

A Multi-Platform Application Based Tool to Facilitate Ergonomic Assessments and Problem Identification

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Abstract: With changes in the work environment be it an office or a manufacturing floor, there has been an increased necessity for tools that can be agile and mobile so as to integrate the data collection, storage, and adhoc analysis processes. Such a tool should enable practitioners and associated agents with the ease of collection of ergonomic related data such as body part discomfort, prior relevant medical information, awkward body postures associated with the neck, upper and lower extremities, back, wrist, tool and grip interface, overall postures attained during completion of task cycles, etc. Additionally, the tool needs to be able to perform manual materials evaluation. An ergonomics assessment tool was developed to function on an Android and Mac OS platforms and is one program that utilizes fundamental ergonomic principles and guidelines such as the RULA, REBA, Strain Index, HSE load handling criteria, etc. The output of the assessment tool was designed and developed based on front-end GUI principles to provide a visual dashboard that would not only assist practitioners but also provide simple and clear interpretation of ergonomic risks and hazards to any layperson including management and employees. This program as currently designed is being tested at a Midwestern aircraft manufacturing facility and is assisting manufacturing workers, leads, and managers identify ergonomic issues on a priority basis. Over the past 1.5 years (test period) that the program has been rolled out, it has resulted in a priority based identification of ergonomic risk factors for tasks and monitoring of these risk factors over time.

Keywords: Ergonomics, Assessment tool, Application based software