Explanation before adoption: documentation and discussion

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1. Introduction

Complex platforms are often difficult to explain and involve negotiation of significant 'digital plumbing' for installation, a process that relies on informed decision-making. In two studies, we explored the creation of a *companion guide* through an iterative process (above right: example pages; below right: process) to present a complex platform involving machine learning and then used interview and observation methods to study how experts present platforms.
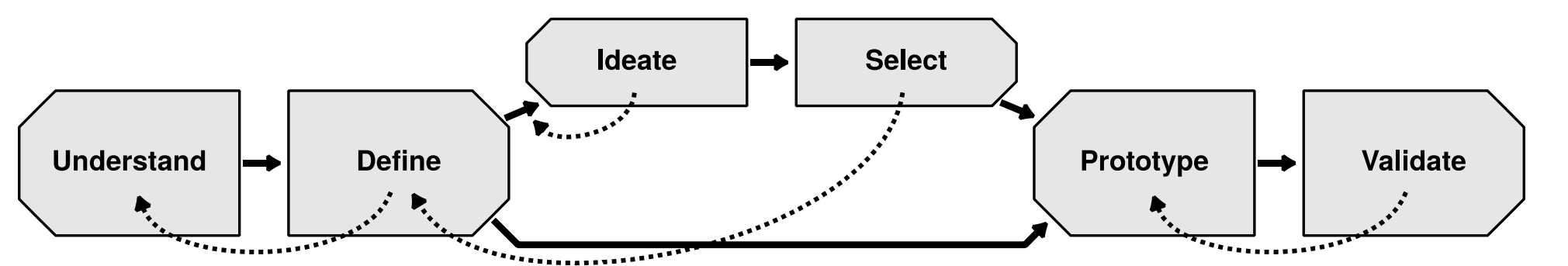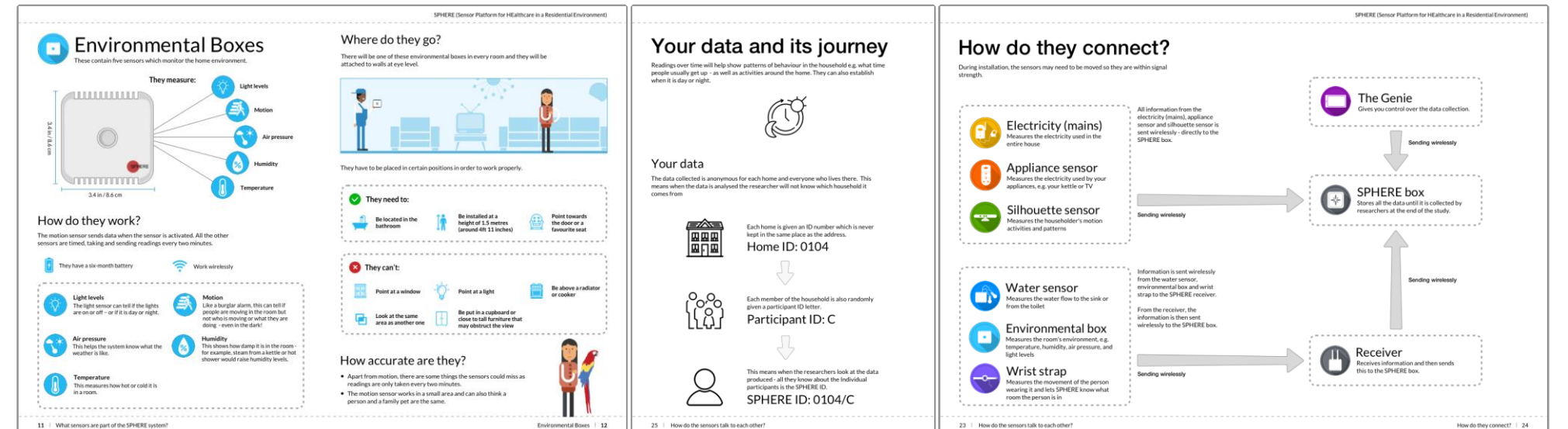
2. Results

For study 1 a user centred design (UCD) process was used, asking participants to compare three low-level black and white design concepts of varying technical complexity. Through this UCD process we were able to create a set of design guidelines for usable guides. Study 2 took a document created using Study 1's findings and asked the SPHERE technicians to onboard (introduce) participants. We found that explanations did not solely rely on texts and verbal explanation using methods such as analogy and anthropomorphisation. Technicians also used tools, techniques and strategies such as illustrations of concepts via gesture (see images below), methods for evaluating how well concepts are understood and identification of common ground. We used these findings to develop guidelines to support effective explanation of complex platforms.

3. Conclusions

Explainability is often understood as a technical property of computational systems. However, in practice good explanations are multifaceted. They benefit not only from good documentation but also effective communication methods.

This work was reported in two publications, the first presented at Ubicomp 2022 [1], the second accepted pending changes for CSCW 2023 [2].

References

[1] Eardley, Rachel, Sue Mackinnon, Emma Tonkin, Ewan Soubutts, Amid Ayobi, Jess Linington, Gregory JL Tourte et al. "A Case Study Investigating a User-Centred and Expert Informed 'Companion Guide' for a Complex Sensor-based Platform." Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies 6, no. 2 (2022): 1-23

[2] Eardley, Rachel, Emma Tonkin, Ewan Soubutts, Amid Ayobi, Rachael Gooberman-Hill, Ian Craddock and Aisling O'Kane. "Explanation before Adoption: Revealing Methods Used to Support Informed Consent for Complex Platforms." Computer Supported Cooperative Work (CSCW) 2023.