Nordic Sensing Problem Statement [Mandana Hajizadehmotlagh]

How can Nordic Sensing reduce the InSense sensor sudden increase in failure rate that can be due to a faulty part from a supplier, issue at a manufacturing site or both and reduce the current 15% failure rate to below 5% immediately?

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1 Context

Nordic Sensing is one of the world's top IOT companies. Recent data show that the failure rate of the InSense sensor (one of their new products) has increased drastically from 1-2% to 15%. The root cause of this issue, which could be a faulty part from a supplier or problem at a manufacturing site, needs to be identified. Large advance orders are placed for InSense sensors from the company's key accounts and four factories are focused solely on fabrication of the InSense sensor, fabricating a new sensor every 30 minutes. The reason for this issue needs to be found and addressed immediately to drop the failure rate to below 5%.

2 Criteria for success

The InSense sensor failure rate will be reduced to below 5% immediately.

3 Scope of solution space

The reason for failures will be identified. If the source of increased failure rate is a faulty part from one or more of the 26 suppliers, purchases from those suppliers will be stopped. If the issue is due to manufacturing steps at any of the four factories, production at the factory or factories will be halted until a remedy is in place. The issue may also be due to a combination of the aforementioned reasons.

4 Constraints within solution space

The Cert system limits data exports to at most 20k rows and only includes manufacturing dates going back two quarters.

5 Stakeholders to provide key insight

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

6 Key data sources

Data from Cert: The data include individual sensor manufacturing dates and testing results (failed/not failed) as well as the device part supplier and the manufacturer for the last two quarters.

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