

### (3) Facilitating the Presence of Users and 3D Models by the Augmented Round Table

Erik Granum, Thomas B. Moeslund and Moritz Störring,  
Computer Vision and Media Technology, Aalborg University, Denmark  
Email: {eg,tbm,mst}@cvmt.dk

and

Wolfgang Broll and Michael Wittkaemper  
Collaborative Virtual and Augmented Environments Department  
Fraunhofer Institute for Applied Information Technology  
Sankt Augustin, Germany  
Email: {Wolfgang.Broll, Michael.Wittkaemper}@fit.fraunhofer.de

#### Abstract

Round table meetings are regularly used between professionals to review development, to design new approaches and to make decisions. While these roundtable meetings naturally facilitate the collective presence of users they often lack a sophisticated presence of the actual object discussed.

In this paper we present the Augmented Round Table for architectural design. We use Virtual Reality technologies to augment the users' common workspace by virtual 3D objects and providing real world interfaces to them – thus making them present. In praxis the augmentation is done via a see-through head mounted display and the interfacing is done by having computer vision systems to recognise and track real world items and hand gestures performed by the users.



In the paper it is suggested that it is possible to have simultaneous presence in different worlds. A way in which we propose this is when the presence in the one world can be functionally embedded in the other. In the situation of round table meetings, discussed in this paper, the social and collective aspects are important, and one may wonder if this is a necessary condition or just facilitating the simultaneous presence.