FET PRESENCE
Brainstorm on November 13, 2003: some views.

Danielle PELE, Dominique PAVY

Olivier GACHIGNARD, Christian BOUVILLE

France Télécom R&D

Le présent document contient des informations qui sont la propriété de France Télécom. L'acceptation de ce document par son destinataire implique, de la part de ce dernier, la reconnaissance du caractère confidentiel de son contenu et l'engagement de n'en faire aucune reproduction, aucune transmission à des tiers, aucune divulgation et aucune utilisation commerciale sans l'accord préalable écrit de France Télécom R&D

diffusion contrôlée

Some views for the brainstorm:

- **Inter-personal (human/human) communication and collaboration**
  Improve presence through seamless mixing of virtual and real people in real and 3D virtual environment over fixed and mobile configurations
  - Business and home applications
    - Conerencing, Collaborative work or entertainment, sharing events (broadcast) and content (CAD)

- **Human/Machine (or service) interface**
  Improve presence through believable autonomous Embodied Conversational Agent
  - Human interaction through Natural language and natural gesture
  - Emotion/expression understaning and synthesis (speech and visual)
  - Personality and mood analysis and synthesis
  - Non Verbal Behavior linked to the dialogue and the environment (content and context)

Some views for the brainstorm:

- **Ensure telepresence functionalities over a broad class of networks and terminals**
  - Scalable content representation and coding (including audio, video, 3D, content and user representation)
  - Modular equipment
  - Adaptation mechanisms
- **Multimodal non intrusive sensors and interfaces**
  - For inter-personal communication between people (either with virtual representation)
  - For HCI
- **Presence enhancements accessible to everyone with special care to handicapped persons**
- **Crucial importance of testing (ergonomy, psychology), implication of artists for view of the future (mock up, WoZ)**

Spin-3D platform

For working and communicating together in real time through the networks

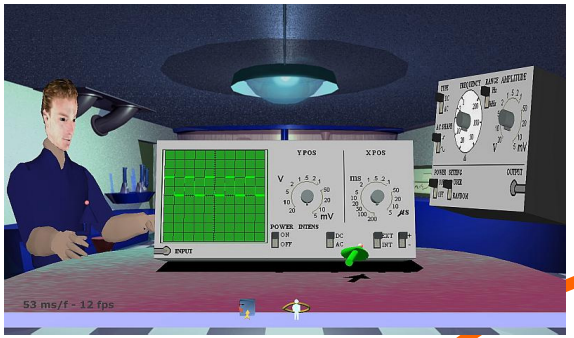
Collaborative Virtual Environment on PC

non-immersive virtual reality

very light cognitive charge,
what we see and hear is explicit

France Télécom R&D

Domains of application



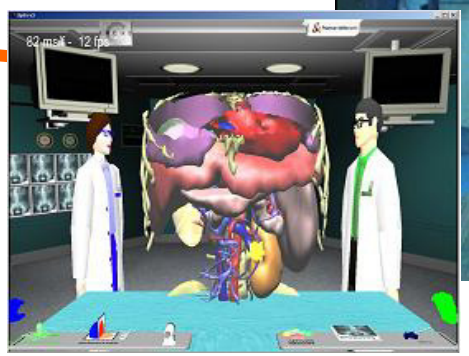
Education and training

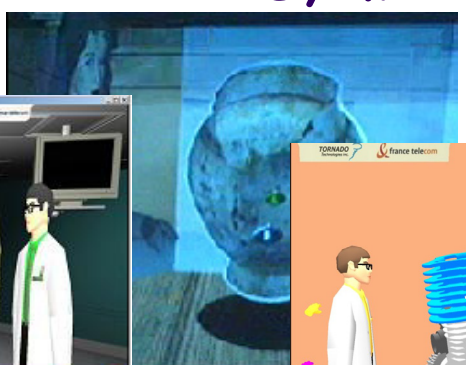
E-business

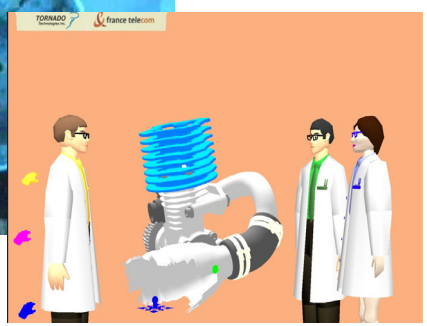
Distant learning, working, entertainment

Networked games

Distant working, CAD, medical

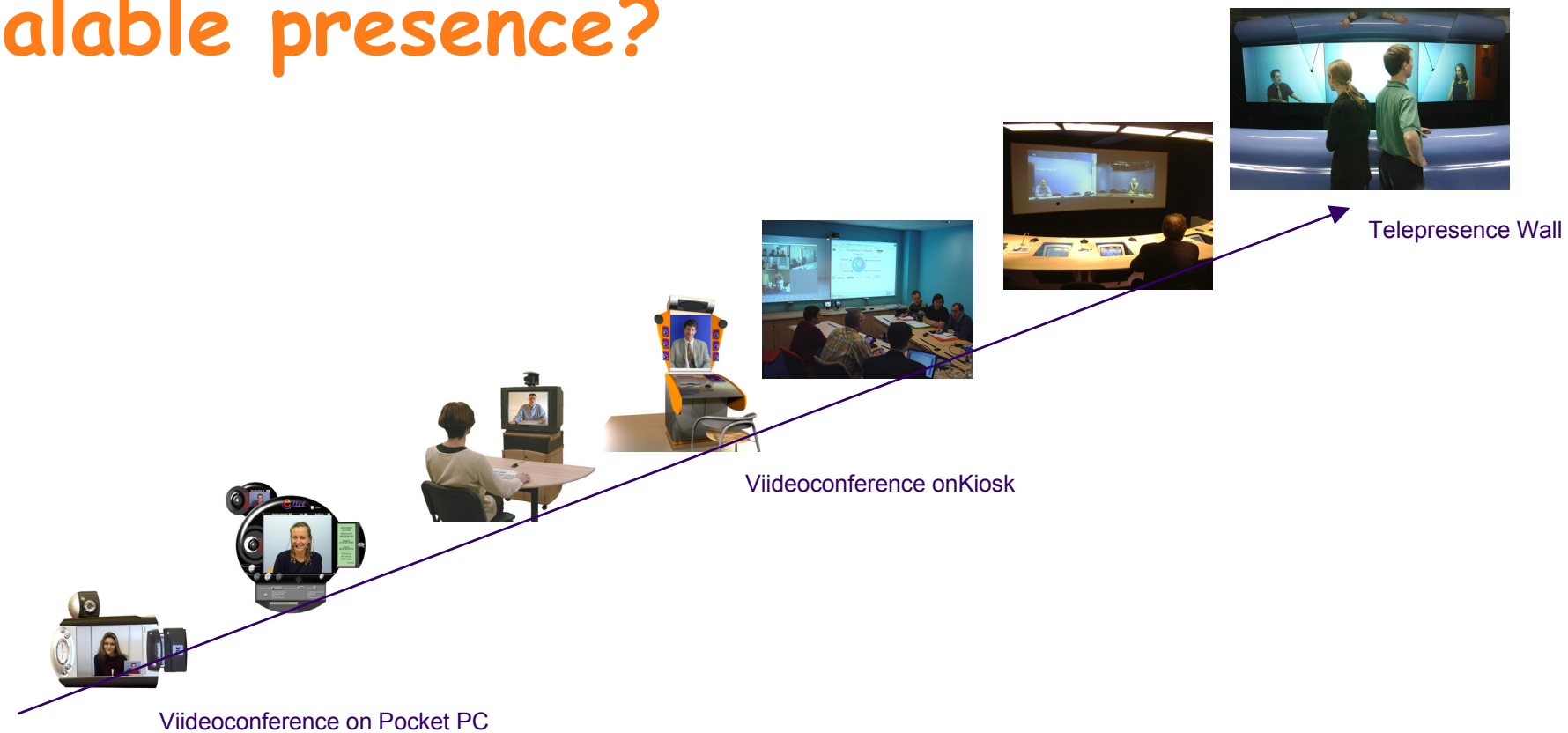




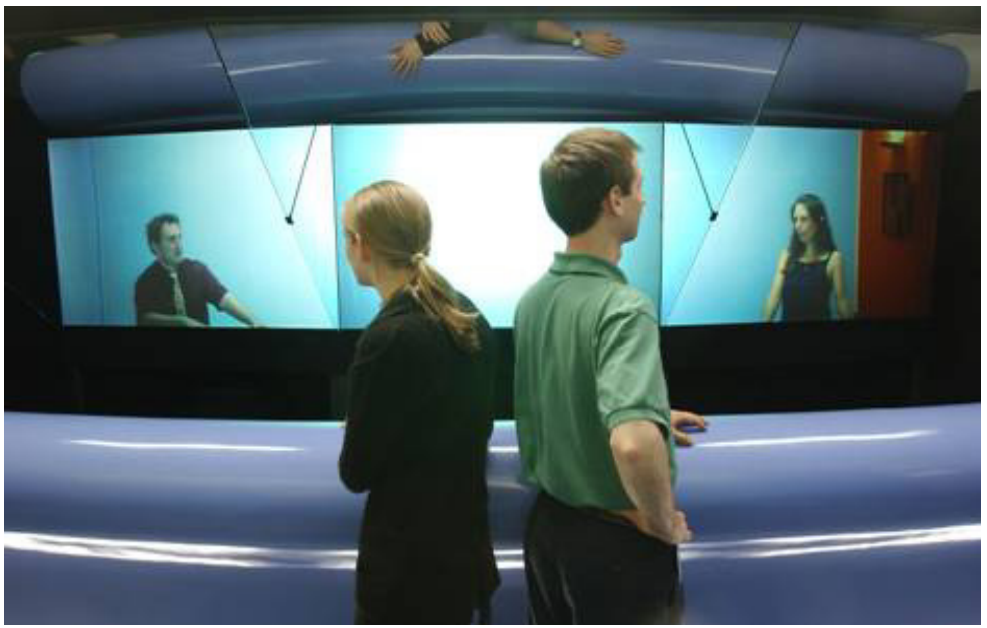


France Télécom R&D

Scalable videoconference
Scalable presence?



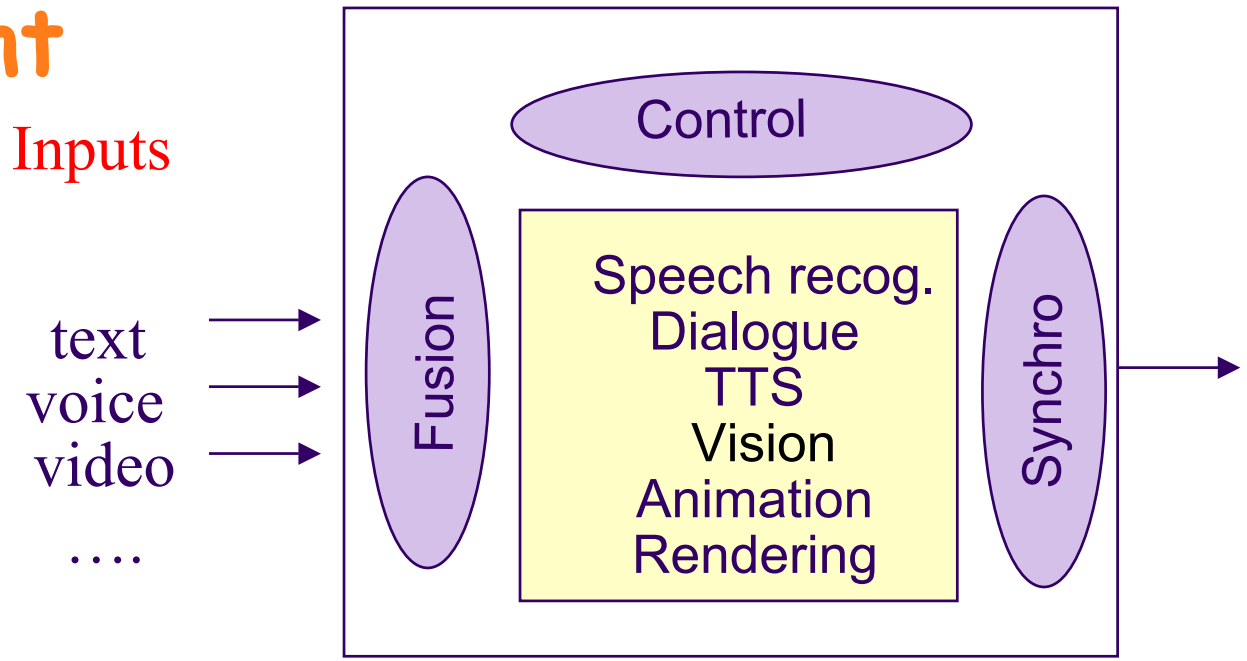
Telepresence Wall (Gate Conf)



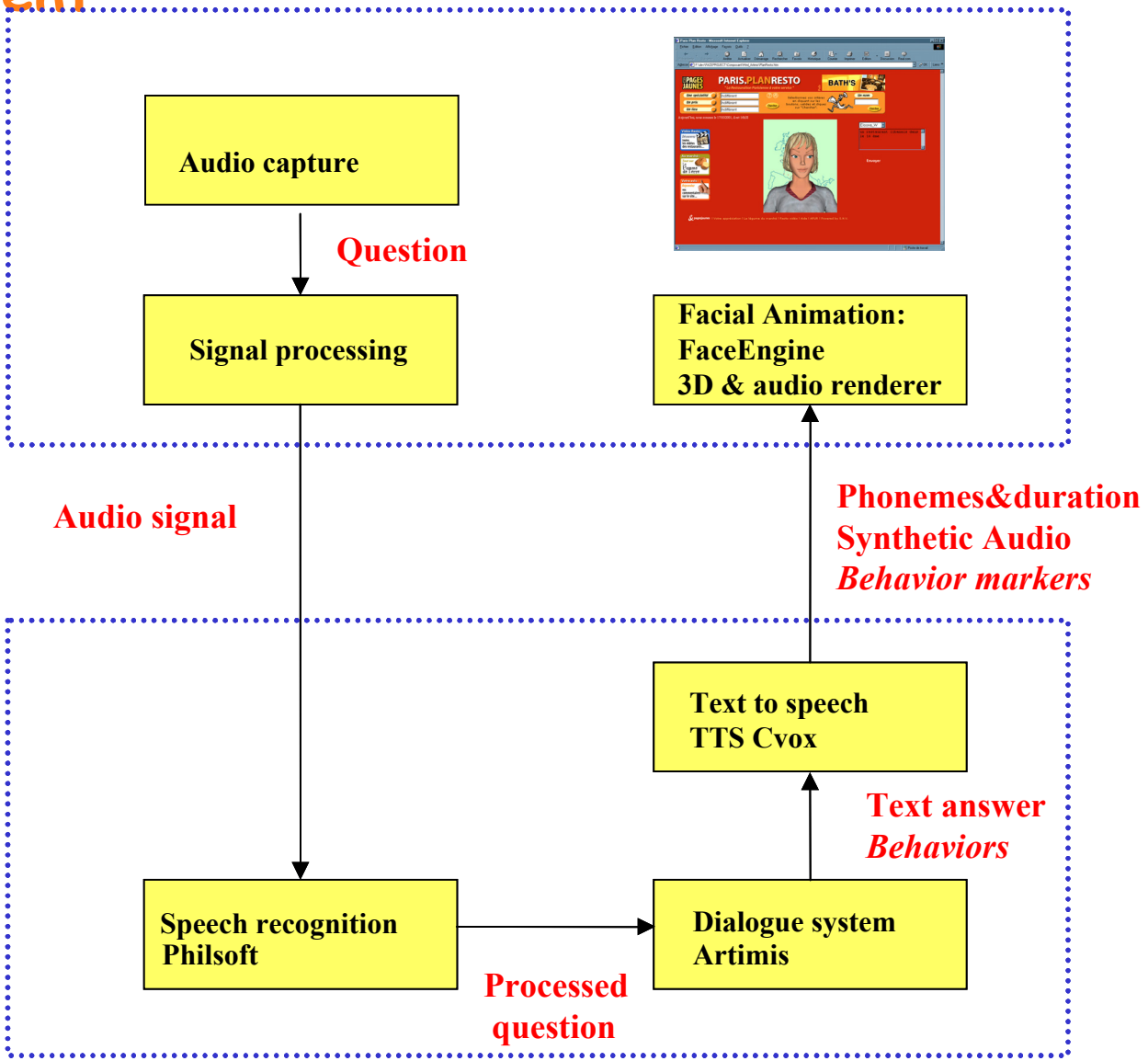
1,2 or 3 contiguous large screens
Real size persons
Eye contact

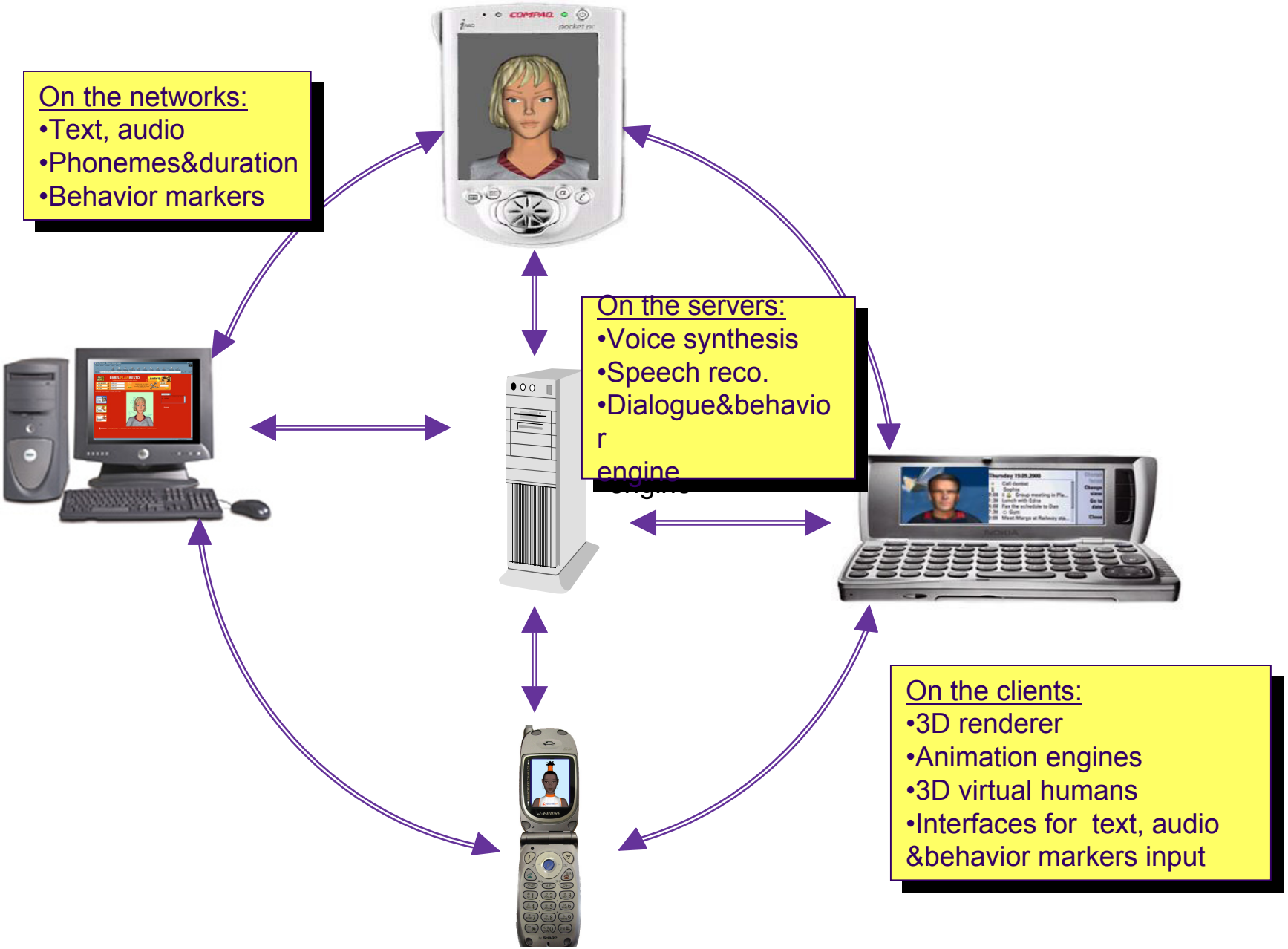
3D spatial audio
IP solution
1-4Mbits/s/screen full-duplex video
128kbits/s/screen full-duplex audio

Believable Embodied Conversational Agent



An architecture to implement a 3D embodied conversational agent




On the networks:
•Text, audio
•Phonemes&duration
•Behavior markers
On the servers:
•Voice synthesis
•Speech reco.
•Dialogue&behavio
r
engine
On the clients:
•3D renderer
•Animation engines
•3D virtual humans
•Interfaces for text, audio
&behavior markers input

Increase telepresence by building augmented reality applications on top of these technologies