

AR SUITE – augmented reality applications

TECHNOLOGY OVERVIEW

Augmented Reality (AR) stands for superimposing virtual objects in the user's view of the real world, providing novel visualisation technology for a wide range of application areas. The work by VTT's Augmented Reality team dates back to the year 2000, when the team started developing virtual advertisements for live TV broadcast and, a little later, games and entertainment applications.

Currently, the research focus is on architecture/construction and interior design applications, as well as industrial applications at production sites. While keeping track on the very latest AR research in the world, the Augmented Reality team also does important basic research, e.g. both on marker detection and markerless tracking. Furthermore, the team is especially proud of being able to adopt many complex video processing and AR ideas for low-level mobile platforms, e.g. camera phones, in which the processing power and transmission bandwidths are scarce resources.

APPLICATION

ARMobile

ARMobile technology is mobile software (Symbian, Java) that adds user-defined 3D objects to the camera view of the mobile phone. The application enables placing, for example, virtual furniture on mobile phone's camera image. The models are loaded by using matrix code in product catalogue or advertisement. The user places the furniture in camera view by 3D rotation and zoom. The furniture stays in place when moving the camera phone. The technology is based on feature tracking and no markers are required.

ARScaleModel

ARScaleModel technology enables Mixed Reality collaboration with an architectural scale model which can be augmented e.g. on a conference table. The user interface is based on a virtual pop-up menu. Vision-based markerless tracking enables free inspection and virtual reality walk-through of the model. The viewing is enabled by a miniature camera integrated into video glasses. The scale model can be embedded also into a satellite or topographic map (E.g. Google Earth) for 3D- visualization.

VTT produces research services that enhance international competitiveness of companies, society and other customers at all stages of their innovation process, and thereby creates the prerequisites for growth, employment and wellbeing.

VTT promotes the realisation of innovative solutions and new businesses by foreseeing the future needs of its customers already in strategic research.

With its 2,700 employees, VTT is the largest research organization in Northern Europe. VTT's Ventures operation creates profitable and growing technology and wellbeing as well as more effective use of VTT produced Intellectual Property Rights.

AROnSite

AROnSite technology enables the implementation of an Augmented Reality system on a PDA device. For example, architectural scale model can be visualised on its real life location using camera enabled PDA device and local markers.

MARKET TRENDS AND OPPORTUNITIES

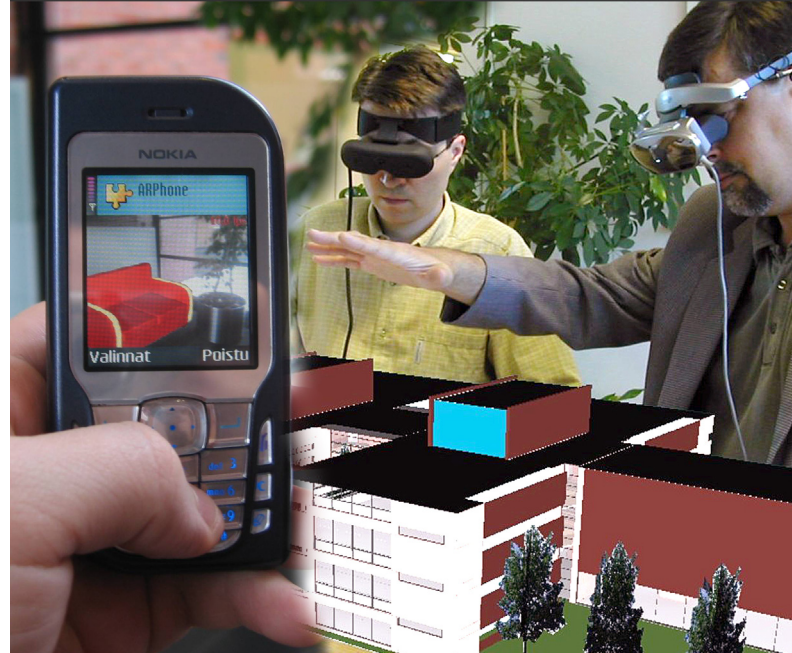
Shorter product life cycles cut the duration of design processes even more as we move forward. Rapid prototyping has been able to solve some of the challenges but Augmented Reality solutions can further fasten the time-to-market and enable even more flexible design iterations. The Mobile Augmented Reality market and technologies are evolving rapidly. New mobile augmented reality experiences can be increasingly created with the development of easy-to-use applications that use simple mobile equipment and can be used even by inexperienced end-users.

PRODUCT/ TECHNOLOGY FEATURES

- ARMobile technology is mobile software (Symbian, Java) that adds user-defined 3D objects to the camera view of the mobile phone. The application enables placing, for example, virtual furniture on mobile phone's camera image.
- ARScaleModel technology enables Mixed Reality collaboration with an architectural scale model which can be augmented e.g. on a conference table.
- AROnSite technology enables the implementation of an Augmented Reality system on a PDA device.

CUSTOMER BENEFITS

- Faster time-to-market and production with new designs
- Enables quick and flexible design iterations.
- New mobile augmented reality experiences can be offered even to consumer end-users.



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