

ImmercCity: Communicating about Virtual and Augmented Realities

Jean-Daniel Taupiac^{1,2}, Nancy Rodriguez¹, Olivier Strauss¹
¹LIRMM, CNRS, Univ. Montpellier (France)
²Capgemini Customer Service Development, Bayonne (France)



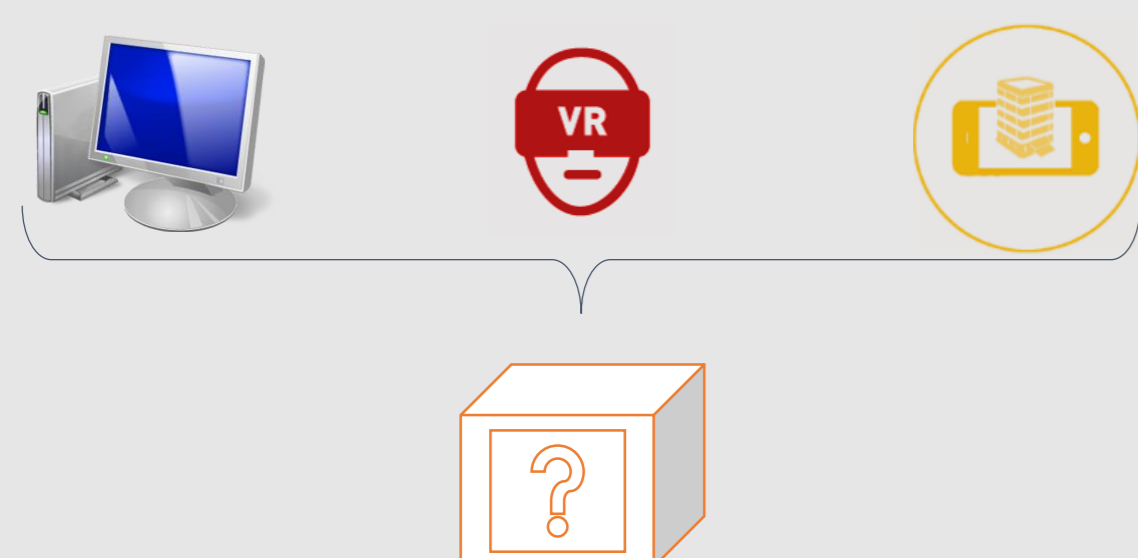
INTRODUCTION

With the aim of centralize a technology watch in an original manner and to overcome definitions difficulties, we choose to communicate on the Virtual, Mixed and Augmented Reality technologies by their self. Interacting differently with an unique 3D model, let exploit the differences between those technologies and raise awareness on them. In this work, we also explore several visual clues to highlight key objects.

Explore the idea of ImmercCity : use of a city metaphor in a cross-platform application

APPLICATION

Cross-platform application
(Technology watch centralization)



Unique 3D metaphor needed
(Definition & difference understandings)

METAPHOR

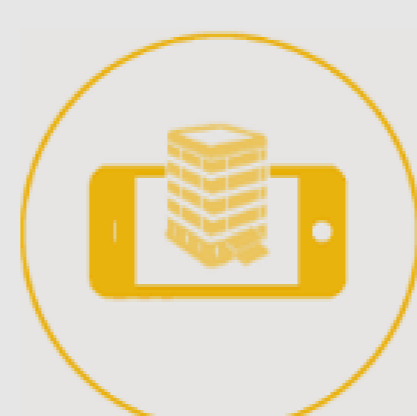
- City metaphor choice
- 1 key building → 1 information type



PROTOTYPES



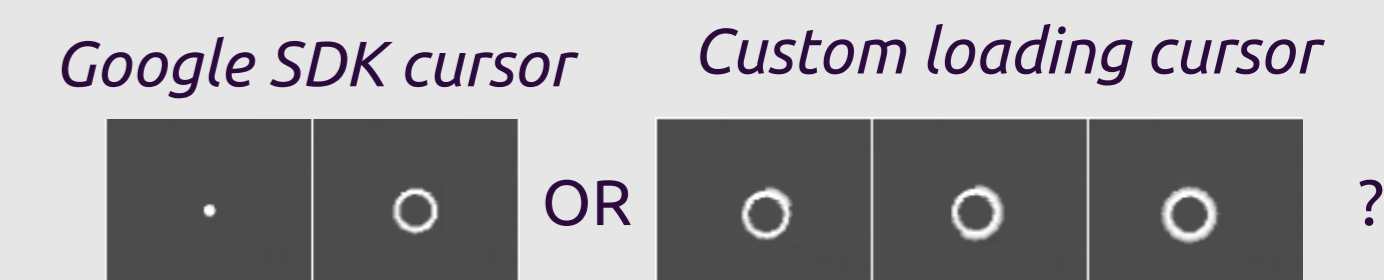
Cardboard prototype :
Immersion in the city



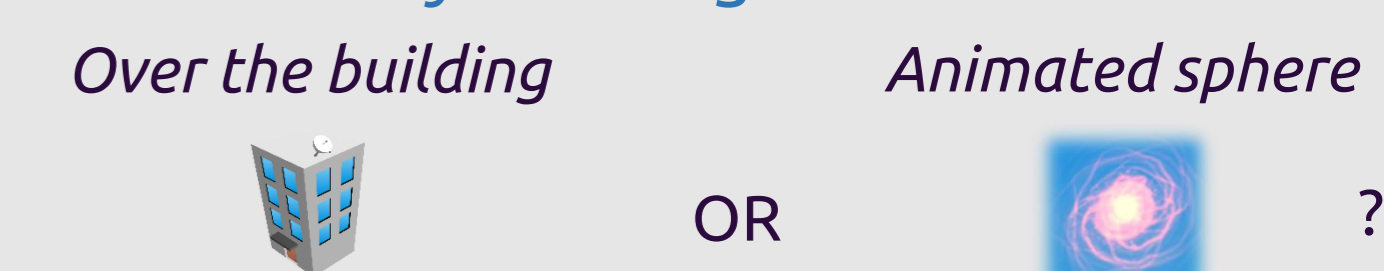
AR smartphone prototype :
2D map → 3D model
On the back of a business card



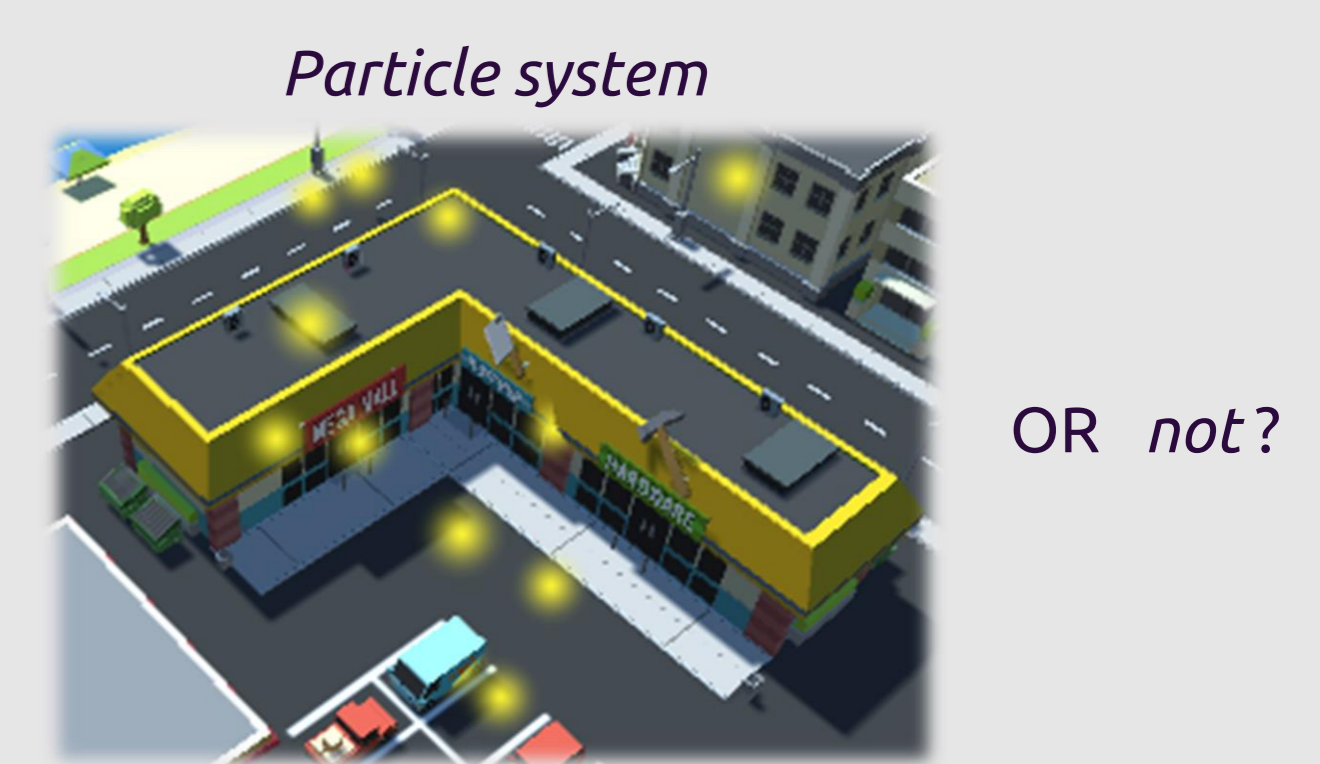
Visual pointing method :



Key building selection :



Key buildings highlighting :



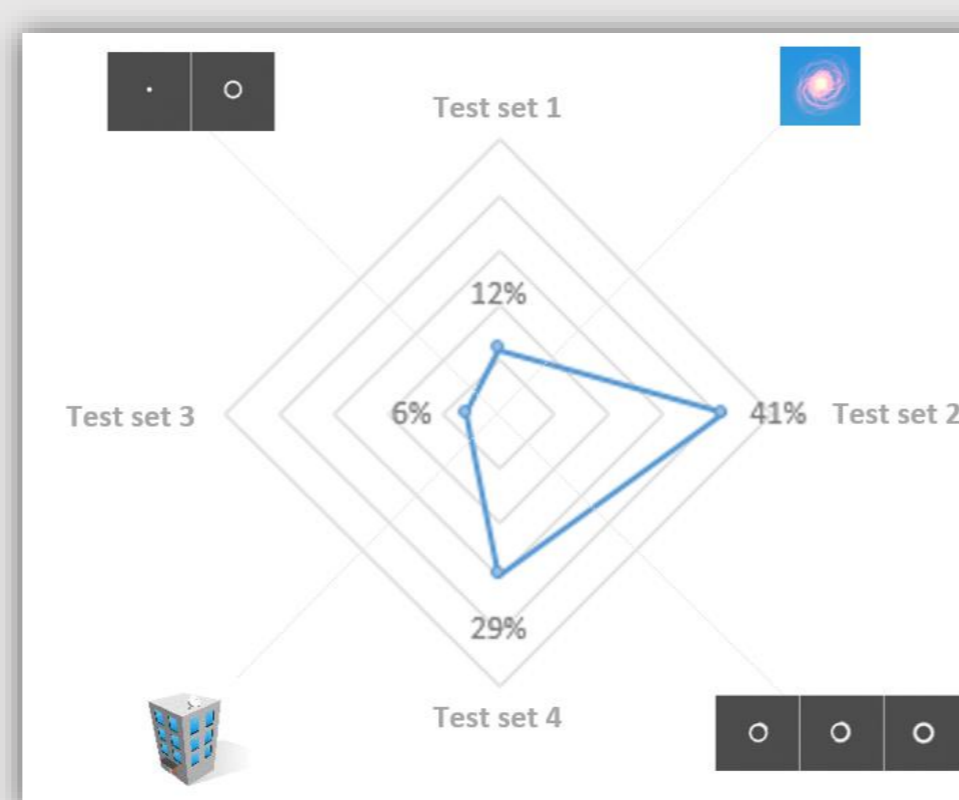
RESULTS

Experiments on 33 Capgemini co-workers
1st experiences : 68 % in VR, 70 % in AR

Experimentation process :
Observation on free 1st use → Observation on required selection → Survey → Open discussions



4 test sets

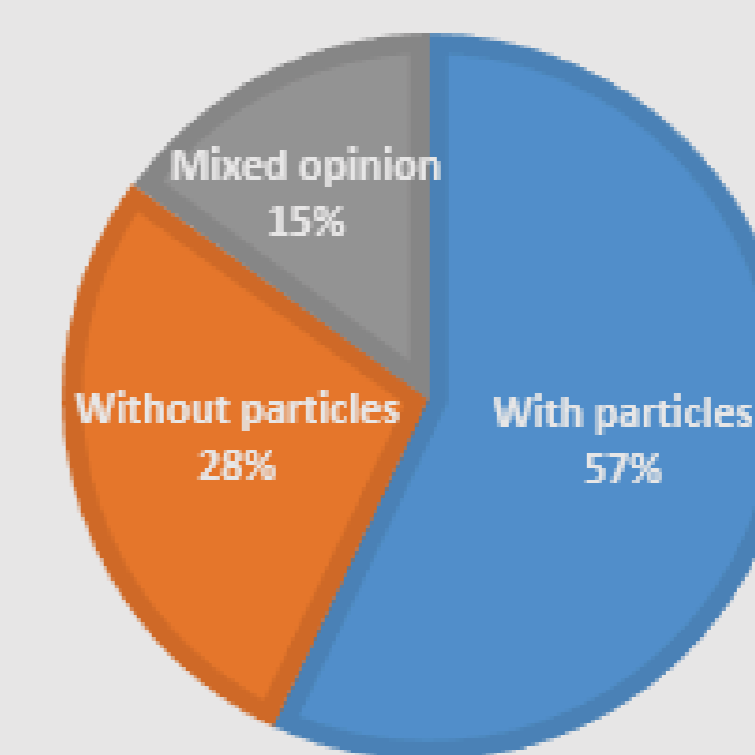


Preferences in Virtual Reality

- Custom loading cursor interest confirmed
- Need of a hybrid method for selection



2 test sets



Preferences in Augmented Reality

- Particle system interest confirmed
- Need a lighter and more discreet solution

Participant having preferred the system without particle :
100% of them → notified a visual overload

PERSPECTIVES

- Other elements need to be analyzed :
→ Novice users behavior
→ Metaphor validity
→ Impact on definitions understanding
- Improvements required : an hybrid method of highlighting must be defined
- Mixed Reality prototype development
- In-depth versions : **how to exploit the interactions for representing and access to the information ?** (within the buildings)

CONCLUSIONS

- Content curation application : share information and structure it within a unique 3D element
- Prototypes helped validating/invalidating visual elements :
→ loading cursor confirmed
→ hybrid method (animation/building) for building highlighting needed

REFERENCES

1. Ronald T Azuma. 1997. A survey of augmented reality. Presence: Teleoperators and virtual environments 6, 4 (1997), 355–385.
2. Philippe Fuchs. 2016. Les casques de realitA virtuelle et de jeux video [Virtual reality and video games headsets]. Presses des Mines. [In French].
3. Samuel Masseport. 2016. Prototypage d'une application pluri-technologique en realite virtuelle et augmentee. [Prototype realization of a multi-technological application in virtual and augmented reality]. Master's thesis. Rapport de stage, Licence cursus de Master Ingenierie Informatique, Univ. Montpellier. [In French].