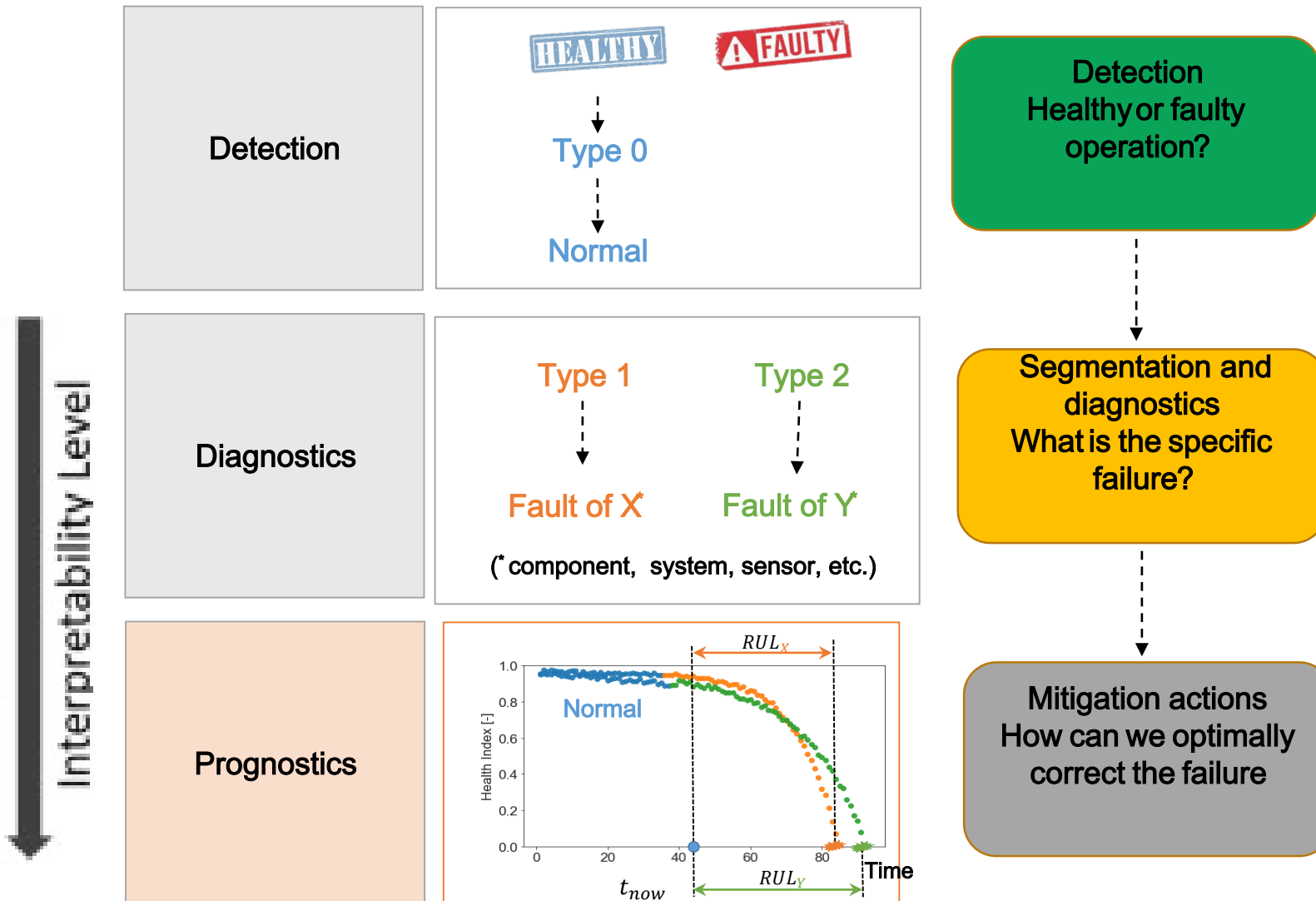


How to make the optimum uses of data: combining IoT data analysis with industrial business cases: making money with smart maintenance in industrial application

Dr. Jan Thomas Palmé
ZHAW School of Engineering





Example – Generator Rotor Interturn failure

Detection

- Vibration shaftline characteristics changes
- Anomaly is detected

Value:

- **Early detection allows early diagnostics of impending failure**

Diagnostics

- Anomaly signature (deviation between expected and measured) is inferred and the specific failure identified

Value:

- **Identification of specific failure mode allows the planning of specific repair**

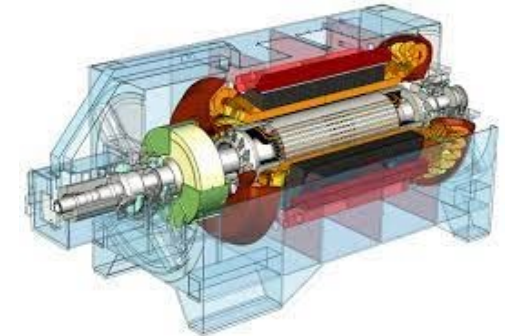
Prognostics

- Experience of the failure mode allows the customer to continue operate the plant until an upcoming planned outage

Value:

- **Customer can align repair with planned maintenance**

Interpretability Level



Summary

- Focus on integrating AI in company core business to support predictive/smart maintenance approaches
- Diagnostics and Prognostics has to be done with high degree of interpretability and confidence in the results
- Evaluation of failure signatures for diagnostics needs to be inferred with experience, know how, data and physics to reach its full potential