

PRECOG predictive algorithms



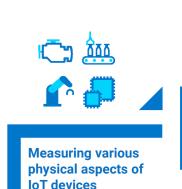
TELLS THE FUTURE

Go beyond monitoring: Automate analysis to take actions

- The PRECOG product can predict the failure of an electric motor two weeks in advance
- · Works with DC, single-phase AC, and three-phase AC electric motors that can be part of complex machines
- Precog enhances operational safety by preventing downtime
- It can be used for water and oil pumps, production lines, robotic arms, railway turnouts, and **essentially any complex equipment** that contains an electric motor or electronics where the high availability is crucial.
- Precog is a smart maintenance forecasting Al software with over 90% success rate
- It **continuously improves** as the Al learns and adapts to specific devices
- COST EFFECTIVE: Precog lowers operational costs
- Logistics and maintenance costs can be reduced -> Green solution

Smart maintenance maturity assessment diagram







Collect and store telemetry data



Monitoring, administration and general Al

- Basic fault detection
- Helps to find the right physical aspects
- Provide approximate reference data
- Due to the general model, the success rate is significantly lower



Precog statistical algorithms

- Designed for industrial use
- Typically for electric motors and machines performing periodic motion
- Combines multiple different probability calculation algorithms
- High success rate, as it is specifically tailored



PRECOG AI

- Automatically learns the behaviour of the device
- Development of algorithms tailored to the specific device
- Continuously improves the efficiency of the algorithms
- Automatic reference data determination
- Short learning time
- Very accurate forecasts, analysis and advice

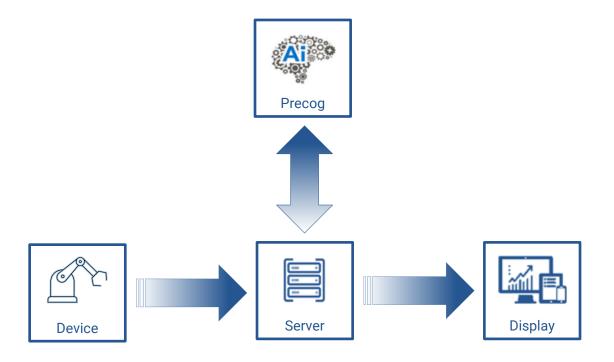
If any level is missing, we offer consulting and complete project execution.



Telemetry data process



Precog can be accessed via a web API interface over the internet or on-premises.





Case studies





Please check out our website for more information: https://vidasoftservices.com/precog/case-studies/

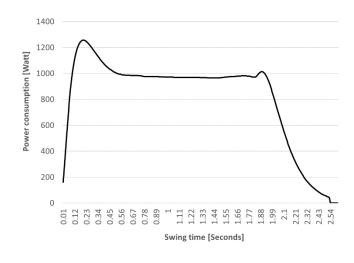


Case study - Railway project













30% REDUCTION IN MAINTENANCE COSTS

75% REDUCTION IN UNPLANNED SITE VISITS AND FALSE ALERTS

50% IMPROVEMENT IN DETECTION RATE

40% REDUCTION IN DOWNTIME

ZERO UNPLANNED MAINTENANCE



14 YEARS OF EXPERIENCE

NEURAL NETWORKS

PRECOG UTILIZES 14 DISTINCT PROBABILISTIC ALGORITHMS

TRAINED WITH MORE THAN 7 BILLION MEASUREMENT DATA POINTS

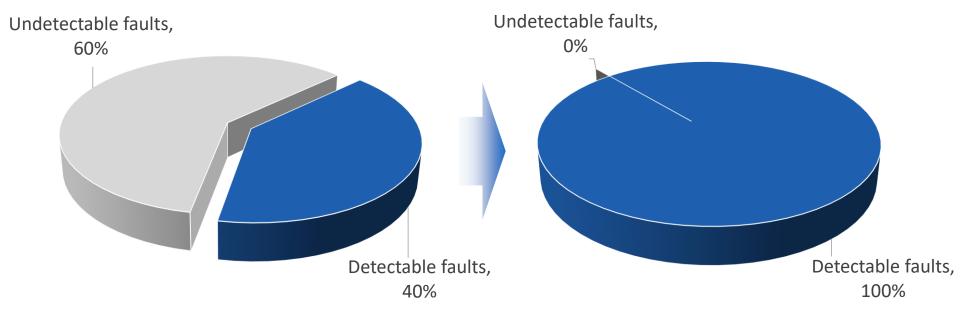


Other solutions vs PRECOG



Boundary values & thresholds detection method

PRECOG accurate predictions for all faults

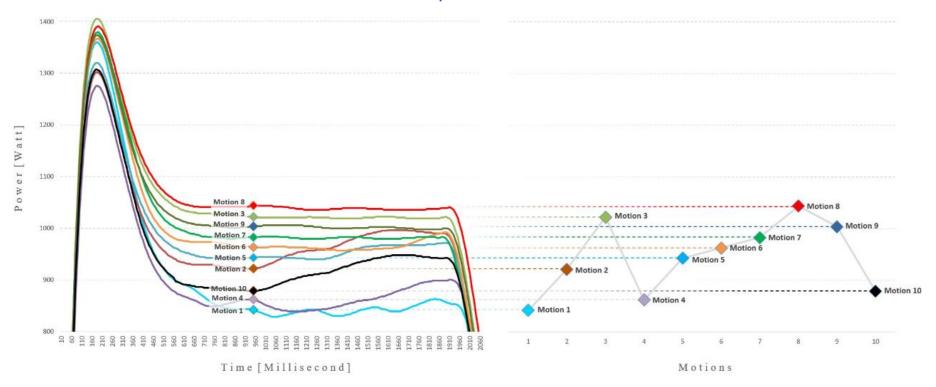


Precog is not only able to detect significantly more errors but also provides accurate predictions.

How PRECOG analyses curves



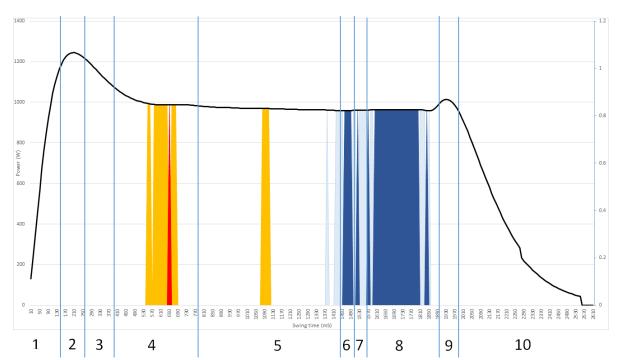
Process each point on the timeline



PRECOG uses "recipies" to devide data sets into sections



Deformed switch blade



The recipe

Section	Relevant	Percentage	Range of motion
1-3	Х	> 90%	Inside
4	Х	> 30%	Above
5	Х	> 80%	Inside
6	Х	> 30%	Outside
7	Х	> 15%	Outside
8	Х	> 60%	Below
9	Х	> 50%	Inside
10	Х	> 90%	Inside

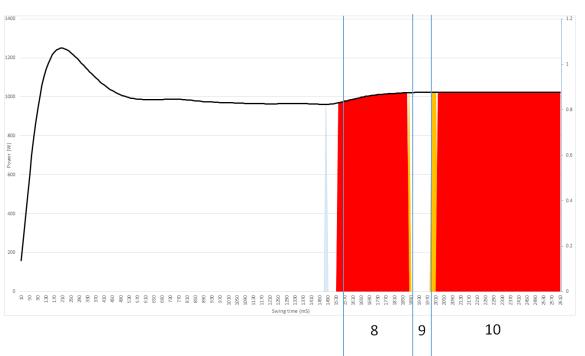
Each section is evaluated against the recipe to identify the fault.



It's sufficient to use just the PRECOG approach for all faults



Abnormal operation due to extraneous material



Section	Relevant	Percentage	Range of motion
1-7	-		
8	Х	> 70%	Above
9	-		
10	Х	> 85%	Above

PRECOG also works for faults that can be detected by boundary value and threshold detection methods, so it is sufficient to use the PRECOG approach.

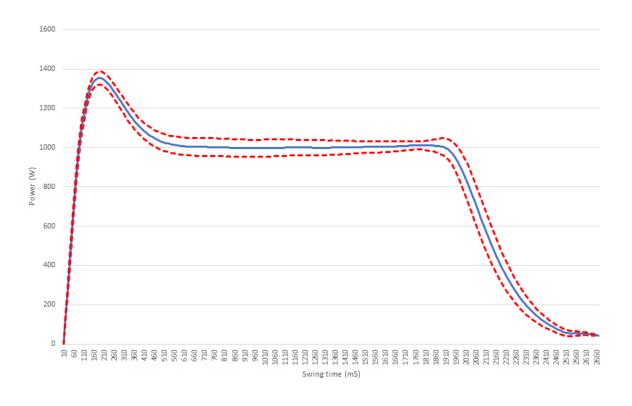


What PRECOG uses the Neural Networks for?



Select relevant reference curves

- to reduce noise
- adapt to each asset



Demo



- Easy to try
 - Download examples
 - Use your own data



https://vidasoftservices.com/tryprecog/





Thank you

Contact us:



info@vidasoftservices.com