

# The place for 3D in Mobile AR

A position paper for the Mobile AR Summit @MWC 2010

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Interactive Kingdom is an engineering company based in Geneva, Switzerland. Our Research Lab is specialized in complex Internet software solutions. For the past 12 months we have been developing a platform which makes it easy for merchants to create their own navigable 3D shops using customizable objects.

Mobile access to the Panoshop platform and shops which are created using Panoshop will be possible to enable virtual shopping in 3D while on the go. In the future, the real world will also be featured as part of the Panoshop publishing platform using codes and, in time, visual feature recognition.

Restating of the obvious...The physical world is multi-dimensional, well at least 3 dimensions for most people. People interact with objects and space in their environment and they are increasingly comfortable doing so in their virtual worlds (e.g., games, Second Life, etc). As the digital (virtual) and physical worlds come closer to one another, dare we say "converge," many users will also feel at ease with and seek the ability to manipulate objects. For these reasons, the original definitions of Augmented Reality as the intermediate point between the Virtual Reality and the Physical Reality include an aspect of 3D. Three-D remains important.

## Augmented Reality and 3D

Many of the current applications available for consumers to experience AR are informational, providing text and, when available, photos or drawings (maps). Platforms such as Total Immersion D-Fusion and metaio's Unifeye, have long provided the ability to introduce and for the user to interact with 3D objects placed in context of the real world. The developers using these platforms and other game platforms for creating PC-based AR applications frequently have a rotational feature, so that the user can see all sides of an object realistically.

Examples of 3D in automotive design, and marketing for cars, dragons in books (Dragonology by Templar) and other vertical markets are too numerous to list.

## Mobile AR and 3D

While meeting some current needs, the vast majority of current mobile AR applications and tools lack the richness offered with 3D. There are many reasons for this shortcoming, including:

- Hardware on the mobile devices not sufficiently powerful to offer smooth rendering and real time manipulation
- Real time updates or refreshing of 3D objects across mobile networks require conditions which most operators do not support, or at least not to the mass market
- There are fewer databases containing 3D objects for use in mobile AR applications
- Applications which use 3D for providing value (as opposed to novelty) are still relatively rare. The first generation of 3D AR applications are (and will likely continue to be) games.

We encourage the industry partners which are gathered at the Mobile AR Summit to include considerations and support for 3D interactivity in the future of mobile AR. This means that when discussing or developing guidelines for mobile AR user experience design, or talking about how to address technical challenges, there be at least one person who is an expert in the design and management of 3D objects participating in the dialog.

We seek to provide our expertise in such discussions should and when it be valuable to the community and to the mobile AR industry.