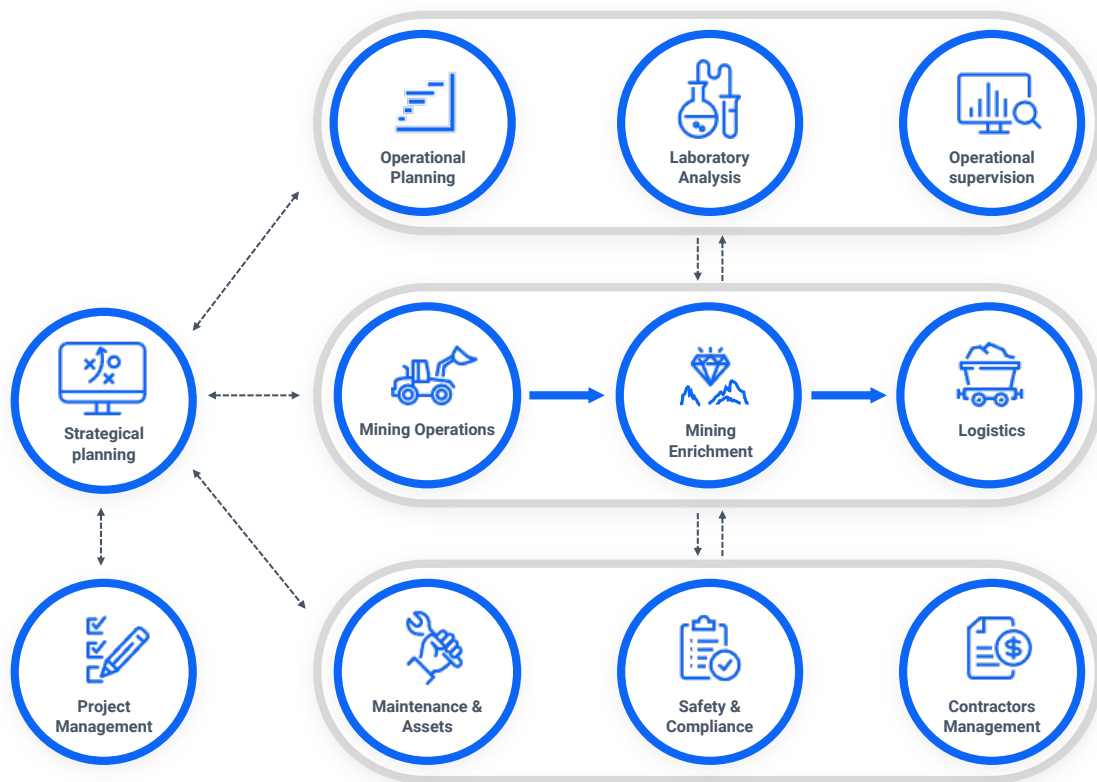


novacura

# OPTIMIZE THE ENTIRE MINING PROCESS WITH OUR DEDICATED SOFTWARE SOLUTION.

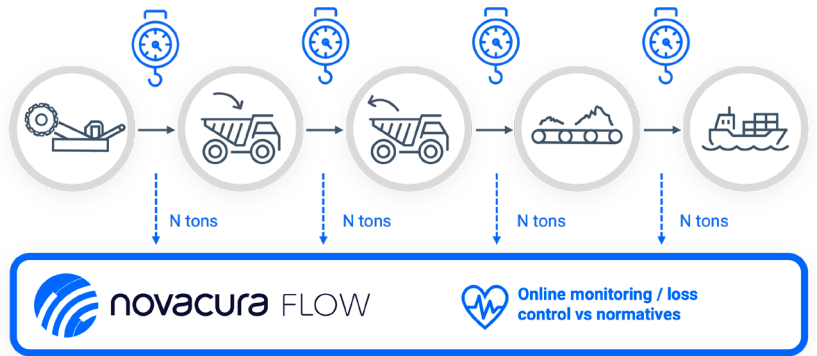
Increase forecast accuracy, reduce incidents, decrease cost per ton and improve facility uptime with IFS Cloud empowered by our innovative low-code platform Novacura Flow



## A COMPLETE SOLUTION.

We know that the challenges in mining don't end with just the mining operations and that's why we offer a complete package of integrated mining services and solutions.

In the next pages we present a few examples of what we deliver.



## 01. CONTROL THE WEIGHT IN EVERY STAGE.

Thanks to Novacura Flow's ability to directly connect to the IIoT devices, the **entire product journey through the mine can be precisely traced**. Flow can connect to industrial scales and read the weight of the product in every stage (i.e before crushing and after). Our solution can then compare losses versus standard and alert the operator or supervisor if the loss exceeded an acceptable threshold.

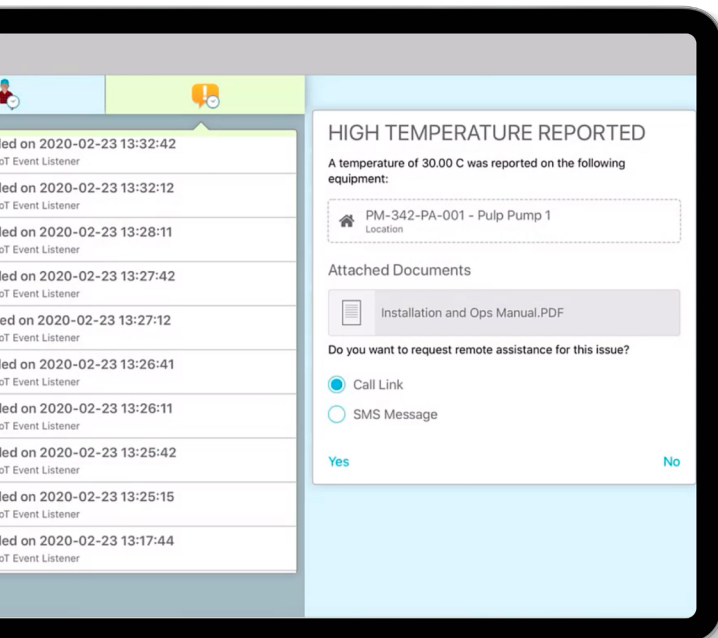
Thanks to that, the manager can precisely identify the place of loss and take the actions needed to increase efficiency (decrease cost per ton)

## 02. INTEGRATE THE MAINTENANCE.

In our solution, all areas of mining – from planning, via logistics to maintenance operations are integrated. Thanks to that, maintenance operators get **access to all the statistics gathered from the machines** (like pressure, temperature or km traveled by the truck). Directly in their application they can start new preventive maintenance actions if any of the parameters warn them.

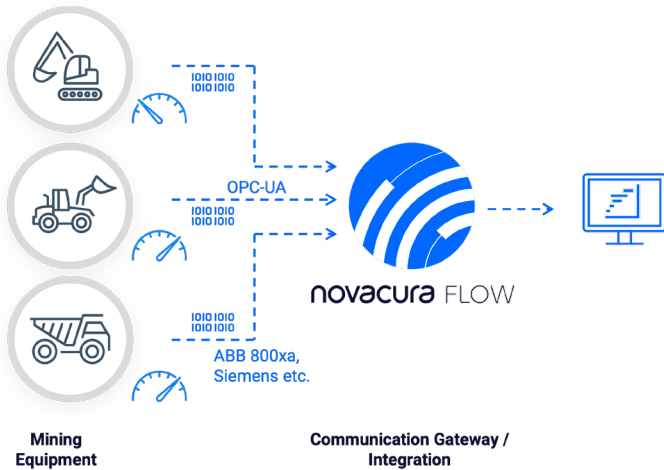
Tasks are visible in the mobile application dedicated for the maintenance crew – they see tasks details, asset documentation and can report work statuses.

Moreover, all maintenance actions – planned or ad-hoc – can be included in the updated production plans in the planning module.



If you are interested in our services and applications dedicated for Mining companies, visit [www.novacura.com/by-industry/mining/](http://www.novacura.com/by-industry/mining/)





### 03. PROVIDE RELIABLE DATA FOR THE OPERATIONAL PLANNING.

The operational planning process is effective and provides reliable plans when it has access to detailed historical statistics and freshly updated information about ongoing operations. Novacura Flow helps gather this information by acting as a **communication gateway between mining equipment and business systems**. It can retrieve the data directly from machines (using OPC-UA, PLC or ABB 800xa). Flow also gathers current work statuses from all employees thanks to a Mobile Work Order Application.

### 04. SUPERVISION SUPPORTED BY REAL-TIME DATA.

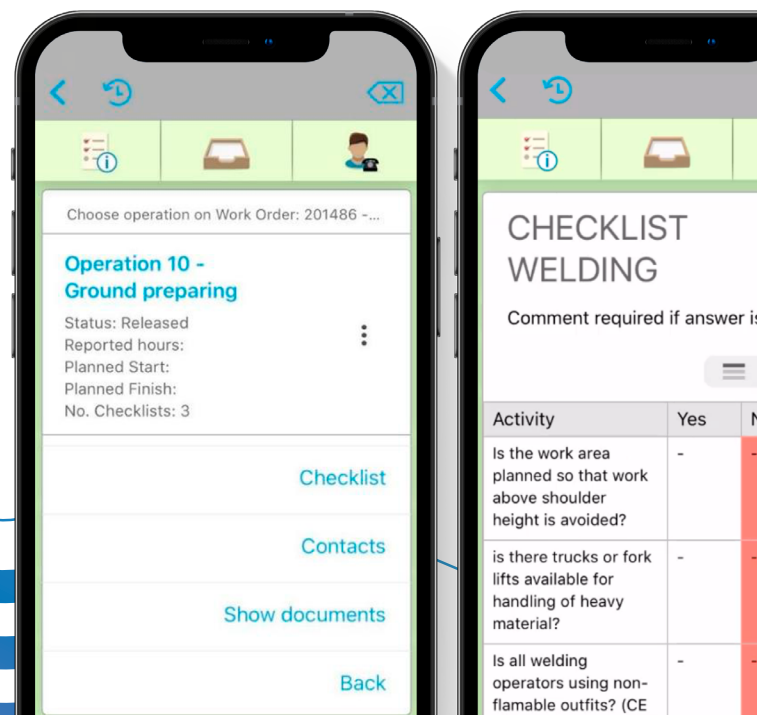
Thanks to the “Mobile work order” application and IIoT connectivity Novacura Flow can gather tons of **data about the performance of tasks and all unexpected situations** (like downtime or damage). The data can be transferred into KPIs and presented on different charts in the Novacura Flow Portal. Employees can see their individual goals and check their current performance in their mobile applications.

### 05. STRATEGICAL INVESTMENTS MANAGEMENT.

Our solution can support mines in strategic investments planning. Because all modules of this solution are integrated – managers get the access to all historical data – from asset utilization via maintenance history to drilling area efficiency and financial costs of operations. By combining all these dimensions **managers can evaluate the trends and make strategic decisions based on facts**. For example, decide if it is better to invest in new equipment and reduce maintenance costs that increase month by month.

### 06. STREAMLINE MINING OPERATIONS.

With the Novacura Flow solution for mining, **every mine crew member can be connected** to the solution thanks to the “Mobile work order” application. In this app, all users get their daily tasks with priorities. It can provide them with further details (additional documentation attached to task) and it can force a specific way of task execution by providing a performance checklist which must be completed by the team member before finalizing the task. The application gathers all task status changes that are immediately transferred to managers and can also be used to update operational plans. It works in both online and offline mode.



## 07. B2B PORTALS.

Novacura Flow Portal is perfect for B2B Portals. The solution manages the communication with mine customers and suppliers (maintenance subcontractors, laboratories etc.).

The B2B portal can be used by 3rd parties to define new customer orders, confirm deliveries, present and approve financial settlements and handle invoices flow.

## 09. IMPROVE PLANNING WITH VISUAL TOOLS.

Novacura Flow offer an advanced visual interface that can be used to improve the operational planning experience.

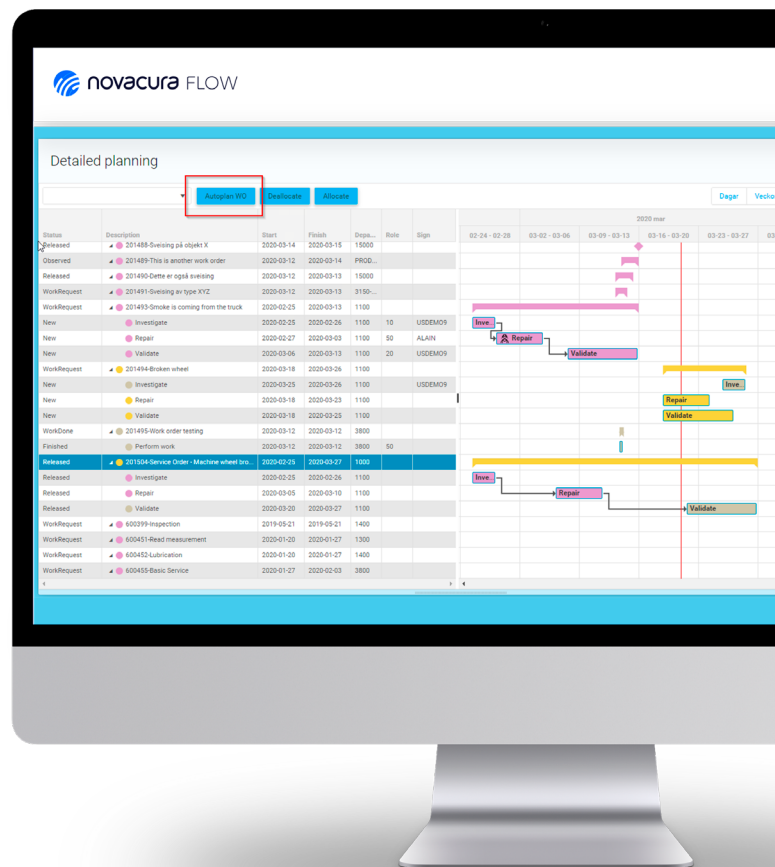
A planning specialist can switch between different charts (including Gantt, Kanban, and bucket chart). The solution can present plans from different perspectives – machine, person or production site – and these perspectives can be viewed simultaneously for efficient planning.

Thanks to connectivity with operational applications plans can be converted to work orders and synchronized with mobile applications used by operators.

## 08. SAFETY & COMPLIANCE.

Being compliant with regulations, especially in the safety area is crucial in mining. All safety, quality, and environmental checklists can be managed within specific mobile applications. Inspection results are then stored in the database and can be printed if necessary.

The applications can also manage employee' certificates validity and automatically alert if a person lost his entitlement to report on a complicated or dangerous task.



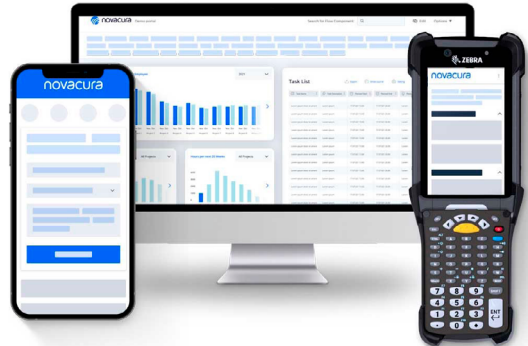
# OUR SOFTWARE PLATFORM.

We don't just take care of business capabilities but also of the technical aspects and features. Below are the key characteristics which differentiate our offer from a ready-made mining solution.

## INTERFACE OPTIMIZED FOR HEAVY INDUSTRIES.

Our applications run on a sophisticated software platform called Novacura Flow. One of the key foundations of the platform is to **run on every device – from barcode scanners, via mobile phones and tablets up to workstations equipped with large screens.**

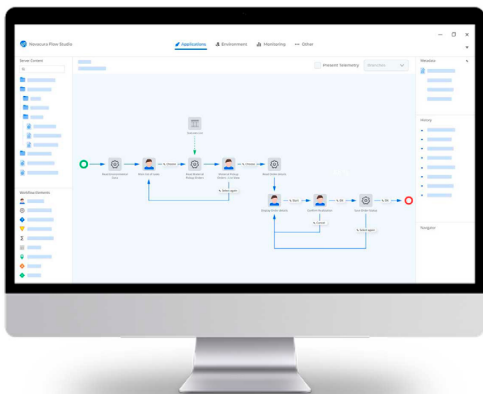
But we are not just another SaaS software. We have optimized our user interface for users that operate in harsh conditions i.e. our applications can run in offline mode when there is no internet connection.



## READY FOR CHANGES THANKS TO LOW-CODE HEART!

Every company is different from the other. You might have specific processes and require unique features and we are ready for that! We created our applications for mining based on our low-code platform.

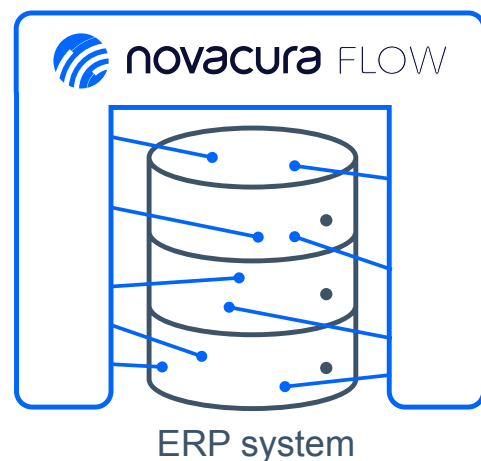
These applications are not hard-coded, meaning that our customers can modify them or clone them and create variants. And they can also build their own applications. Because of the low-code engine they can create apps by drawing them like they draw a business process.



## INTEGRATION WITH ERP. DEEP INTEGRATION!

Our low-code platform Novacura Flow and industry applications can play a vital role in a mining company. But we are not forgetting the ERP!

We treat the ERP system as a primary system – all master data, operations and reported information are stored there. And everything that users do in Novacura is immediately visible in the ERP! It is possible because our platform has specialized online connectors to ERP systems. You can think of Novacura Flow as an alternative, mobile and efficient user interface for your ERP. Thus, you can easily adopt Novacura Flow without changing surrounding processes that can still run in your ERP!



# LIST OF SUPPORTED AREAS.

## OPERATIONAL PLANNING

- Gathering data about performance directly from the machines and from mobile work order applications.
- Visual planning using a multi-dimensional perspective.
- Integration between plans and work orders in mobile apps – task assignments based on the plan.
- Integration with laboratory – direct access to the attached analysis - mining operations are always drilling in the most cost-efficient area.

## MINING OPERATIONS/ ENRICHMENT/ LAB.

- Mobile work orders for mine crew – access to task details, task performance checklists, task status reporting, time reporting.
- Crew management (task assignment, task progress monitoring, reported time verification, holidays scheduling, replacements).
- Downtime reporting.
- Incident reporting.
- Precise production monitoring - from drilling to enrichment stages.

## AUTOMATION / TECHNOLOGY

- Offline mode available for all mobile applications.
- Industrial IoT (IIoT) connectivity - Integration between machines and ERP using OPC/UA, PLC, ABB 800xa / Siemens standards – real performance & maintenance statistics processing.
- Computer Vision.
- Augmented Reality for remote support for maintenance operators.
- Mobile app for the lab assistant to scan the drill-hole RFID and printout an analysis barcode.

## LOGISTICS

- Monitoring of the entire material/ product flow at each delivery point by integrating IoT industry scales/ RFID.
- Mobile apps for truck drivers – GEO location monitoring – ability to track product stock at each location.
- KPI dashboards to analyze truck utilization (ton\*km)/ monitor material loss in logistics.
- Transportation planning based on operational plan and real amount of product on particular stages.

## MAINTENANCE & ASSET MANAGEMENT

- Maintenance tasks planning - Integration with operational planning.
- Mobile Work Orders for maintenance (preventive & reactive) incl. asset documentation management, inspection checklists off-line mode support.
- Tools management / Spare parts management.
- Automatic gathering stats from machines to determine preventive tasks (i.e. based on the ton-km for trucks).

## SAFETY & COMPLIANCE

- Compliance audits planning.
- Audit execution on mobile devices with offline capabilities and checklists.
- Integration of Health, Safety & Quality instructions in all work processes (applications).
- Safety incident management.
- Safety certificates management/ access privileges checking.
- Safety reporting & analysis.
- Printable documentation management.

## OPERATIONAL SUPERVISION / STRATEGICAL MGMT.

- KPI Dashboard/Portals – presented information based on real-time data.
- Team target boards.
- Operational effectiveness analysis (cost per ton, material losses on every stage, drilling area effectiveness etc.).
- Maintenance effectiveness analysis (MTW, MTTR, maintenance costs, MTBM).
- Asset utilization analysis (downtime, ton\*km, defects).
- Safety events monitoring.

## CONTRACTOR MANAGEMENT

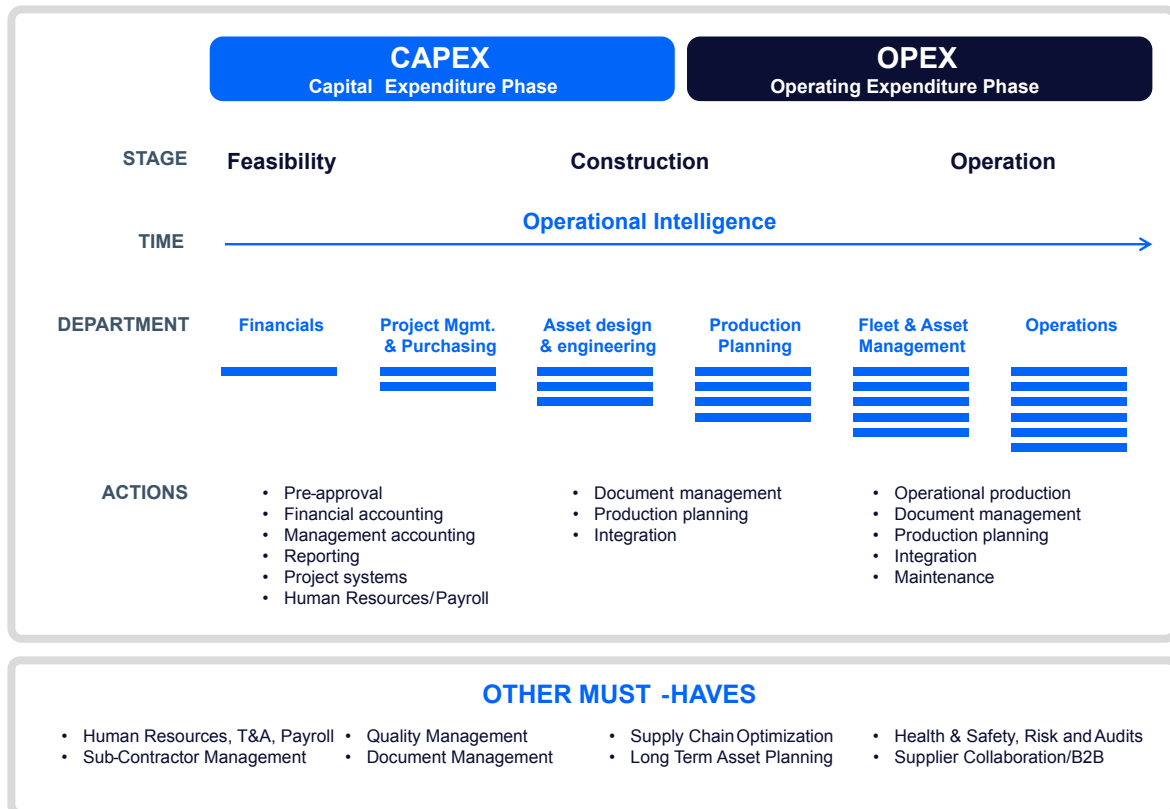
- B2B portal for customers – formal communication with the customers in one portal solution.
- Features: demand confirmation, customer order processing, deliveries confirmation, financial settlements and more.
- B2B portal for maintenance & laboratory subcontractors.
- Features: task assignments, performance reporting, financial settlements, maintenance stats accessing, and more...

## STRATEGICAL MANAGEMENT

- Strategical analysis support – access to the historical data, trends analysis.
- Strategical projects planning – ROI analysis.
- Strategical project planning – scope, financials, resources, suppliers, schedule etc.
- Strategical projects execution – progress supervision, cost tracking and suppliers management.

...and much more

# GUIDANCE FROM PROJECT TO OPERATIONS.



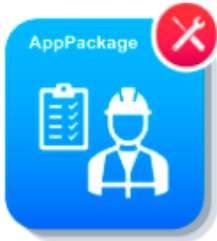
## NOVACURA WILL CONNECT AND TRANSFORM YOUR MINING BUSINESS.

Our experts use Novacura Flow – a low-code process platform – to design a process according to your needs and independent of system and function. Our product gives a Mining organization the support needed to handle simple or complex flows in different areas of your business, such as for example; Maintenance, Storage, HSE (health, safety and environment) etc.

Users receive a workflow adapted to their specific role, which guides them through the current process with a simple interface and with a focus on what is required to complete the process with the right quality.

### Ready-to-run apps

In our Marketplace, we have ready-to-run apps and connectors for your industry needs. Examples of apps are Maintenance, OPC UA Connector and Mobile Work Order. Our product and its apps save development costs and, as a whole, improves operational efficiency.



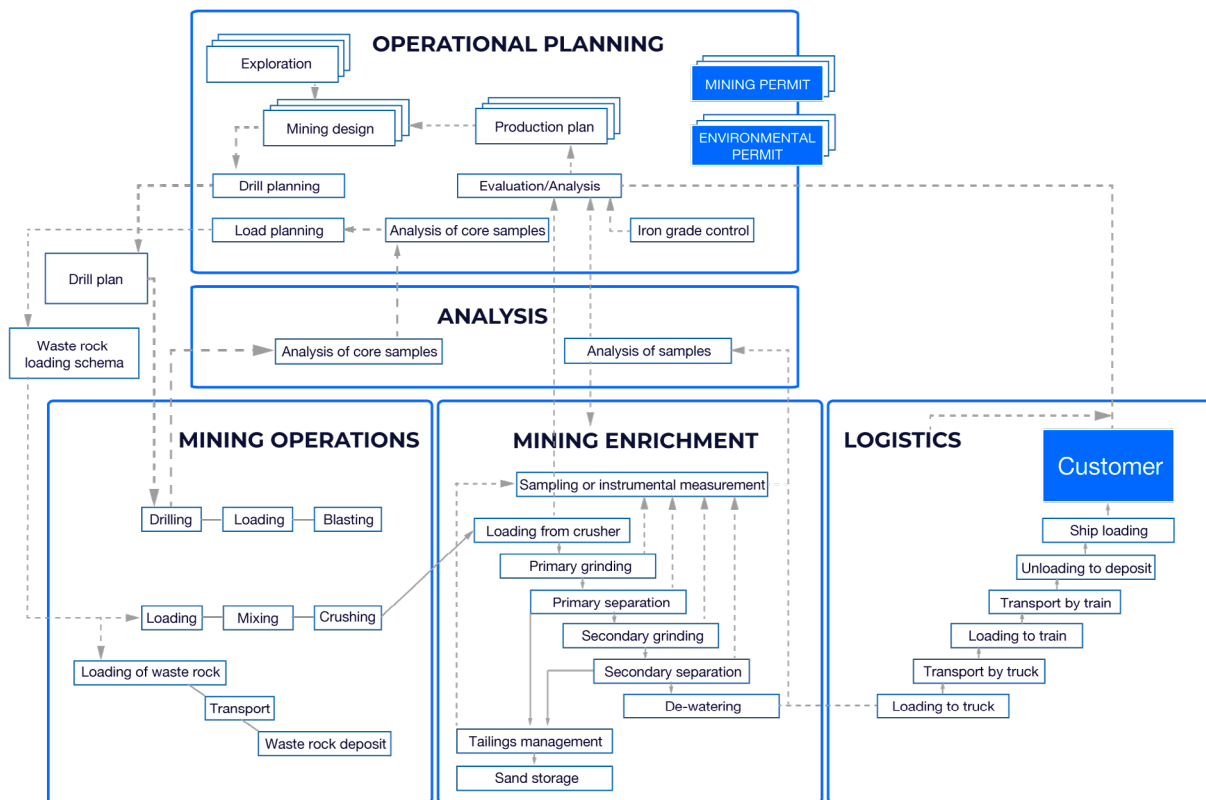
**Mobile Work Order**  
Maintenance, IFS, Service

The Mobile Work Order is a suite of Apps that covers Work Tasks, Pool ...

# WE KNOW AND SUPPORT THE ENTIRE MINING PROCESS.

Our people with specific domain expertise help our customers with many challenges in their daily work. Below are some examples of solutions which we have delivered and supported to our customers in the mining industry:

- Operational planning integrated to multiple systems.
- Rapid turnaround times for sample analysis improves planning.
- Automated production reporting reduces manual mistakes and minimizes administration.
- Collaboration with customers and end-customers via planning portals.
- Traceability of final product in the whole logistics chain.
- Increased availability in plant operations through improved maintenance planning and execution



## A FEW WORDS FROM THE CUSTOMER SIDE.

“ With Novacura Flow, we got the mobility capabilities and a solution to retrieve data from different systems.”

**Martin Hjærtström**  
 Technical Development Manager at Kaunis Iron



## LEARN MORE & CONTACT US!

Please visit our website: [www.novacura.com/by-industry/mining/](http://www.novacura.com/by-industry/mining/)