

## **Advancing diversity and inclusivity in the resources sector - a human centered focus on equipment design**

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### **ABSTRACT**

The resources sector is increasing efforts to provide an inclusive workplace by implementing policies and practices at corporate level which aim to respect the rights and interests of all workers and improve workforce representation in the workplace.

Workplace diversity goes beyond the commonly held perception of gender and age to include a range of issues that contribute to both psychological and physical health and safety. The complexity of the minerals industry, including procedures, the presence of heavy equipment and a diversity of site personnel create an environment where it is difficult to ensure workforce health, safety and maintain efficiency and operational requirements.

The design of heavy earth moving equipment has not changed significantly for many years. Human centered design, underpinned by sound ergonomic principles was utilised to understand how current mining equipment design may restrict the range of potential employees who can safely and comfortably operate and maintain the equipment, and to provide additional assistance to equipment designers. The research draws extensively on the collective knowledge of experienced and apprentice site personnel. While a number of standards and guidance materials exist to assist equipment designers, many of the challenges associated with equipment operation and maintenance have been overlooked by original equipment designers and manufacturers who do not see or understand the conditions under which maintenance tasks in particular are performed. More importantly the standards and guidance material available to designers does not adequately equip them to understand how to address these challenges.

While the general business case for increasing workforce diversity in mining is well established, the research findings highlight many of the challenges currently encountered whilst operating and undertaking routine heavy equipment maintenance work, with the ultimate goal of improved design to reduce serious injury risks and reduced barriers to workforce diversity.