Automated matching systems and correctional method for improved inspection data quality

Abstract

Advances in computing technology, and data gathering tools provides a great opportunity in engineering area such as civil structure analysis domain to better understand its phenomenon. Our case study utilize these advances in pipeline structure in order to study the corrosion behavior that been one of the problem that leads to its failure. The availability of ILI data from MFL tools provides a better insight of corrosion process by using an efficient systems and data analysis method in order to extract important information regarding the condition of the pipeline. Our paper will discuss an implementation of automated matching systems and data correctional method that shown a promising result to improve the quality of data for future reliability assessment. The automated matching systems was evaluated using linear regression method for its sensitivity analysis whereby a modified corrosion rate method was used along with linear prediction method to verify the accuracy of the corrected data. Issues and advantage gain from this research is threefold; timeliness, accuracy, and consistencies in data sampling. This is a preliminary work towards a reliable pipeline assessment method.