PAIRS
Privacy-Aware, Intelligent and Resilient CrisiS Management

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Outage Predictor

Prediction of regional power outages for industrial production

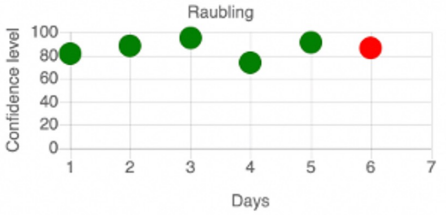
PROBLEM STATEMENT:

Unplanned power failures or fluctuations below 49.8 and above 50.2 Hertz can lead to uncontrolled shutdowns of frequency-sensitive machines → downtimes, destruction of machine parts, additional staffing, production losses

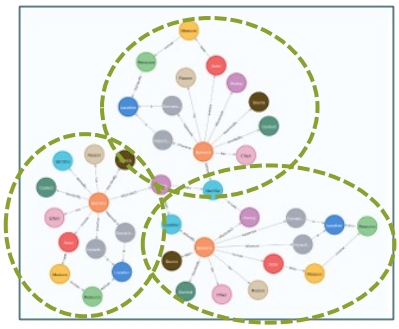
SOLUTION:

- Anticipation of regional energy-driven crisis situations to increase resilience in production by means of AI-based scenario planning
- Mapping of weather & power outages data (2012-2020) on scenario patterns in JSON-LD → creation of crisis scenario knowledge graph
- Prediction of potential regional power outages, i.e., crisis situations described and explained by means of scenario patterns

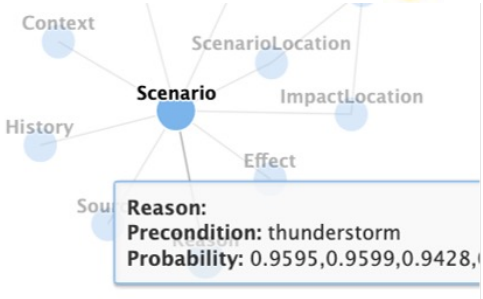
RESULTS:



Prediction of regional power outages for locations of German paper industry in time horizon of max. 7 days (accuracy: 0.81, sensitivity: 0.70)



Scenario patterns in knowledge graph (Neo4j)



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Supported by:

Federal Ministry for Economic Affairs and Climate Action

on the basis of a decision by the German Bundestag

01MK21008D