A Hybrid NSGA II for Re-Localization of Machinery: A Case Study on Heavy Weighted Pipe Inspection

E. Carrum, J. P. Nieto, P. P. Villanueva, and M. Quiñones

Corporacion Mexicana de Investigación en Materiales S.A. de C.V.
No 790 Col. Saltillo 400, C.P. 25290 Saltillo, Coahuila. México

Corresponding author's Email: eliascarrum@comimsa.com

Author Note: All the authors are professors at the Corporacion Mexicana de Investigación en Materiales, where their main areas of work are listed respectively as follows, Layout Distribution, Electrical Systems, Design and 3d design. They have been the group in charge of handling all the projects for new layouts of factories and research in their respective areas.

Abstract: The operation of drill pipe inspection is a critical operation. A good inspection can improve the process, reduce the risk in drilling operations, prevent failures, and prevent accidents, among other benefits. This paper presents an adaptation of neural networks, a multi-objective genetic algorithm and a discreet event simulation as evaluation function, in order to obtain the best localization of machines to optimize the final production, the working inventory and the displacement of material.

Keywords: NSGA II, Adaptive Resonance Theory, Group Technology