Master's degree project at Preemraff in Lysekil

Detecting minor tank leakage

Background

Preemraff Lysekil is a modern oil refinery with many sophisticated computer systems. Preemraff Lysekil uses real-time monitoring systems of its tank farm. The main function of the system is to detect erroneous transactions (product transfers) in the pipeline network as well as to detect major tank deviations, e.g., capturing erroneous flow meters. There is a need to complement the monitoring system so that even smaller tank leakage can be detected. Capturing smaller leakage is of high importance for both safety and environmental reasons. Preemraff views improvement in this area to be a priority.

Details

Derive a mathematical model in the field of mathematical statistics that can reliably detect minor tank leakage from input from a number of meters. The model shall also be written in a suitable programming language, such as MATLAB, to assess the model's ability to capture minor tank leakage. The model must incorporate the importation of historical data from Preemraff's computer system. This historical data documents past events and should be used to test the algorithms.

Other information

- Prerequisite: Bachelor of Science in Engineering, 180 credits
- Specialization:
- Technical physics, chemical engineering or similar, preferably with a focus on mathematical statistics, as well as good skills in programming languages such as MATLAB.
- Scope of project: 20 weeks
- Number of participants: 1
- Work to be performed at Preemraff in Lysekil

Contact persons

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