Experiences with the Impact of Tracking Technology in Mobile Augmented Reality Evaluations

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Consider tracking as factor in your user studies, otherwise they might get confounded.
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Wayfinding

Augmented Maps

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Where and how users employ AR in wayfinding?
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Alternative interface preferred

Lack of trust in AR interface
Did users prefer the alternative interface due to tracking errors or other interface characteristics?
Wayfinding

Gaming at public poster

Augmented Maps
(How) do individuals use mobile AR for gaming at public place?
AR used most of the time

Unclear if alternative interface used as mainly as fallback solution or for different reasons (fatigue, speed)

Tracking errors decreased throughout the study despite learning phase
Augmented Maps
How do people use augmented maps to collaboratively explore information in a real-world scenario?
two natural feature tracking implementations

5-12 fps, 30 deg, 15-40 cm

Mainly usage on ground

16-20 fps, 80 deg, 10-200 cm

More usage while standing
Users adapted to limitations of tracking

Robust tracking supported more dynamic place-making
Lessons Learned

Consider tracking as a factor in mobile AR studies

Reflect tracking accuracy in the interface

Provide alternative interfaces if tracking fails

In comparative studies ensure sufficient learning phases
Thank you

Questions?

http://handheldar.net

http://icg.tugraz.at

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