

## **A Case Study on Evaluating and Selecting Soil /Pipeline Interaction Analysis Software for the Oil and Gas Industry**

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**Abstract :** The evaluation and selection of appropriate software solutions to meet with an organisation's inherent business requirements can be a problematic software engineering process that if done incorrectly can have a significant, costly and adverse effect on the business and its processes. The aim of this paper is to show the process and evaluation criteria followed to select the right engineering solution for the identified business requirement. The research adopted an action research method within an organisation in the oil and gas industry, which required a solution suitable for conducting stress analysis for soil-pipeline interaction analysis (SPIA). Through the use of the presented software selection and evaluation approach, to capture and measure key requirements, it was possible to determine a suitable software for the organisation. This paper investigates methodologies for selecting software packages, software evaluation techniques, and software evaluation criteria in evaluating software packages before providing an explanation of the developed methodology adopted. The key findings of the study are: (1) that there is a need to create a framework for software selection methodologies, (2) there are no universal selection criteria in the engineering industry, and (3) there is a need to validate the findings by creating an application based on the evaluation technique and evaluation criteria for selecting software packages for the engineering industry. The findings of the study are offered to support organisations in the oil and gas sector improve software selection methodologies for SPIA.

**Keywords :** software evaluation, end user programs, soil pipeline analysis, software selection

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