
orion

ORION SYSTEM

An **Integrated Asset Management system** supported by Reliability Engineering that allows companies to reach new level of operational efficiency, balancing **performance**, **risk** and **cost**.

The Orion system is a web-based system for managing industrial assets, supported by reliability and in accordance with the requirements of ISO 55001 and the PAS 55 guide. The system brings together **Management** and **Analysis** modules so that companies can manage their physical assets by doing more with less, managing risks in a sustainable way throughout the lifecycle of assets.

OVERVIEW

- Asset Management System
- Supported by Reliability
- Complies with ISO 55000, PAS 55 and **The Asset Management Landscape (ISBN 978-0-9871799-2-0)**
- Integration with CMMS (e.g., SAP, MAXIMO), downtime logs, PIMS, condition monitoring systems and other sources of information to obtain data such as:
  - Asset Information
  - Work orders
  - Production or system downtime logs
  - Asset condition log
  - Performance parameters
  - Maintenance plans
  - Documentation
  - Other data
- Based on the functional hierarchy of the equipment
- User-friendly interface

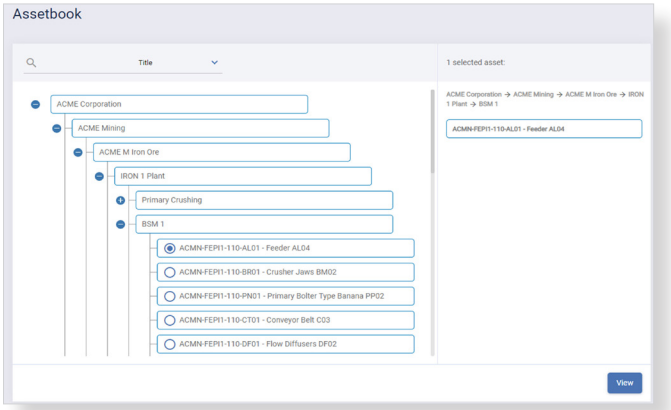
BENEFIT (Value Proposition)	ORION (Enabling Modules)
Results-driven management based on performance indicators	Indicator Panel, Performance Alerts, Reports
Integrated view	AssetBook
Asset risk management	Risk Management, FMEA, LDA, RCM, Failure Forecasting, Asset Criticality Rating, GRI, Degradation Analysis, Artificial Intelligence
Cost reduction	SPF, LDA, Failure Forecasting, GRI, RCA, Production Loss Profile, Artificial Intelligence
Knowledge management	AssetBook, Group and User Portals, Analytics Management, Search
Support in ISO 55001 certification	Asset Management Cycle, MoC, AssetBook, Risk Management
Reliability Analysis	LDA, RGA, SPF, RCM, FMEA, RCA
Optimization of stock policies	LDA and SPF
Optimization of maintenance plans	RCM, LDA, Asset Criticality Classification, Preventive Maintenance and Predictive Maintenance, Degradation Analysis
Increased operational efficiency	Improvement Project, Performance Alerts, Production Loss Profile, RCA, Action Plans

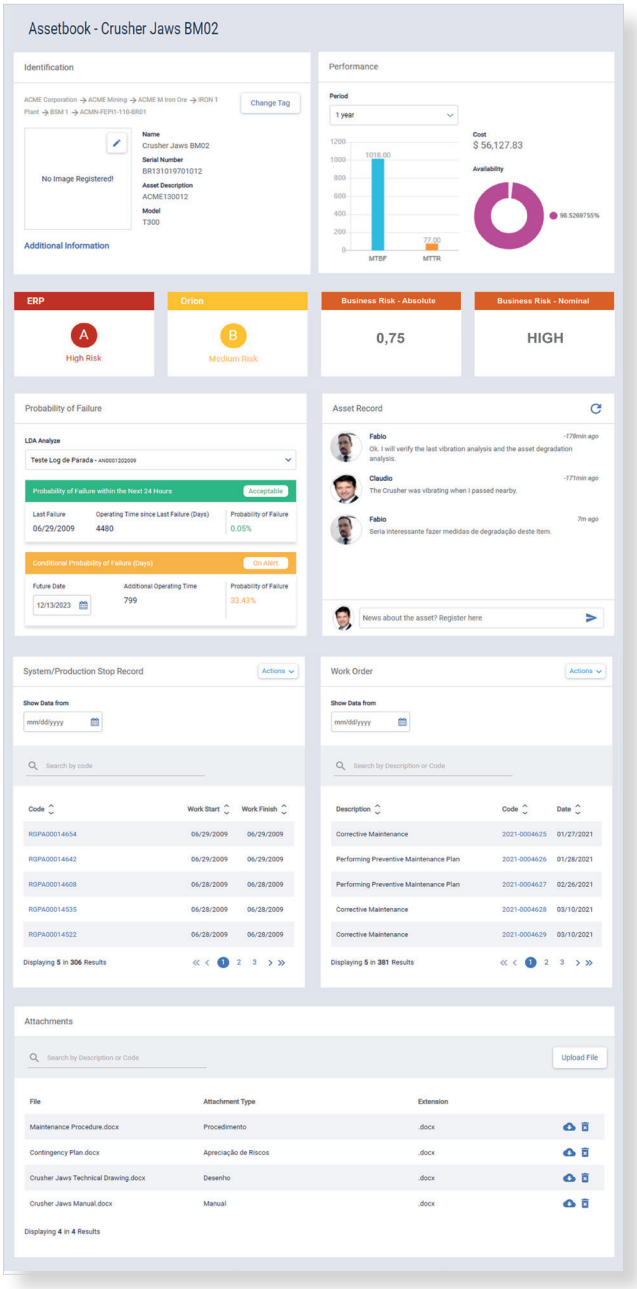
ASSETBOOK

Compiles the several information about the asset, including: photos, location in the functional structure, acquisition date, work order history, maintenance plans, analyzes performed, system/production downtime logs, failure management reports, management of changes (MoC), performance indicators, contingency plans, etc.

Benefits

- Integrated Vision
- Knowledge Managemet
- Support for companies in ISO 55001 certification





MANAGEMENT MODULE

Orion includes several modules to help the company's management and guide decision making to achieve strategic goals. These modules are:

ASSET MANAGEMENT CYCLE

Connects the organization's strategic planning with asset management, supported by performance indicators that cover the life cycle of each asset.

Allows for the organization and communication of the main documents required by ISO 55001: scope, asset management policy, stakeholders, SAMP (Strategic Asset Management Plan), objectives, AMPs (Asset Management Plans) and asset management system indicators.

Benefits:

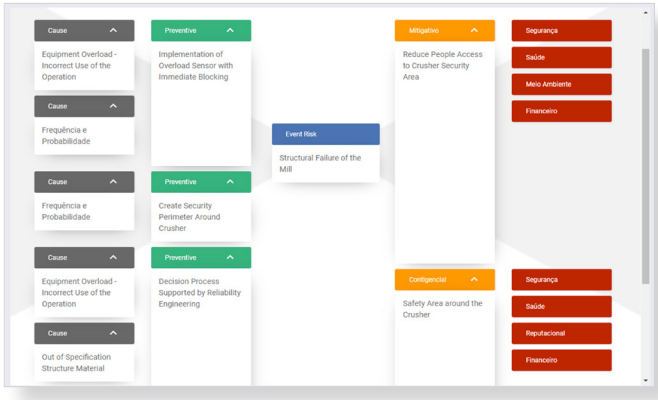
- ✔ Support for companies in ISO 55001 certification

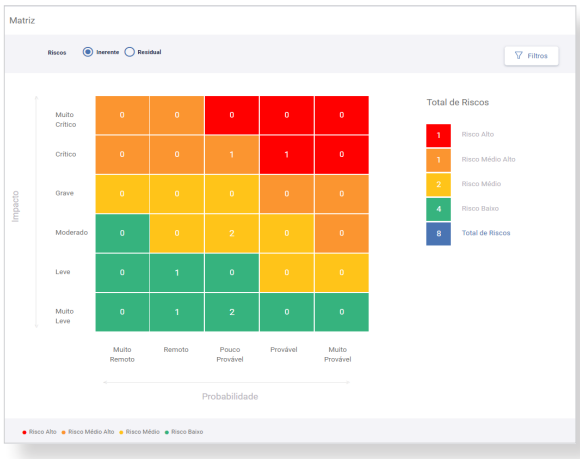
RISK MANAGEMENT

Process based on the ISO 31000 international risk management standard. It allows for an analysis of asset and business risk, comprising qualitative and quantitative approaches, including impacts on safety, health, environment, financial, bow-tie analysis, etc. It also allows you to create preventive, mitigative and contingent control and monitor their respective effectiveness.

Benefits

- ✔ Asset risk management
- ✔ Support for companies in ISO 55001 certification



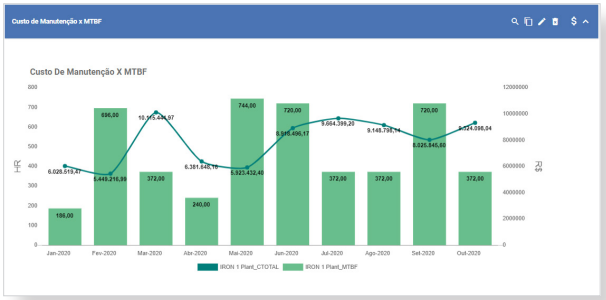


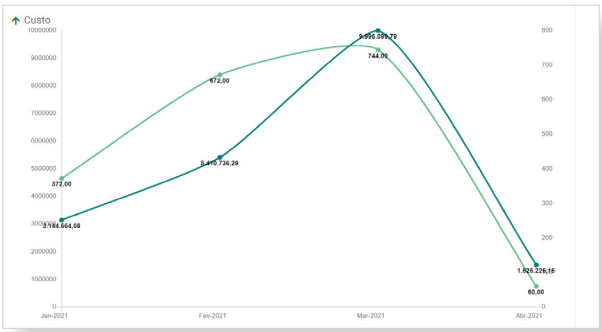
KPI DASHBOARD

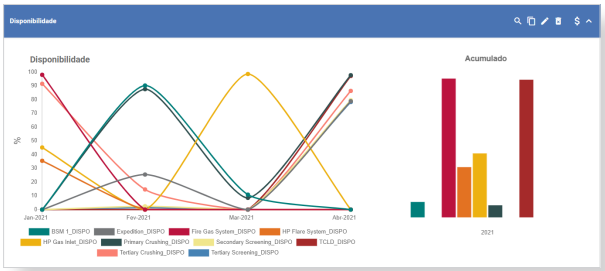
Allows for the creation of indicator panel customized for each user, to monitor the assets that are under their responsibility. It also allows for the detailing of indicators down to the lowest level of the system hierarchy.

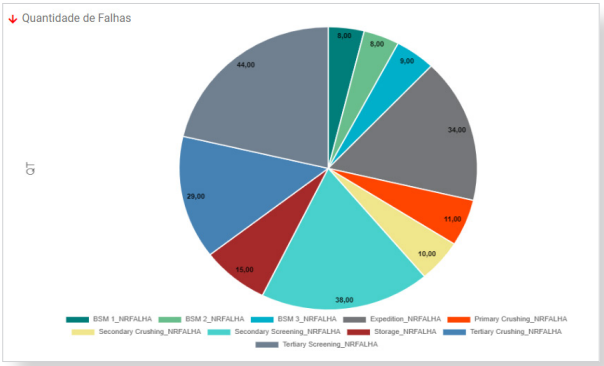
Benefits

- Results-driven management based on performance indicators







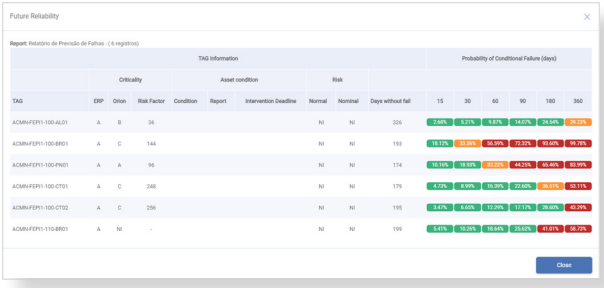


FAILURE FORECAST / RELIABILITY FORECAST

Allows you to continuously monitor, through a daily analysis service, the probability of future failures based on asset information: the existence of equipment in stand-by and its operating condition, condition monitoring (ok, alarm or danger) and reliability distribution.

Benefits

- Asset risk management
- Cost reduction

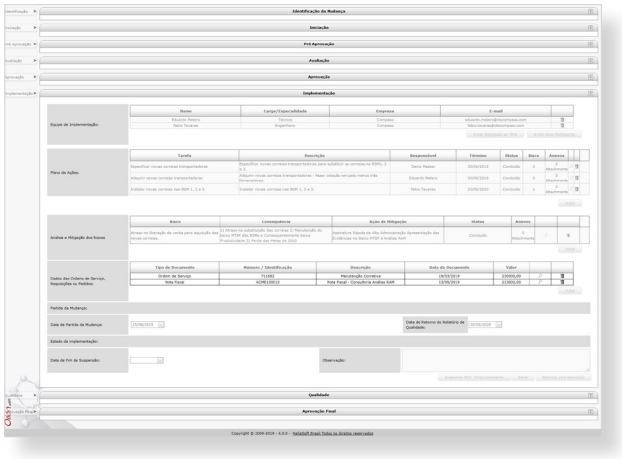


MOC - MANAGEMENT OF CHANGE

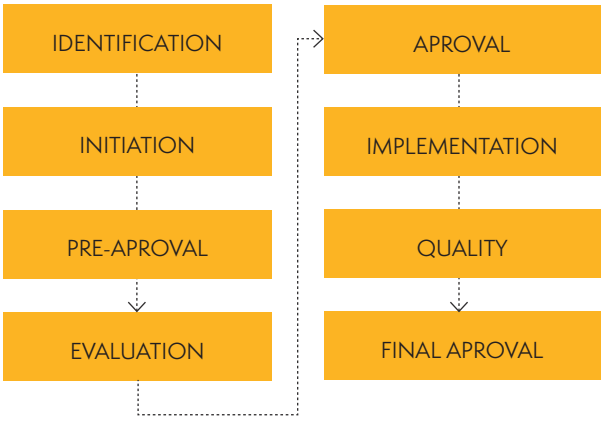
A process structured to monitor and control any planned change, whether permanent or temporary, that may impact the achievement of asset management goals. It includes (financial and non-financial) multidisciplinary approval workflow and panel for managing change implementation tasks.

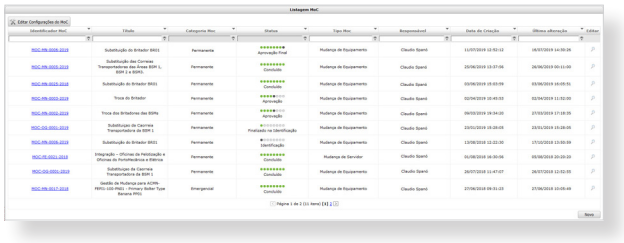
Benefits

- ✔ Support for companies in ISO 55001 certification



MOC PHASES IN ORION





PERFORMANCE ALERTS

Triggers that support asset management, such as: asset performance triggers*, user-defined expression-based failure triggers, and asset management system indicator-based triggers.
*MTBF, MTTR, availability, costs, etc.

Benefits

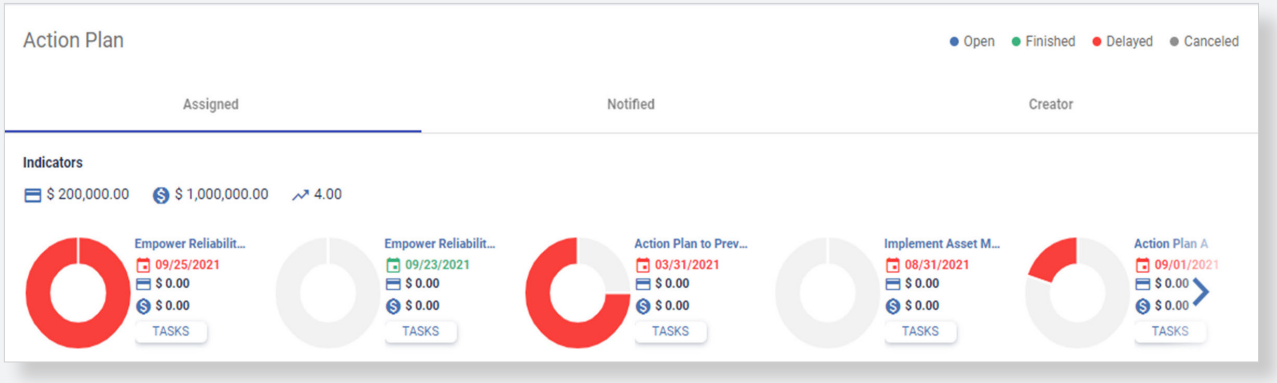
- ✔ Results-driven management based on performance indicators
- ✔ Increased operational efficiency

ACTION PLANS AND TASKS

Allows you to create action plans and associated tasks. It makes it possible to monitor the evolution of actions, through the portals and by sending automatic emails to the persons responsible and engaged. It also provides a panel to monitor the GUT (Gravity, Urgency and Trend) and ROI prioritization of all action plans.

Benefits

- Optimization of the Asset Management Plan monitoring process
- Improved information needed for decision making
- Increased operational efficiency



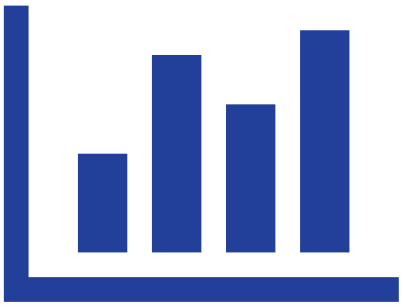
PRODUCTION LOSS PROFILE

Allows you to classify production losses (reliability, inputs, demand, etc.) in up to three levels. This module analyzes the OEE (Overall Equipment Effectiveness) and allows for the management of losses.

Benefits

- Cost reduction
- Increased operational efficiency

IMPROVEMENTS AND CHANGES MODULE



KAIZEN ("improvement" or "change for the better")

Module to execute the Kaizen improvement process, which includes the work team building step, automatic sending of e-mails, approval process, etc.

*Kaizen: Japanese methodology that refers to the philosophy or practices that focus on the continuous improvement of manufacturing, engineering, business management or any process.

QCCs - QUALITY CONTROL CIRCLES

Module to perform the QCC improvement process, which includes the work team building step, automatic sending of emails, approval process, etc.

*QCC: Japanese methodology where employees can regularly and voluntarily contribute to improving the quality of processes, products and equipment.

It aims to identify possible solutions to problems detected and put them into practice in an organized manner and without losing productivity.

ECR - ENGINEERING CHANGE REQUEST

Module for executing, requesting and generating changes in a project. Includes approval and formalization process for design changes.

Benefits

- Cost reduction
- Optimization of activities, processes and resources
- Implementation of a continuous improvement process

ANALYSIS MODULE

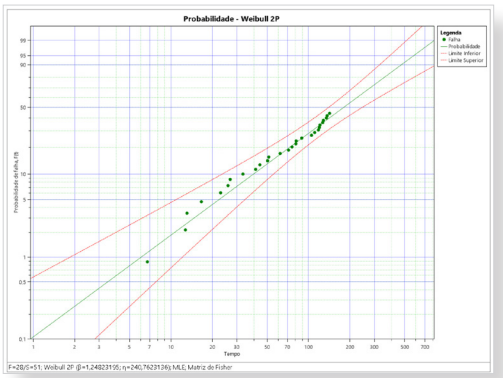
Orion is an asset management system that includes quantitative and qualitative analysis modules. These modules include:

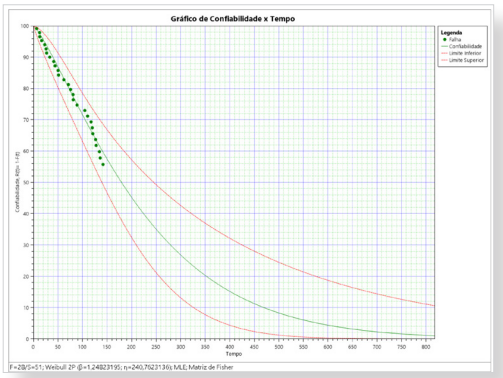
LIFE DATA ANALYSIS - LDA

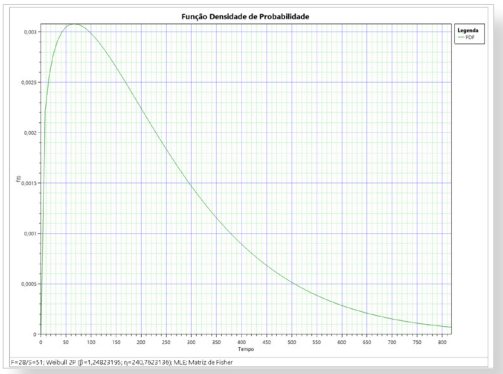
Module to analyze the reliability and maintainability of assets.

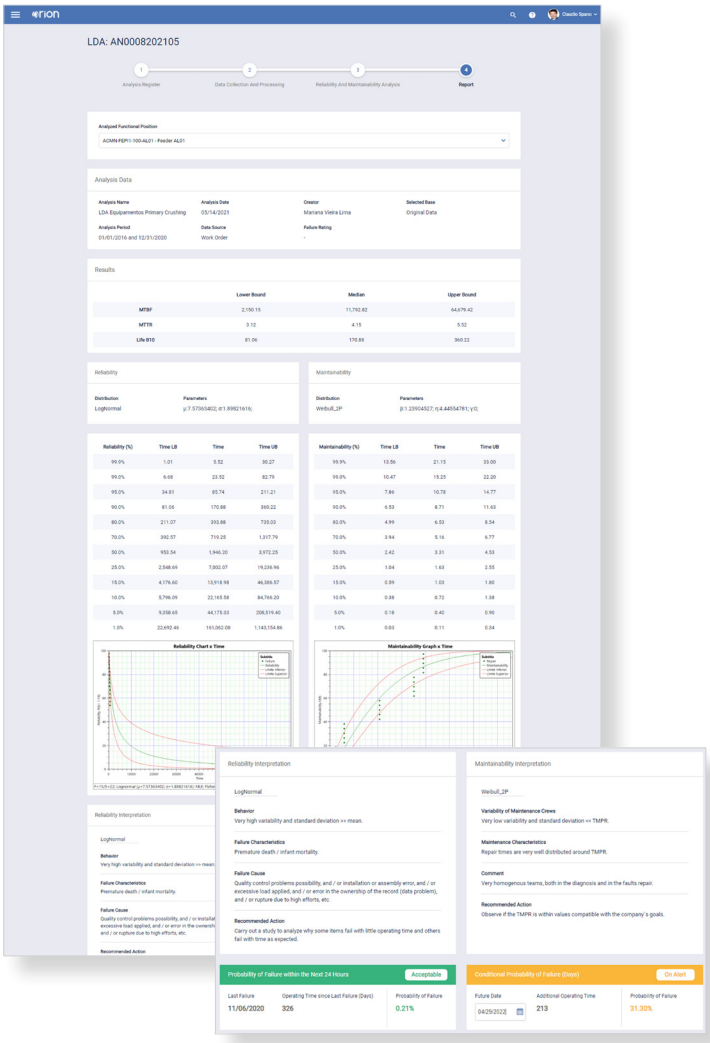
Benefits

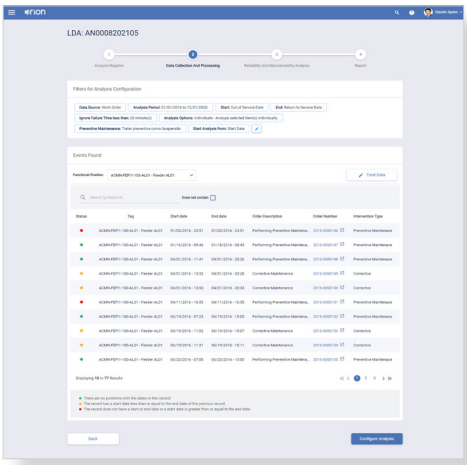
- Asset risk management
- Reliability analysis











RELIABILITY GROWTH - RGA

Module to analyze the MTBF trend, by using statistical properties.

Benefits

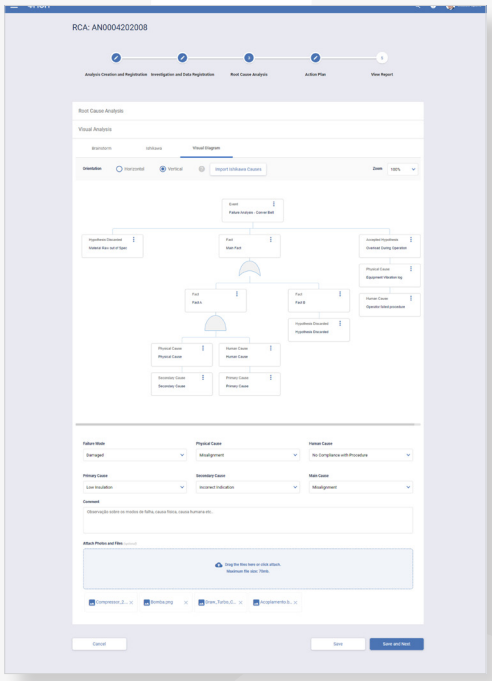
- Reliability analysis

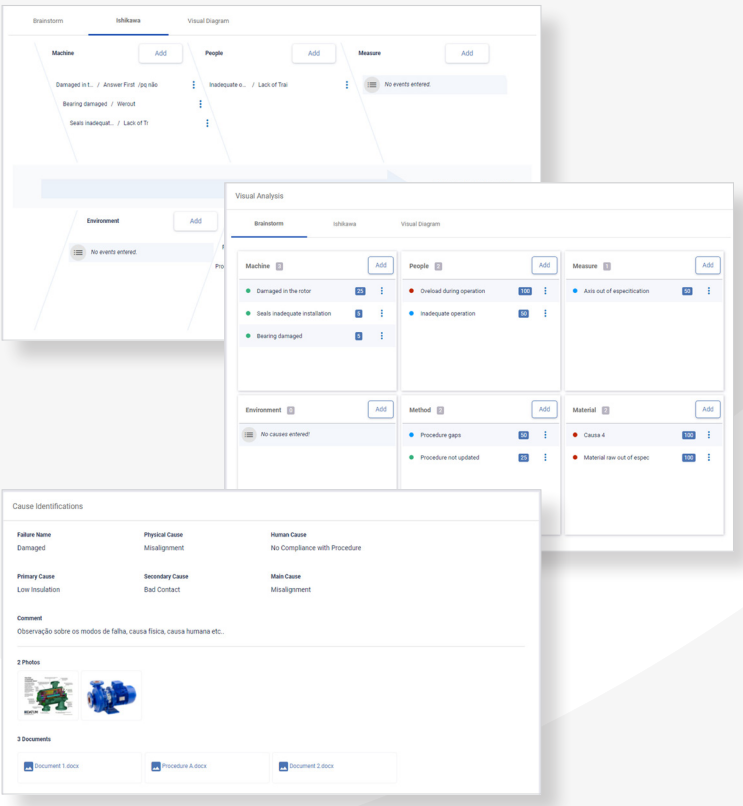
ROOT CAUSE ANALYSIS - RCA

Module to eliminate recurrent failures by identifying their root cause with a structured process. It includes the following tools: Brainstorming, 5 Whys, Ishikawa Diagram, Cause/Effect Analysis and RCA.

Benefits

- Costs reduction
- Reliability analysis
- Increased operational efficiency



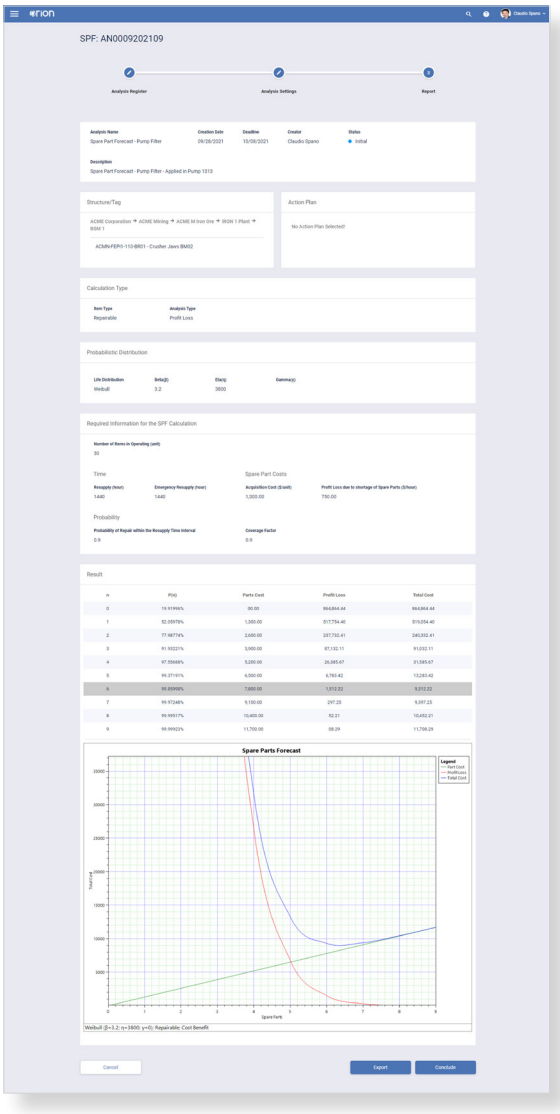


SPARE PARTS FORECAST

Module to determine and set the optimal quantity of spare items based on the item life curve and other information (leadtime, cost, loss of profit, risks, etc.).

Benefits

- Optimization of stock policies

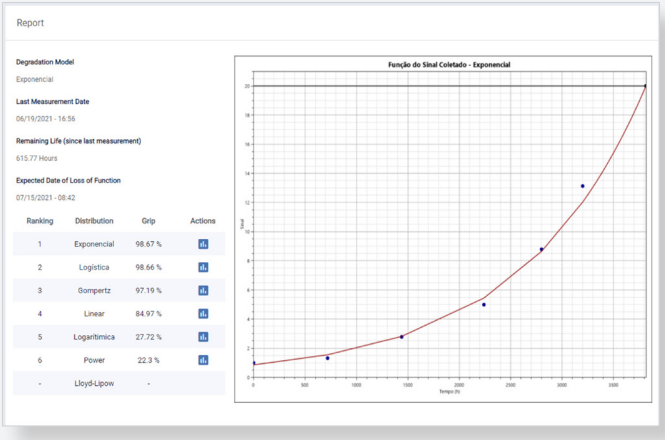


DEGRADATION ANALYSIS

To estimate the life of items from condition monitoring data, through data integrated with monitoring systems or manual input.

Benefits

- Forecast of future failures

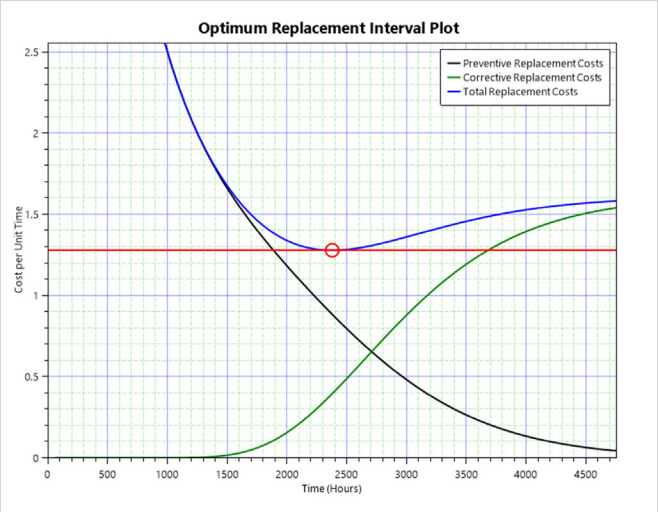


PREVENTIVE MAINTENANCE

To determine the best frequency for preventive interventions, based on reliability curves and information on maintenance costs.

Benefits

- ✔ Optimization of maintenance plans

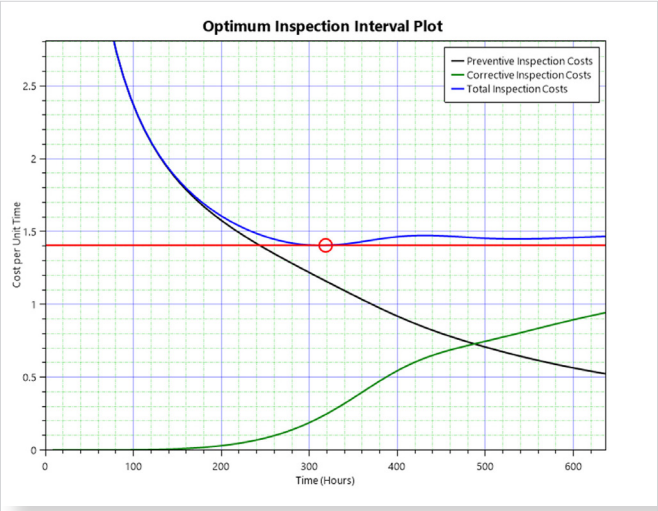


PREDICTIVE MAINTENANCE

To determine the best periodicity for monitoring or inspection intervals based on reliability curves and various parameters related to assets.

Benefits

- ✔ Optimization of maintenance plans

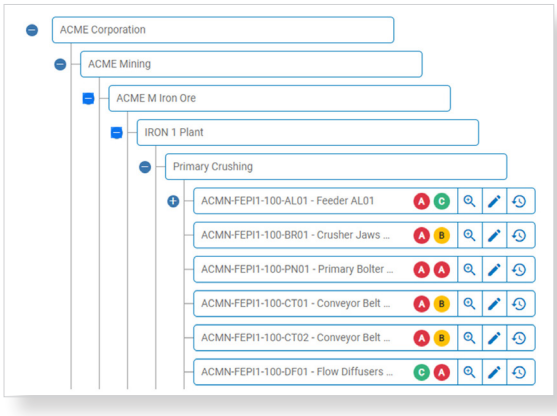


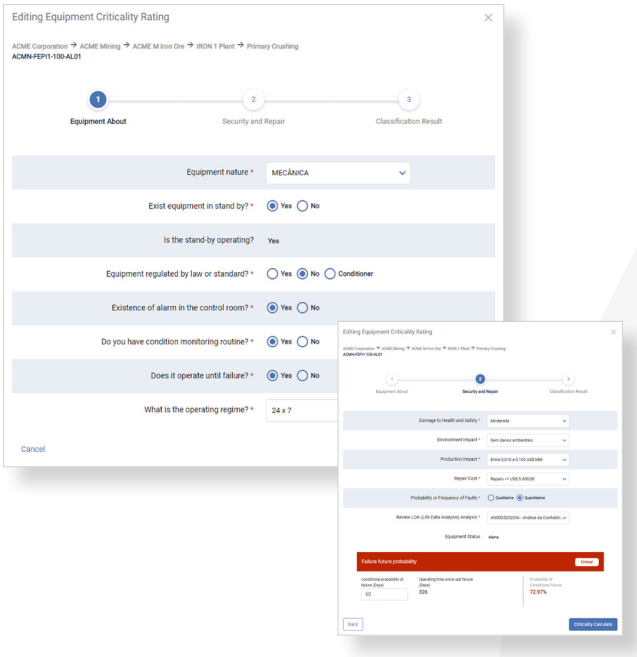
ASSET CRITICALITY RATING

To classify the criticality of assets considering qualitative and quantitative parameters. It also allows for the monitoring and dynamic updating of the assets criticality rating over time.

Benefits

- Asset risk management
- Optimization of maintenance plans





GLOBAL RELIABILITY INDEX - GRI

The indicator is used as a general parameter to assess reliability characteristics of an asset. It uses information on: the existence of stand-by equipment and its operating condition, probability of stand-by failure, equipment status (ok, alarm or danger), conditional reliability analysis, reliability growth trend (Crow- AMSAA – NHPP model), among others.

Benefits

- Asset risk management
- Predictability of failures
- Knowledge of asset reliability

RELIABILITY-CENTERED MAINTENANCE - RCM

To carry out the execution, management, documentation, and preparation of maintenance plans according to the Reliability Centered Maintenance methodology.

Benefits

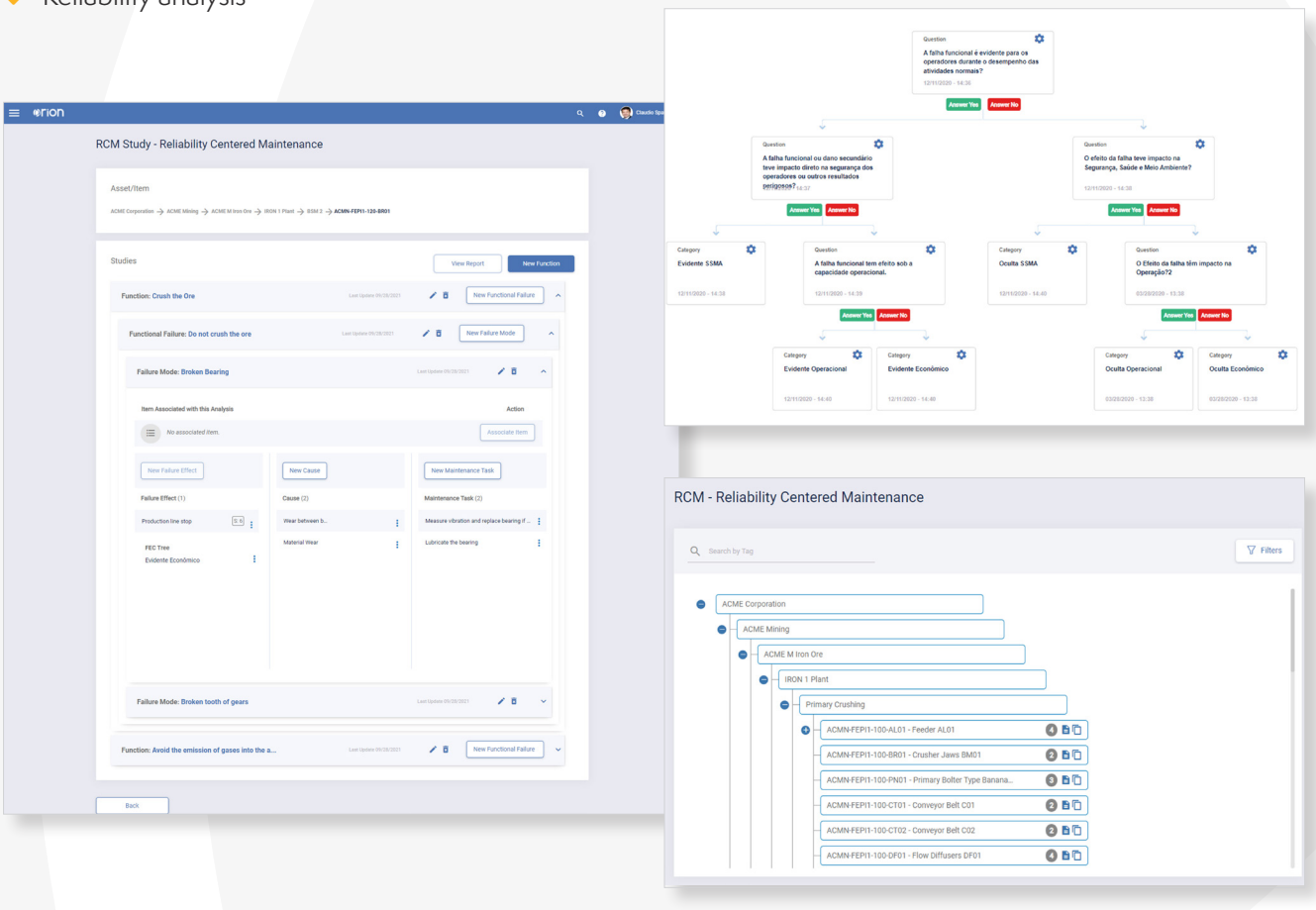
- Asset risk management
- Optimization of maintenance plans
- Reliability analysis

FAILURE MODES AND EFFECTS ANALYSIS - FMEA

To perform failure modes and effects analysis to guide decision making, prioritizing potential asset failure risks.

Benefits

- Asset risk management
- Reliability analysis

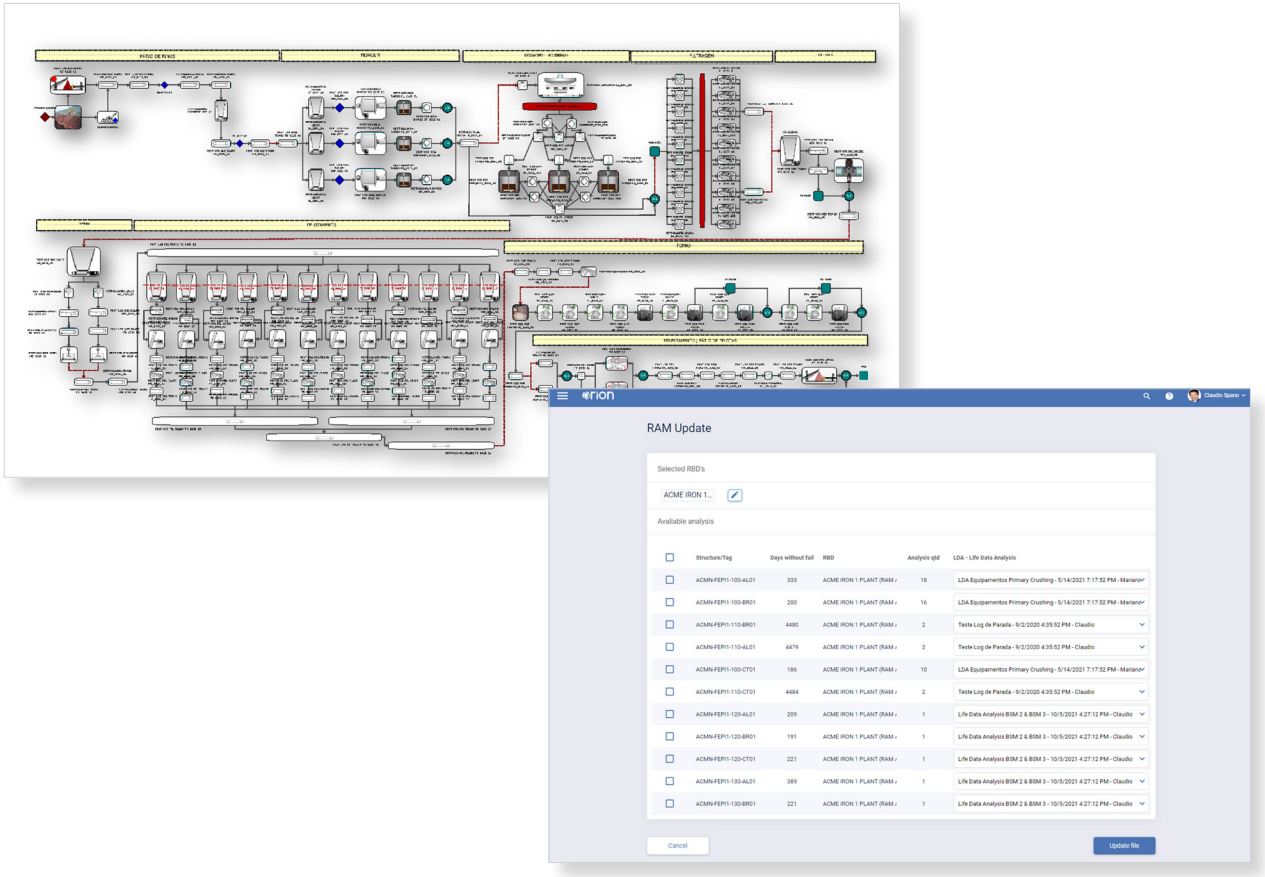


INTEGRATION WITH OTHER ANALYSIS TOOLS

Module that allows integration with other expert tools in reliability analysis and related issues.

Benefits

- Integrated asset management
- Conducting expert analysis
- Knowledge of asset reliability



ADDITIONAL MODULES

INTEGRATION WITH ARTIFICAL INTELLIGENCE PLATFORM

The Orion system includes an optional module* for Failure Detection, Diagnosis and Prognosis that can be customized for your organization. It uses Machine Learning and Artificial Intelligence methods combined with monitoring data and expert knowledge modeling.

This module can be applied to prescriptive maintenance and operation actions, optimization of maintenance and inspection routes, among others.

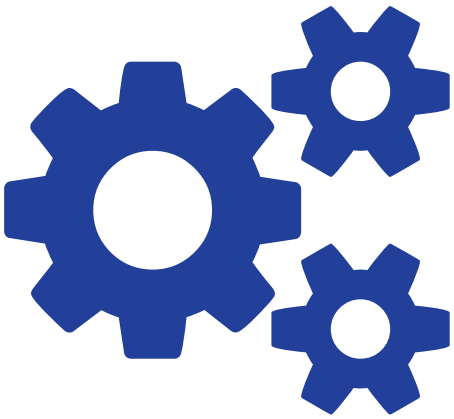
* The Detection, Diagnosis and Prognosis module needs to be customized for different needs and is marketed as an optional additional module.

The Orion system also allows the generation of APIs* to provide reliability and asset condition information to other Analytics systems already implemented in the organization.

* APIs can be developed based on an analysis of the customer's needs. APIs are marketed as additional and optional modules.

Benefits

- Asset risk management
- Costs reduction
- Increased operational efficiency



SUPPORT SERVICES

In addition, the system comprises other modules that support the previous described ones, such as:

REPORT

Allows you to create and share different types of reports.

USER AND GROUP PORTAL

Allows the user to manage their activities and groups within the system.

ADVANCED SEARCH

Allows you to search system database information by selecting tables and related subject fields.

SYSTEM ADMINISTRATION MODULES

The management module aggregates the application settings functions from other modules.

BUSINESS INTELLIGENCE TOOLS

Allows all data from Orion to be exported to Business Intelligence (BI) and Analytics tools.

TYPES OF LICENSES

Orion is licensed by TAGs* and it allows both On Premise or SaaS (Software as a Service) installation.

** Technical acronym for functional position, and may cover business unit, area, system, subsystem, equipment or any other lower level at which you want to perform asset-based management.*

USERS

The number of users is unlimited, and may include outsourced service providers, according to access permissions.

www.ctscompass.com/en

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