

Problem Statement Worksheet (Hypothesis Formation)

Which parts-suppliers or manufacturing lines, in which of our four factories, are causing the sharp increase in InSense sensor failures, and which do we need to shut down to bring our failure rate back below 5%?

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1 Context

Nordic Sensing is rolling out a new product, InSense sensors, for which there are already large pre-order quantities. Typically, these sensors show a 1-2% failure rate, however recent testing has shown an alarming 15% failure rate. We need to identify which part supplier and/or manufacturing line is responsible for this sharp increase so that we can halt the corresponding production and address the issue.

2 Criteria for success

The part supplier(s) or manufacturing line(s) producing the faulty sensors will be identified by tomorrow morning. Halting these parts of the process will bring our failure rate back below 5%.

3 Scope of solution space

This analysis will focus solely on the InSensor manufacturing process, covering 26 suppliers who provide 7 different parts.

4 Constraints within solution space

- **We only have access to 20k rows of sensor data**
- **We need a quick turnaround to resolve the problem (i.e. presenting findings to upper management tomorrow)**

5 Stakeholders to provide key insight

Tony Abraham - InSense VP
Otto Evans- InSense President
James Hansk - CEO
Vince Maccano - Head of Data Science
Jessica Jones - QA/QC Engineer
Gary Neumont - Head of Manufacturing

6 Key data sources

Cert data in excel format - contains QC status for 20k individual sensors, along with the DOM, parts supplier and manufacturer

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