

ABSTRACT

The issue of Over Dimension Over Load (ODOL) in Indonesia has caused significant impacts on road safety and infrastructure damage. Conventional handling methods have proven to be suboptimal, prompting the need for a more effective technology-based solution. This study aims to design a prototype of the Dirga (Digital Road Governance Application) as an innovative tool for real-time monitoring of freight transport vehicles at the Kulwaru Weigh Station. The application leverages Weight in Motion (WIM) technology to detect vehicle weight and dimensions without requiring a stop, providing real-time data that is directly accessible to officers. A User-Centered Design (UCD) approach is employed to ensure that system development aligns with the needs of users, including both officials and drivers. Key features of Dirga include vehicle registration, weighing status monitoring, and violation notifications—designed to enhance transparency, efficiency, and accuracy in vehicle monitoring processes. The findings are expected to support the Ministry of Transportation's Zero ODOL policy and contribute to reducing overload violations, preserving road infrastructure quality, and improving land transport safety in Indonesia. Dirga stands as a sustainable digital solution for modern and responsive road governance.

Keywords: Over Dimension Over Load (ODOL), Kulwaru Weigh Station, Weight in Motion (WIM), Digital Road Governance, User Centered Design (UCD).