Insole – Executive Summary
Jeroen Blom –Glasgow School of Art
[A Digital Health & Care Institute (DHI) Collaboration, University of Strathclyde]

The 'insole device' is a novel biomedical device to measure gait and balance for extended periods to support the assessment of the risk of falls in the elderly. This project was proposed by Principal Investigator Prof Lynne Baillie and Research Associate Dr Philip Smit, Glasgow Caledonian University (GCU), and accepted by the Digital Health & Care Institute as Experience Labs, which took place in February and July 2015.

Prior to the Experience Labs, interviews were conducted with Margaret Anderson, NHS lead for Falls Acute and Community, and Professor Dawn Skelton, renowned expert in falls at GCU. The interviews provided insights into the falls process, which shaped the sessions in the Labs.

In the Labs, a design-led approach was applied to explore the potential of the insole device and generate a pool of user experiences, needs and wishes.

In Experience Lab 1, participants were invited to describe their experience of the falls process after having a fall or from a professional perspective. The Lab captured different referral pathways in the falls process; the activities done at each referral; the prior information available; the output of the session; and how the insole device was perceived to have a potential role in the process.

The findings of the first Lab were used to develop realistic scenarios for the proposed use of the insole device. In Experience Lab 2, participants were asked to reflect on these scenarios. Three scenarios were presented in video format, each capturing unique elements of the pool of user experiences, needs and wishes.

The outputs from the Labs included audio, photos, videos and field notes which were analysed for emerging themes. The findings of the Labs provide insights on the potential use of an insole device in a falls clinic assessment as well as requirements for use in daily life. The findings show a need for the insole to complement a physiotherapist's expertise in full-body assessment. Proposed data representation elements are: 1) alignment with current balance and gait indicators, 2) presenting a 'norm' for each individual, and 3) a dynamic live view for interpretation during assessment activities.