Jaaji Technologies
Sophistication with Simplicity

IndianOil

Connected Worker

Driving collaboration among the Refinery Personnel

Serving Indian Manufacturing since 2013

Jaaji Technologies

Founded in 2013
13 years in business
3 Office Locations
(Houston, Hyderabad & Ongole)

Launched inSis Suite in
Year 2017

110+ site installations
65+ customers

Scalable for future digital
needs of Industry

inSis suite

Our Customers TRUST us for the value we bring

More than 80% of our customers have extended contracts

Oil & Gas

IndianOil, NAYARA ENERGY, GAIL (India) Limited, KNPC, ADNOC, ESSAR OIL UK, HP, IGPL, ONGC MRPL

Chemical

NAGARJUNA GROUP, Kothari PETROCHEMICALS, Coromandel, Epsilon carbon, TREI, ADITYA BIRLA, IREL, Sipchem, SRE, Galaxy Global Supplier to Global Brands, VISHNU CHEMICALS LTD, DORF KETAL

Metals & Mining

JSW, TATA STEEL, AM/NS INDIA, SCANIA Steels & Powers Ltd.

Power & Renewables

NTPC, sembcorp, PG Power Ventures Plc, S V POWER PVT LTD, RLG GROUP, NAES, BVPL BHADRESHWAR VIDYUT PVT. LTD., Sravanthi, RP- Sanjiv Goenka Group Growing Legacies, Diligent Power DB Power Ltd, LANCO, RattanIndia, RattanIndia Power Limited, KSK, JAYPEE GROUP, UPRVUNL, NLC INDIA, NSL POWER Clean Energy for a Green Tomorrow, IL&FS Energy IL&FS Tamil Nadu Power Company, JINDAL POWER, TRN Energy Private Limited, POWER MECH growth unlimited, Adhunik POWER, NPL Nabha Power Limited, INDIA POWER Adding power to life, vedanta transforming for good

Cement, Food Paper & more

TVS, APIT PROCESS • INNOVATION • TECHNOLOGY, carbon clean TECHNOLOGY TO ACHIEVE 'NET ZERO', TATA, TATA PROJECTS, PharmaZell, YOKOGAWA, ABB, EMERSON, Chandpur Paper Leading with Values, Eisai, DODLA, NSL SUGARS, ANJANI CEMENT, Anjani Portland Cement Limited (A Subsidiary of Chettinad Cement Corporation Ltd.), 3F INDUSTRIES LTD., HAL, FORBES MARSHALL

Management Team

Siva Kondapi
Founder and CEO

- 25+ Years of global industry experience (ex – IOCL, Aspen Tech)
- Has rich domain experience in process industry operations & technical services
- Vast experience in design & development of digital transformation, AI and other industrial software
- Architect and Key Product Developer of inSis platform

Sunil Kumar
Chief Operations Officer

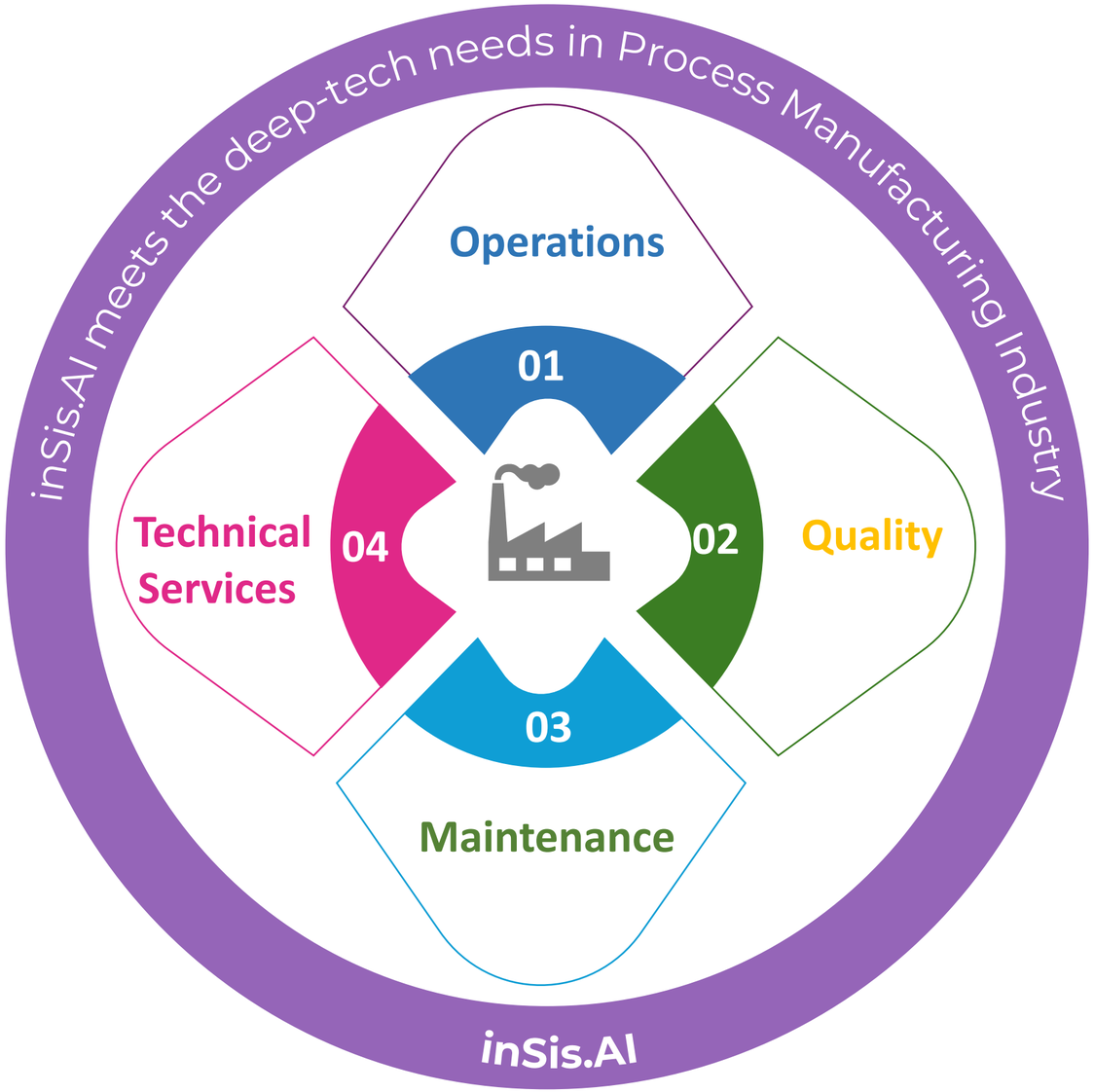
- 27+ years of global industry experience (ex- Accenture, Dell, Wipro) across different verticals
- Rich experience in management consulting including operations and manufacturing
- Managed multi-million dollar accounts globally

Rajesh Kaza
Chief Sales Officer

- An Instrumentation Engineer with 24+ years of Experience across sectors (Ex-Honeywell)
- Experienced in Sales, Services & Project Operations, P&L etc.,
- OT Cybersecurity, Integrations unto single pane of glass, Automation Contracting / Co-sourcing

The Solution: An integrated platform for Digital Transformation

Meets various needs across **Operations**, **Maintenance**, **Quality & Technical Services** in your Digital Transformation Journey



Connected-worker Platform

- Digital Operations Logbook
- Safety Interlock Bypass Management System
- inSis forms for Industry Apps, Digital Kaizen
- Alarm Management, LOTO, Permit-to-Work

- Laboratory Information Management System
- AMADAS – Analyzer Reliability Management

- Digital Maintenance Check-Lists
- Asset Performance 360
- Predictive Analytics for Asset anomaly detection
- Substation Relay and Power Quality Monitoring

- Performance Management System
- Data Analytics, Reports & Anomaly Notifications
- Batch Analytics & AI-based Batch Monitoring
- Energy Management & Optimisation
- Native Mobile Apps

- inSis.AI - platform for diverse use cases of AI

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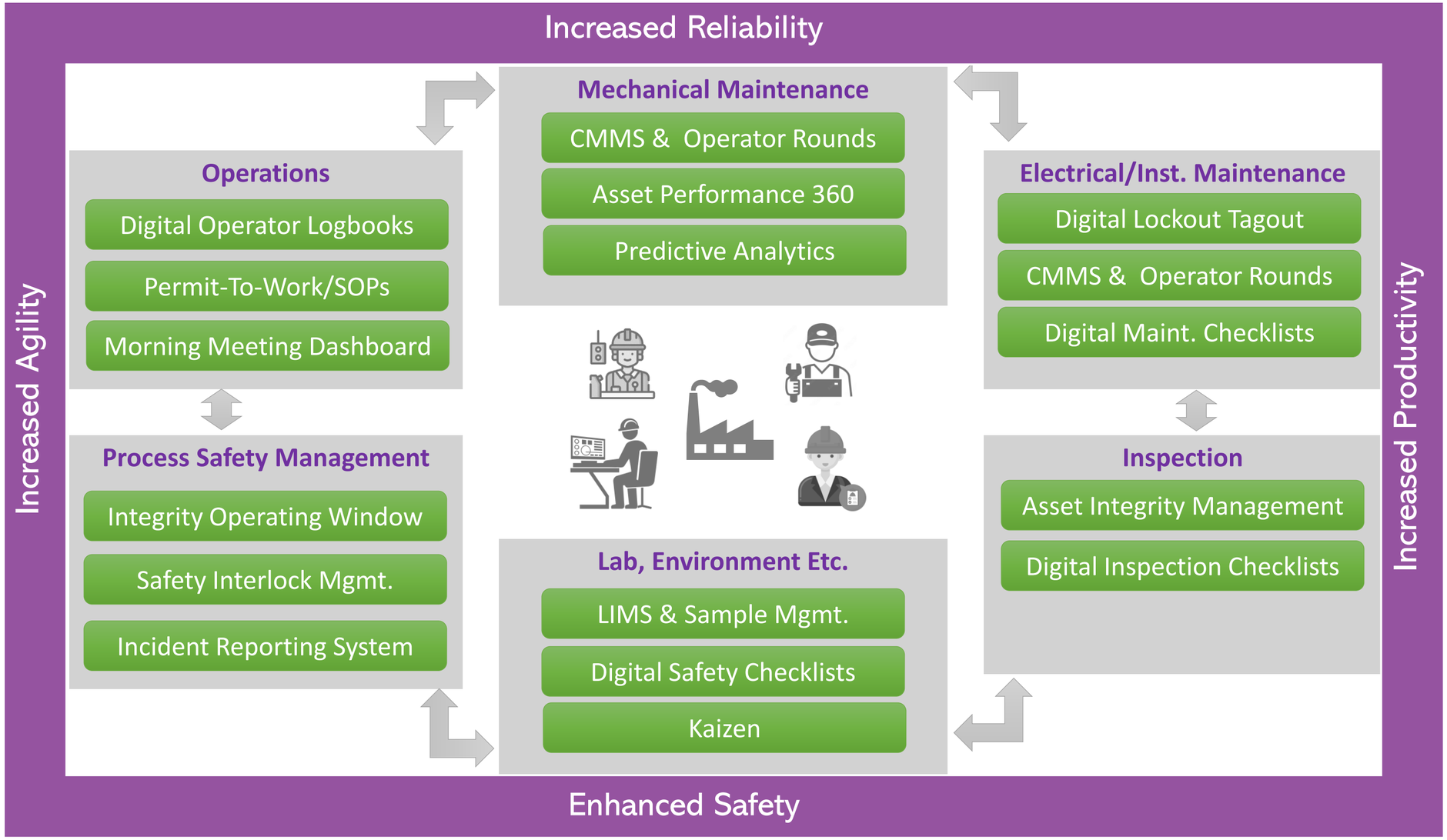
inSis suite

How can connected worker help?

Accelerate your Digital Transformation with a Connected-worker platform

Connected-worker enables the frontline workforce with digital tools focused on asset operations & maintenance



- One unified native Mobile App for operations, maintenance, inspection, safety and laboratory teams
- Enables seamless & effective collaboration between various teams
- Decreased Time-to-respond to issues on the ground
- Increases ground operations visibility & situational awareness
- Streamlines digital workflows
- Results in a good quality data for AI-adoption

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Powerful Platform combined with years of DIGITAL experience

PRODUCT

inSis.AI

Uses the power of AI to bring immense value from data, help optimize, enable easier and quicker operations etc.

inSis Suite

Enables digitalization and digital maturity, Streamlines processes, Improve data availability and quality etc.

SOLUTIONS

- IT/OT Data Integration with Analytics
- Connected Worker
- Performance & Energy Management
- Asset Integrity and Monitoring
- e-BMR & Golden Batch Analytics
- LIMS / Quality Management

VALUE

Sustainable and Measurable Business Value

Energy Savings (~5%)
Faster decision making (~80%)
Equipment availability (3 to 5%)

inSis.AI - platform for diverse use cases of AI

inSis.AI

Uses the power of AI to bring immense value from data, help optimize, enable easier and quicker operations etc.

inSis Suite

Enables digitalization and digital maturity, Streamlines processes, Improve data availability and quality etc.

Maintenance

- Predict pump **failure**
- Estimate **remaining life** of a catalyst
- Do RCA based on **pattern recognition** for a compressor
- Project the **efficiency** of a heat exchanger

Safety and Asset Integrity

- Identify operational scenarios with **high safety risks**
- Analyse **high pressure vessel thickness** trends to estimate failures
- Analyse **leakage patterns** in a heat exchanger

Sustainability

- Estimate impact on **environment** due to change in process conditions
- Minimize energy costs to achieve **Net-Zero** emissions

Operations

- Monitor **Batch deviations**
- Soft Sensors to predict critical **operational parameters**
- Predict yield / quality to decide on **optimal process conditions**

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Asset Maintenance & Reliability Management

Asset Framework

inSis AF is flexible and extensive. Asset information and PM Schedule can also be integrated seamlessly (through RFCs)

Maintenance Schedules

Time-based, Condition Based, Run-length based Schedules drive the Reliability

Automated Reports

Equipment history card, Outage report and Abnormality report can be automated (Excel, PDF) for easy collaboration

QR Code Scanning

QR based Asset scanning to drive compliance during site visit to each asset and easy access to asset information

Data Driven Decisions

Real-time and Historical Data Analytics helps in taking data-driven decisions and drives compliance

Predictive Analytics

Using Advanced Pattern Recognition and AI, the asset failures are predicted and planned for maintenance well ahead of failure

Digital Checklists/SOPs

PM/LLF and other Checklists are configured for each asset and drive compliance by operator with instant access to SOPs

Mobile App for Field Connectivity

Accessibility on mobile using a Native App and associated analytics gives flexibility to operators

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Energy and Power Quality Management

An integrated platform for Energy, Power Quality and Relay Monitoring System

Provides real time visibility of key energy parameters

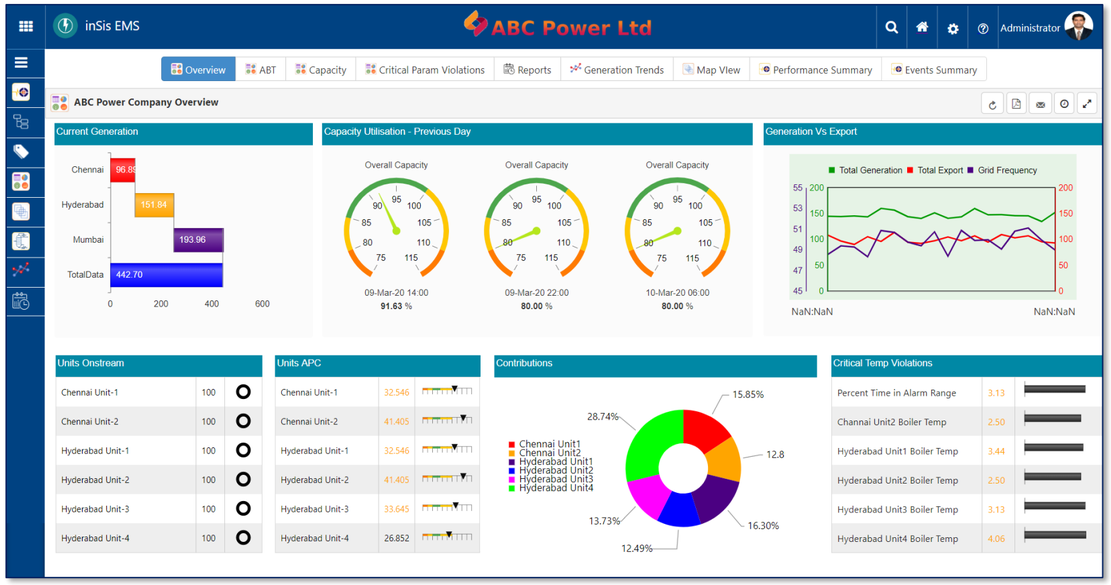
Indicates monetary impact real time

Shutdown, Idle times, excessive energy consumptions etc…

Performance monitoring for reports, Energy KPIs

Analyse for Critical & Safety Parameters Violations

Automated Reports and access of energy data on Mobiles Apps



- Unified platform for management of Energy for Fuels, Steam and Electrical Power.
- Simplifies Data Collection, Calculations, Analytics and Reporting of Energy Information centrally
- Use of AI based Advanced Pattern Recognition to predict the energy performance degradations
- Provides Online Energy Balance and Equipemement Performance KPIs
- Provides tools for Power Quality analysis and online Relay monitoring

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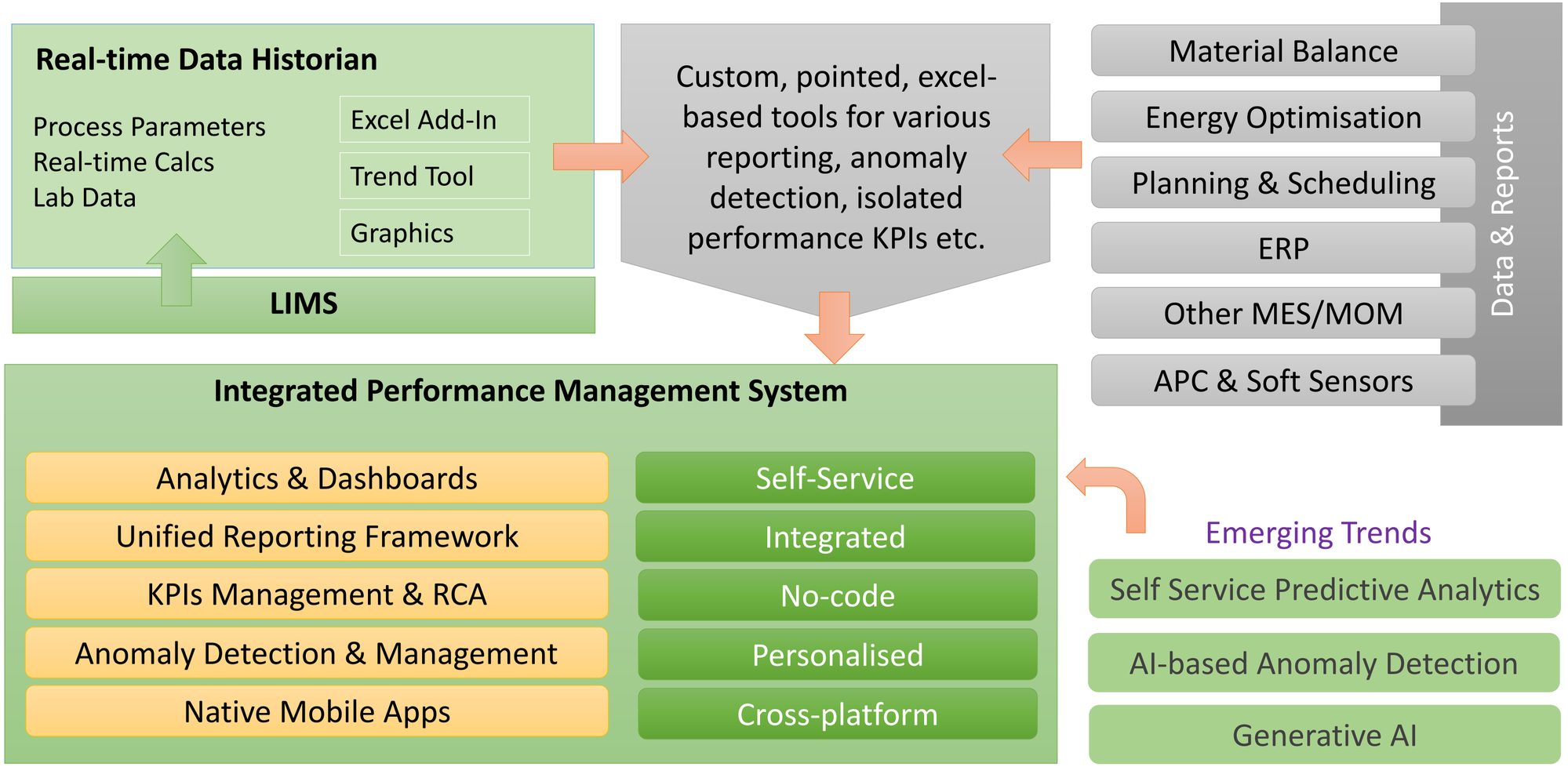
Integrated Plant Performance Management

Integrated Performance Management with Self-service & AI capabilities



- Unified platform for Plant Performance Management
- Effective management of Time-series and Relations Data
- AI/ML & Generative AI capabilities for process assistance
- Provide clean and reliability data for Enterprise Analytics & AI/ML

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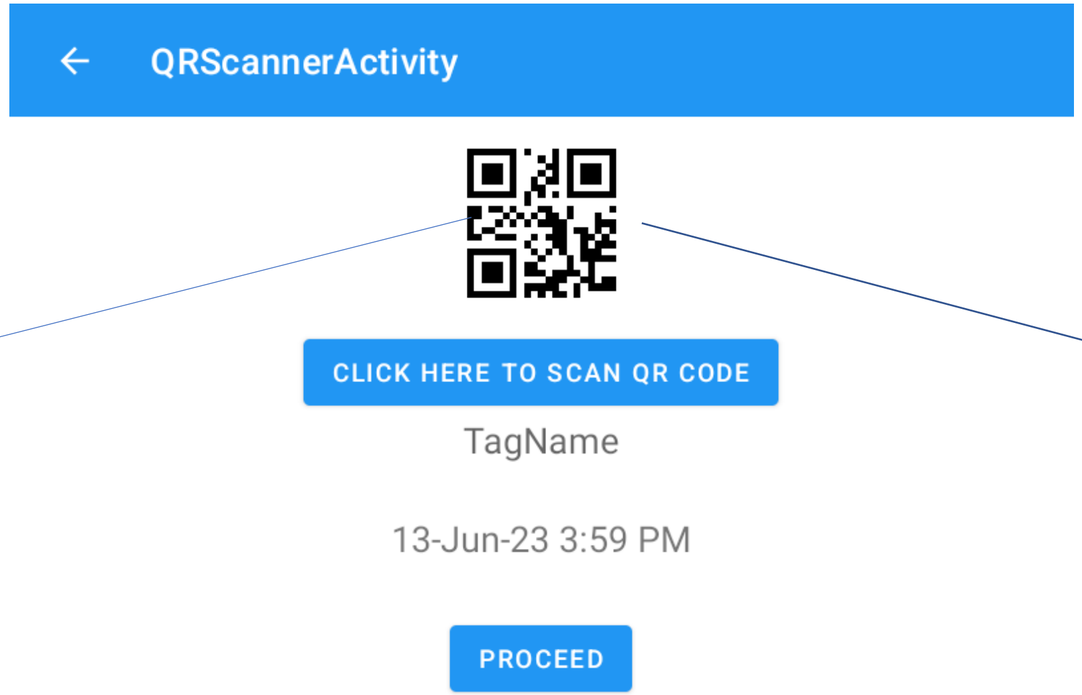
Jaajitech is proud to be part of digital projects at IOCL

Solution	Site / Unit	Scope	Year	Partner	Current Status
Historian	Faridabad R&D Centre	Integration of 22 PLCs ; Real-time data monitoring	2022/23	Direct	Completed
AMADAS	Paradip – ERU / EG units	33 analyzers, 6 shelters – Dashboards, analyzer calibration	2021	Yokogawa	Completed
AMADAS	Paradip - PP	42 analyzers, 7 shelters – Dashboards, analyzer calibration	2017	ABB	Completed
EMS	Haldia Township	Smart EMS using LoRaWAN for 30 Energy Meters across 5 clusters	2024	Direct	Completed
AMADAS	Panipat P25 PBR GC unit	50 analysers , 2 CEMS stacks , PLC – 2 nos , DCS – 1 no , Dashboards, analyzer calibration	2025	Yokogawa	In progress
AMADAS	ETP	90 analyzers , DCS- 1 no , , Dashboards, analyser calibration	2024	Emerson	In progress
AMADAS	Paradip – SRU	6 Analyzers , DCS – 1 no , Dashboards, analyser calibration	2023	Emerson	In progress
AMADAS	EPCC-1, EPCC-2 and EPCC-4	Analyser shelters- 4, 34 analysers , DCS- 1 no , dashboards, calibration	2023	ABB	In progress

1. Digital Logbooks
(Sample Screens)

QR Code Scanning

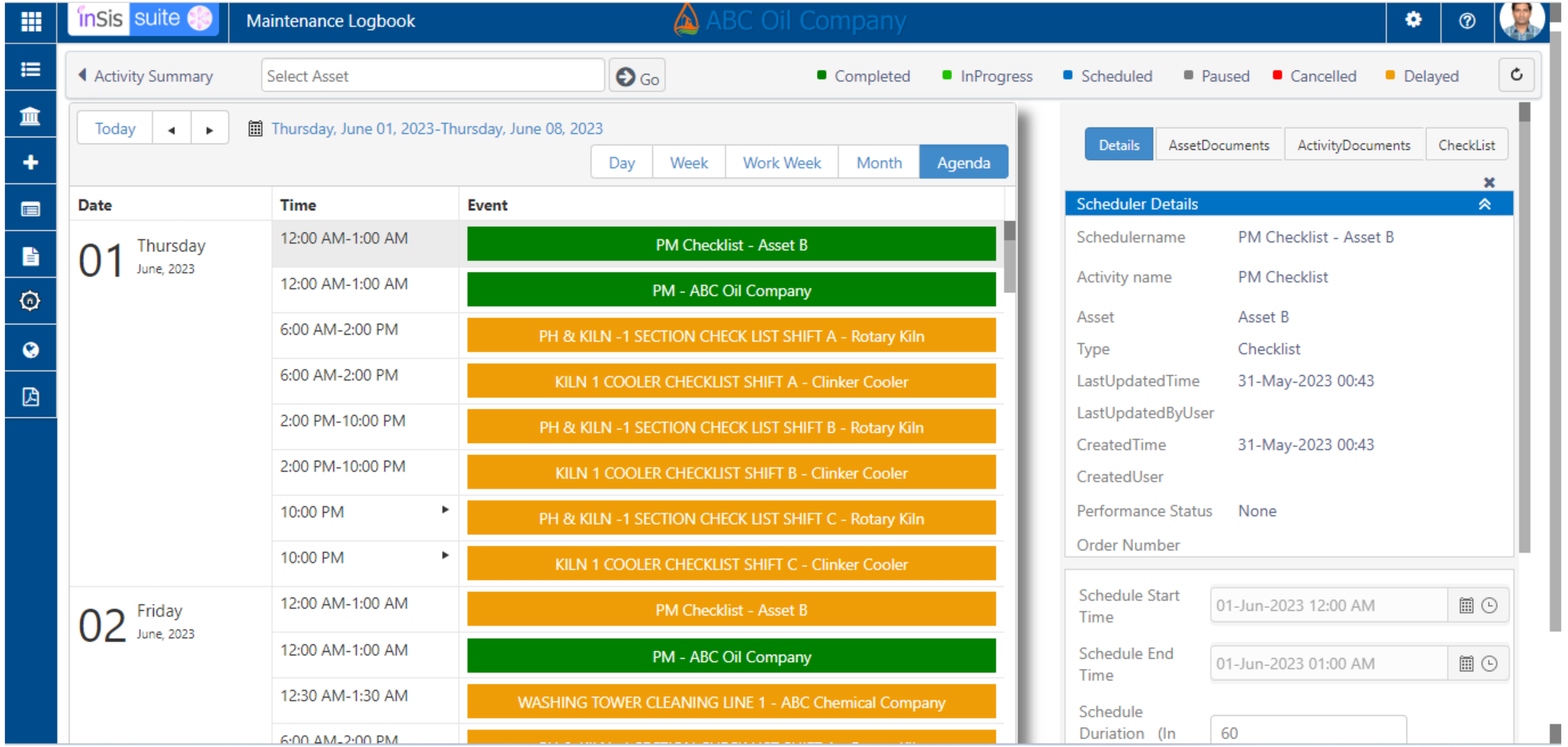
Operators can scan the Field equipment with help of QR Code. The respective logbook or checklist for that equipment pops up on the handheld device so the operator can enter the observed data into the required field



Logsheet will open once we scan the QR Code successfully

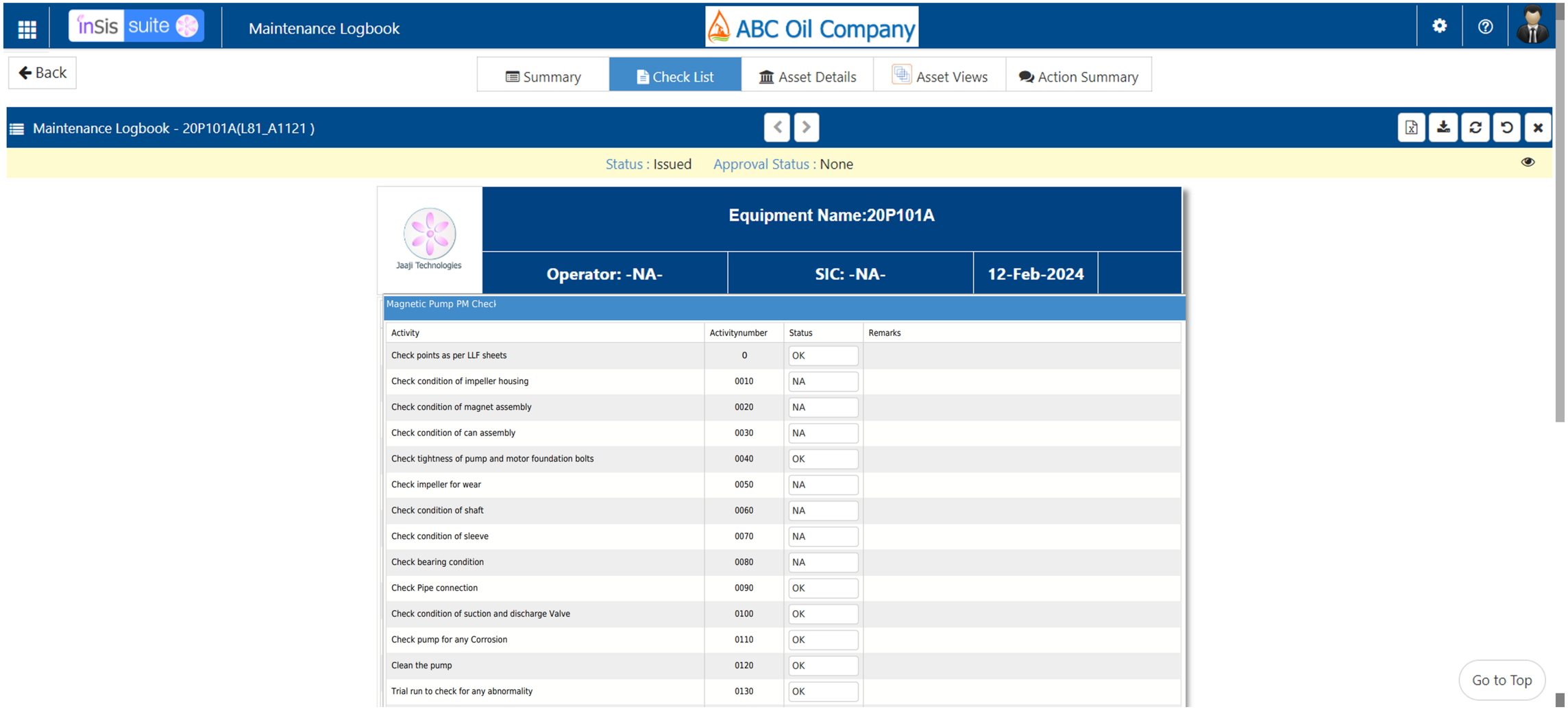
Maintenance Schedule

Preventive Maintenance schedules built in SAP can be synchronized into inSis and compliance can be driven to ensure better availability of the assets. In addition, PM schedules can also be defined in inSis directly.

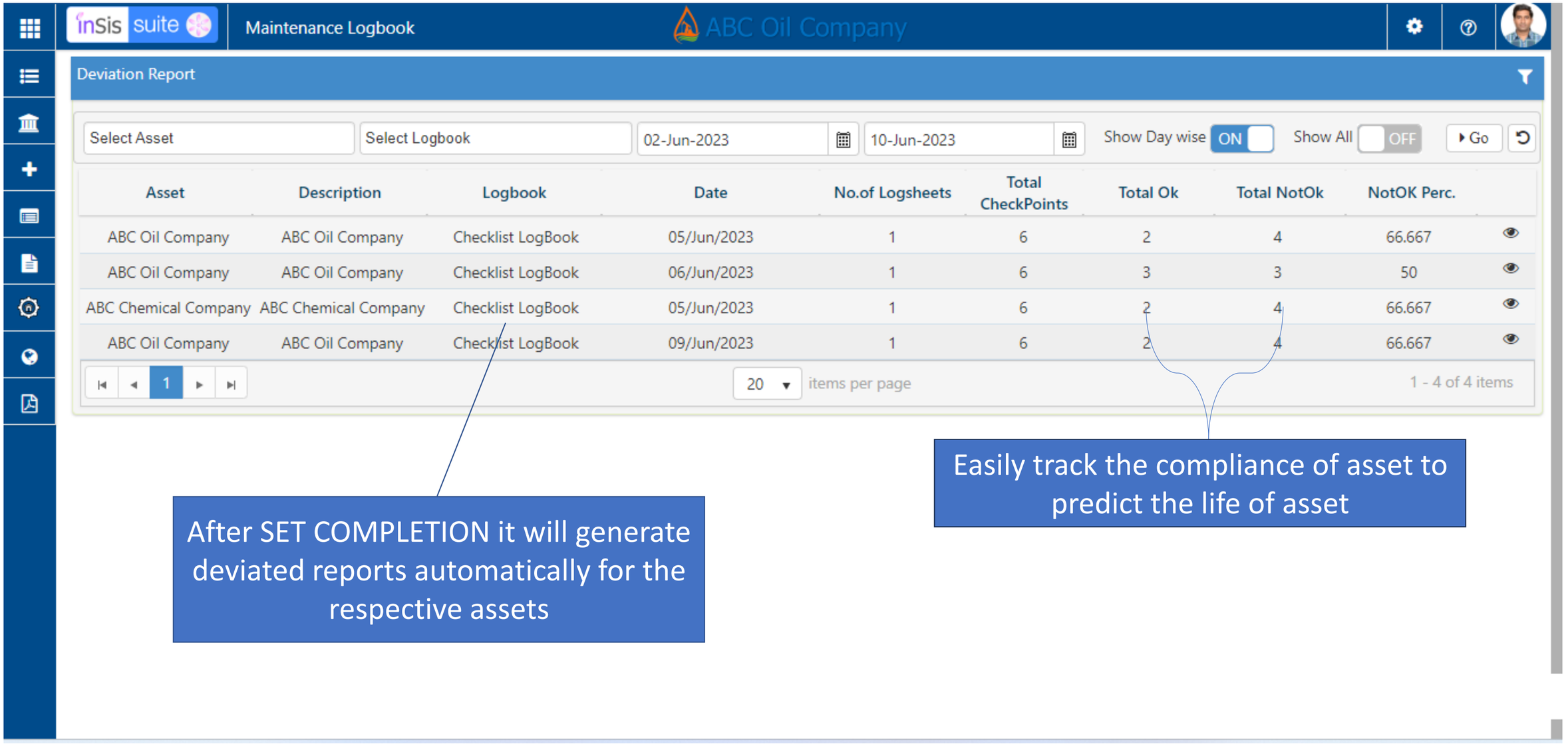


PM Checklist

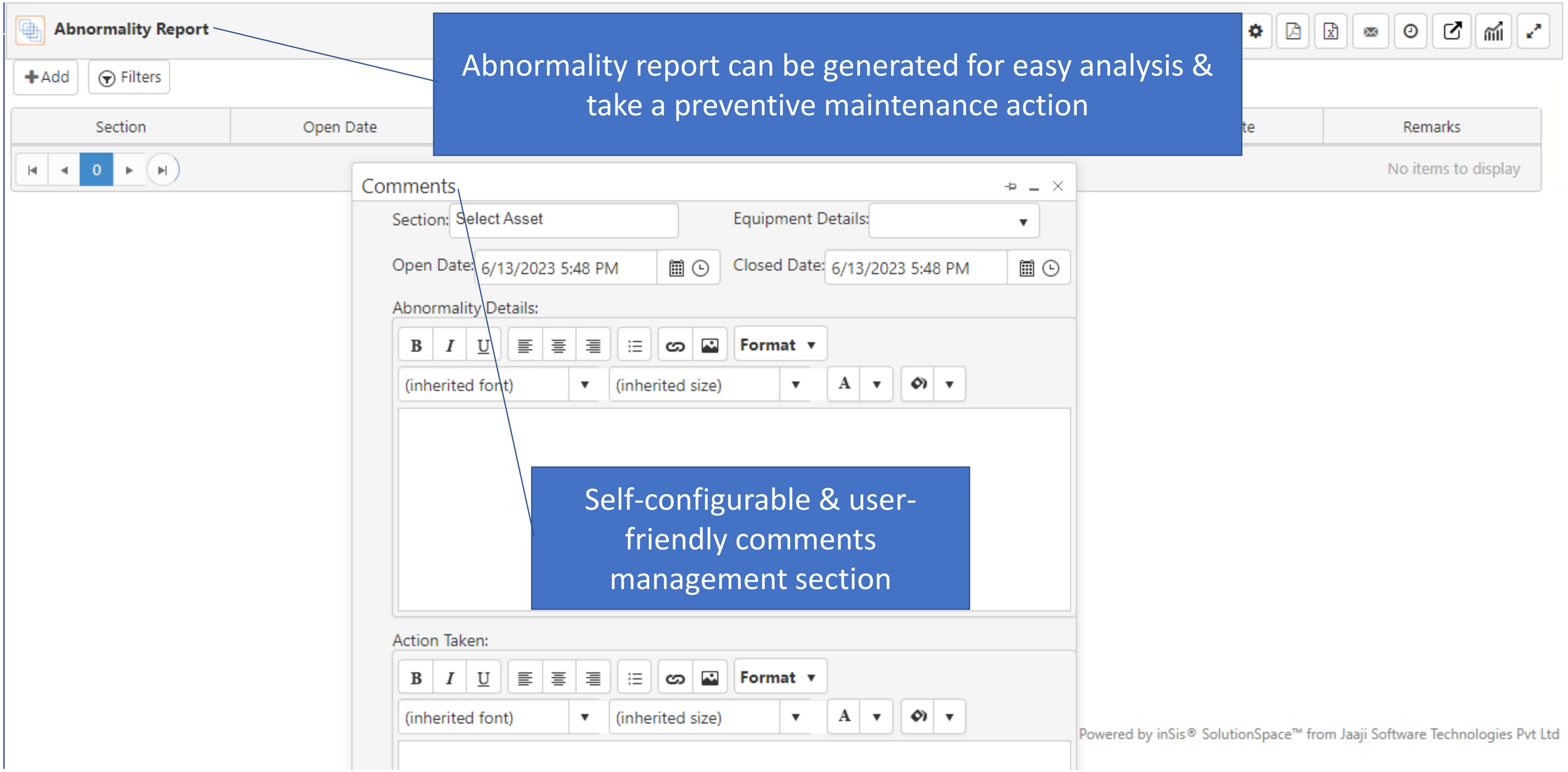
Preventive maintenance is the act of performing regularly scheduled maintenance activities to help prevent unexpected failures in the future.



Deviation Report



Abnormality Report



Automated Report of PM compliance

Compliance Dashboard

01-Jan-2024 | 31-Jan-2024 | Go

Avg LLF Compliance

CheckList Compliance%
01-Jan-2024 to 31-Jan-2024
44.44 %

LLF Compliance, MTD

CheckList Compliance%
1 Mar 2024 to 11 Mar 2024
22.22 %

Avg PM Compliance

PM Compliance
01-Jan-2024 to 31-Jan-2024
85.71 %

PM Compliance, MTD

PM Compliance
1 Mar 2024 to 11 Mar 2024
0 %

LLF Compliance

Date	Scheduled	Completed	LLF Compliance %
01-Jan-24	25	0	0
02-Jan-24	25	0	0
03-Jan-24	25	25	100
04-Jan-24	25	0	0
05-Jan-24	25	0	0
06-Jan-24	14	0	0

PM Compliance

Date	Scheduled	Completed	PM Compliance %
01-Jan-24	1	1	100
03-Jan-24	1	1	100
04-Jan-24	1	1	100
05-Jan-24	1	1	100
06-Jan-24	1	1	100
07-Jan-24	1	1	100

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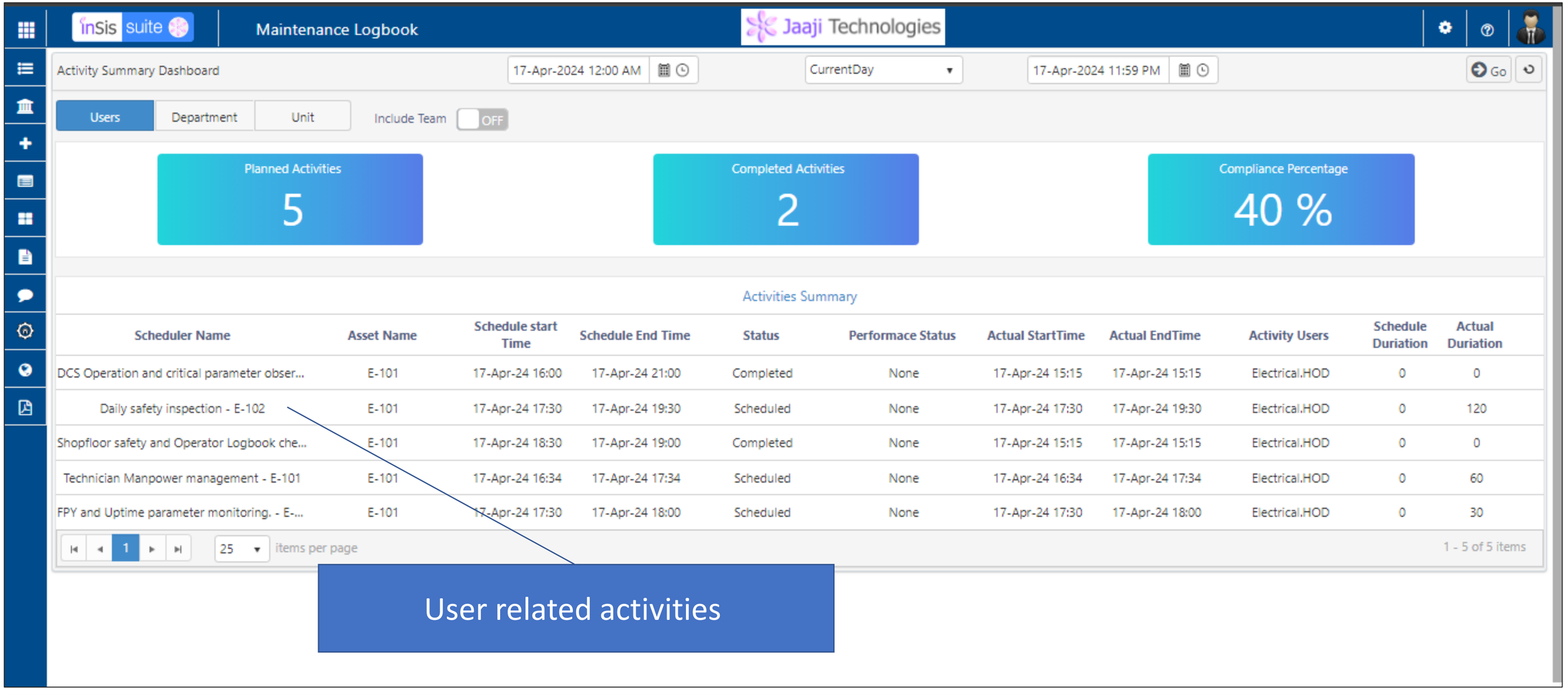
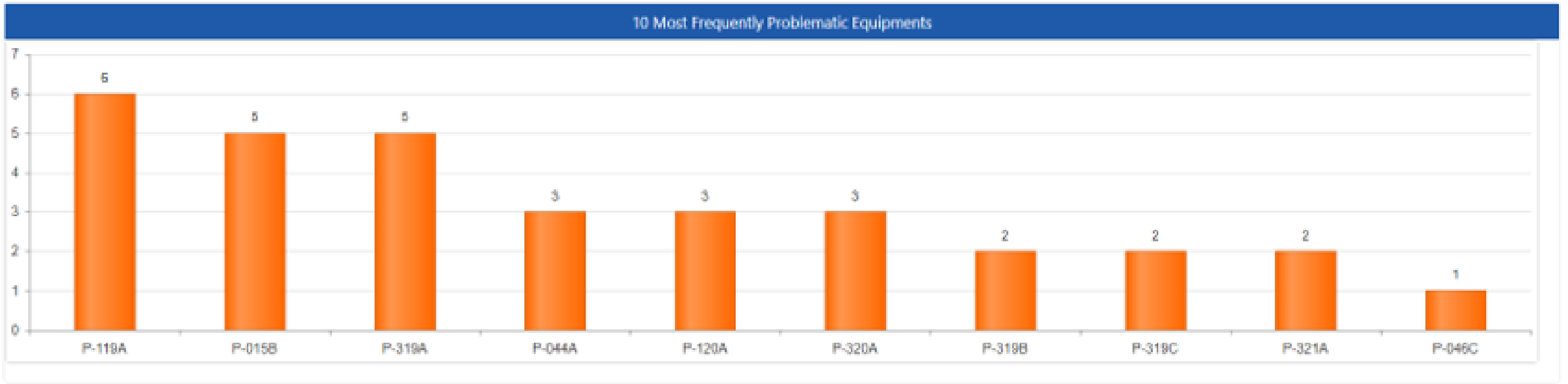
Daily Work Management (DWM)



Most Problematic Equipment

Maintainance Analytics

Search OneViews...



P-119A

Checked_On	deviationsummary
17-04-2023 00:00:00	Mechanical seal : Mechanical seal leakage.
20-03-2023 00:00:00	Mechanical seal :
06-03-2023 00:00:00	Mechanical seal :
06-02-2023 00:00:00	Mechanical seal : drop wise leakage
30-01-2023 00:00:00	Mechanical seal : drop wise leakage
09-01-2023 00:00:00	

P-015B

Checked_On	deviationsummary
06-04-2023 00:00:00	Mechanical seal : Mechanical seal leakage.
30-03-2023 00:00:00	Mechanical seal : Mechanical seal leakage.
23-03-2023 00:00:00	Mechanical seal :
12-01-2023 00:00:00	
05-01-2023 00:00:00	

P-319A

Checked_On	deviationsummary
17-04-2023 00:00:00	Mechanical seal : Mechanical seal leakage.
06-02-2023 00:00:00	Mechanical seal : drop wise leakage
30-01-2023 00:00:00	Mechanical seal : drop wise leakage
09-01-2023 00:00:00	
02-01-2023 00:00:00	

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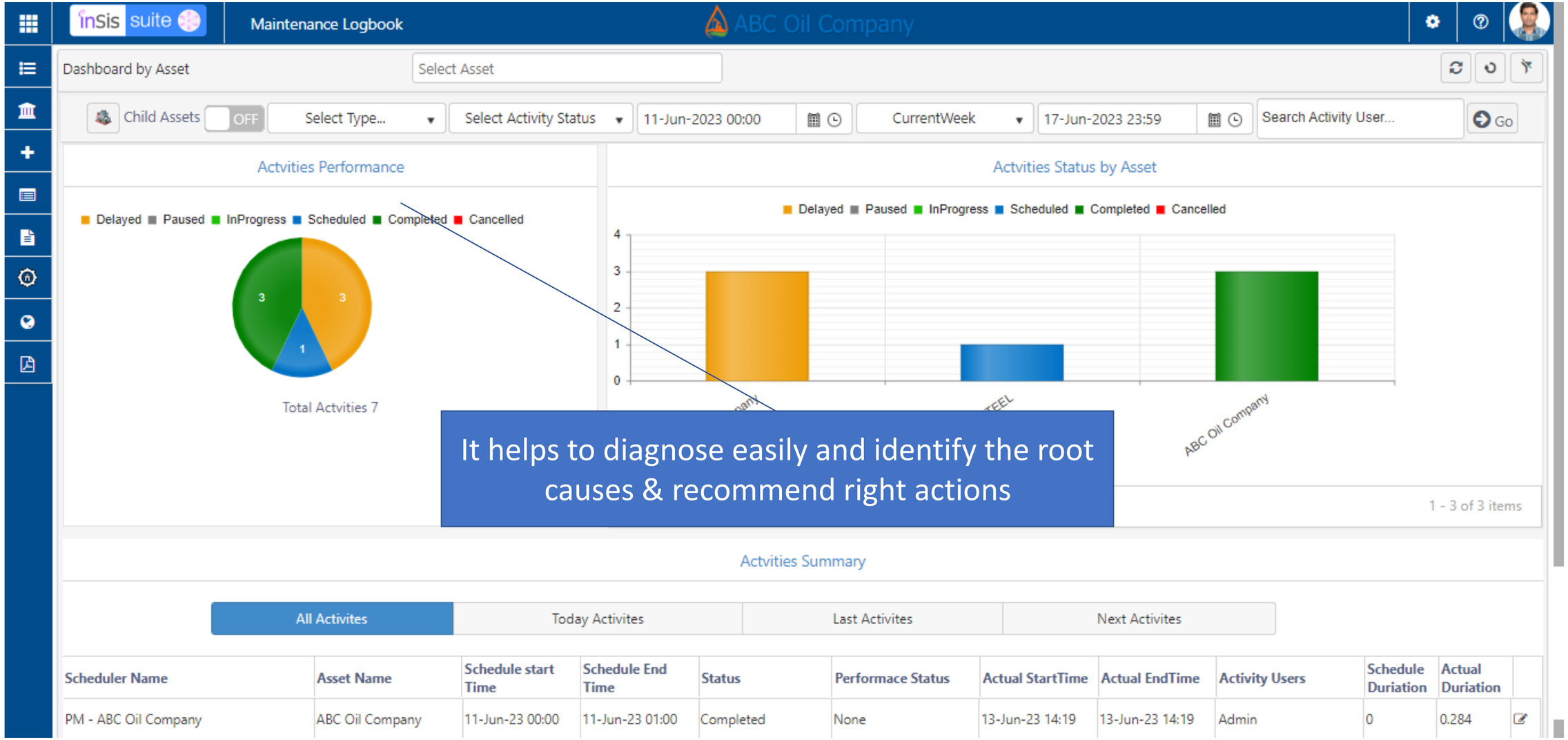
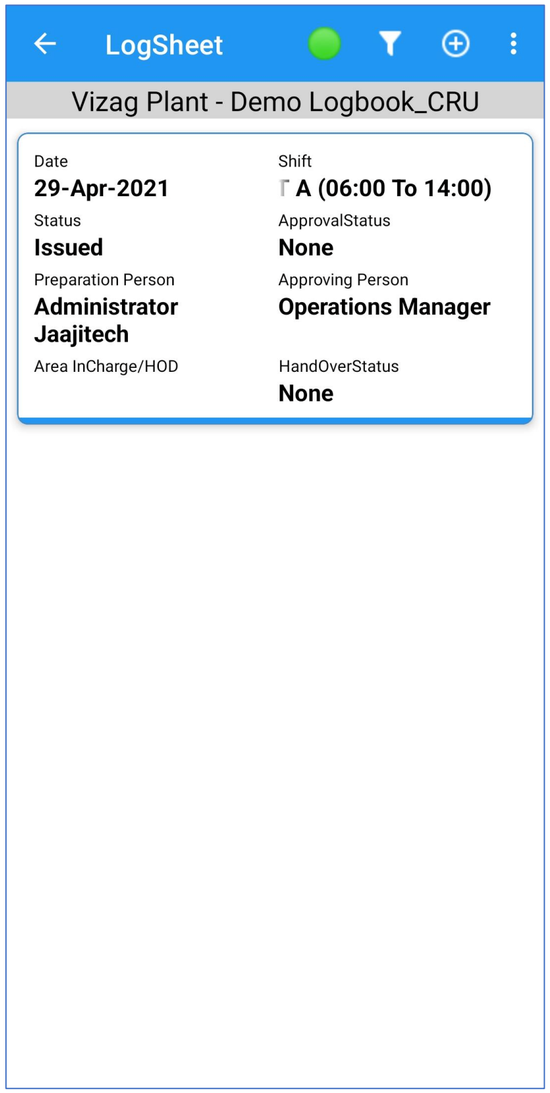
Contextual Analysis

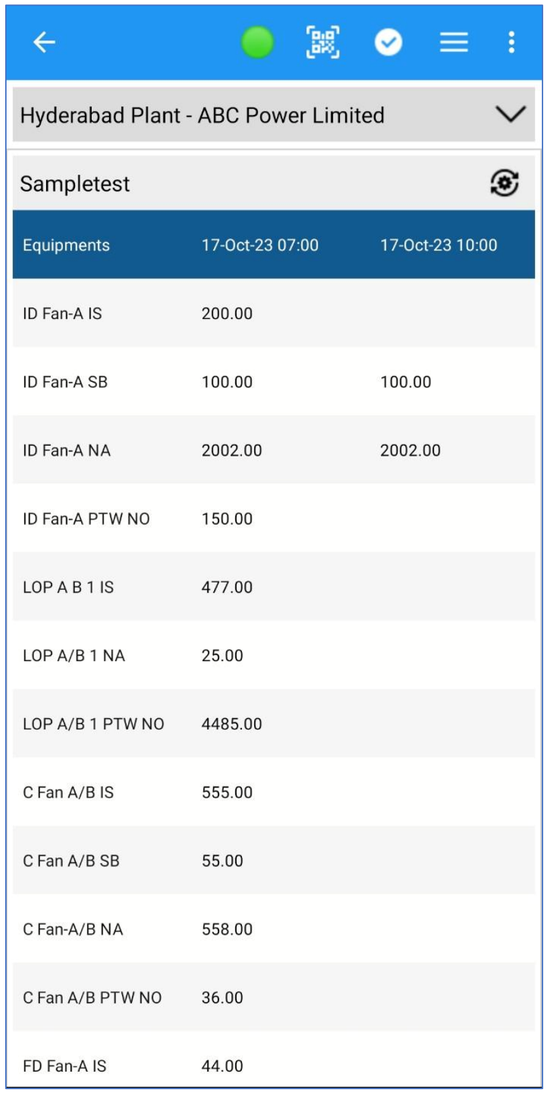
Easy to observe patterns and any anomalies in the energy consumption, vibrations, Oil temperatures etc…,



LogBooks & Logsheets Management

Role-based access of logbooks. Select Logbook>Logsheet>Area/Asset to start logging

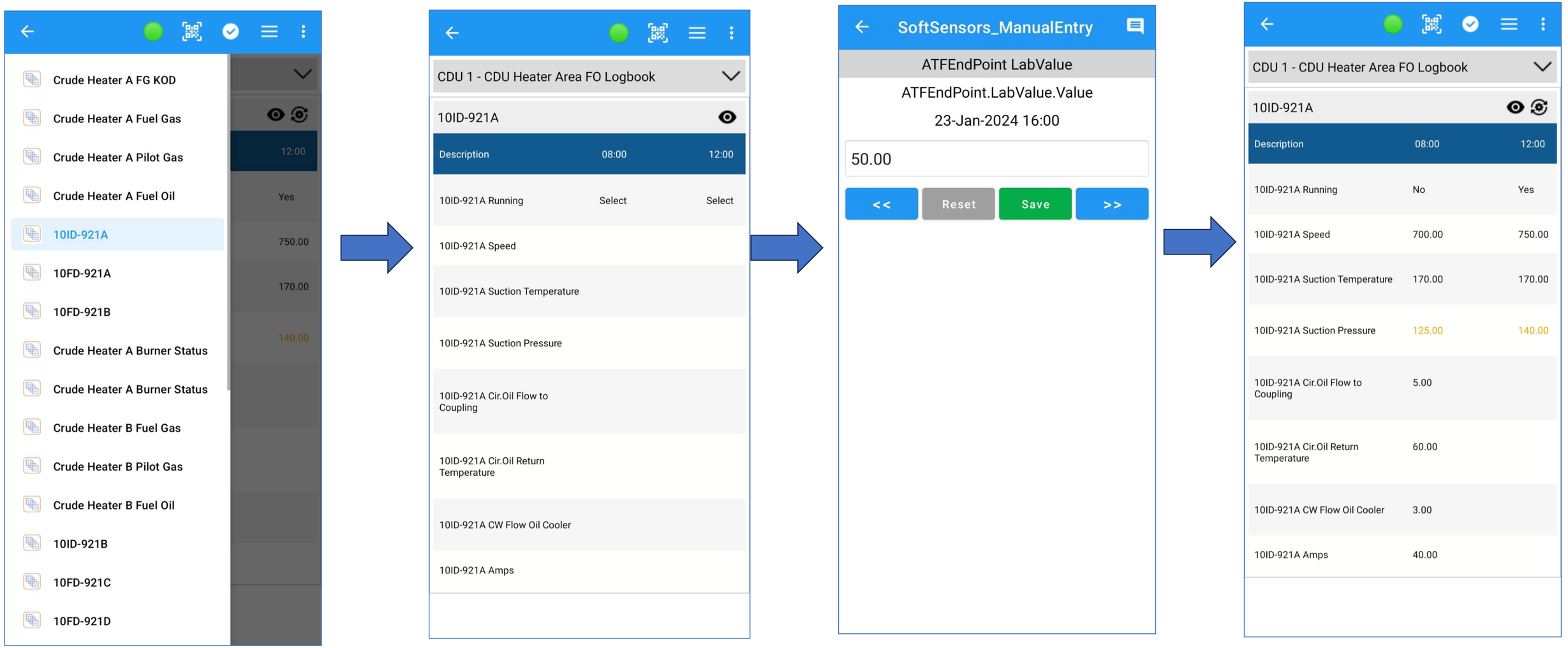




Equipments	17-Oct-23 07:00	17-Oct-23 10:00
ID Fan-A IS	200.00	
ID Fan-A SB	100.00	100.00
ID Fan-A NA	2002.00	2002.00
ID Fan-A PTW NO	150.00	
LOP A B 1 IS	477.00	
LOP A/B 1 NA	25.00	
LOP A/B 1 PTW NO	4485.00	
C Fan A/B IS	555.00	
C Fan A/B SB	55.00	
C Fan-A/B NA	558.00	
C Fan A/B PTW NO	36.00	
FD Fan-A IS	44.00	

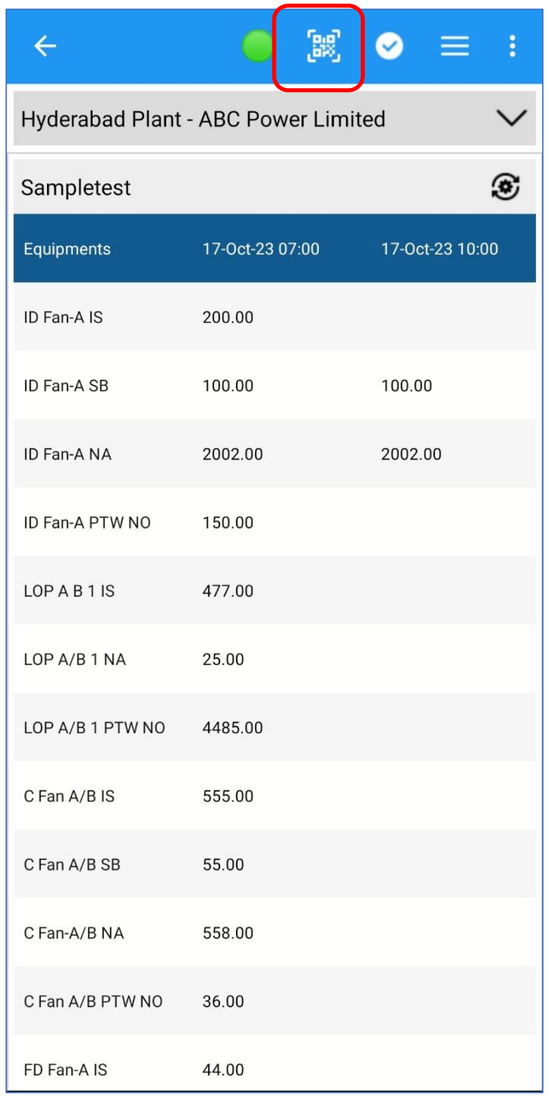
Data Entry

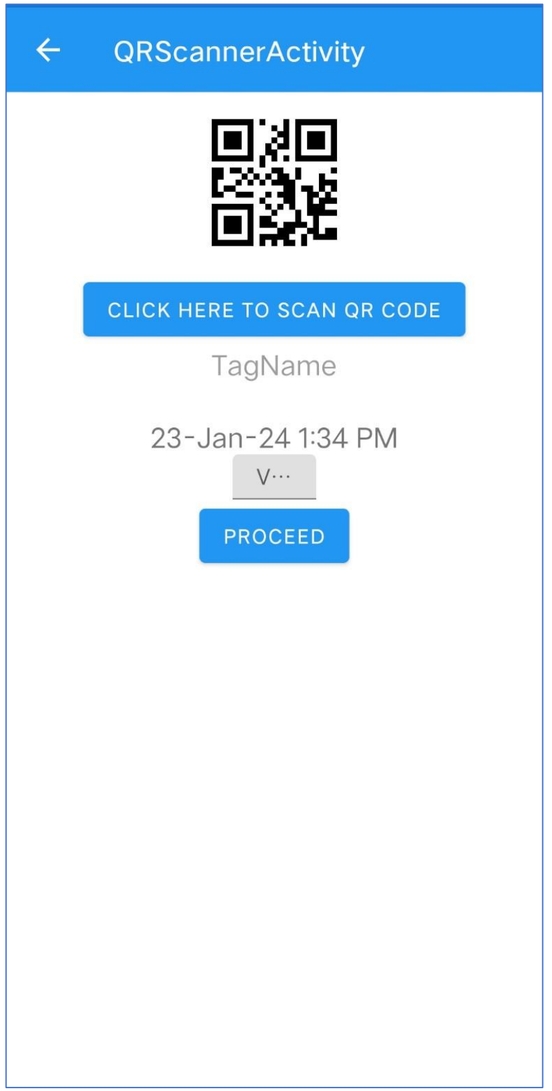
Select Area/Asset by list or QR/NFC. Select Parameter and enter one after another in quick and easy way.
After successfully entering data for one widget, the user can proceed to the next widget or interval by clicking the confirmation button.



QR Code/NFC Scanning

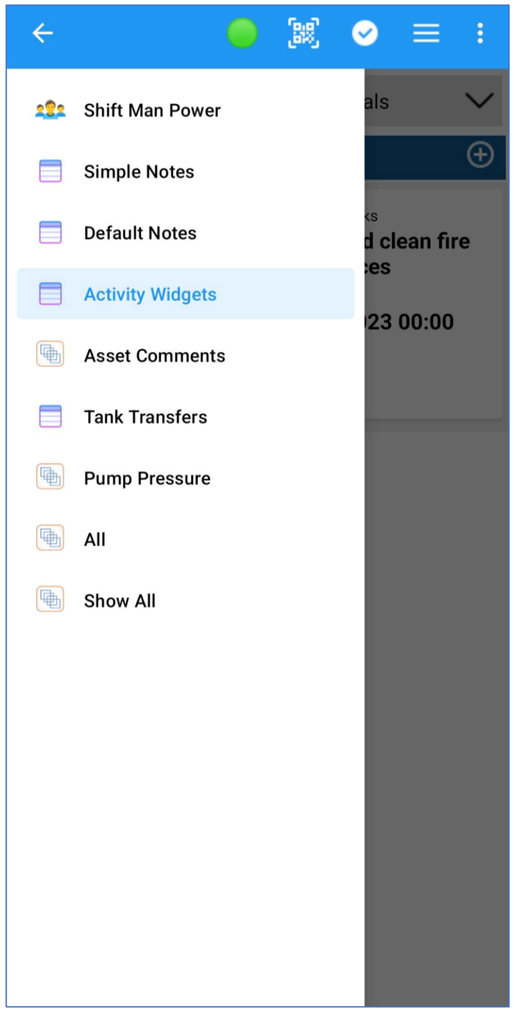
Users can access the relevant widget through QR Code or NFC scanning.

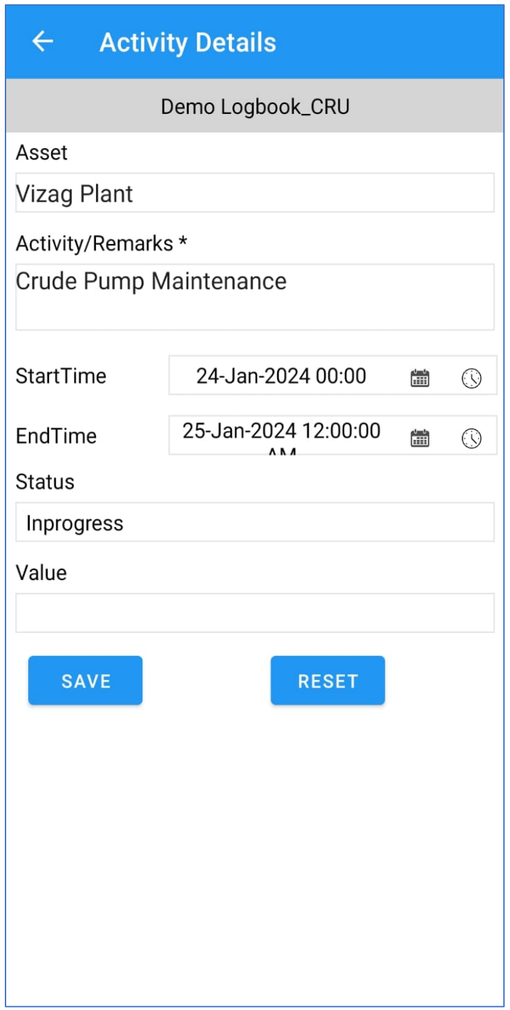


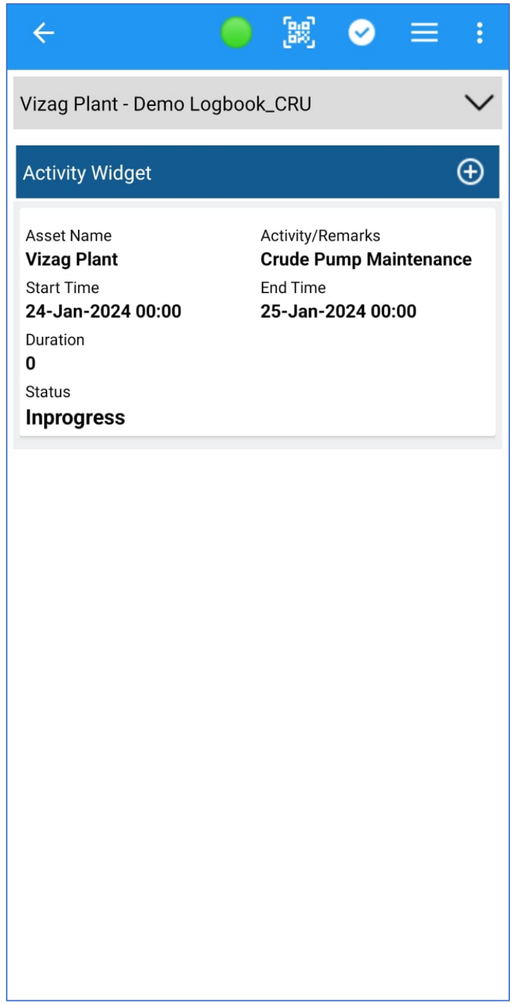


Activity Widgets

Detailed shift activities can be entered and tracked effectively.







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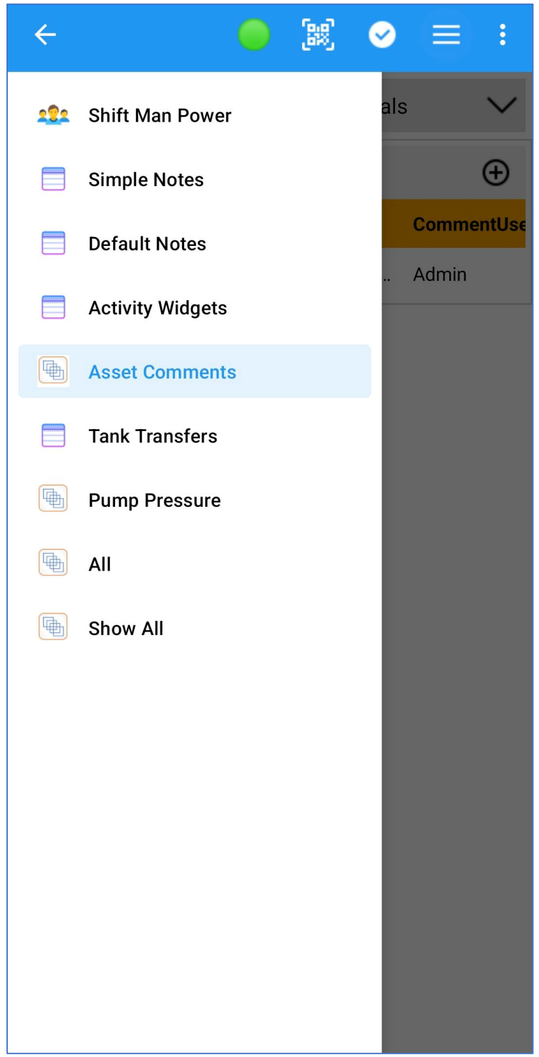
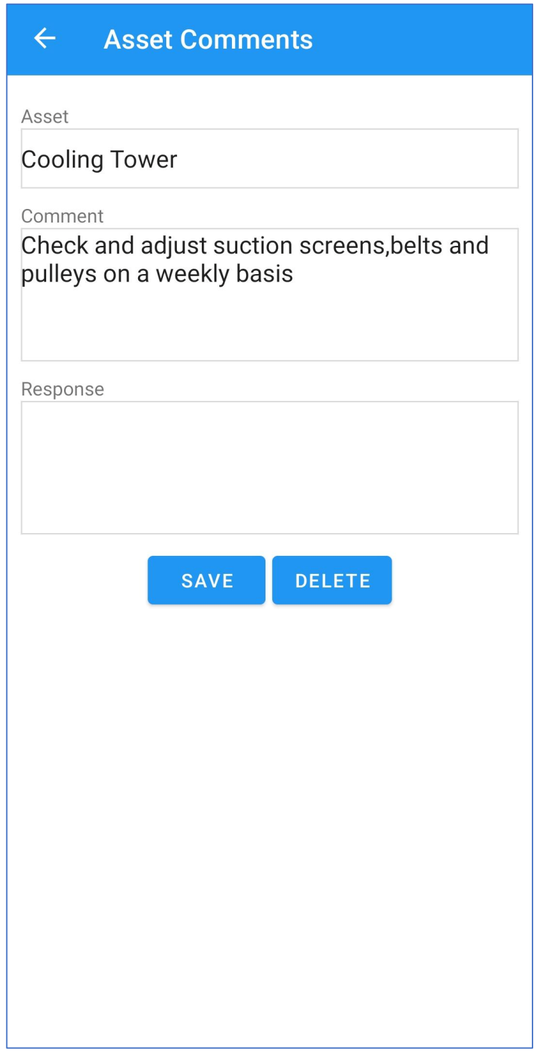
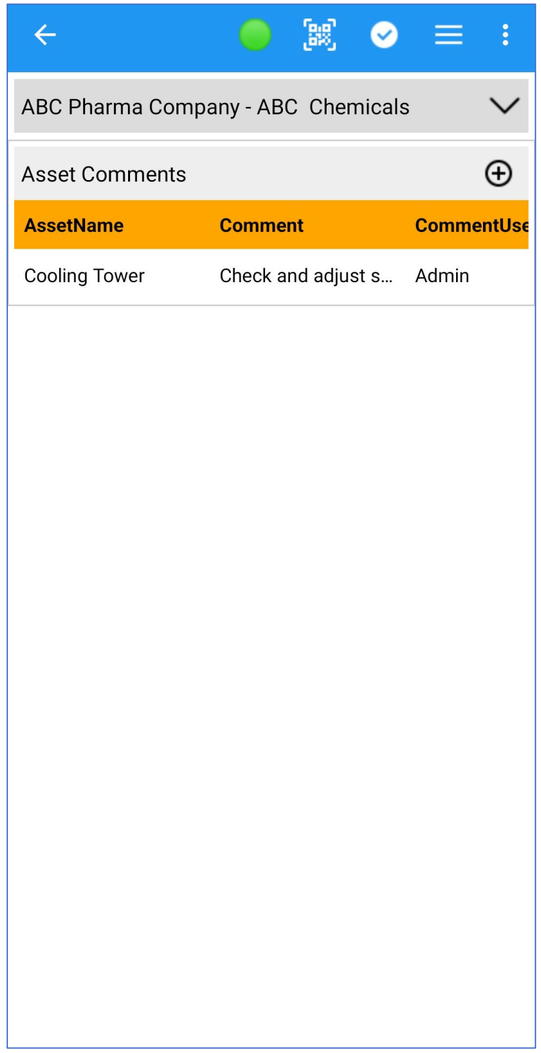
Asset Comments

Asset based activities can be entered and tracked effectively







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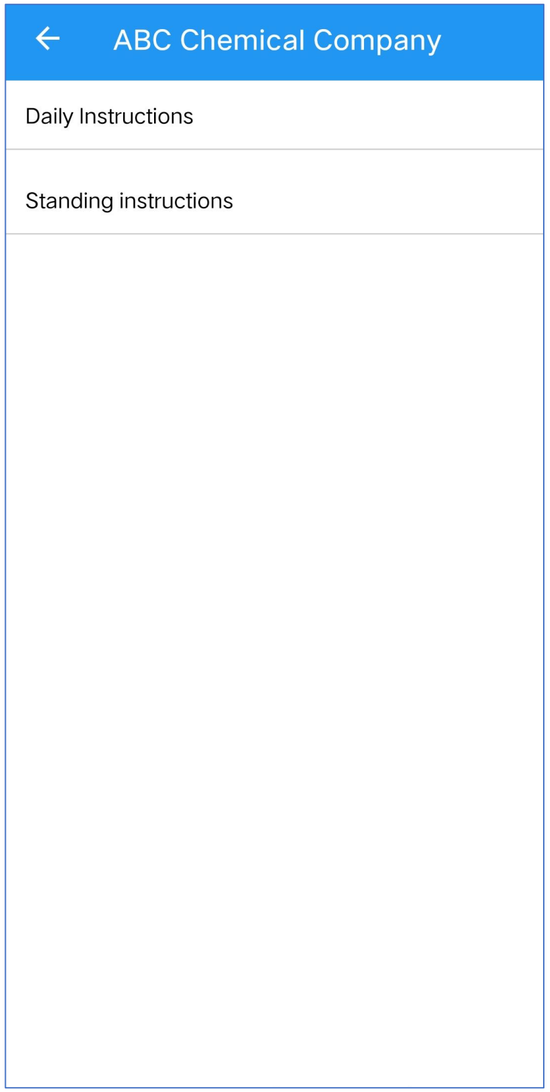
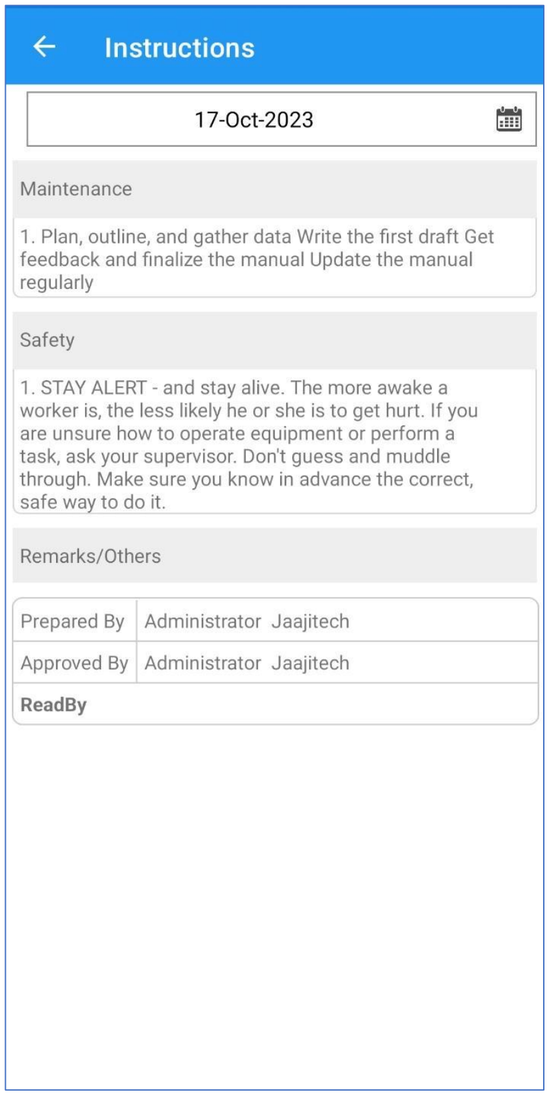
Asset Based Instructions

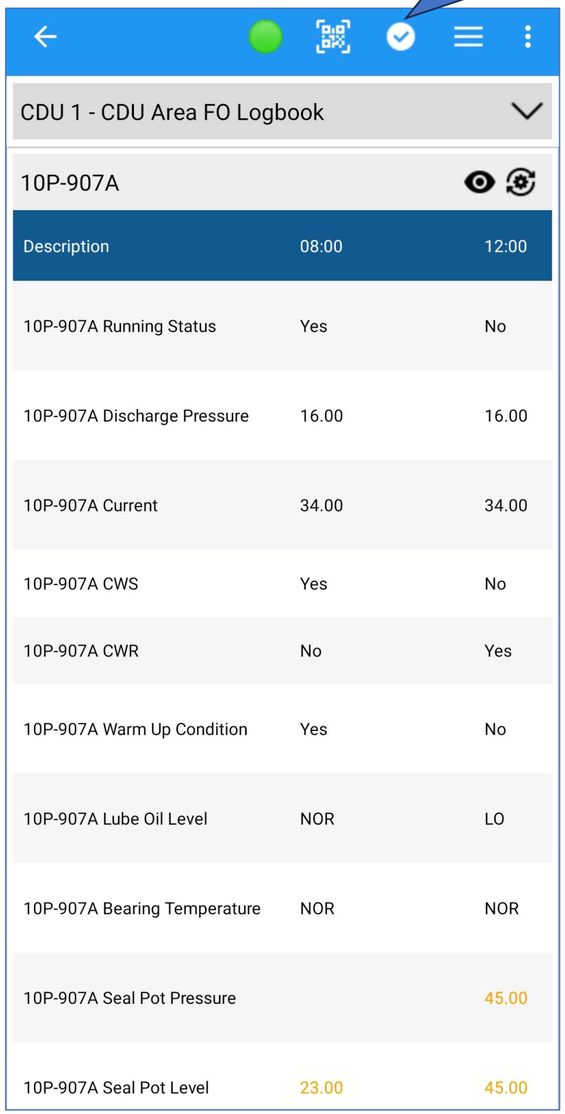
Shift Engineers/Managers can provide instructions directly to operation in a convenient way.

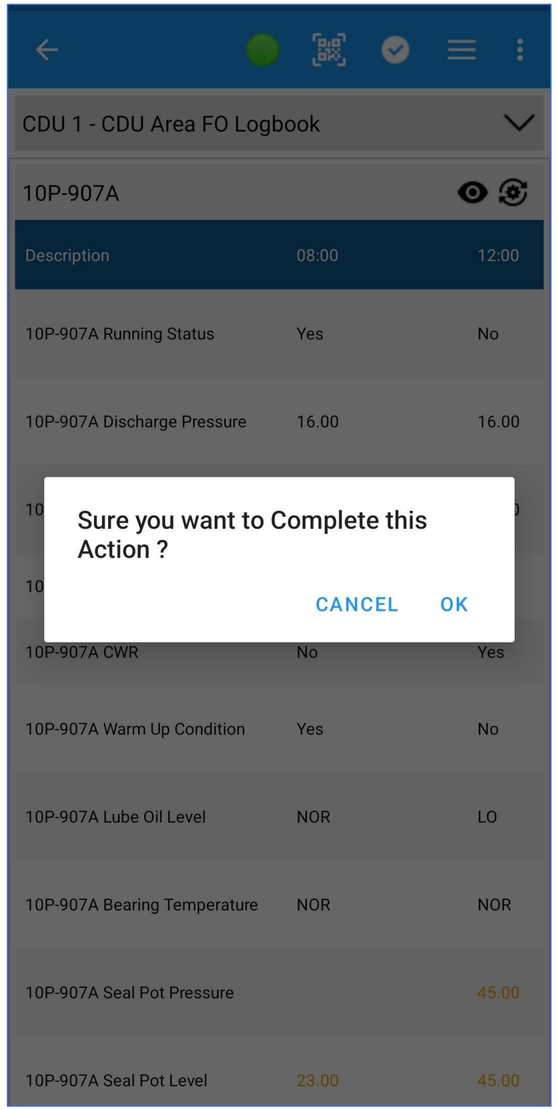




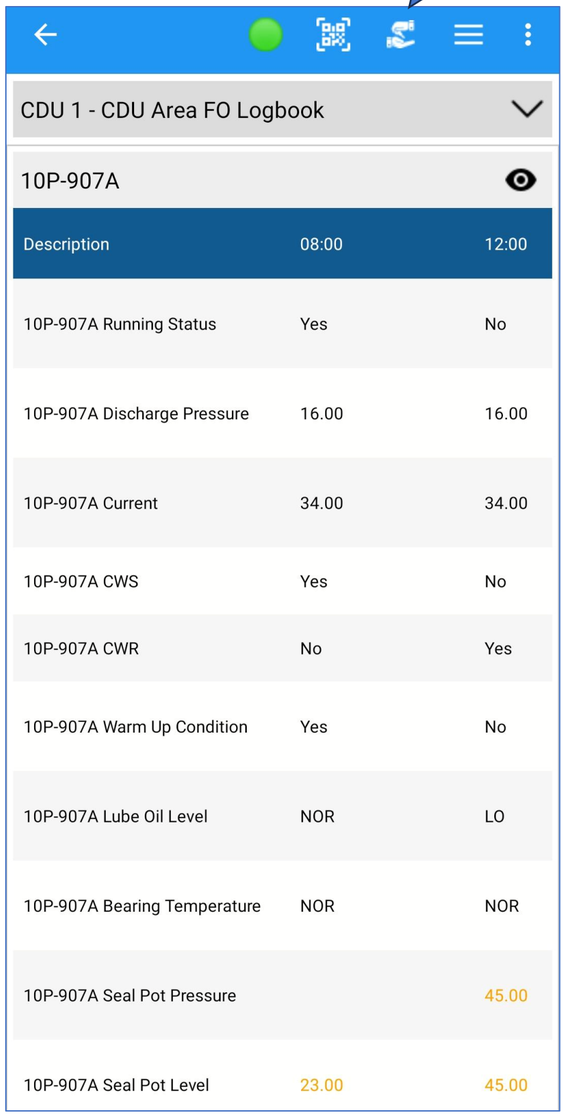
Shift Handover

Set Complete





Shift Handover



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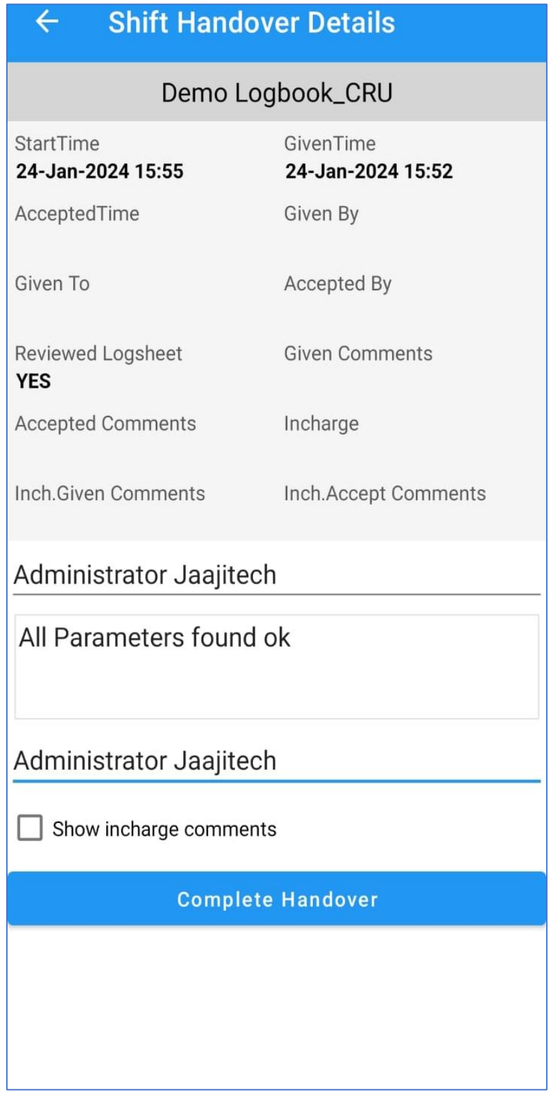
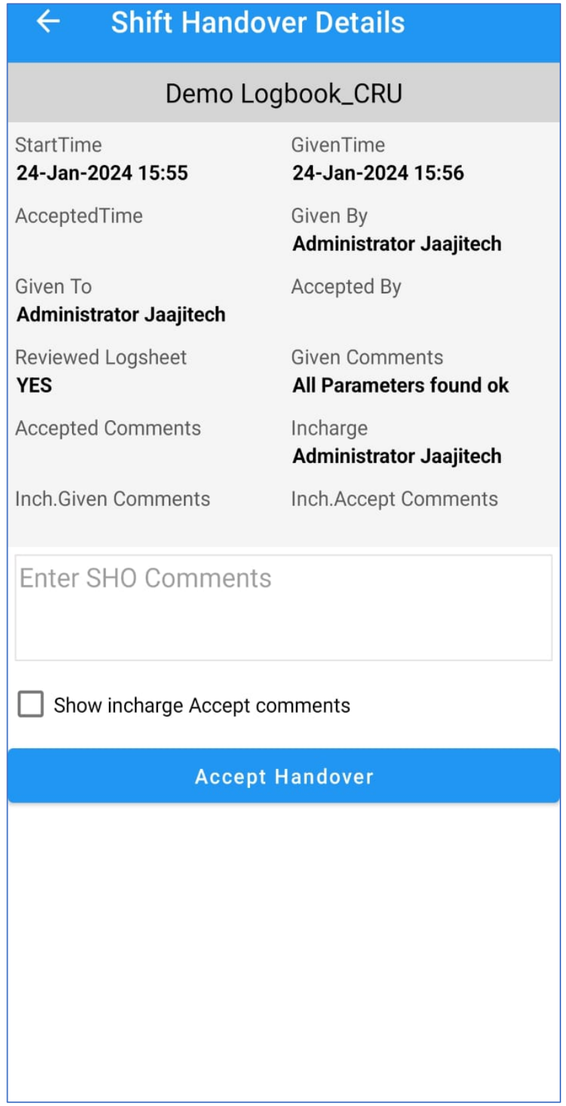
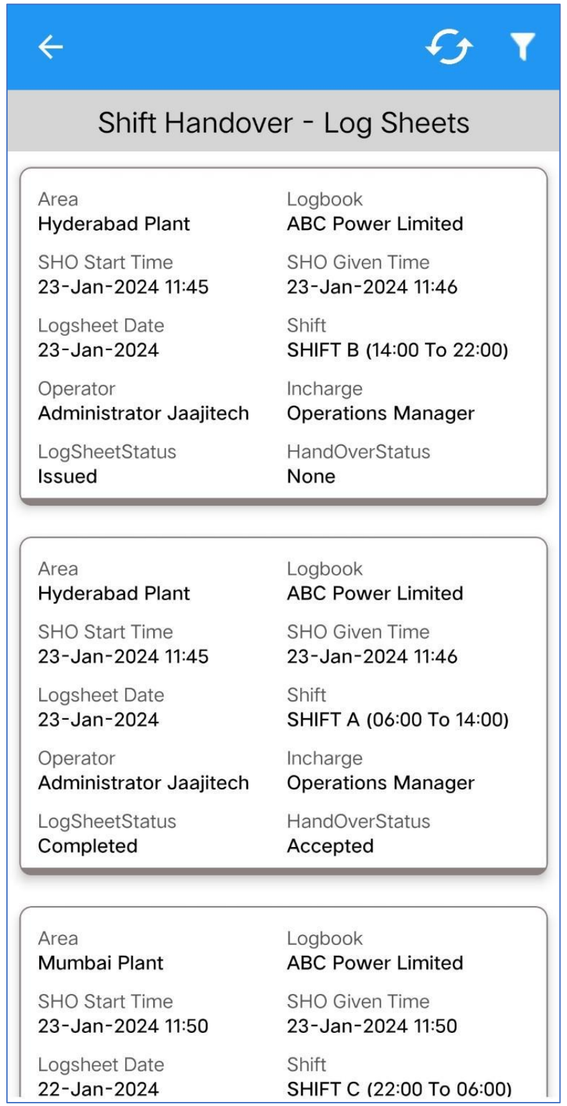
Shift Handover



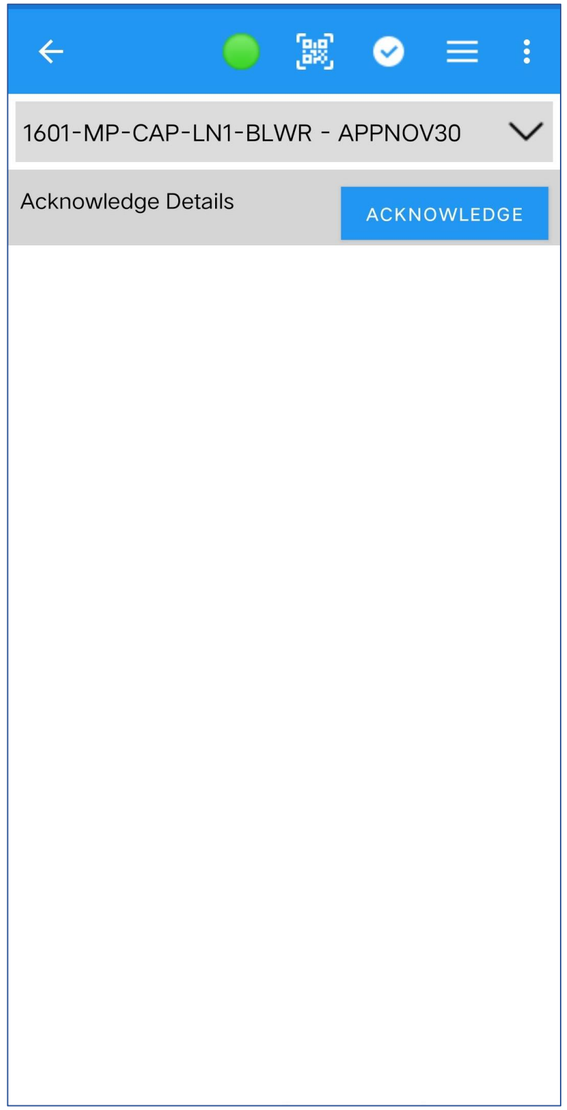
Provide Shift Handover



Accept Handover



Shift Handover Summary



Acknowledge

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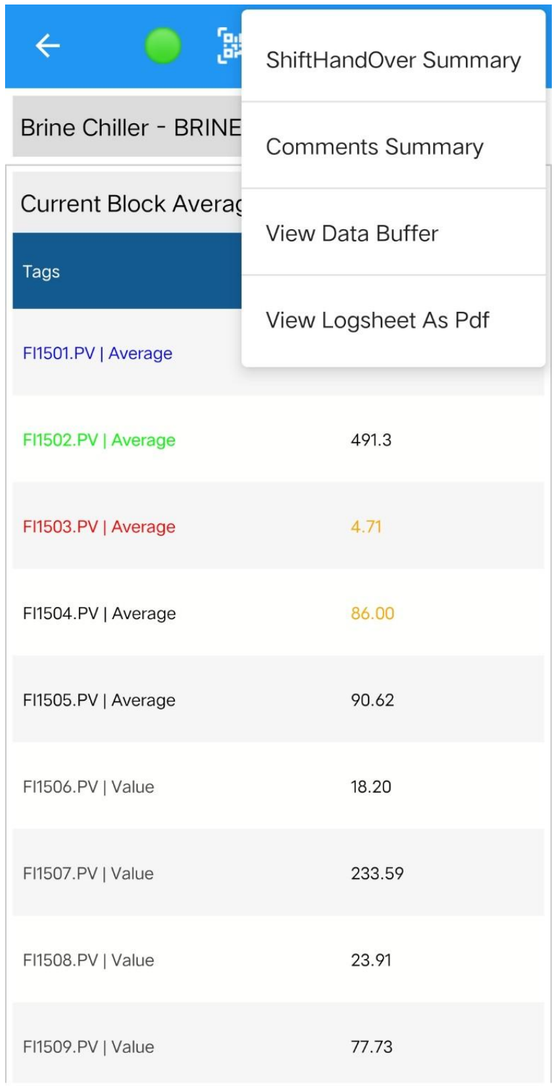
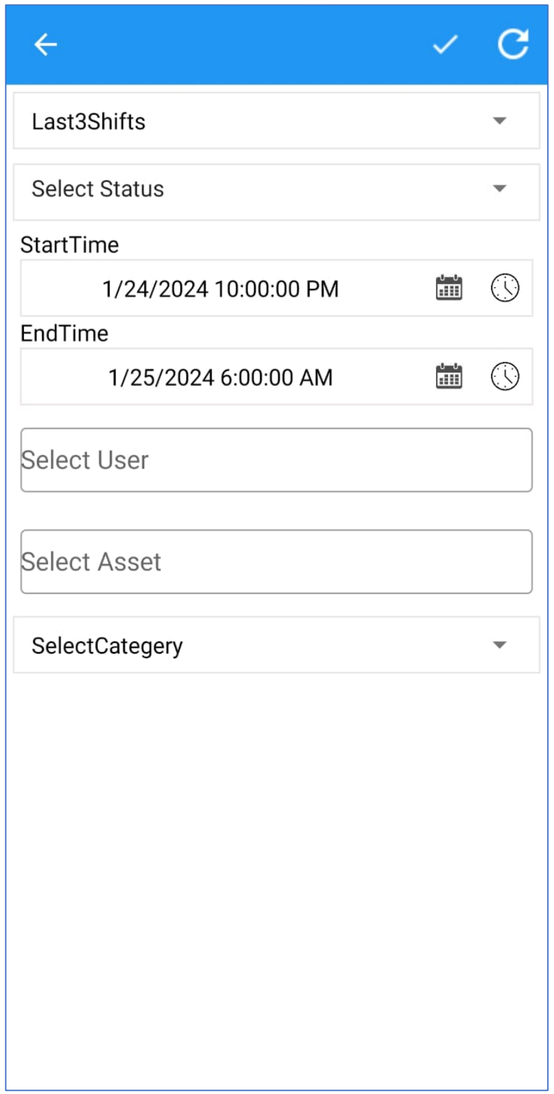
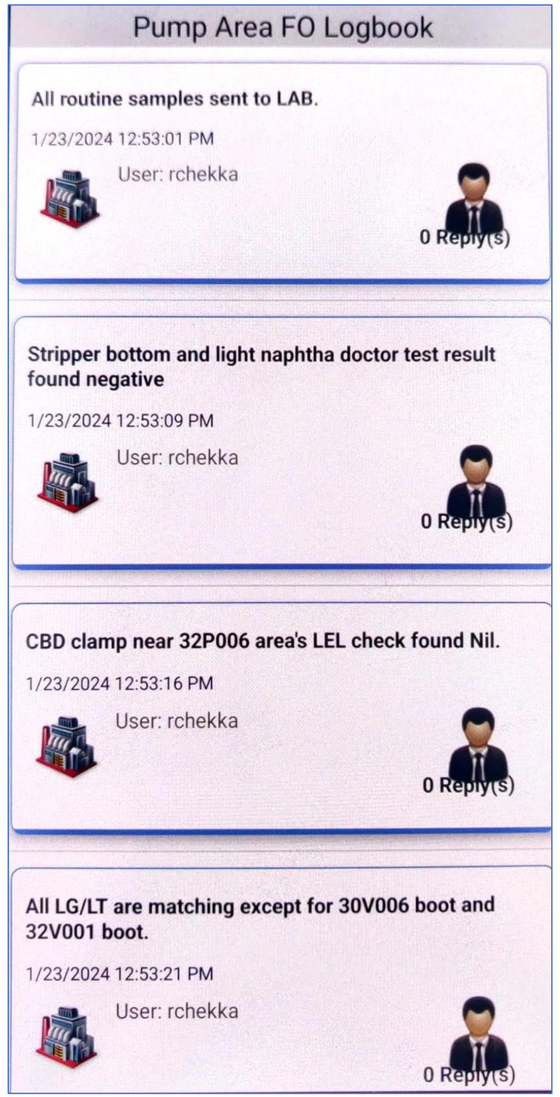
Comments Summary

The operator comments can be centralized within the comments summary, allowing users to search for comments based on criteria such as date, status, category, asset, and user. This can be done using the filter option in the top menu bar. By default, the comments from the last three shifts will be displayed.







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Standing Instructions-NHT CCR

Last Updated Time : 29-Mar-2023 00:00

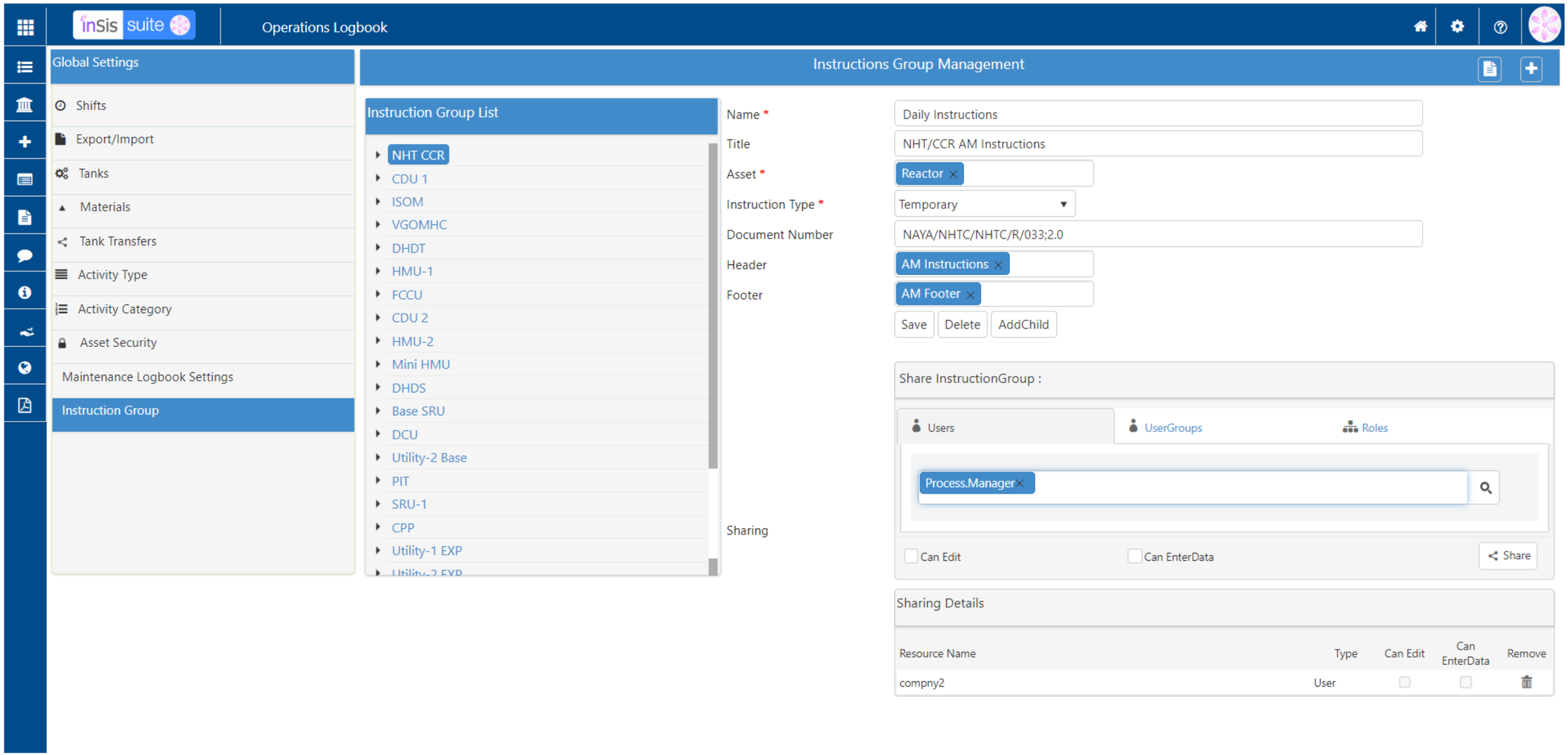
Safety

1	All jobs should be carried out as per the work permit procedure laid out by HSEF
2	All safety procedures to be followed
3	Whenever 32P001 disch temp 32TI005 high temp alarm comes, then a) Cross check with 32TI001 (at sour naphtha inlet) and if that is also increasing then inform CDU/PIT to lower sour naphth temp and b) check at our B/L for any abnormal lineups causing higher sour naphtha temp c) if 32TI001 normal then check 32P001 discharge temperature with temp gun and if lower side then 32Ti005 by instt. If actually goes high then pump damage may occur. If not controllable then pump to be stopped and cooled
4	Whenever 32P001 disch temp 32TI005 high temp alarm comes, then a) Cross check with 32TI001 (at sour naphtha inlet) and if that is also increasing then inform CDU/PIT to lower sour naphth temp and b) check at our B/L for any abnormal lineups causing higher sour naphtha temp c) if 32TI001 normal then check 32P001 discharge temperature with temp gun and if lower side then 32Ti005 by instt. If actually goes high then pump damage may occur. If not controllable then pump to be stopped and cooled

Operational Excellance

1	Everybody should come in duty only in proper uniform and should be available during his official duty hours.
2	SOP compliance should be 100%.
3	Whenever 32P001 disch temp 32TI005 high temp alarm comes, then a) Cross check with 32TI001 (at sour naphtha inlet) and if that is also increasing then inform CDU/PIT to lower sour naphth temp and b) check at our B/L for any abnormal lineups causing higher sour naphtha temp c) if 32TI001 normal then check 32P001 discharge temperature with temp gun and if lower side then 32Ti005 by instt. If actually goes high then pump damage may occur. If not controllable then pump to be stopped and cooled
	Whenever 32P001 disch temp 32TI005 high temp alarm comes, then a) Cross check with 32TI001 (at sour naphtha inlet) and if that is also increasing then inform CDU/PIT to lower sour naphth

Instructions Management



Engineers can share instructions as per-asset basis and control edit access for both daily and standard instructions.

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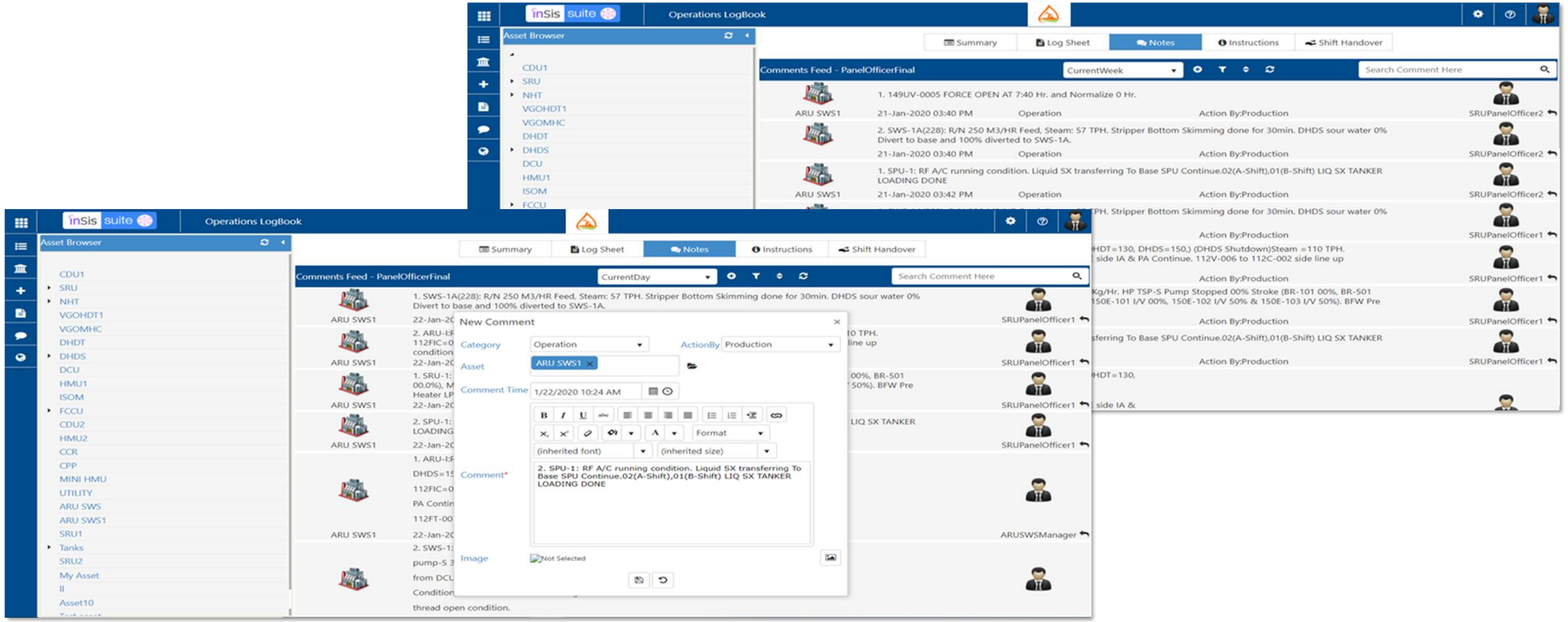
Engineer Summary View - Comments

All the Operator Comments Can be Consolidated in the Comments Section for the engineer. Every Comment Can be Categorized, Assigned to Others and Status Can be Tracked. Corresponding Users Can Also reply

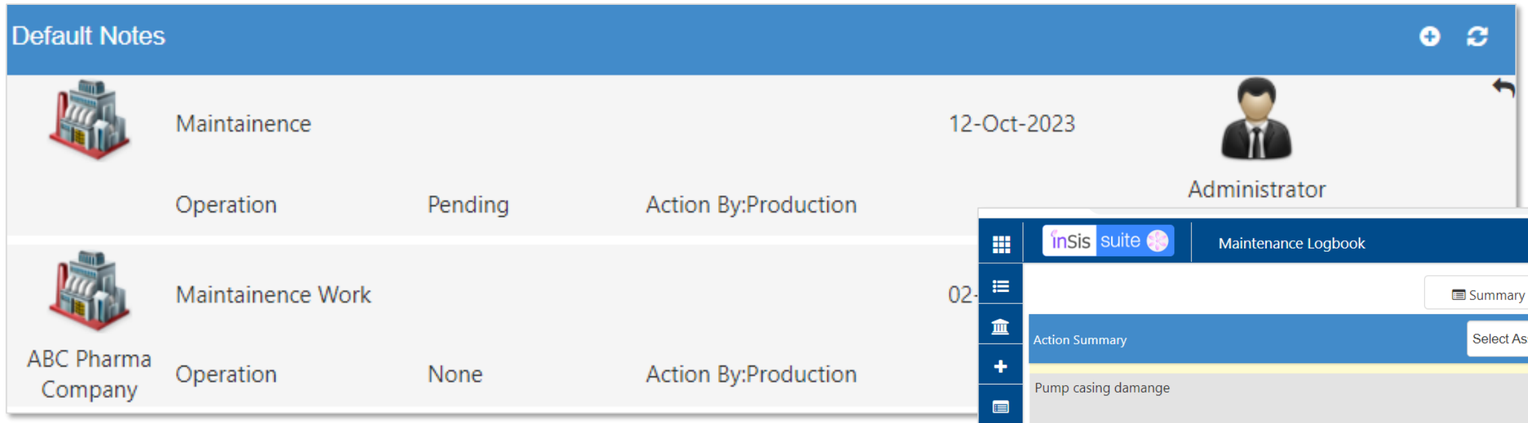


Comments can be searched based on “Content, Date, Status, Category, Asset, Usernames” using filter option from top menu bar. BY default, last3shifts of comments will display.

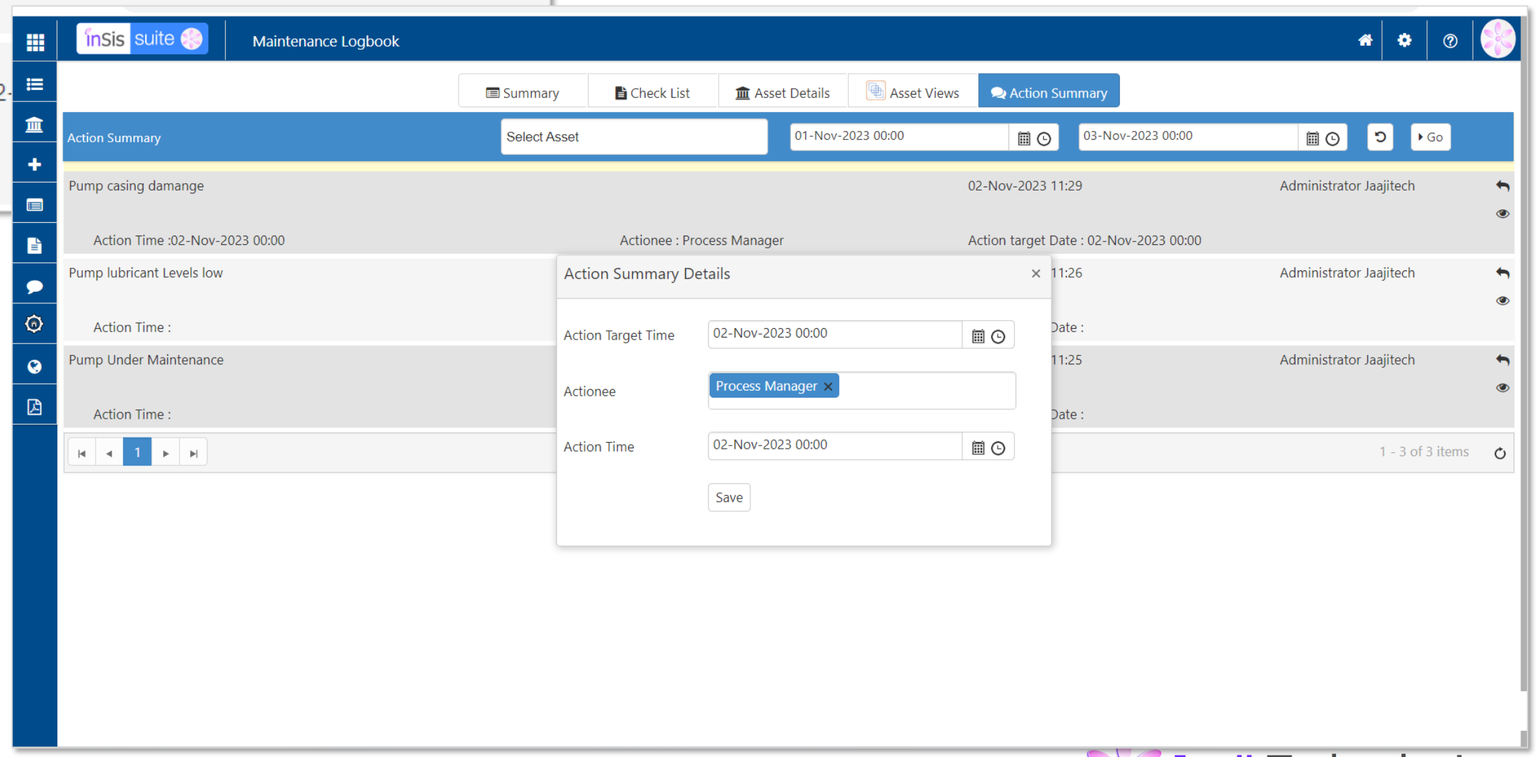
Action Summary for Maintenance Teams – Closing the loop of identified issues in field

All the actionable comments in the Logbook are separately listed and tracked by Maintenance teams for closing the loop of the abnormal situations for timely correction of the same

Operator Comments – In Logbooks



Action Summary – For Maintenance Teams



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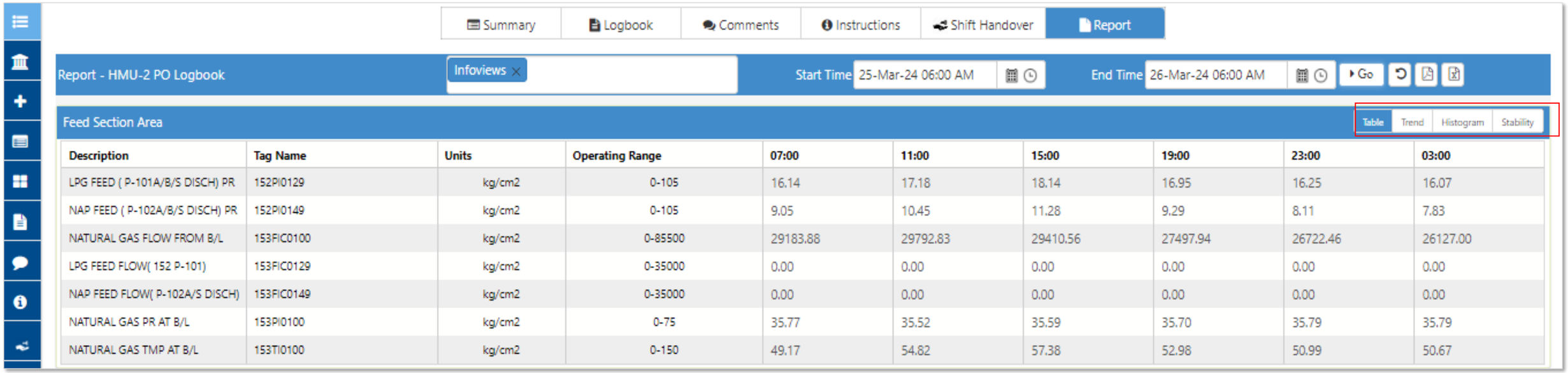
Summary Report Day/Shift

The system will automatically generate reports, and operators can view historical data using various visualizations such as tables, line charts, histograms, and stability charts.



Description	Tag Name	Units	Operating Range	07:00	11:00	15:00	19:00	23:00	03:00
LPG FEED (P-101A/B/S DISCH) PR	152PI0129	kg/cm2	0-105	16.14	17.18	18.14	16.95	16.25	16.07
NAP FEED (P-102A/B/S DISCH) PR	152PI0149	kg/cm2	0-105	9.05	10.45	11.28	9.29	8.11	7.83
NATURAL GAS FLOW FROM B/L	153FIC0100	kg/cm2	0-85500	29183.88	29792.83	29410.56	27497.94	26722.46	26127.00
LPG FEED FLOW(152 P-101)	153FIC0129	kg/cm2	0-35000	0.00	0.00	0.00	0.00	0.00	0.00
NAP FEED FLOW(P-102A/S DISCH)	153FIC0149	kg/cm2	0-35000	0.00	0.00	0.00	0.00	0.00	0.00
NATURAL GAS PR AT B/L	153PI0100	kg/cm2	0-75	35.77	35.52	35.59	35.70	35.79	35.79
NATURAL GAS TMP AT B/L	153TI0100	kg/cm2	0-150	49.17	54.82	57.38	52.98	50.99	50.67

IOCL, Orissa Paradip Refinery - ERU/EG units

(Through Yokogawa)

CHALLENGES

Real-time monitoring & calibration of online analyzers, Data analytics, integrating both process and maintenance data seamlessly.

OFFERED SOLUTIONS

Analyser Management System (AMADAS) – Dashboards, PFD, KPI Management, Tasks, Reports & Historian

CONCLUSION

Comprehensive management of Analyzers and their Increase Availability & Reliability

Departments & Locations

- Covered Departments: Performance Monitoring, Operations & Maintanence

InSis suite

Scope of Work

- Tags/Parameters – 5000
- Analyser Shelters – 6
- Analyzers – 33
  - Gas Chromatograph - 17
  - Field Analyzers – 7
  - Mass Spectrometer – 1
  - UV Analyzers – 3
  - Nox - 5
- Analyser Sheleter Dashboards – 6
- Individual Analyser dashboards – 33 nos
- DCS Integration – Read & Write
- Validation & Calibration
- PLC Integration - 7

Benefits

- A record of calibration and maintenance activities performed on the analytical instruments
- Unlimited Data storage from DCS/GC/Analyzers/PLC's /Spectrometers and brings to central AMADAS LAN
- Anomaly detection & generates alerts when certain thresholds or conditions are met
- Provides a range of data analytics including customized reports, dashboards, and alerts

Benefits

- Availability of an Improved reliability analyzers & Improves Process control
- Optimize Operational Performance, Improves Operational Safety
- Typical ROI is less than 10 months & up to 80% savings in time
- Improves asset life span & Faster time to Respond 100% Data Accuracy
- Reduces manpower for maintenance in remote areas

Indian Oil Corporation Limited (IOCL) , Haldia, West Bengal., India

CHALLENGES

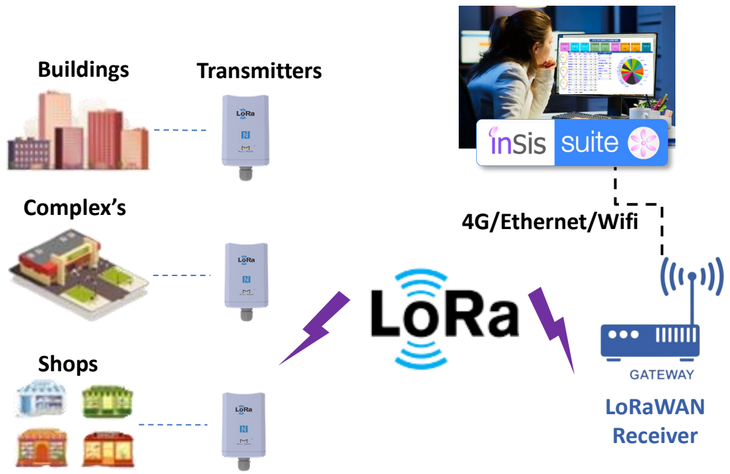
Lack of availability of real-time data for power consumption and monitoring

SOLUTION

- Energy Management Solution (EMS) through Lorawan Gateway

CONCLUSION

Monitor real-time data on mobile /web to make prompt decisions that leads to increase the incentives & profits



inSis suite

Scope of Work

- Associated in **2023**
- Successfully Implemented Smart Energy Monitoring System using LoRaWAN
- Tags – 300 tags
- Data Analytics - 200
- Dashbaords – 15 EMS
- Reports – 3
- Alerts & Notifications – 25
- Trends – 25
- PFD/SLD - 1
- Hardware Supply & Installation – Server, LoRa Wan, Cables like LAN, RS485, Racks, etc.,

Integrations

- Energy Meters – 30 Ems
- 5 clusters
- Make & Models of Ems Meters
  - AE-900
  - Neptune 200
- LoRa Wan Nodes - 11
  - F8L10T
- LoRaWan Gateway – 1
  - F8L10GW
- Meters Communicated via
  - Modbus RTU (RS485/RS232)

Benefits

Faster Deployment | Low Power Consumption | Longer Range | Simple Architecture | High Security

Case Studies

A Leading Refinery

OBJECTIVE

NexGen **Refinery** MIS Portal to drive Performance, Efficiency

OFFERED SOLUTIONS

Refinery Performance Monitoring System (RPMS), Real-time data integration, Inventory Dashboard, Energy KPIs, Blending Analytics & Automated reports and Dashboards for Senior management

CONCLUSION

Reliable and Accurate data consolidated from multiple data sources increased the operational efficiency & productivity

BENEFITS

~ 5% impact on Hydrocarbon inventory, ~90% time saved in analytics
~50% time saved through collaboration

A Leading Chemicals Company

OBJECTIVE

Drive Digital transformation across multiple sites in the areas of Operations, Maintenance and Quality for a **Specialty Chemicals company**

OFFERED SOLUTIONS

Centralized Historian, Digital Logbooks, Digital Checklists, Kaizen workflows, Automated Reports,

CONCLUSION

Improved visibility of data set the foundation for valuable analytics; this is expected to help the organization in their expansion plan

BENEFITS

~ Single system of record
, ~5 to 7% improvement in process yield
~30% time saved through collaboration

Jaaji Technologies

Thank You

Join hands to help industry get more productive and profitable !

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