy, time , risks of car accidents ) but teleworkers are more "socially distant" to their colleagues, their management...
- S** The occurrence of digital images and mobile services create new mobile cooperative work like teleexpertise using fixed images ( insurance, building sites,...)





# Distance to tourism



- S Seems contradictory (travelling seems necessary for site tourism )
- S But more efficient **information gathering** results in better time optimisation ( less distance, more on site seeing)
- S Example : Quintesens<sup>®</sup>, targets teleportation and ubiquity
  - Q Uses sensory retransmission technologies
  - Q 3D vision , voice recognition force feedback touching, diffusion of fragrances, spatial sound,...
  - Q Promotes cultural heritage and tourism



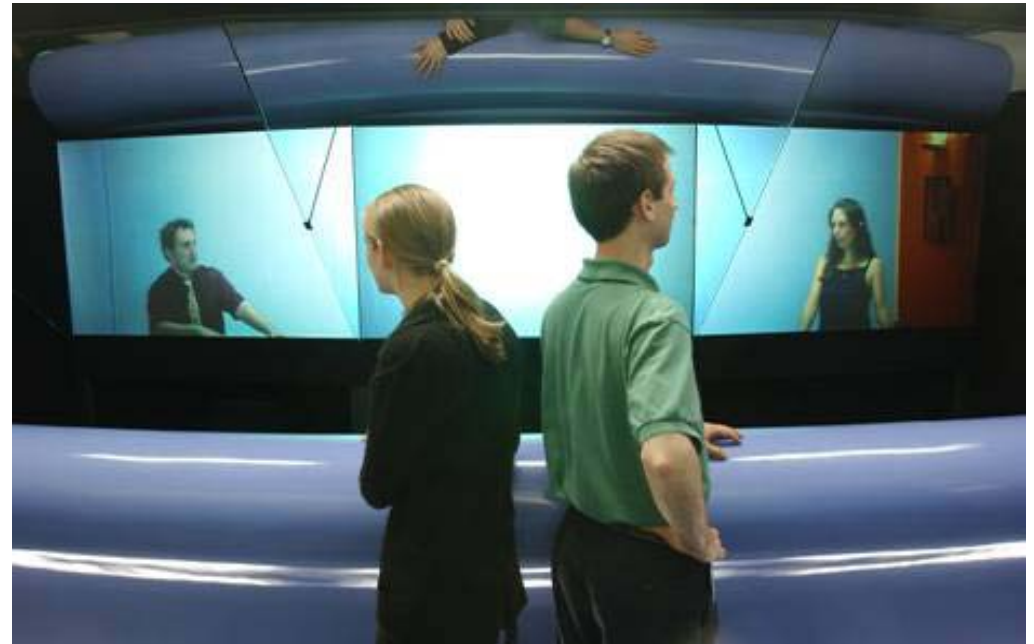


# Distance to citizenship = d ( citizen , citizen)

- S Access to administrative and public information
- S Distant income tax form filling etc...
- S Participation to local decisions and meetings
- S Electronic voting in the frame of a European Project



# Telepresence wall



« An open space for discussions addressing the needs of meetings, informal discussions, special events... »



# Remote advisors



S Here again, target is telepresence

Q Real size pictures

Q Spatialised and synchronised sound

Q Noise extraction

Q VHS Video quality

Q Eye-to-eye contact

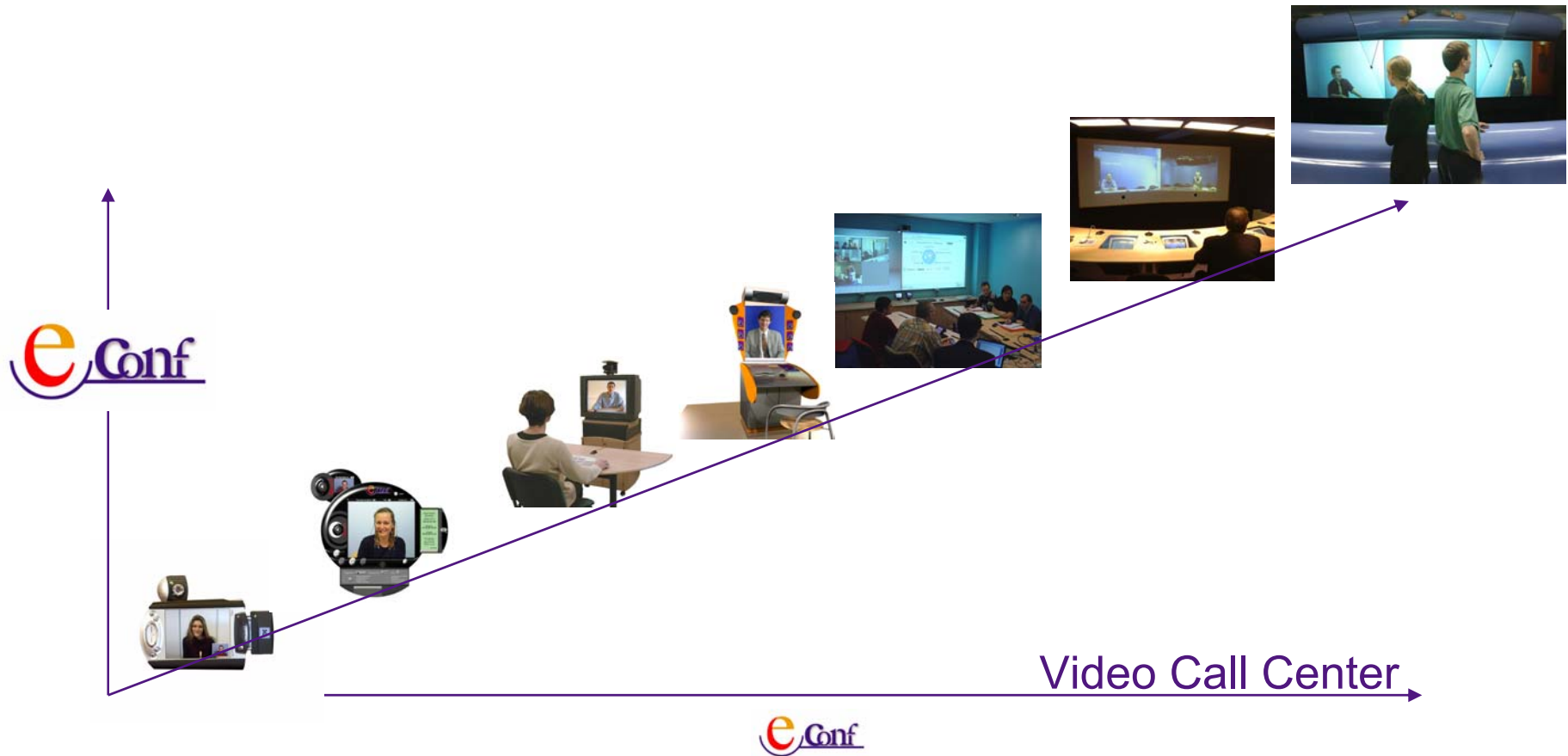
Q "All-IP" solution :

256 Kbit < Bit-rate choice < 1 Mbit (or +)



(Unrestricted)

# A wide range of services





# Reduce "accessing difficulties"



- S Handicaped persons
  - Q Voice monitoring
  - Q Real time translation :
    - Text,
    - Signs language



(Unrestricted)



# Electronic voting : E-poll project



- S Design, develop and field test of a complete electronic voting system that enables voting from any polling station
  - Q Touch screen, fingerprint recognition, wireless network
  - Q Private Virtual Network (on source filtering), firewall,
  - Q Enciphering 2\*2048 bits, https protocols, smart cards



(Unrestricted)

# Transportation and Teleactivities

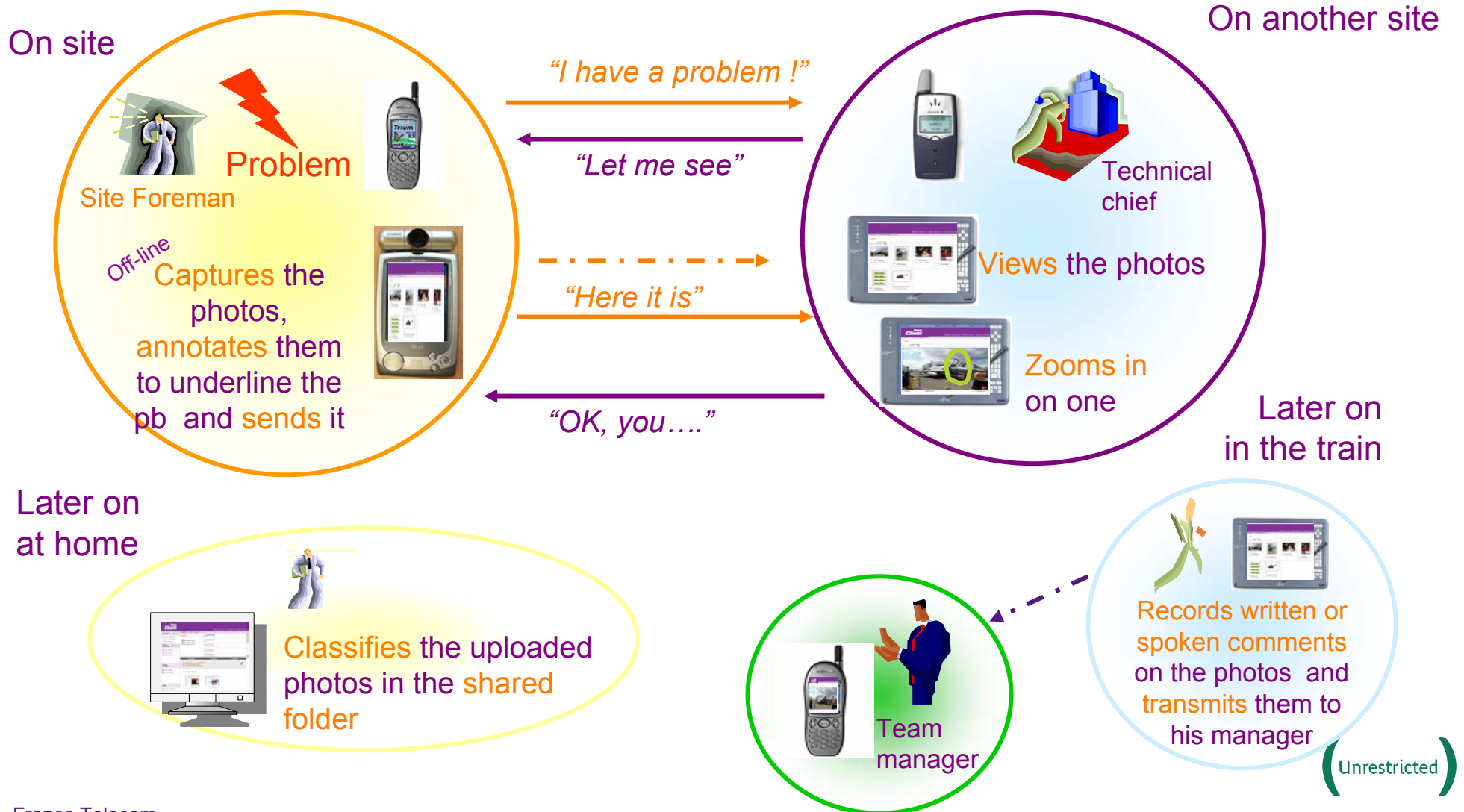


- S Car pooling services
  - S Integrated intermodal traffic management
  - S Interactive regulation for ambulances
  - S Urgent medical mobile vehicles
- 
- S Photomessaging for business users
  - S Mobile real time data sharing service





# Photomessaging for business users



# A mobile real time data sharing service



**S** Thanks to this service, **two** or **many** **fix** or **nomad** **workers** will be able to speak and in the same time



**QRead** a Word.. PowerPoint ...document or watch the same picture **together**

**QPoint out** details of the documents and **annotate** them (write, draw...)

**QShare a whiteboard**

**QSave, print** the documents and whiteboards presented

**QSave** the exchanges

**QDefine the profiles** (read, write) of the different participants





# Conclusions (1) : we saw several "distance" definitions...

- S From Patients to their general practitioner, care, hospital , families, relatives, ...
- S From people to knowledge, education, culture (on line libraries, education on line, digital workspace ...)
- S From citizens to citizens, to their local administration and to decisions pacing their local life and rules
- S From tourists to the sites they want to visit and discover
- S From workers to their working location ( teleworking)



# Conclusions (2) from previous services



**S** First, we see that ICTs

**Q**Modify our way of living, of working through a continuous trend towards distance shortening and dematerialisation

**Q**Modify, the notion of town, land, company, citizenship, etc.

**S** Then that the notion of distance

**Q**According to previous enlarged definitions and contexts, will slowly disappear with present or future ICT but, however...





# Did we ( did'nt we) eliminate distances



?

**S** If , in some cases we do eliminate distances ...

**Q** We can also, sometimes, increase others ...

**Q** So, more generally, we **optimize** them or try to do so

**S** To push **ICT services** towards **sustainable development**

**Q** Deleting the so called **digital divide**

**Q** Shortening **access** and **distances**

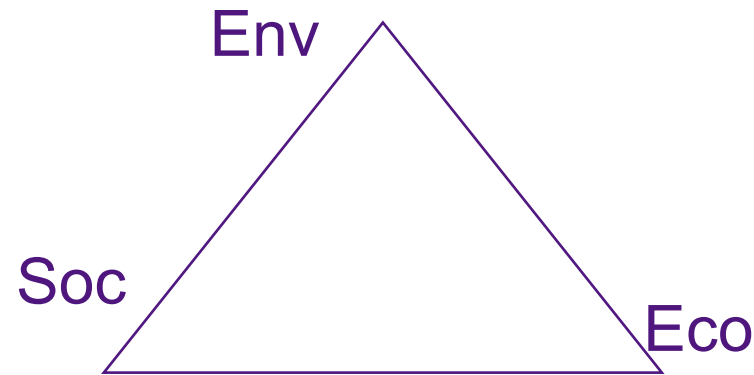
**Q** For citizens, customers, companies to their vital and life services

**S** We pay much attention to the use of these services

**Q** We started to "**measure**" **their effects** on society, their impact on sustainable development with a screening method.

(Unrestricted)

# Triangle of interactions and screening method



- S Environmental – Social – Economic
- S Screening method : all major ICTs services projects listed and checked with criteria linked to the pillars of sustainable development
- S Well balanced projects reduce distance with centre of gravity



# Köszönöm !



S Thank you for your attention

S Ευχαριστω Πολι

S Danke schön

S Gracias

S Grazie

S Dziekuje

S Dank

S Kiitos

S Tack

S Merci

S Köszönöm

S Dankon (esperanto)

S Esperanto a tentative **communication** language  
language **reducing distances** between other languages  
and peuples ?

