Nat. Hazards Earth Syst. Sci. Discuss., 3, C2237–C2239, 2015
www.nat-hazards-earth-syst-sci-discuss.net/3/C2237/2015/


Natural Hazards and Earth System Sciences
Discussions

# *Interactive comment on* "Mobile Augmented Reality in support of building damage and safety assessment" *by* W. Kim et al.

**Anonymous Referee #2**

Received and published: 11 November 2015

#General Comments:

The paper at hand describes the design and development of an app for visualizing additional information on a mobile device by augmented reality. It is undoubtful that additional (location-based) (geo)information in the field is helpful and might increase performance (in whatever definition) of damage and safety assessment. Thus, from a practical point of view the developed prototypic app could be a good start for a more sophisticated tool that could be used by practitioners in the future.

From a scientfic point of view no generic scientific question could be identified: not from a computer science / geoinformatics perspective, nor from a NHESS perspective. The paper presents an app implementation and includes a small user survey, which was



performed under no realistic conditions (online and not in the field) and lacks a control group. Thus, the paper is an interesting case study and presentation of a prototypic app but does not reveal scientific findings that would justify publication in NHESS. What is the advantage of AR compared to have the same information on an interactive map (LBS) in the field? AR is your unique selling point but it does not get clear what is the real feature of your AR LOCs compared to not having AR but the info of the LOCs.

Furthermore, of course the app could be used in the context of natural hazards. However, NH is one of many application domains and it could simply be repaced in the text by another application case. This can be a pro (i.e. it is generic) and also a con (i.e. no focus on NH) of the study.

The aim is to evaluate the increase of efficiency and improvement for damage and safety assessment. I could not find the methodology and experiments for that. You just asked the users whether it would make sense to have the app - but you did not make an experiment having a control group (without app).

It is not clear form the paper why an indoor version has been developed? Most of the arguments in the paper do not support the indoor version. First time it is mentioned on page 2610 that also an indoor variant is developed. But why?

You write on page 2612 that "The result of the survey showed that mAR can improve the assessment accuracy (objectiveness) and time". You asked the people what they think if accuracy could be improved. This is a difference to really assess an improvement in accuracy! You need to be careful and check you manuscript for also other such conclusions which are not supported by your data/survey (e.g. evaluate efficiency, etc.)

#Specific Comments:

- Avoid citing too many of your own papers if not really necessary. - Why not designing a system that works using a service-oriented architecture and OGC formats/services? -

The user study needs to be described in much more detail and already in the Methods section. Who are the people/institutions? What did they test exactly? For example, how was "situational awareness" tested in the experiment? The experiment needs to be reproducible, which is not given at all in the current version! - Also LOC 5/6 need to be presented already in the Methods. - You need to define structural integrity for non-expert readers. - You state that ground surveys are inefficient (page 2601) but AR is also a ground survey?

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 2599, 2015.