Nordic Sensing Problem Statement & Context

Recent Nordic Sensing production output shows a dramatic increase of sensor failure rate from 1-2% to 15%. Root cause of the issue may be multifold: bad supplier parts or internal manufacturing errors due to lapse of QC and/or internal manufacturing/operational issues. The reason for this problematic change must be found and the sensor failure rate cut to below 5%.

Areas of intervention:

- One or more of 26 suppliers delivers substandard sensors. Find out who?
- Which and how much the 4 facilities contribute to the 15% failing rate and why?
- Are the reasons due to faulty external supplier issues or internal operational and QC issues?

Criteria for success

How to immediately reduce InSense's sensor failure rate back to below 5%, by finding the internal and/or external factors/causes for it?

Scope of Solution Space: external and internal investigation

1. Analize and discover supplier/manufacturer processes in the leading months before the change, when failure rate has been below 5%.
2. Focus on specific suppliers, recently added to the production line, or any external changes in the supply chain and origin of parts. Identify, compare, analize, external factors before and after the change in failure rate. Identify substandard suppliers, if any.
3. Trace back recent changes in the manufacturing steps in all 4 facilities, before and after the failure rate change and describe the reason(s) for the new increased failure rates.
4. Disclose findings and recommend change(s) or rectifying measures.

Constraints within solution space

- The Cert system limits exports to less then 20k rows.
- The manufacturing dates go back only two quarters.
- Parts can be connected to suppliers and manufacturer for each InSense sensor and identified if it failed on testing.

Stakeholders providing insights

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

Data sources

- Cert source. Excel format.
- Data covers manufacturing dates going back two quarters with dated testing results. Additionally, its possible to connect supplier parts and manufacturer to each InSense sensor and identify whether it failed on testing.