PROJECT FACTSHEET

ReSurf

Exploring and studying how mutual awareness can be enhanced for collaborative decision-making in a distributed wall-display setup.

Inspiration

The 21st Century is facing highly complex societal and intellectual challenges, that can only be solved when professionals with distinct abilities and resources join their efforts and collaborate. Interactive wall-sized displays provide large benefits for information visualisation and visual data analysis. Besides allowing for a better presentation of large amounts of data, they support -collocated- collaboration, as multiple users can access and view content at the same time and easily follow each other's actions.

However, in many situations (e.g. the COVID-19 pandemic, geographical barriers) face-to-face collaboration is not feasible and needs to be replaced by remote collaboration. Conventional tools used to support it strongly limit non-verbal awareness information, leading to communication difficulties and additional efforts for staying engaged. This lack of awareness is increasingly relevant in the context of decision-making at interactive wall displays as in front of a large screen, collaborators are naturally making use of a large number of non-digital body movements and hand gestures.

To better mediate awareness information and facilitate communication, previous work suggests adding additional visual cues into the common workspace or the live video stream. Such cues have been proposed for smaller workspaces like tabletops and have only seldomly been investigated in the context of remote collaboration across two or more wall displays.

Innovation

The ReSurf project funded by the FNR through its CORE programme addresses the question of how person-oriented awareness cues need to be designed in order to enhance remote collaboration across two physically distributed wall displays.

To do so, LIST researchers will combine design-based research, user centred design and user studies with the aim of exploring and studying how mutual awareness can be enhanced for collaborative decision-making in a distributed wall-display setup.

They will make use of different LIST wall displays (VisWall, 360° Immersive Arena, DemoWall), and conduct a user study to find out how awareness information is shared in a well-functioning, collocated decision-making context. In an iterative approach, and by progressively integrating results from focus groups and user studies, they will design audio-visual awareness cues that make use of body movements (proxemics, postures, and hand gestures) and eye gaze to support remote collaboration. A series of user studies will allow to learn about the role and effectiveness of different types of cues.

Impact

ReSurf will generate scientific knowledge on the optimal design of awareness support in remotely connected wall displays. Moreover, it will contribute to the next generation of remote decision-making tools, where people can collaborate smoothly, and enjoy an experience that is as close as possible to a collocated situation.

This innovative project will not only enable to collect behavioural patterns for establishing and maintaining awareness in collocated settings, but also to identify new types of audio-visual cues for mediating awareness information over distance and to provide empirically validated results on the role and effectiveness of awareness cues in mixed-presence settings.

Watch more

This project is supported by the Luxembourg National Research Fund under the CORE program (Grant nr C21/IS/15883550).

Financial Support

Luxembourg National Research Fund (FNR)

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