

## **Investigation on user experience goals for joystick interface design**

### **ABSTRACT**

The automation of the crane operation system and the vehicle itself affects its control and handling operation, i.e. remote operation. Lack of direct motion feeling due to loss of physical interaction and experience between the operator and the crane has been recognized as a possible weakness in remote-operated container crane application. In order to improve this situation, this study aims to establish some insights on how to improve the lack of direct motion feeling through the joystick interface by means of interviews and observations with crane operators to establish user experience (UX) goals, as well as cognitive task analysis (CTA), need analysis and interpretation approaches. A total of 13 crane operators participated in this research. Based on their responses, eight positive experiences and eight negative experiences, along with several suggestions for lack of direct motion feeling improvement, have been identified and discussed. The results from this study provide a realistic feedback from the operators as end users in improving the control and handling interface for U. 134 the remote operated container crane applications, which can also be extended to the general off-road vehicle industry.

**Keyword:** User experience; End-users; Engineering design; Container crane; Remote operation.