Jaaji Technologies

Sophistication with Simplicity

Implementation of E-Logbook using inSis Suite

Solution Overview

Like us on Facebook
facebook.com/jaajitech

Follow us on LinkedIn
linkedIn.com/company/jaaji-technologies

Contact Us
Business Card

Follow us on YouTube
https://www.youtube.com/channel/UCyYHDLAc_QZHC67HDQVBFhw

Contact Details:
Web: www.jaajitech.com
Ph: 8897698106
E: sivarambrahmam@jaajitech.com
sales@jaajitech.com

Table of Contents

1. Digital Operations Logbooks 4

1.1 Digital Operations Logbook 5
1.2 Objectives of Operations Logbook 6
1.3 Challenges in Operations Logbook 7
1.4 Benefits 7
1.5 Features of Digital Operations Logbook 9

1.5.1 Logbook Management 9
1.5.2 Logbook Builder 11
1.5.3 Log sheet Management 11
1.5.4 Log sheet Data Entry 12
1.5.5 Comments Management 12
1.5.6 Instructions Management 13
1.5.7 Shift Handover 14
1.5.8 Mobile App for filed Entry data 15
1.5.9 Operator Logbook for Field Operator 17
1.5.10 Manual Data Entry Module 17
1.5.11 Operations Task Management 18
1.5.12 Security and Auditing: 18
1.5.13 Alerts and Notifications: 18
1.5.14 Data Visualization & reporting 19
1.5.15 Data Analytics & Decision Support Tools 20

2. Operator Rounds 21

2.1 Operator Rounds Management: 22
2.2 Security and Auditing 22
2.3 Alerts and Notifications 23
2.4 Technical Requirements: 23

3. Customisations Available in inSis Suite 23
4. Security & Role-based Visualization 25
5. Common Requirements 27

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

Terminologies:

Jaajitech: Jaaji Software Technologies Private Limited, India (**Jaajitech**)

MIS & OI: Manufacturing Information System & Operational Intelligence

MES: Manufacturing Execution System

OIP: Operational Intelligence Platform

Process Historian: A time-series data base where the operations data are stored

Process Data Analytics: Provides actionable insights with the help of views which are a combination of Data, Calculations, Different Time Periods & Visualizations.

OPC: OLE for Process Control, a specification by OPC Foundation.

Modbus: A serial communication protocol for exchange of data between electronic devices

Process Control Systems: An automation system that is used to control process plants

DCS: Distributed Control System

Tag: An ID used to denote a process measurement in the Control System

inSis®: Industrial Smart Information Systems from Jaajitech, India.

EMS: Energy Management System

Jaaji Technologies®: Jaaji Software Technologies Private Limited, India (www.jaajitech.com)

Operations Logbook: The electronic logbook for Operator Field Logs.

KPI: Key Performance Indicator

Baseline Period: The period in which the Plant/Unit/Section is operated most efficiently and profitably

Baseline Value: It is the value for a KPI as a basis of certain performance used for comparison

Benchmark: It is the value for a KPI which is practically achievable which is based on other industry peers

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

1. Digital Operations Logbooks

In every operations facility, Operators record the key production information, important events occurred, ongoing maintenance activities, safety events and notes during their shift. This information helps next shift operators to handle the operations smoothly. Maintaining Operator Logbook is essential for any operating facility to ensure smooth operations. It is also mandatory in many plants to maintain the Operations logbook.

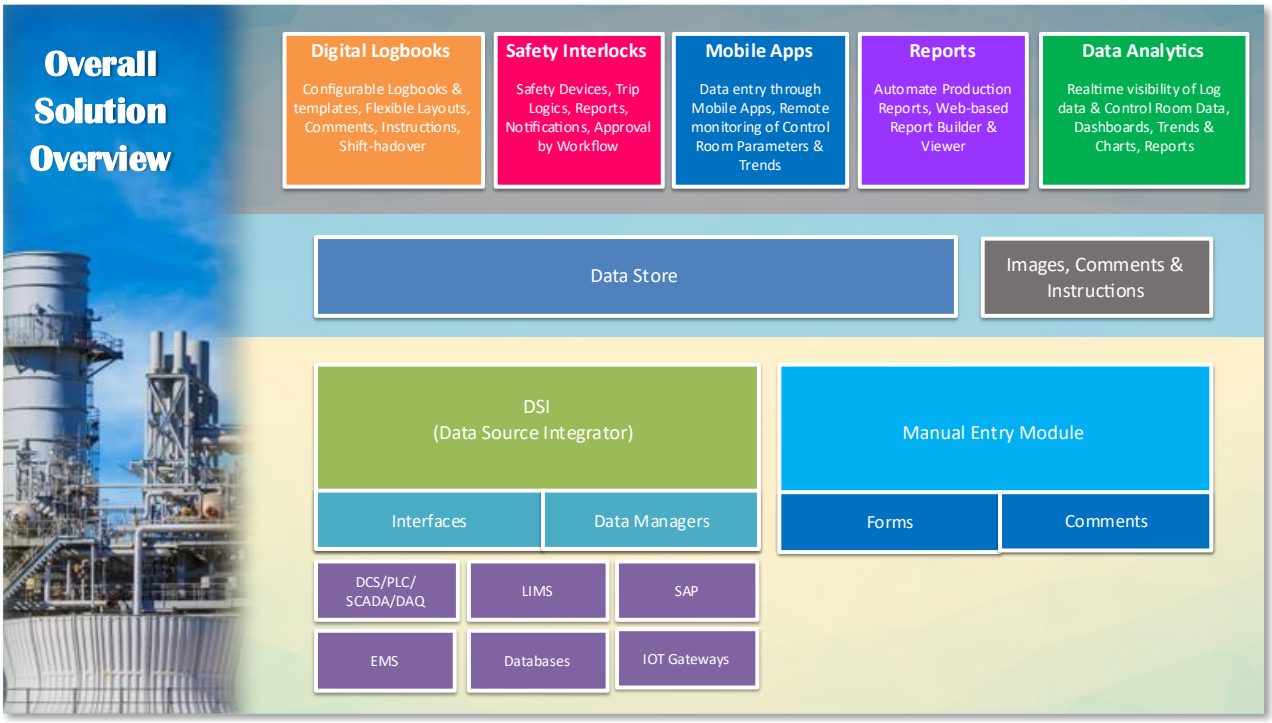
Digitizing the Manual Operator Logbooks to Electronic form will greatly enhance the overall effectiveness of shift log process. inSis Operations Logbook helps in digitizing the Operator Logbooks while enhancing the ease of managing the log sheets. The data and comments are stored in a database instead of simple computer files which helps in consolidation, search and trending of operator data.

The solution has several modules,

1. **Self-Service & Role-based Portal:** A single point access to all the modules based on the roles.
2. **Digital Operations Logbook:** Digitalisation of Operations Logbooks to provide a comprehensive management of operations logbooks centrally.
3. **Data Visualisation:** Provides real-time visibility of operations data collected through operations logbooks.
4. **Data Analytics & Decision Support Tools:** Provides actionable insights into Operational Data.
5. **Mobile Apps:** Provides access to Data Visualisation and Analytics over Mobiles & Tablets.
6. **Personalisation & Collaboration:** Share, collaborate and work as Team to enhance the overall performance of the Team.
7. **Data Integration:** Integrate the existing Data Sources like Historians, Control Systems, Devices, LIMS, EPR Systems, RTDBs, Files etc.
    a. Supports automatic and on-demand import of task-related data from external systems such as SAP, OSIsoft PI, or other enterprise applications.
    b. Provides capability to export task and logbook data to external systems for reporting and analytics.
    c. Uses secure Web APIs for data exchange, ensuring compliance with cybersecurity standards.

Following is the proposed Overall Solution Overview

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

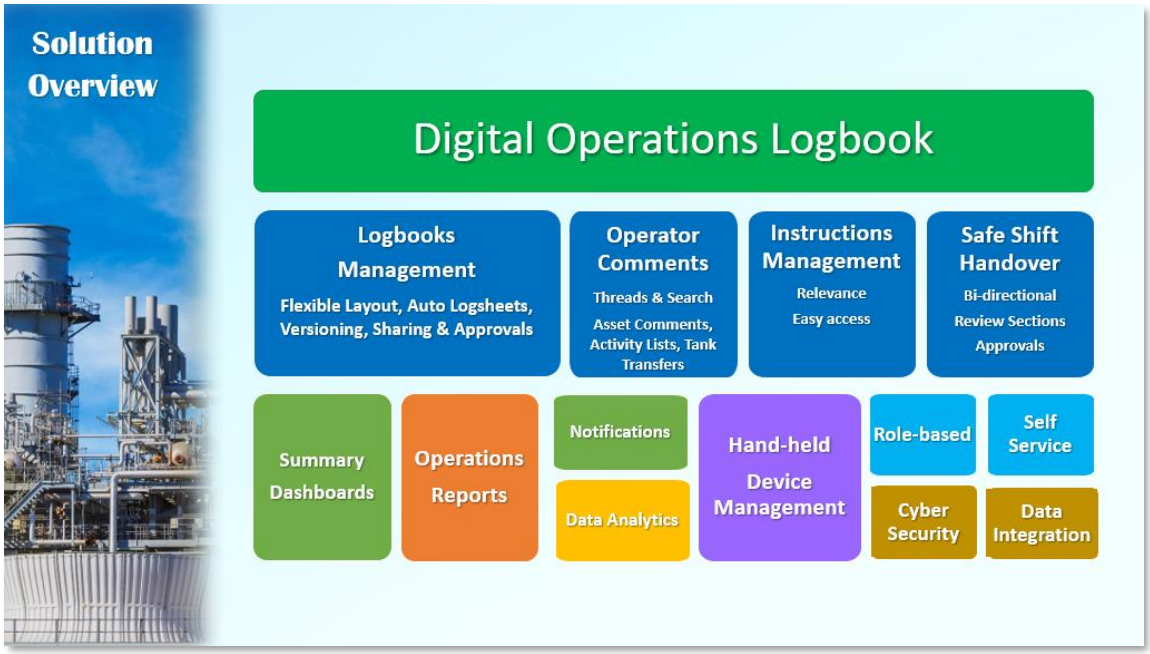


1.1Digital Operations Logbook

In control room both Master Board/Panel operator and Shift-In-Charge do write logbook with various information like Process Data, Maintenance Activities, Incidents, On-going activities, Shift Manpower Comments etc. This information is written in paper and soon after, it becomes an information silo. Since it is manual information, the accessibility is limited with physical constraints. Also, to search a certain asset related events, data it will take lot of time with manual search. The log writing process take considerable time as several information has to be detailed.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

Following is the proposed Digital Operations Logbook overview,



1.2Objectives of Operations Logbook

In order to face the above challenges, it is required implement the Operations Logbook with following objectives,

- A simple and effective way of digitising the Manual Operations Logbooks by eliminating the paper, binders, manual bookkeeping etc.
- Collect data from DCS, Lab, EMS, Tanks, SAP etc. and auto-fill logsheet for review, validation & update
- Carryout effective & safe shift handovers
- Delegate operational instructions to respective teams
- Using hand-held device, digitalize the field data using electronic log sheets
- Consolidate and search operational data, comments & events quickly
- Provide a centralized platform for managing the logbooks of entire plant.
- Access & View Logbooks from anywhere in Plant and from HQ
- Connect to control systems and provides real-time visibility & trend of equipment operating data to operators.
- Provide Data Analytics, Trends, Dashboards, Reports, Notifications etc.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

1.3Challenges in Operations Logbook

Following are the typical challenged in maintaining the manual and traditional operations logbook,

- Most accidents in the process industry are related to errors in communication during shift handovers
- Manual shift handover is unidirectional
- Instructions are often go unnoticed or followed even after their period of applicability
- Manual data entry by collecting data from DCS, Lab, EMS, Tanks, SAP etc.
- Human Errors in manual data logging/retrieval
- Exhaustive & time consuming to consolidate manual log sheets when required
- NO real-time visibility & trending of these logged parameters
- Searching of an event or comment from Logsheets is tedious
- Its is laborious to maintain the physical papers, binders and housekeeping
- Modifying and reprinting the layouts is always expensive and time consuming

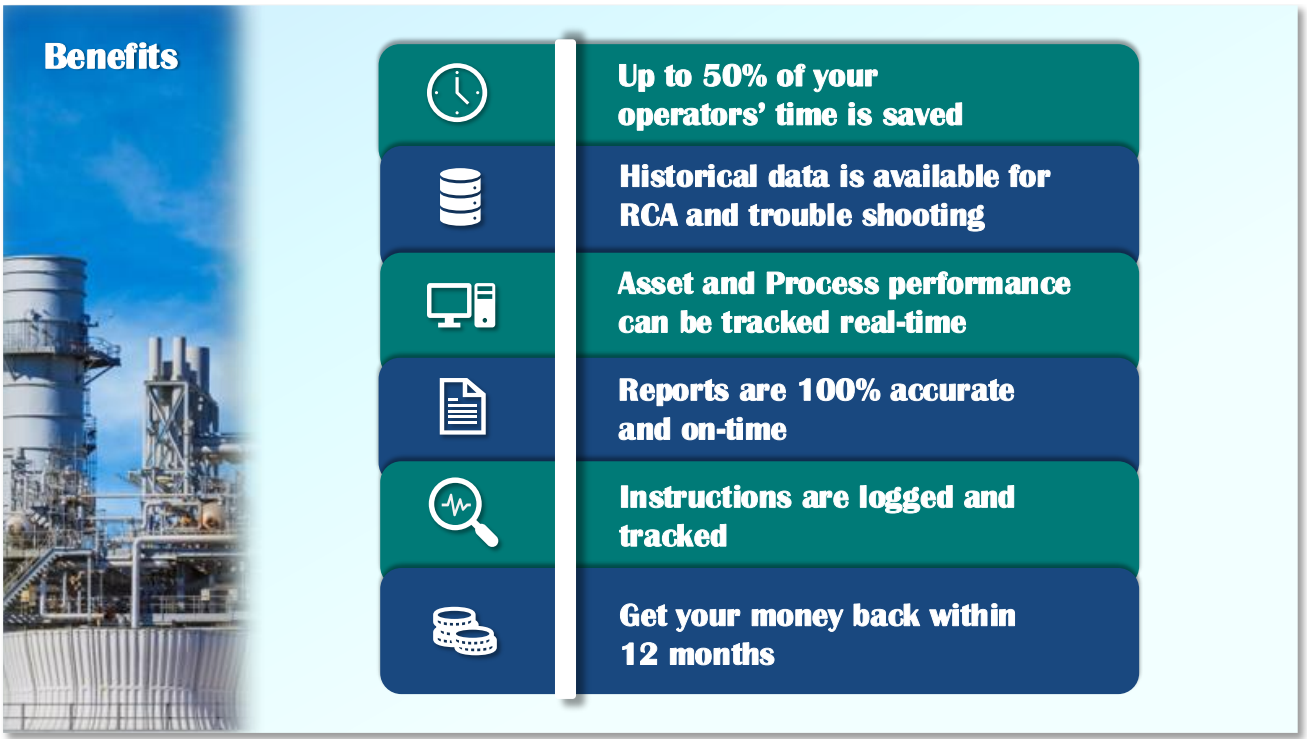
1.4Benefits

Following are the major benefits of Digital Operations Logbook,

1. Improves Safety by smooth shift handover process
2. Reduces time & efforts of logistics and housekeeping of manual logbooks
3. Easy consolidation and quick searching data, events & activities etc.
4. Improves the overall effectiveness of logging of operations data and Shift Changeover
5. These logs, summaries and comments are easily accessible to top management

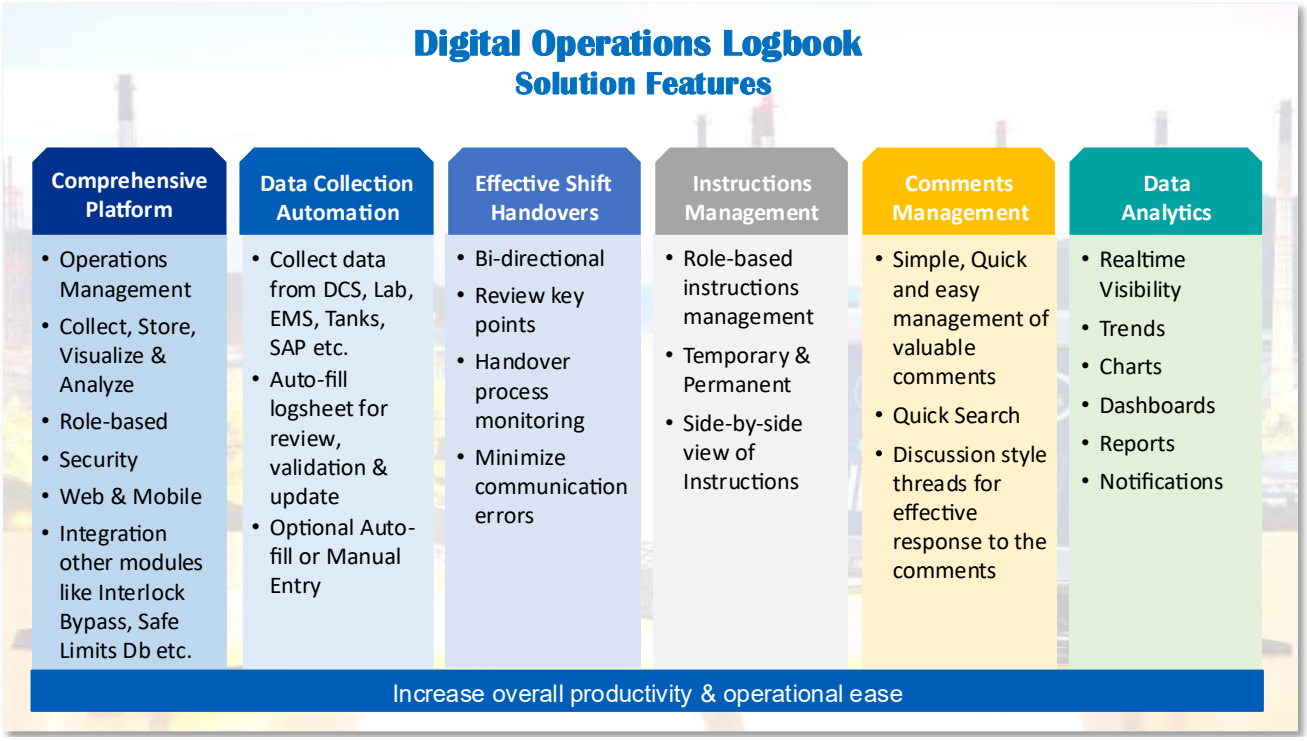
© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

6. Reduces man-hours for logbook data collection, calculations and presentation by 80%
7. Reduces the time for troubleshoot process issues by 50%
8. Makes plant operations information easily accessible to all of teams across devices.
9. My making the operations data available on Mobiles, the teams are seamlessly connected to plant which improves their productivity
10. Analytics with Metrics enables better and faster decision-making, increased productivity and reduced costs.



© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

1.5 Features of Digital Operations Logbook



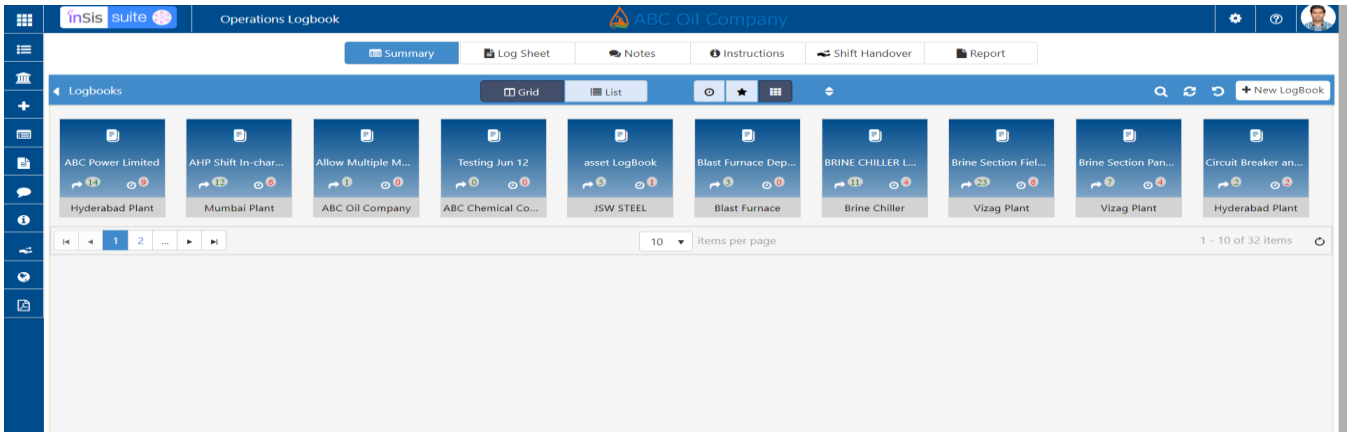
1.5.1 Logbook Management

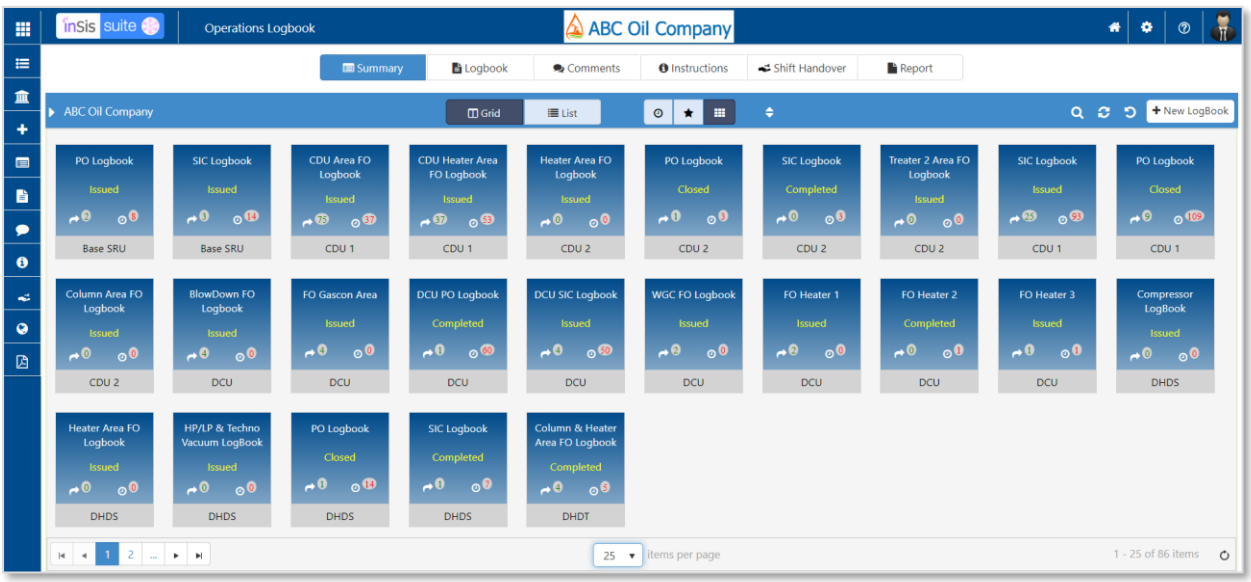
With Digital logbook, logbook management become simple and effective. Following is the typical process of log management,

1. The process information is directly fetched from DCS/Historian
2. Maintenance activities are fetched from Maintenance Management System
3. Optionally, Shift Man-power information is fetched from access control/attendance system
4. The Critical Params violations, Critical Assets status are automatically updated
5. Shift-In-Charge/Engineer will verify this data and add comments to complete the logbook
6. Also, key information from Filed are automatically fetched from Field Logbooks

As the information is digitalized, it becomes easy & simple to analyze the data, see the trends, search comments etc. Also, the data are readily visible by Unit Heads and RSMs in real-time.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.





The process of operations logbook management,

- The required log sheets formats are first created using the Logbook Builder
- Logbook is shared with Operators and Engineers with appropriate permission to edit and approve
- At the beginning of shift, Engineer or Operator will issue new log sheet
- Field Operator uses hand-held mobile device to enter the data from field. He will also add comments. Optionally he can take pictures and attach with it.
- Once the shift is about to be completed, Operator mark it as completed. Engineer verify, add any comments and approves it.
- Does the Shift-handover by handing over to the next shift personnel
- Managers/Engineers/Operators can retrieve historical log sheets quickly and effortlessly from central portal
- All the data and comments are retrieved quickly in tables, charts, trends, Dashboards, etc. The information can be searched quickly
- Automatic validation of acquired data with pre-defined limits.

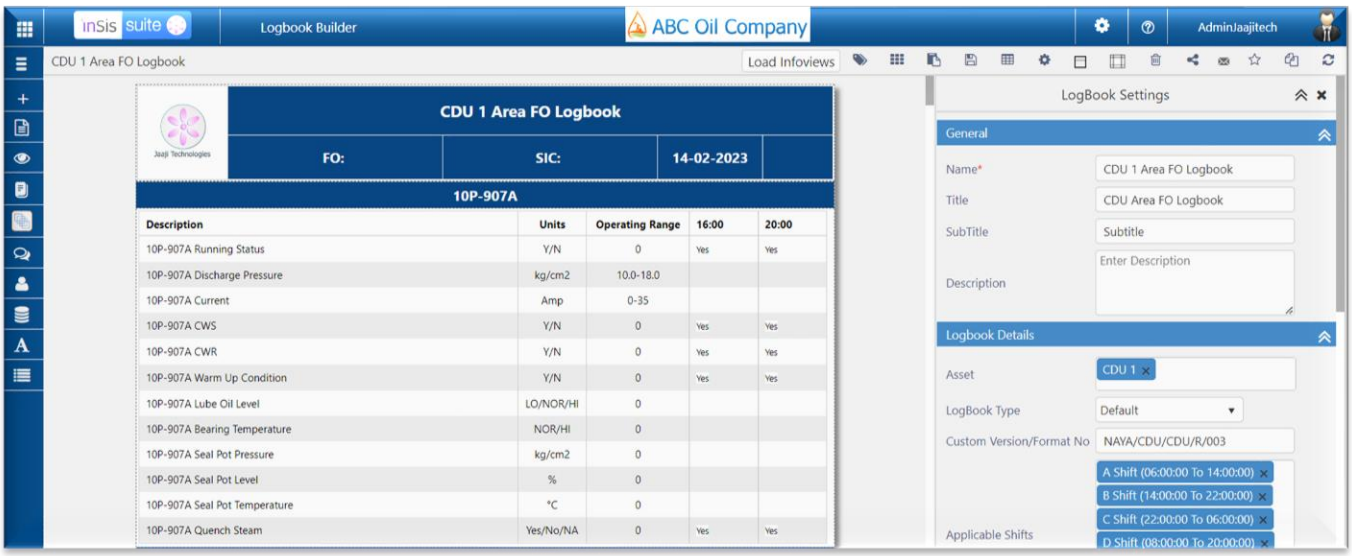
© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

- Automatic rejection of erroneous data.
- Configurable workflow for logbook approval.
- Support for attachments (Excel, Word, PDF) in logbooks.
- Automatic emailing of PDF copies of submitted logbooks to designated users.
- Auto-email alerts to predefined users if logbooks are not created or submitted.
- Ability to define site-specific logbook header formats (logo, operator name, unit, shift details, etc.).
- Advanced search using wild characters and multiple filters (template, unit, equipment, time).

1.5.2 Logbook Builder

Digital logbooks are configured same as physical logbook which will maintain the relationship between operator and the logbook. Providing best features to customize the logbook with Print and Pdf option. Look and feel are customisable. We can assign Shifts to logbook, and we can share the logbook to specific users with some privileges.

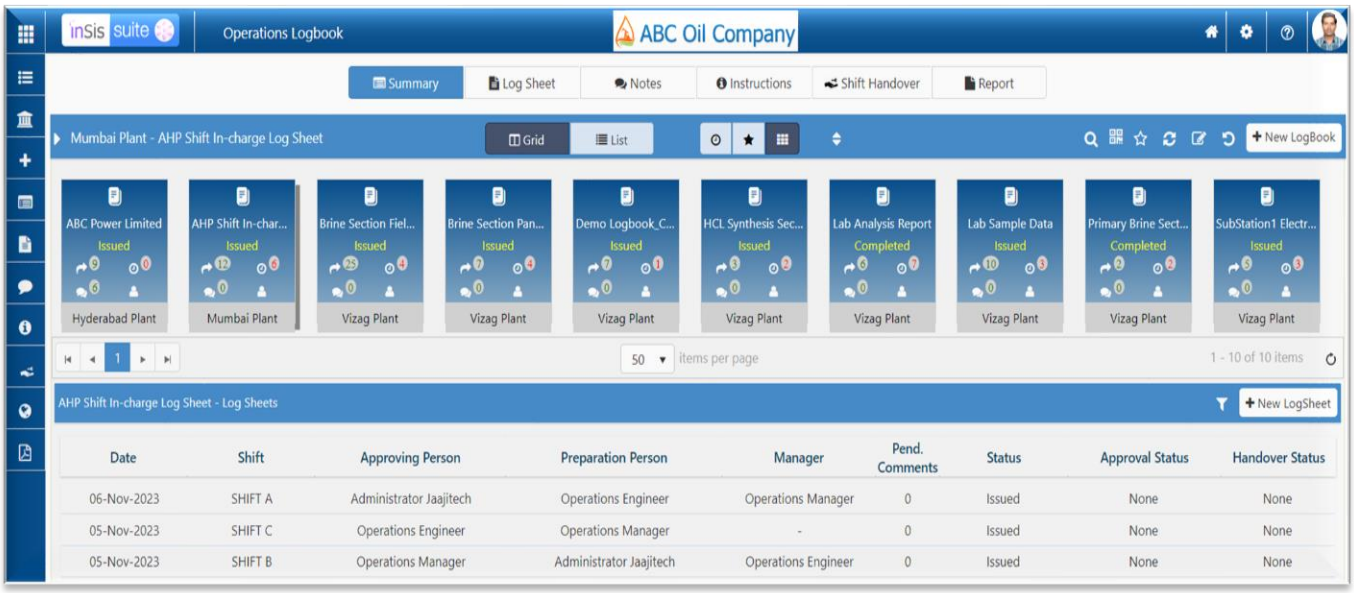
- Ability to define a default logbook template for each role/user.
- Ability to define default shift timings per logbook template.



1.5.3 Log sheet Management

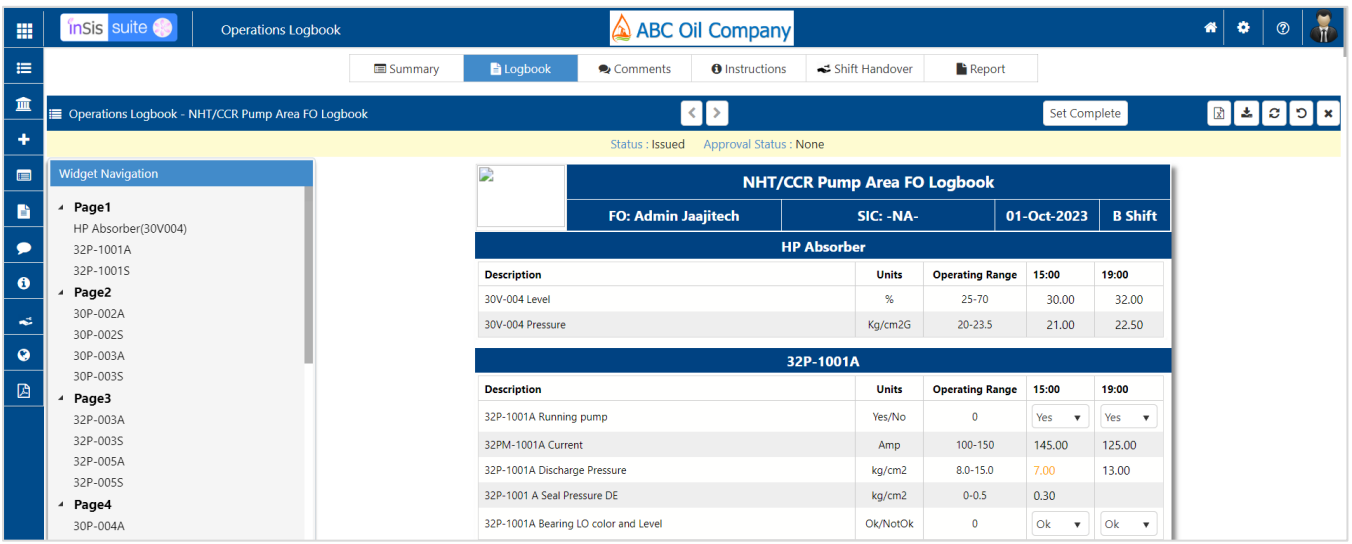
The continuous cycle of giving and accepting handover by the field officer.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.



1.5.4 Log sheet Data Entry

The parameters which are to be monitored timely has to be entered in the log sheet. Also pump change overs, tank transfers ,shift manpower and shift activities will be entered in log sheet

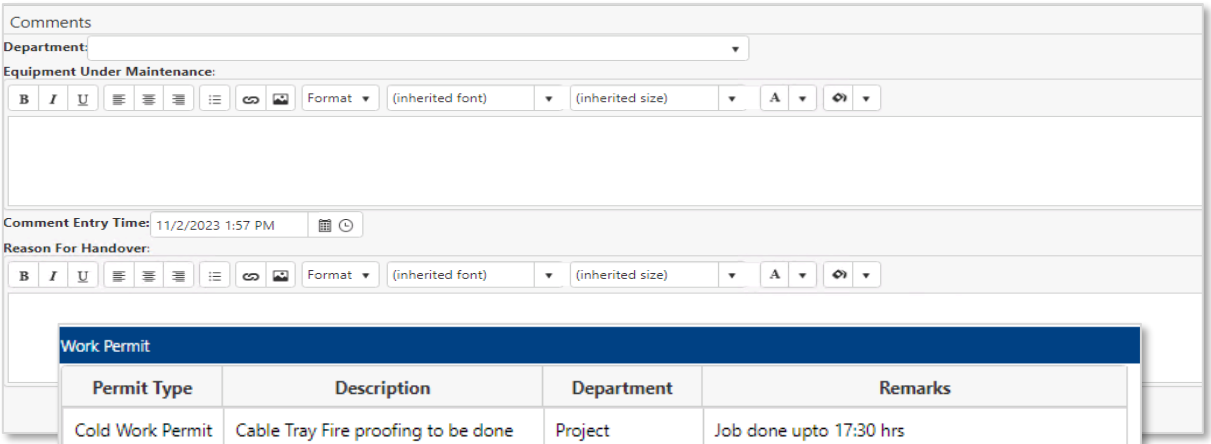


Digital Operations Logbook – Sample

1.5.5 Comments Management

In Comments management, we can give comments /filter based on the status, users and time duration which help to monitor any pending/completed activities in field.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.



Work Permit

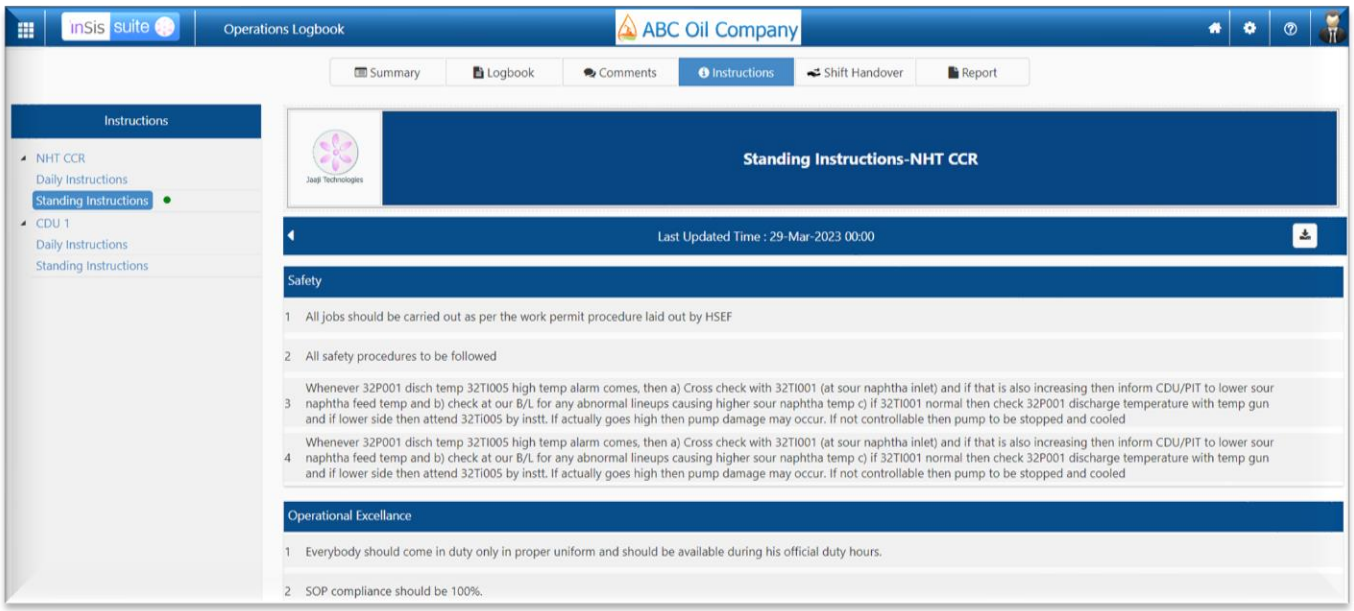
Permit Type	Description	Department	Remarks
Cold Work Permit	Cable Tray Fire proofing to be done	Project	Job done upto 17:30 hrs
Cold Work Permit	XV Valve Tube and Cable connection	Project	Job done upto 17:30 hrs
Cold Work Permit	PR-1, PR-2 , PR-3 and other RCC str. finishing and painting (CWP)	Project	Job done upto 21:30 hrs
Cold Work Permit	structural and pipe Painting in pru	Project	Job done upto 17:30 hrs
Cold Work Permit	Insulation work to be done at pru unit	Project	Job done upto 17:30 hrs
Hot Work Permit	Compressor Roof drain HDPE pipe installation to be done	Project	Job done upto 17:30 hrs
Hot Work Permit	paving breaking by electrical breaker (HWP)	Project	Job done upto 17:30 hrs
Hot Work Permit	Repalacement of SOV For XV Valve	Project	Job done upto 19:30 hrs

1.5.6 Instructions Management

In day-to-day operations, due to the nature of manufacturing operations, several instructions are given to various teams of operations. These instructions are normally managed in a physical notebook whose access is restricted. These instructions are mostly time bound. It is often challenging to identify, segregate and delegate them to respective shift personnel.

inSis Operations Logbook provides a module to manage the Instructions effectively. The instructions are provided by appropriate authorities and are readily accessible along with their shift logbook. This way, the appropriate instructions are automatically provided to the concerned personnel.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

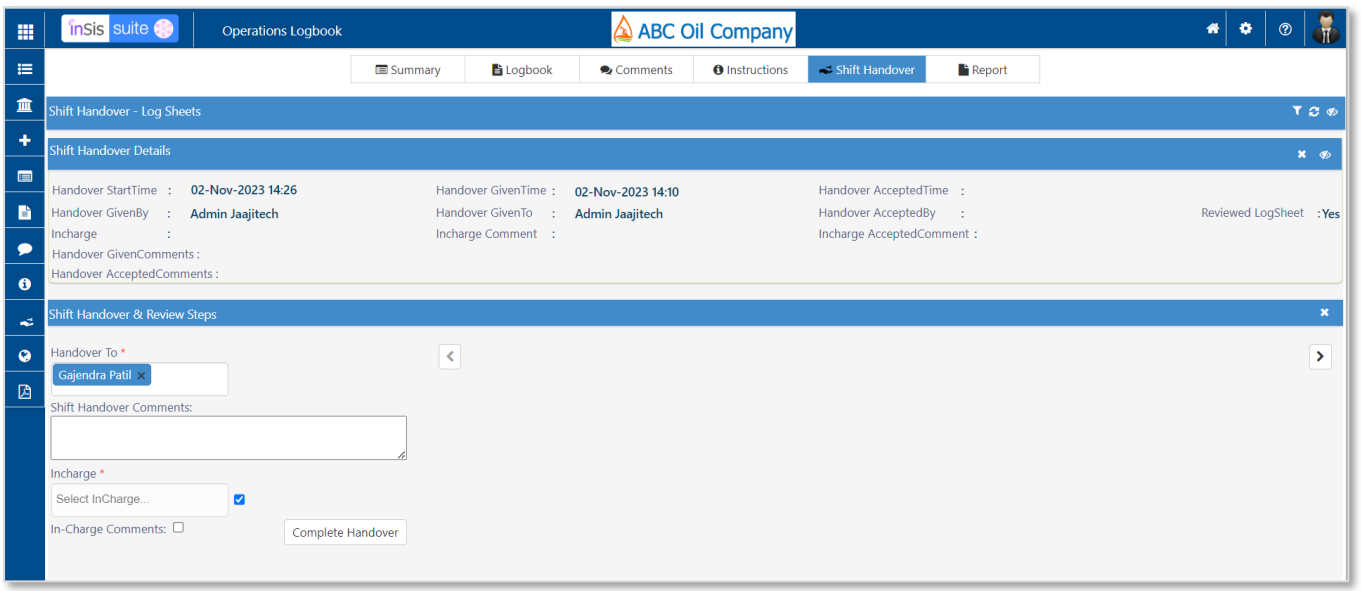


Digital Operations Logbook - Instructions

1.5.7 Shift Handover

Shift-handover modules helps the current shift to properly handover the duty to next shift personnel. Improper shift-hand over is the frequent and most common reason for most of the accidents in Manufacturing Plants. It is important to implement a smooth, efficient and consistence process of Shift Handover in operating plant. inSis Operations Logbook helps in smooth shift handover with proper check lists.

Automatic carry-over of selected data from previous shift to current shift.



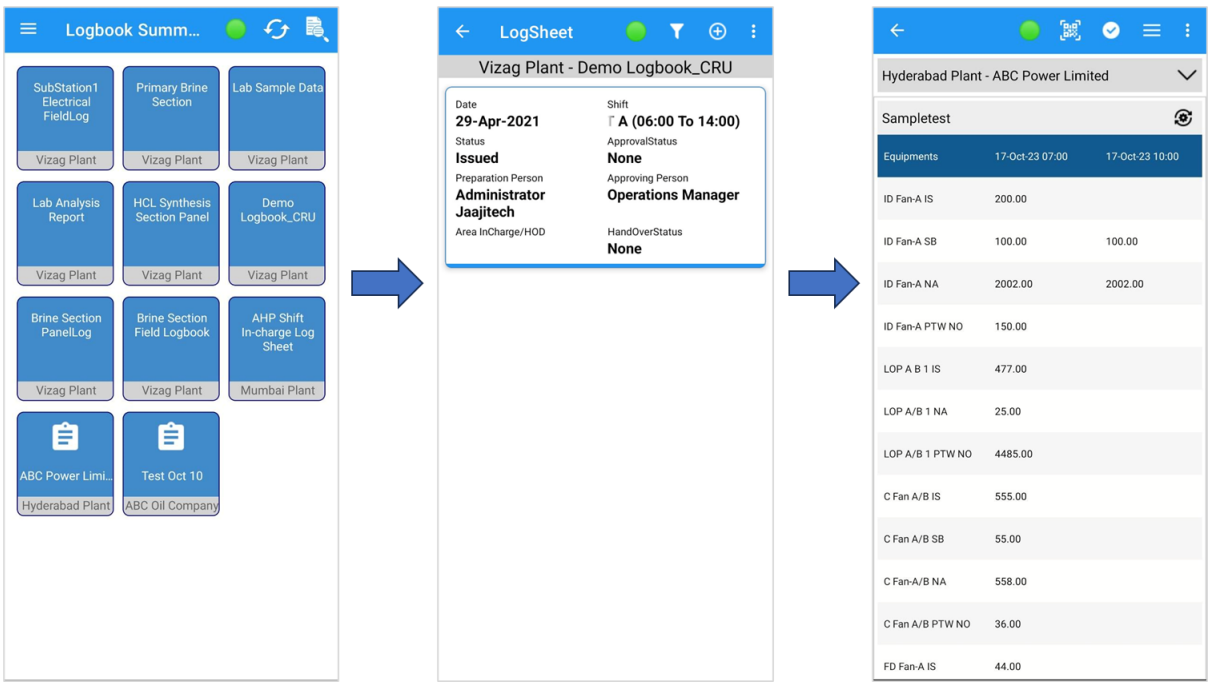
Digital Operations Logbook – Shift Handover

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

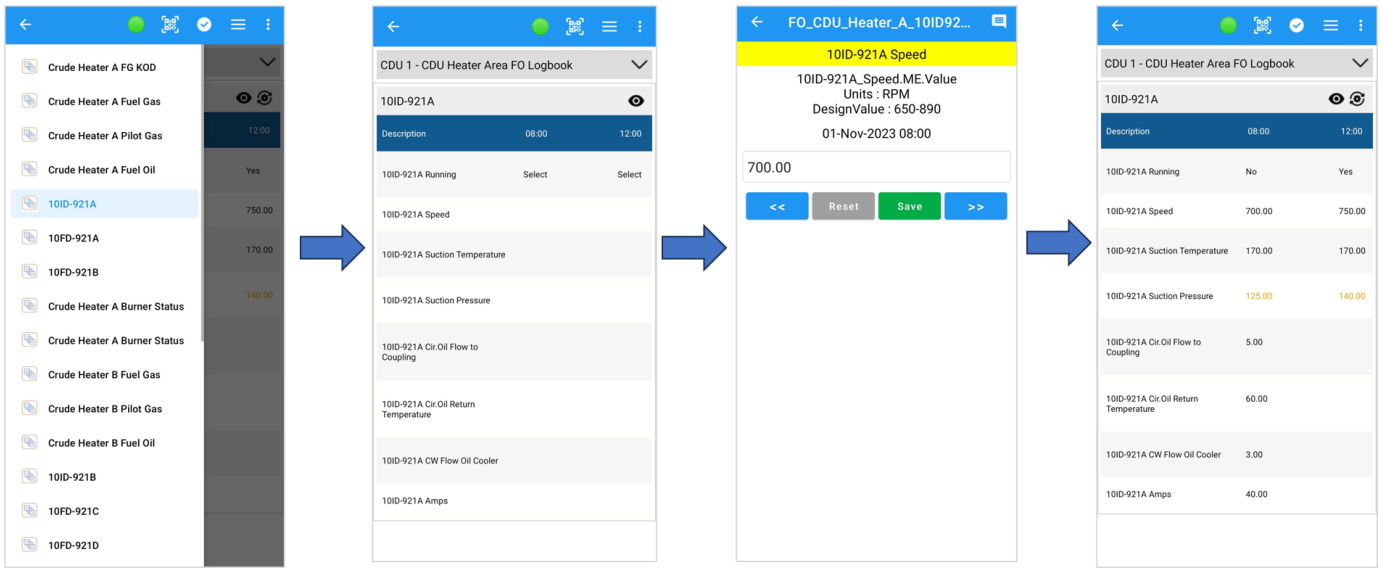
1.5.8 Mobile App for filed Entry data

The mobility module provides access to Data Analytics & Reports over mobiles & tablets. This will enhance the interaction of various teams and increase the overall efficiency of operations by reducing the time to access the right data at the right time. Following are provides as part of this module,

1. Real-time Analytics on Mobile
2. Operational Trends on Mobile
3. Executive Dashboards on Mobile
4. Reports on Mobile



© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.



Mobile Apps

There are two types of Mobile Applications,

1. Native Apps - Android & iOS Apps
2. Mobile Views based on Browsers (Works for all mobiles)

Mobile Apps – Summary

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

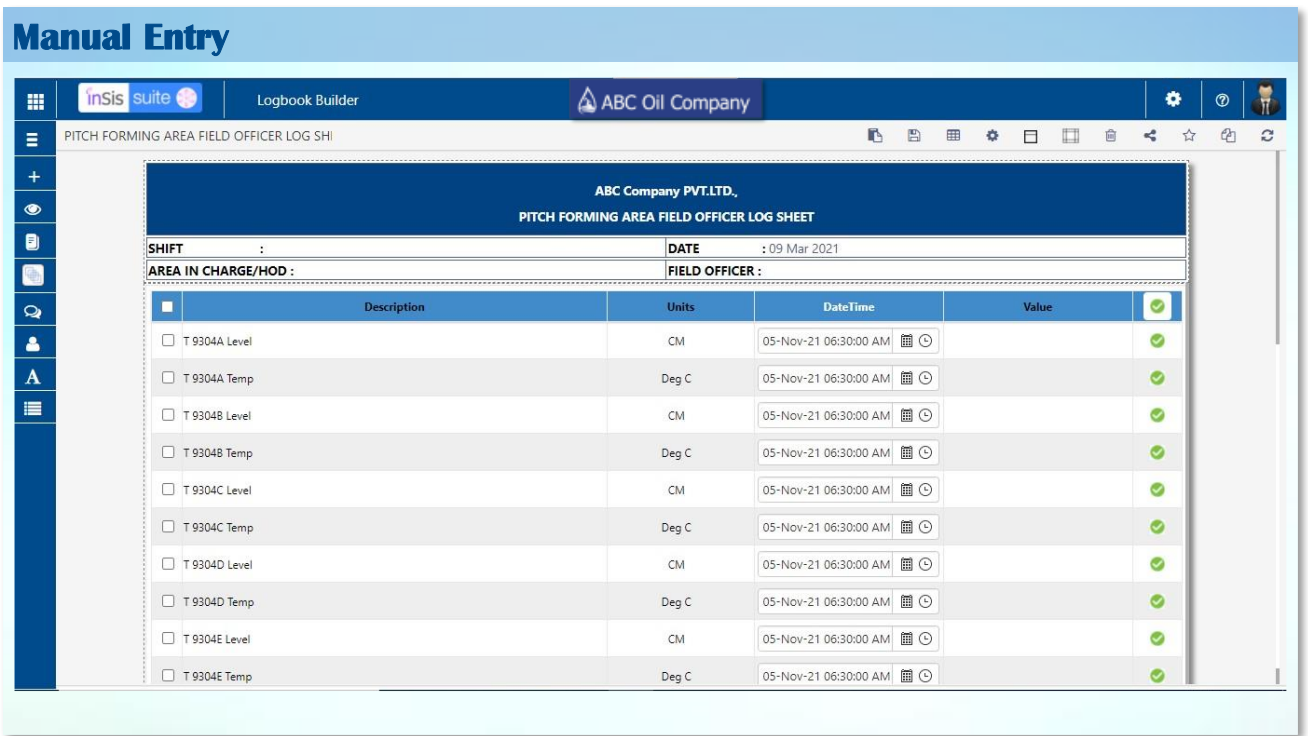
1.5.9 Operator Logbook for Field Operator

Like that of Control Room operator, the field operator in most of the sections of the manufacturing plant take manual readings from various field instruments and enter in to Filed Logbook. Since the instruments are located at various geographic locations, the operator will carry a hand-held device. This hand-held device is intrinsically safe to carry in appropriate zones of the plant. The Operator Logbook app is installed in the device. The device is synchronised with control room from time to time to update the data to main server.

1.5.10 Manual Data Entry Module

There are several Manual Data that are to be entered manually in order to complete these reports. inSis Logbooks provides a flexible and user configurable Manual Entry Forms. These forms are used to enter the respective manual data. Further these forms are shared with other teams so that these manual data are collected from across the teams using the online manual entry forms. Following are key aspects of Manual Entry module,

1. User Defined Manual Forms
2. Multiple Data Entry
3. Upload using Excel
4. Group Edit
5. Editable tables with both auto-acquired and manually entered data (partially editable tables).



© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

1.5.11 Operations Task Management

The Operations Task Management Module enables effective creation, assignment, tracking, and completion of routine and non-routine operational tasks.
Key Features:

- Configurable workflows for all task activities, including creating, accepting, rejecting, executing, completing, reassigning, rescheduling, closing, and cancelling tasks.
- Workflow for creating, reviewing, and publishing task reports.
- Task creation with details such as description, planned start/end time, assigned person or role, attached documents, process unit name, and remarks.
- Automatic task number generation with a configurable format.
- Configurable task templates for predefined tasks to reduce data entry.
- Assignment of tasks to specific users, groups, or roles.
- Support for routine (scheduled) and non-routine (ad-hoc) tasks.
- Automatic task creation as per defined schedules:
    - Absolute time: e.g., 20th Jan at 2:00 PM.
    - Relative time: e.g., daily at 5:00 PM for 30 days.
    - Shift basis: e.g., first shift for next five days.
- Ability to define non-working days, holidays, weekends for specific roles or users.
- Capability to modify task details (schedule, assigned person) for routine tasks.
- Task acceptance with status change and comments.
- Progress updates including percentage completion, reasons for non-completion, and comments.
- Ability to reassign or reschedule incomplete or not-started tasks by the task creator.
- Task cancellation with mandatory comments or reasons.
- Configurable escalation workflows to automatically escalate overdue tasks to managers.

1.5.12 **Security and Auditing:**

- Role-based security model to grant or restrict permissions for creating, modifying, commenting, changing status, or creating templates for tasks.
- Permissions can be configured per user, user group, or role, and restricted to specific sections or process units. For example, a CDU section head can create tasks for CDU but only view tasks for VDU.
- Comprehensive audit logging of all task-related actions, including username, activity performed, timestamp, and task number.
- Audit records can be searched and filtered by task, task type, process unit, and time range.

1.5.13 **Alerts and Notifications:**

- The system automatically sends email notifications to applicable users for all task events (assignment, reassignment, reschedule, completion, incompletion, cancellation).

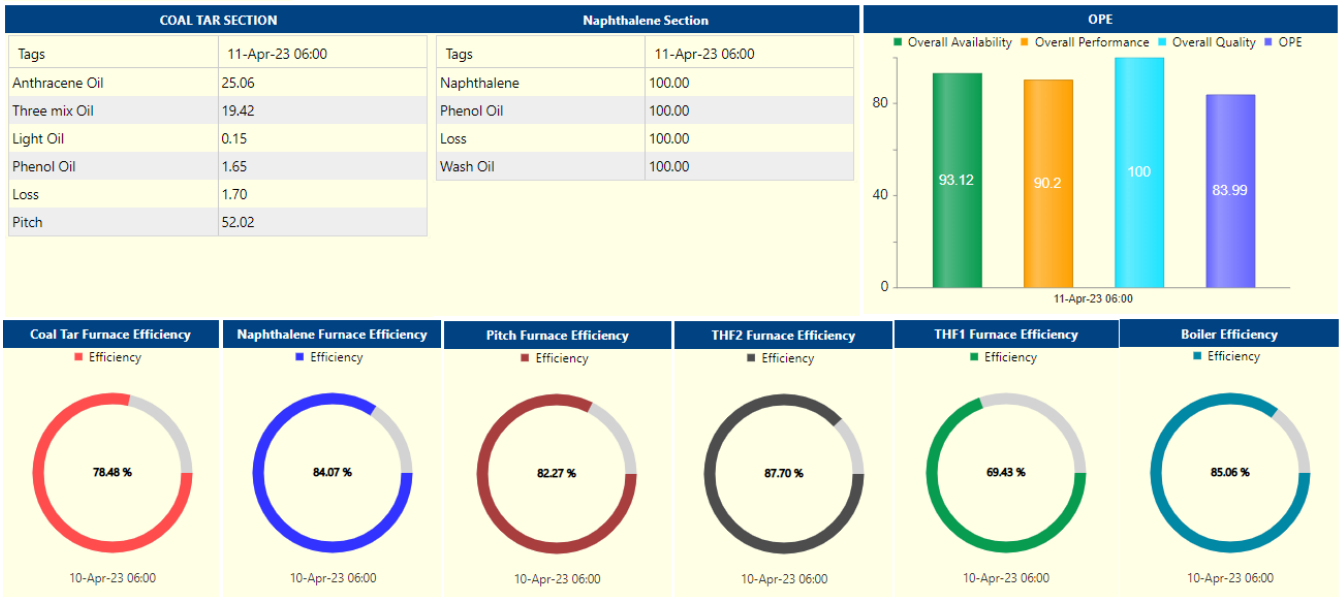
© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

- Emails include task details (description, start/end time, process unit, remarks, reasons, comments) and a hyperlink for single-click task access.
- The system supports automatic scheduled email delivery of task reports as attachments to applicable users.

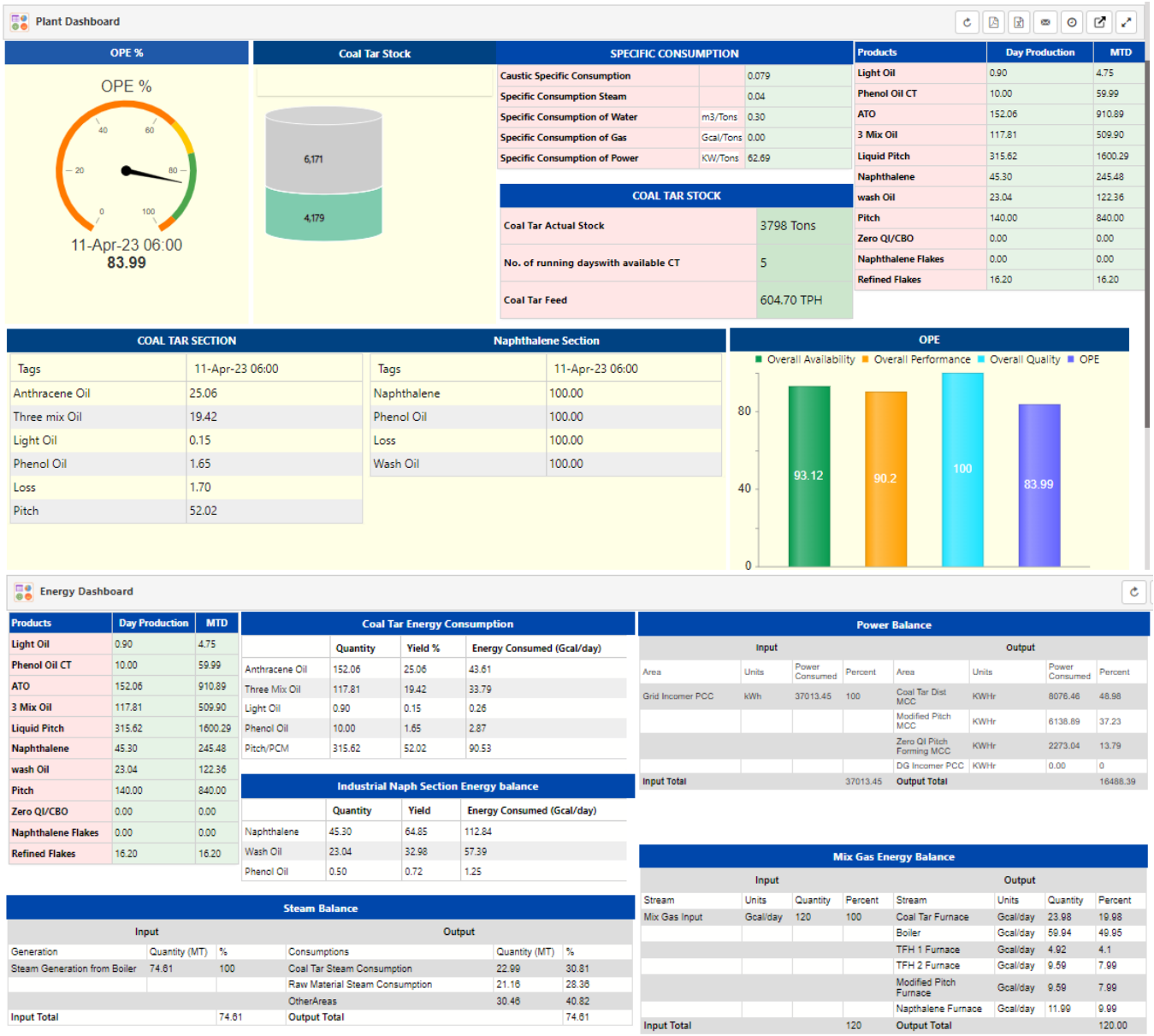
1.5.14 Data Visualization & reporting

Data Visualization functionality is provided by inSis Infoview & Oneview. inSis Infoview is a Self-service Process Data Analytics platform that helps various teams to convert data into a meaningful information. inSis Oneview is a Self-service, Role-based and Interactive Dashboards solutions. Variety of widgets ranging from Analytics Widgets, SQL Widgets, Rich-text Widgets, Process Flow Diagrams Widgets etc.

- Provides a single graphical user interface to display task details (task number, process unit, status, planned/actual times, remarks, comments, reasons).
- Allows filtering and searching tasks using wild characters and multiple criteria such as task description, process unit name, status, and assigned person.
- Supports personalized task views, enabling each user to see tasks created by or assigned to them, with configurable display fields.
- Provides task summary and detailed reports, generated by user-selected criteria (username, process unit, status, etc.) and delivered in PDF, Excel, or Word formats.
- Uses inSis Infoview and Oneview platforms for dashboards, analytics, and visualizations with rich widgets.



© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.



Real-time Data Visualisation

1.5.15 Data Analytics & Decision Support Tools

Providing the actionable insights is the key aspect of this module. inSis Data Analytics Platform provides wide range of tools to provide the insights in to process operations and enable take quick decisions. Following are the major aspects of this modules,

1. Process Data Analytics that Provide Actionable Insights
2. Real-time Process Trends
3. Statistical Summaries

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

4. Built-in Data Analysis Tools

Following are various major Built-in Analytics options,

1. SPC - Histograms
2. SPC - Control Charts
3. Conditional Times Analysis
4. Change Period Analysis
5. Tag group Analysis - by Status and Enumerated
6. Statistical Summaries
7. Conditional Show/Hide
8. Calculation Engine
9. Critical Param Violations
10. Multiple Period Analysis - Merge Views
11. Smart Trend
12. Various Visualisations
13. Box plots
14. XY Plot
15. Metrics

2. Operator Rounds

The Operator Rounds Module digitizes field inspection and data collection.
General Requirements:

- Enables operators to download operator rounds schedules and associated checklists on handheld devices.
- Allows downloading of non-routine task lists for operator rounds.
- Displays equipment locations through GPS functionality.
- Automatically reads data using barcodes on equipment.
- Applies data validation limits, which are also transferred to handheld devices.
- Determines whether recorded data are within pre-specified limits.
- Enables operators to perform simple calculations on handheld devices.
- Provides configurable workflows for validating operator rounds schedules and checklists.
- Provides configurable workflows for approving collected data when required.
- Provides configurable workflows for escalating deviations, implementing corrective actions, and recording observations against deviations or recommended actions.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

2.1 Operator Rounds Management:

- Records equipment condition data collected in the field and makes them available for analysis.
- Enables operators to generate checklists manually.
- Enables operators to manually update checklists.
- Tracks the history of operator rounds checklists, activities, recorded data, and observations.
- Allows users to create, save, update, and view operator rounds schedules and associated checklists.
- Includes asset hierarchy models and uses them to create/update schedules and display to users.
- Uses historian tags to identify data points, including associated limits and thresholds.
- Enables users to enter comments, information, and instructions.
- Enables users to attach documents (procedures, checklists, instructions) to schedules and download them to handheld devices.
- Allows users to record process equipment data such as rate, temperature, pressure, and quality parameters.
- Enables users to enter data manually during operator rounds.
- Automatically marks equipment as checked during operator rounds.
- Enables operators to modify alarm limits and warning alerts.
- Enables operators to enter observations related to operations and equipment during rounds.
- Uploads data from handheld devices to the system database.
- Indicates when operator rounds are complete and ready for sign-off.
- Enables users to manually maintain data required for operator rounds.
- Allows users to define and store routes for operator rounds.
- Assembles task and checklist information for operator rounds.
- Assigns different measurement locations across equipment, units, and routes.
- Enables users to create manual templates for operator rounds schedules and checklists per shift/unit/site.

2.2 Security and Auditing

- The system captures and stores user credentials for operators who update operator rounds information into handheld devices.
- Provides capability to grant or restrict security permissions to a user for specific departments, sections, process units, and equipment. For example, a shift supervisor can validate operator rounds data related only to his department.
- Enables role-based security configuration for operator rounds to define roles, assign tasks to roles, and allocate users to these roles.
- Supports authorization and authentication schemes for active field operators, supervisors, panel operators, and department heads.
- Provides auditing capability to verify that rounds have been completed successfully.
- Implements information protection with role-based permissions for entering, viewing, modifying, propagating, emailing, screen capture, and printing information.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

2.3 Alerts and Notifications

- Automatically indicates any operator rounds activity that has not been executed per schedule.
- Automatically notifies panel operators and/or shift supervisors of important issues or abnormal conditions based on recorded information.
- Automatically reports key values (alarm points, warnings, abnormal conditions) to key stakeholders.
- Generates email notifications when a single value or a series of values are off-limits or meet alerting criteria.
- Displays warnings when collected data indicate conditions outside predefined limits.
- Notifies operators during rounds of any specific actions that must be taken based on recorded data.
- Automatically generates emails with reports and sends them to area supervisors if variations or abnormalities are observed in readings.
- Indicates if a scheduled round was completed.
- Indicates if a scheduled task in a round was completed.
- Indicates if a scheduled task in a round had an exception or notation.
- Alerts if a scheduled round was missed.
- Alerts if a scheduled task in a round was missed.

2.4 Technical Requirements:

- Provides pop-up instructions to operators with additional steps to take in case of abnormal situations.
- Compatible with the latest Android devices available in the market for operator rounds.
- Offers a printer-friendly version to print operator rounds information using standard printers.
- Supports barcode scanning for equipment identification.
- Supports RFID scanning for equipment identification.
- Enables users to manually add activities to operator rounds.
- Allows comparison of routes based on user-defined criteria, such as detected anomalies

3. Customisations Available in inSis Suite

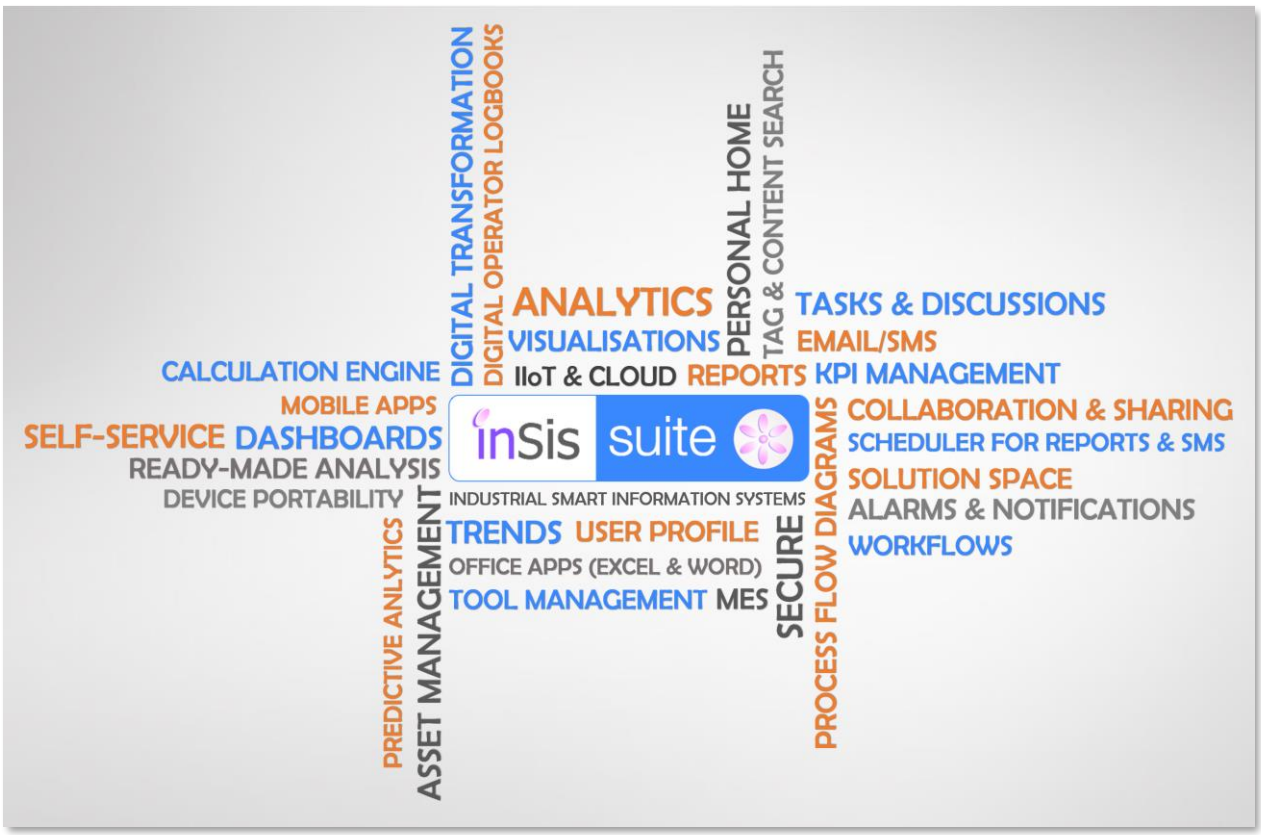
inSis Suite is a comprehensive plat form for customising and building variety of solutions in the MES domain. inSis Suite is built based on Self-Service approach. End users and System Integrators can customise range of solutions and use cases. Following are major areas where the customisations are offered in inSis Suite,

1. **System Administration:** inSis Suite offers entire range of features available for end users to configure as per the following**,**
    a. Add/Modify/Delete New Tag Templates
    b. Add/Modify/Delete new Tags

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

c. Modify Tag Properties like Limits, Units, Filters, Data Processing options, Historisation options, Scan frequency etc.
d. Add/Modify/Delete new Calculation Tags with user defined calculations
e. Add/Modify/Delete new Data Source Connections to OPC Servers, Modbus Gateways etc.
f. Add/Modify/Delete User Enumerations
g. Add/Modify/Delete Engineering Units
h. Modify System Settings
i. Add/Modify/Delete Users, User Groups & Roles

2. **Logbooks:** The logbooks are configured using free-format and layout using Logbook builder by end users. Configuring a new Logbook or revising new logbook can be done without any help from IT.
3. **Analytical Views:** Like the Dashboards, Users can configure their own Analytics Views depending on their requirements. They can modify the Tags, Analytics, Calculations, etc. at any point of time. inSis Suite offers drag & drop, click & Select, search & add approach while creating these Views. The IT teams support is NOT required to configure Analytics Views.
4. **Calculations:** End users can configure Ad-hoc calculations in Analytical Views, Dashboards, Trends, Reports etc. Further a Server-based calculation Tags can be configured by End users with user defined calculation expressions.
5. **Email & SMS Notifications & Reports:** Users can freely create email and SMS notifications to deliver the Manufacturing data on their mailboxes and phones.
6. **inSis Solution Space:** This product which is exclusively designed to build customised UI for the end users for a specific use case.It offers customisable UI with user defined navigations, drill-downs, content etc.



© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

4. Security & Role-based Visualization

All the products of inSis Suite are fully secured and based on configurable access permissions. The various Apps of inSis Suite implement thorough security for accessing the content and various features. inSis Suite supports Role-based Visualization.

Active Directory Integration:
inSis Suite has built-in connectivity with Active Directory so that the Users can be easily added in to inSis System directly from AD. Also, the authentication is done using the Active Directory.
System supports parallel authentication using Active Directory and Form authentication for supporting the Mobile Apps and accessing the inSis System from outside the corporate networks.

Cybersecurity:

By using the Microsoft Azure Cloud, we provide the reliable, secure and robust cloud solution. Further the securing provided by Application software as per the following

The application security is either Forms based security of Windows Active Directory based security. In both cases, the security model implements the following,

1. Users
2. User Groups
3. Roles
4. And, Privileges

Users: User are created by Administrator for each of the person who is intended to access inSis Suite. Each User has various details like Password, email, phone etc. User can change their password and manage their profiles after login. When a new user is created, by simply assigning to appropriate User Group, his access is controlled.

User Groups: A User Group is configured for similar type of users i.e., Process Engineers, Production Engineers, Process Managers etc. The Roles are assigned to the User Groups.

Roles: By default, there are Administrators, Engineers, Operators & ViewOnly roles. The privileges for each of these roles are pre-configured. However, these privileges can be modified by the Administrator.

Privileges: The privileges are fixed which define the accessibility and specific activity in the application, i.e., accessing an overview, or creating a dashboard etc.

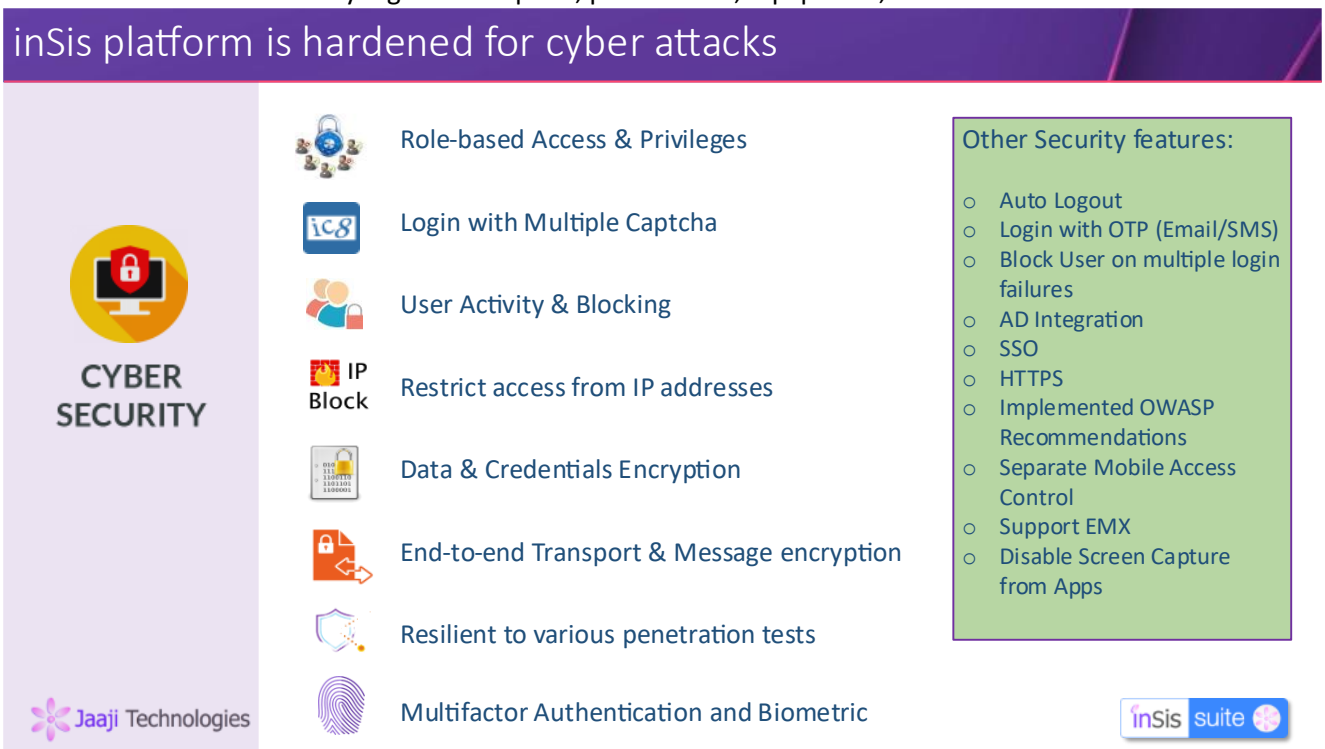
© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

Login Process:

inSis Suite is accessed through Web-browsers, Office Apps and Android Apps wherever applicable. In all scenarios, the user shall authenticate before proceeding further.

- **Credentials:** The login process required providing a valid credentials.
- **Encryption:** The passwords are encrypted while passing over to Server for validation.
- **Captcha:** The logins are done with Captcha.
- **Blocking of Username:** The usernames are blocked on fixed number of invalid credential entries.

- Ability to grant/restrict permissions for specific logbook templates per user.
- Complete action-based auditing with user, timestamp, and activity details.
- Audit search filters by logbook template, process unit, equipment, and time.



Content Visibility & Access within the Organization:

The various Analytical views, Trends, Dashboards, Graphics, Reports which are created by specific user will be accessible to only the user who configures them. However, user can share this information to specific Users, User Groups & Roles for them to access with or without the privilege to modify. This enables to full control of the data visibility and access within the entire organization.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

5. Common Requirements

Security and Auditing:

- Provides capability to manage security configuration with special access permissions only.
- Includes a graphical user interface to manage security configuration.
- Supports modular security configuration, allowing definition of security at function, sub-function, user display, and user activity level.
- Links security configuration with the asset data model, enabling permissions at the individual asset level.
- Allows definition of view-only access for specific personnel or groups.
- Allows definition of access to configuration elements for specific personnel or groups.
- Maintains online history of production and process orders for at least five years, with archiving and restoration capability.
- Supports single sign-on (SSO).
- Encrypts data in transit using TLS 1.2 or above.
- Encrypts text fields and attachments.
- Supports segregation of duties and roles for power users and administrators.
- Restricts access to unauthorized data using access controls and encryption.
- Implements encryption in compliance with the NCA National Cryptographic Standard.
- Ensures implementation follows NCA regulatory requirements and Petro Rabigh Cybersecurity Requirements.

Alerts and Notifications:

- Enables users to define events and associated details (recipients, frequency, format, email content) for alerting scenarios.
- Sends emails to relevant users in case of failure of data acquisition from historian or LIMS.
- Sends emails to relevant users for data quality issues (bad data quality, negative values, static values, or values beyond limits).
- Automatically sends scheduled reports as email attachments to relevant users.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

Integration:

- Supports import of process and quality data from external systems such as DAHS, LIMS, and SAP.
- Integrates with Microsoft Exchange Server using SMTP.
- Integrates with Active Directory to manage security configuration.
- Supports SSO and MFA integration.
- Provides open connectivity and data access through Web API services.

Technical Requirements:

- Based on web architecture.
- Does not require deployment of configuration files or components on client machines.
- Supports client communication using the HTTPS protocol.
- Utilizes a relational database for data storage.
- Uses the company's centralized RDBMS.
- Stores critical data source information (connection strings, usernames, passwords) using industry-standard security methods.
- Logs all configuration, runtime, and event errors.
- Generates reports in PDF, Microsoft Excel, and Microsoft Word formats.
- Provides a graphical interface for configuring data source information (server name, username, password, etc.).
- Allows users to define user fields displayed via GUI per site-specific requirements.
- Supports database redundancy with clustering or equivalent.
- Supports load balancing for web servers.
- Provides a configurable reporting framework, allowing modification of standard reports to site-specific needs.
- Supports client access across firewalls, with configurable communication ports.
- Displays user access or license details online via a GUI.
- Displays system health, warnings, and errors through a GUI.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.

- Provides links to SOPs, process flow diagrams, and P&IDs for quick access by operations personnel.
- Allows users to define site-specific shift timings for monitoring and logbooks.
- Allows users to define shift timings for sections, process units, and equipment independently.
- Supports defining different shift timings for steady-state and shutdown scenarios.
- Allows users to update shift timings via GUI.
- Ensures high availability with no single point of failure.
- Supports on-premises or SaaS implementation hosted in KSA.
- Includes all software and hardware requirements/specifications in the proposal.
- Ensures compliance with NCA and Petro Rabigh requirements regarding segregation of development and production environments.

© 2025 Jaaji Software Technologies Pvt Ltd. All rights reserved.