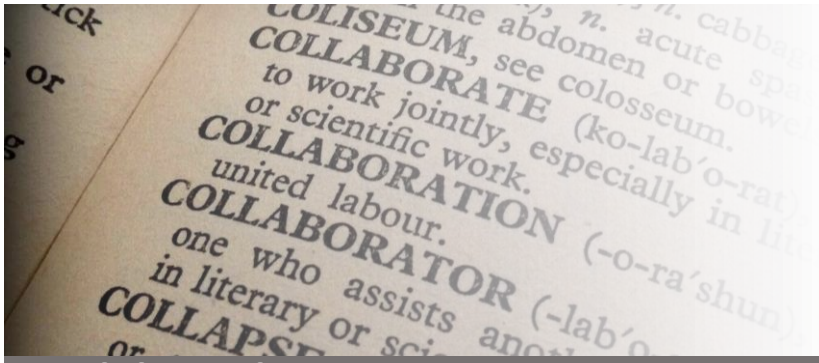

ICED 21
GOTHENBURG 16-20 AUG

CD SIG
Collaborative Design Special Interest Group

Workshop title: An interactive experiment to investigate a fundamental concept that defines collaborative design

Workshop chair and co-chairs: Ian Whitfield, Avril Thomson, Ross Brisco
Expected number of participants: 25
Delivery: Online

Successful collaborative engineering practices have demonstrated significant benefits to industry: improving efficiency; eliminating rework due to information inconsistencies; managing complexity and automating parts of the collaborative design process. Despite these benefits, collaborative endeavours fail due to obstacles such as: sharing knowledge through ineffective communication methods; co-ordinating stakeholders with divergent objectives; managing teams with cultural and leadership differences; and configuring collaborative networks towards a long term and strategic vision. Changing innovation landscapes have the potential to radically advance collaborative practices to develop more user-centred, innovative and customised products in a timelier manner.

Description of activities and expected outcomes:

The aim of this workshop is to conduct an interactive investigation to explore the validity of a key concept that is considered to be fundamental to our understanding of Collaborative Design. Workshop participants will engage in an innovative interactive experiment to test this concept. Participant numbers will be strictly controlled within groups to allow the experiment to be conducted in a controlled environment.

The first stage of the workshop will involve participants interacting within groups through the use of a well established and familiar collaborative design tool which has been adapted for online use within the workshop. The groups will be expected to complete one of approximately five different and easily understood design tasks. Once the group has completed the task, the participants will be instructed to collectively choose the solution that best satisfies the specification, and rate how well it does.

The second stage of the workshop will use two online tools to gather participants' views in relation to the outcome of the first stage. Participants will initially be invited to provide a qualitative opinion within their groups using the online tool Mentimeter to gather responses with respect to factors that define the effectiveness of the collaborative exercise. Participants will then be asked to complete an online survey using a set of Kansei Engineering adjectives that reflect their psychological response to the collaborative exercise. This survey will be conducted online to allow the immediate processing of the responses.

The final stage of the workshop will be to present the outcome of each of the stages. Participants will be provided with an explanation of what the experiment aimed to investigate, followed by the outcome of the collaborative design task from each of the groups. They will then be presented with each of the word-graphs from Mentimeter. Finally the analysis of the results from the Kansei Engineering survey will be presented to analyse the validity of this key concept.

Participation will be entirely voluntary, and ethical data collection practices will be adopted throughout the experiment. The results will be used as a basis to write a paper for publication at the DESIGN'22 conference, and for adaptation for submission to the DESIGN SCIENCE journal.

The workshop is anticipated to last for approximately two hours.