

(20) Evaluation of the VIRTUE Video-Conference System Using the ITC-Sense of Presence Inventory

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Abstract

Whilst the experiential benefits of early video conferencing (v-c) systems were largely outweighed by commercial and usability barriers, recent technological developments such as improved video compression techniques, higher telecommunications bandwidth and a better understanding of designing for presence, have enabled the development of compelling v-c systems that are enjoyable and satisfying to use.

On the basis of research into the determinants of presence, partners in the EC funded IST project VIRTUE designed a video conferencing system with the key goal of providing a more satisfying user experience – enabling users who are remotely located to feel a sense of presence in the shared communication space and with each other (co-presence). In the study reported here, the system was evaluated using the ITC-Sense of Presence Inventory (ITC-SOPI: Lessiter, Freeman et al., 2001). The ITC-SOPI is a post-experience, self-completion presence questionnaire that measures 3 dimensions of presence (a sense of: physical space, engagement, and naturalness), and also provides a measure of the negative effects caused by a media system.

The VIRTUE system was rated highly on each of the 3 ITC-SOPI presence scales, and received low ratings on Negative Effects. For the Sense of Physical Space dimension, ratings were higher than any media the ITC-SOPI was piloted on except for 3D IMAX. For Naturalness, ratings were higher than any media system the measure was piloted on. For Engagement, reasonable ratings were obtained, though these are less relevant to the VIRTUE evaluation as the ITC-SOPI Engagement scale is most sensitive to variations in media content.

The results of the VIRTUE evaluation raise questions that the authors will discuss in the presentation of this paper. For example, though it was developed to evaluate spatial presence, is the ITC-SOPI a useful measure of social presence? In addition, what is the relationship between dimensions of physical presence and social presence – for example, did the fact that natural interaction was supported between remotely located participants result in the high Naturalness ratings the system received? Whilst further research is likely to be needed to answer these questions, the positive evaluation of the VIRTUE system using the ITC-SOPI is encouraging for the system's developers.