

## Mechanical Fault Detection System for MEMS LiDAR Systems

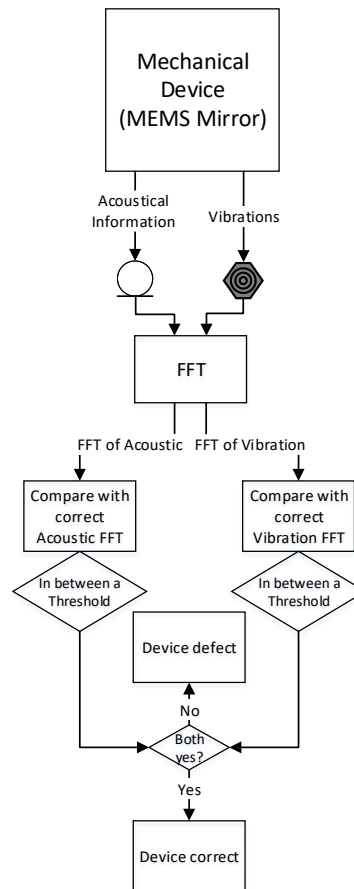


Figure 1: Concept overview of a Mechanical Fault Detection System for MEMS LiDAR Systems.

### Description:

The problem with Micro-Electro-Mechanical-Systems (MEMS) is that the mechanical part is able to be defected after some shocks or aging. To exclude that the mechanical component is not defect it is necessary to check the state of health over different indicators. It is an opportunity to sense acoustic and vibration information by oscillating components like the MEMS mirror in a 1D MEMS Micro-Scanning LiDAR System.

For this purpose, we want to create a Mechanical Fault Detection System, which is able to assess the state of health of the mechanical component via oscillation information.

### Tasks:

- Literature Research
- Integration of I<sup>2</sup>C sensors
- Implement Mechanical Fault Detection System in Software
- Test Mechanical Fault Detection System
- Documentation

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