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Central Asset Data Intelligence System - CADIS

Asset Monitoring combined with Data Analytics

Business intelligence tool solution improving component reliability, asset diagnostic and condition based maintenance.

Challenge

Customers expect delivery of safe, reliable, affordable and sustainable energy. In the past years, siloed instrumentation and control, condition monitoring and computerized maintenance management systems were the key tools for safe and reliable operation of power plants. Today the optimization of the overall effectiveness and the reduction of operational costs are becoming key objectives. Throughout the runtime of a plant, numerous data from various plant assets such as pumps, valves and heat exchangers are obtained. The data volumes and variety continuously increases, making it difficult to store, manage, analyze and to evaluate the asset data.

Solution

CADIS enables plant operators to collect huge and complex asset data at one central place, to transform the data into actionable insights for faster and reliable decisions. It informs continuously about the historical and current health condition of the monitored assets. **CADIS** can predict behavior (predictive maintenance) and integrates customizable tools (data analytics) for easier and faster data exploration, diagnostics and root cause analyses. During normal operation **CADIS** helps to get an overview of all essential systems information needed (customized dashboard).

CADIS is a Framatome customizable data analytics platform:

CADIS - Product

Stand alone solution for your data evaluation, asset monitoring and analytics

CADIS - Add On

Merging different M&D Systems in one GUI and add additional functions, such as:

- Dashboard and analytic tools for existing M&D solution
- Detect and classify trends from historical events of assets

CADIS - Service

Framatome analyses your historical data to identify critical events and helps to understand those behaviors.

CADIS Dashboard and Expert Tools

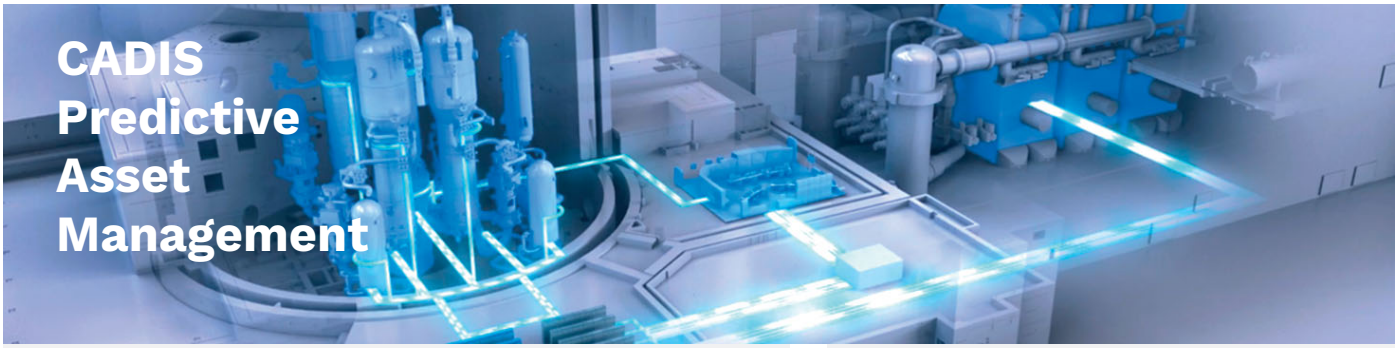
Customer benefits

- Understand component behaviors and component correlations
- Increasing the profit by reducing maintenance costs
- (Self) Business Intelligence tools for faster decisions
- Continuous information about the health condition and fatigue sate of the assets
- Schedule predictive maintenance and to customize the strategic perspective
- Store and present all occurred asset events with their description (what, when, where, how and why)
- Evaluation of your data, effectively and efficiently
- Tailor made software solutions based on customer needs

Your performance
is **our** everyday **commitment**

Technical information

- Easy and automatic transformation of huge numbers of complex asset data into actionable insights
  - Automatic processing of collected data for feature extraction
  - Data visualization module for feature exploration, diagnostics and root-cause analysis
- Connection of smart data collectors to the Condition Monitoring System (CMS)
  - Wired monitoring system
  - Semi-wireless monitoring system
  - Wireless monitoring sensor
- Creation of data analytics (prediction) models for
  - Statistics, clustering and fault pattern recognition
  - Class or fault prediction (classification)
  - Remaining Useful Lifetime (RUL) prediction (Regression)
  - Fatigue prediction (based on temperature, vibration or load data)
- Integrated web-based customizable dashboard for asset condition management enabling plant managers to learn from data, obtain insights and make reliable and faster decisions for plant optimization
  - **CADIS** data can be hosted locally at your premises or as a cloud solution
- Scalable and easy-to-maintain File Archive, with the possibility to store structured and unstructured asset data in different format (numeric, text, pictures, videos, etc.) and of any size



CADIS Predictive Asset Management

Advantages

Define asset instrumentation priority, based on recurring issues, criticality, strategic planning, and set up the ramp up of the instrumentation.

Connect **CADIS** to existing historians and use its big data analyses capabilities in order to make sense of previous events, detect unknown behaviors, analyze known issues.

Define asset priority based on recurring issues, criticality, strategic planning and set up the existing instrumentation.

References

- Running as stand alone and add on solution for pump monitoring in two NPP
- Add-on to complement Framatome M&D products for new build projects
- Successful identification of abnormal events analyzing historical data
- Used within Framatome for data analytics and root cause analysis in several business fields.

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