Project	Early detection of main bearing degradation
Industry / Asset	Wind Turbine
Country	France
Year	2017

The Context

How to predict degradation of the low speed main bearing and thereby reduce production losses resulting from the long delivery time of the critical part?

Our Solution

1. Detection of anomaly
   - Detection of abnormal vibration through hybrid model combining SCADA & vibration data
   - Detection of abnormal operations of lubrication system
2. Diagnosis
   Cross-analysis of health indicators showing:
   - Excessive metal particles in lubrication
   - Starting degradation of the main bearing
3. Prognosis
   - Prediction of remaining life time based on current vibration and operating conditions
   - Planning of the main bearing replacement
4. Intelligence: Palliative maintenance based on advanced monitoring
   - Short term action: lubrication system flushing based on agents triggering, magnets in oil syphon
   - Middle term action: power limitation
   - Long term: main bearing replacement

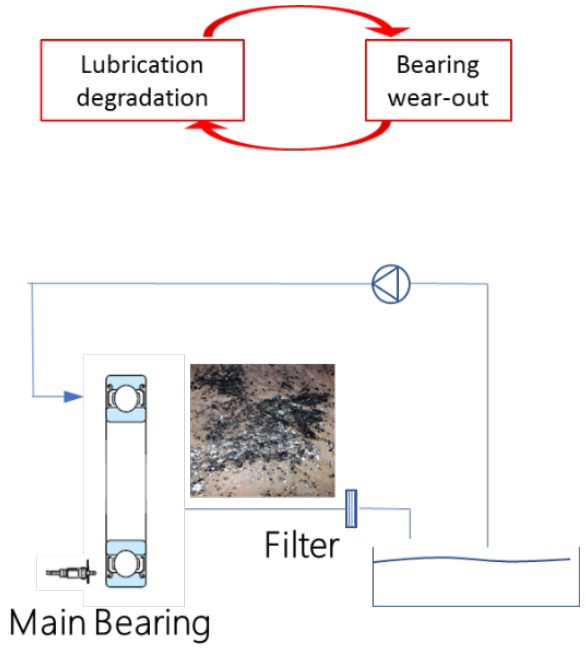
The Benefits

- Reduction of production losses
- Lifetime extension & Safe operations
- Optimisation of main bearing replacement planning

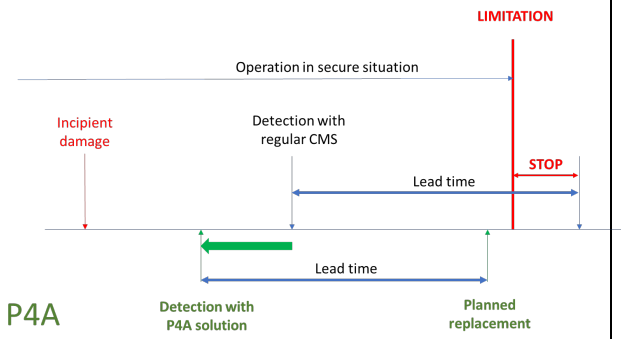
The ROI

Average gain approx. € 25k

Pictures / Graphs



Diagnosis: Bearing degradation related to lubrication quality



Benefit: Reduction of production losses thanks to early detection

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