

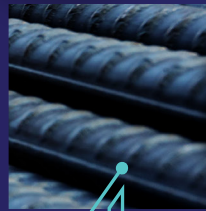
# Industry 4.0 Solutions Customized for the TMT Rebar Industry

All you need are 30 digital tablets. And ConnectFacts.

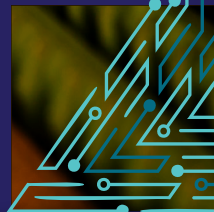
Manufacturing  
excellence



15% ↓ in  
conversion  
cost



35% +  
Improved  
throughput



Establish **world-class manufacturing practices** with ConnectFacts, your gateway to Industry 4.0! Seamlessly connect your essential rebar manufacturing processes with our cutting-edge digital solution, designed for the future of lean manufacturing. Improve employee productivity and build a culture of continuous improvement with our digital daily work management applications.

We understand what your rebar manufacturing shop floor needs.

Improved availability of furnace and cranes

100% 'OK' heat and streamlined scrap sorting

Reduced power consumption

Increased furnace lining life

Decreased sequence breaks

100% availability of ladles

Reduced caster loss

Improved hot rolling

Instant abnormality identification

On-time closure system

Reduced mis rolls

Reduced random loss

Reduced changeover time

## Why do you need a defined, digital daily work management system?



**Integrate shop  
floor data**



**Drive everyday  
productivity**



**Improve  
operating margins**

**56%**

Improved  
Throughput

**17%**

Reduced  
Conversion Cost

**6%**

Reduced  
Power Usage

**43%**

Improved  
Melting Per Minute

**60%**

Reduced  
Off Heat

**22%**

Improved  
Lining Life

**60%**

Reduced  
Sequence Break

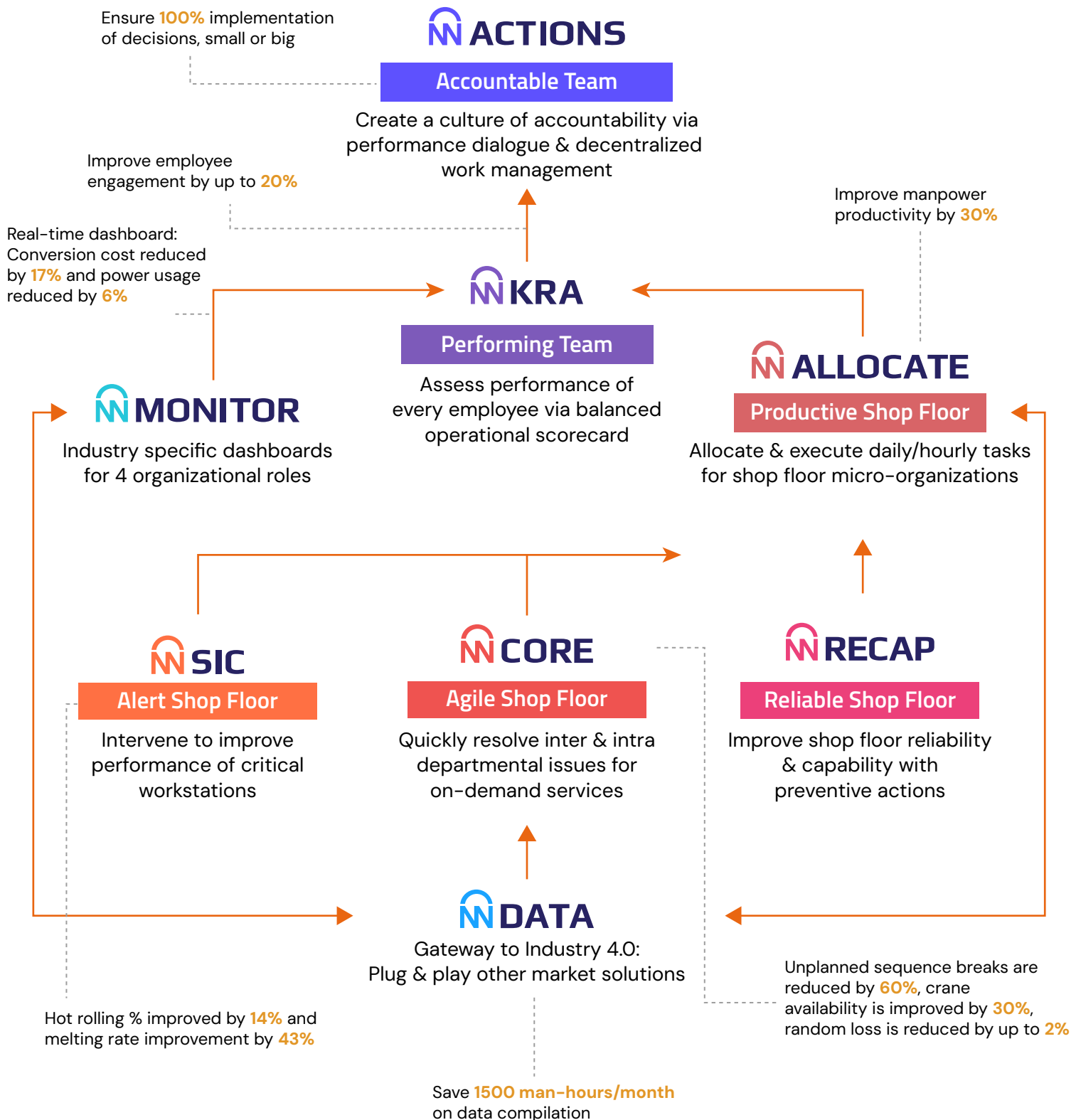
**14%**

Improved  
Hot Rolling

**50%**

Reduced  
Random Loss

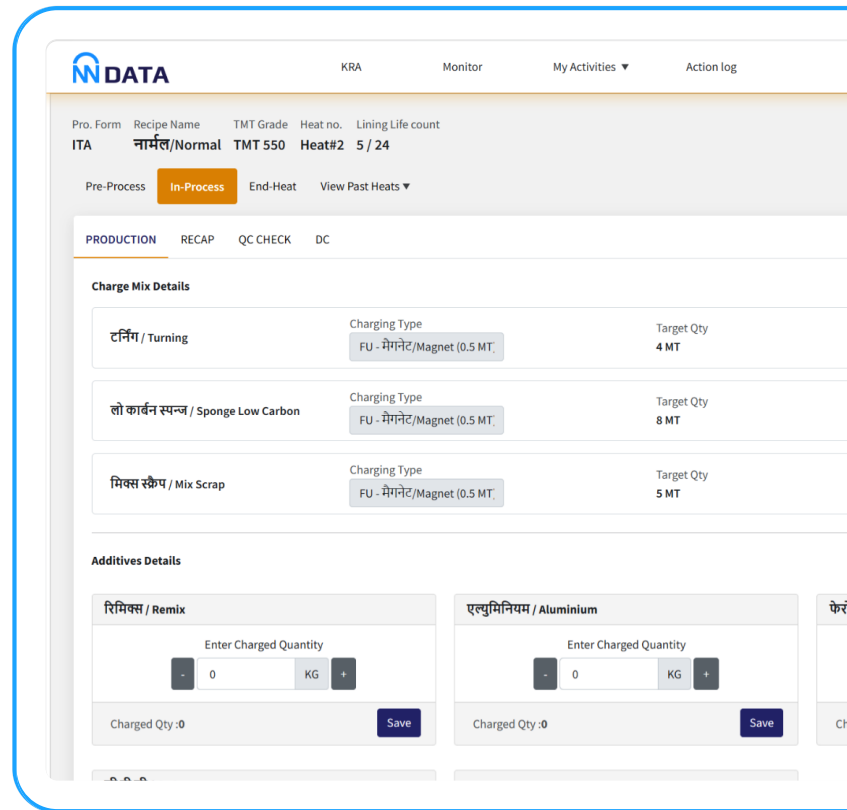
The daily management framework is the digitization of the Deming Cycle, which delivers continual improvements and hence, improved EBITDA.





## Your gateway to Industry 4.0: Easily plug and play with other market solutions

DATA is the virtual twin of your production process. As the single source of truth, it utilizes simple digital forms that support multiple languages and can be used by anyone! Connect data from multiple sources to a single, integrated system (ERP, PLC, Scada, Sensors). It supports the plug and play functionality, allowing you to use related analytics and gain much needed context and insights!



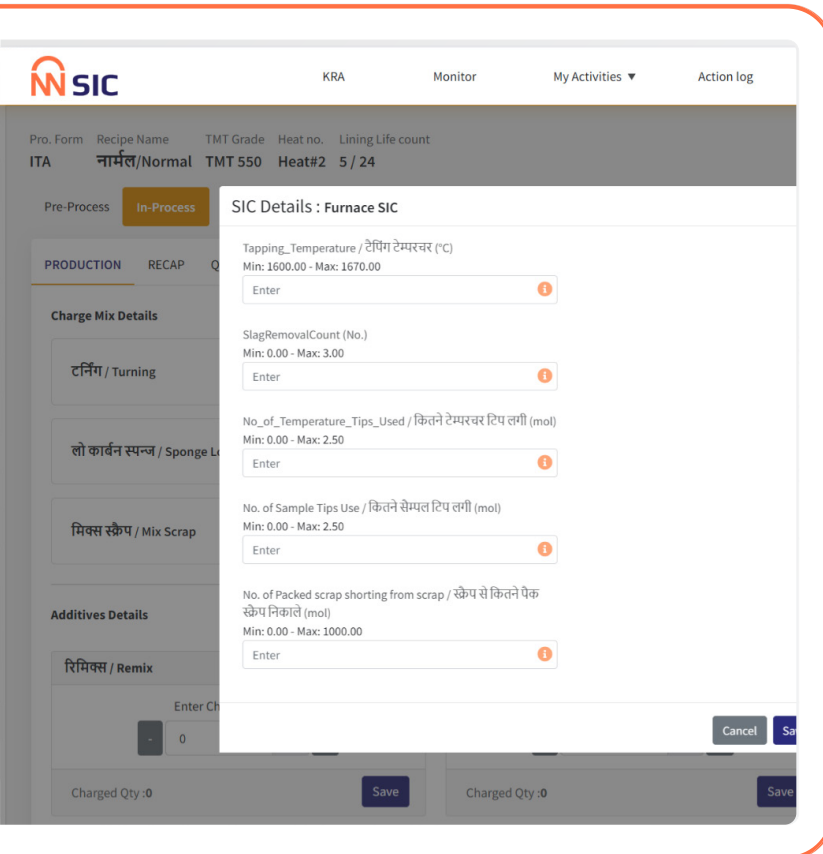
The screenshot displays the N DATA web application interface. At the top, there's a navigation bar with the N DATA logo and links for KRA, Monitor, My Activities, and Action log. Below this, a header section shows production parameters: Pro. Form (ITA), Recipe Name (नार्मल/Normal), TMT Grade (TMT 550), Heat no. (Heat#2), and Lining Life count (5 / 24). A tabbed interface includes Pre-Process, In-Process (active), End-Heat, and View Past Heats. The main content area is divided into sections: PRODUCTION, RECAP, QC CHECK, and DC. Under PRODUCTION, there's a 'Charge Mix Details' section with three rows: 'टर्निंग / Turning' (Charging Type: FU - मैग्नेट/Magnet 0.5 MT, Target Qty: 4 MT), 'लो कार्बन स्पन्जर / Sponge Low Carbon' (Charging Type: FU - मैग्नेट/Magnet 0.5 MT, Target Qty: 8 MT), and 'मिक्स स्क्रेप / Mix Scrap' (Charging Type: FU - मैग्नेट/Magnet 0.5 MT, Target Qty: 5 MT). Below this is an 'Additives Details' section with two columns: 'रिमिक्स / Remix' and 'एल्युमिनियम / Aluminium'. Each column has an 'Enter Charged Quantity' input field with a 'KG' unit and a 'Save' button. The 'Charged Qty' is currently 0 for both.

## What do you get from DATA?

A holistic data map customized for the Integrated Rolling Mill including:

- Digital twin of TMT plant layout
- Organizational structure and employee hierarchy mapping for all departments and functions
- Clear and contextual mapping of plant, sections, and major equipment
- Details drilled down to 7 levels with components like thermopac, pumps, motors, and rolls – across furnace, caster, rolling mill

## For the Alert Shop Floor: Intervene to improve performance of critical workstations



Intervene on time to improve the performance of critical workstations in your TMT factory. With SIC, you can actively supervise workflows and minimize performance leakage on the shop floor that are due controllable causes. Monitor critical parameters that may affect your throughput or quality. Get alerted on when to intervene or escalate issues on time.

## What do you get from SIC?

SIC features workflows with related KPIs that are customized for the rebar industry.

### Melting per minute for furnace

- Hourly alert to melter
- Escalation to supervisor & manager



Improved furnace throughput:  
**15% to 43%**

### Casting % for caster

- Hourly alert to operator
- Escalation to supervisor & manager



Improved caster throughput:  
**1% to 3%**

### Hot rolling % for rolling mill

- Hourly alert to operator
- Escalation to supervisor & manager



Improved caster throughput:  
**14% to 20%**

## For the Agile Shop Floor: Quickly resolve inter and intra departmental issues

CORE allows you to **CO**ordinate and **RE**solve inter and intra departmental issues for on-demand services. Automated workflows for specific inter-departmental coordination activities ensure that you increase availability and performance. Simple digital signals and a live messaging system lets you raise requests, measure service levels, auto-allocate tasks, and track them for closure.

## What do you get from CORE?

We have digitized manual workflows commonly used in the rebar industry!

Coordination between  
melter and crane driver



Charging rate  
improvement



Improved melting per minute  
by **40%**

Coordination  
between melter and  
caster operator



Unplanned sequence  
break reduction



Improved caster availability  
by **100%**  
Reduced furnace hold time  
by **60%**

Coordination between  
melter and scrapyards  
supervisor



Ensured availability of  
right scrap at right time



Reduced off heat by **60%**

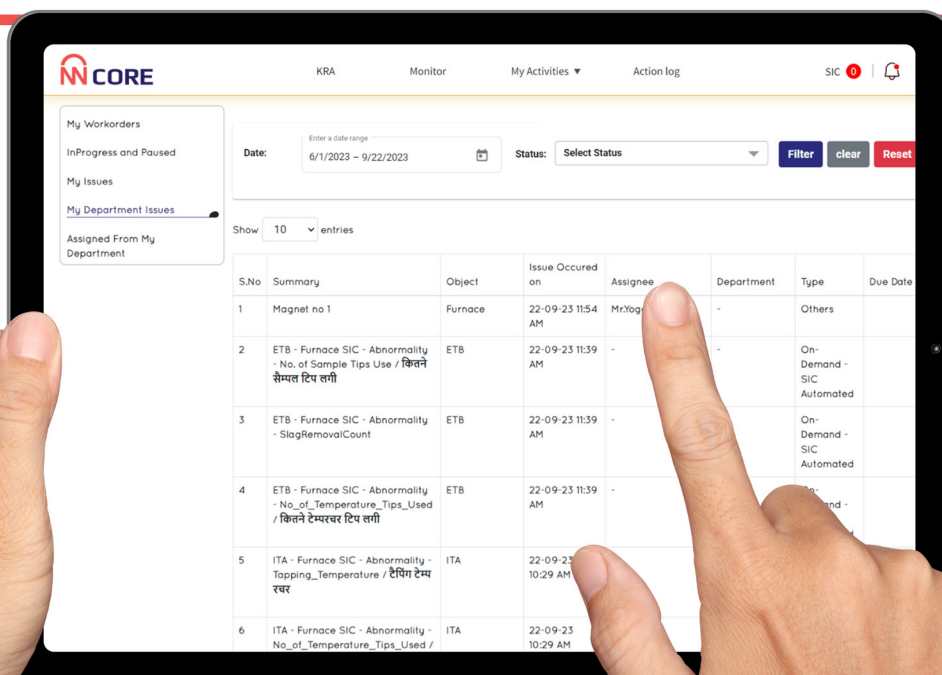
Coordination between  
melter and maintenance  
technician



On-demand electrical  
equipment setting



Reduced delays in furnace  
set up by **90%**



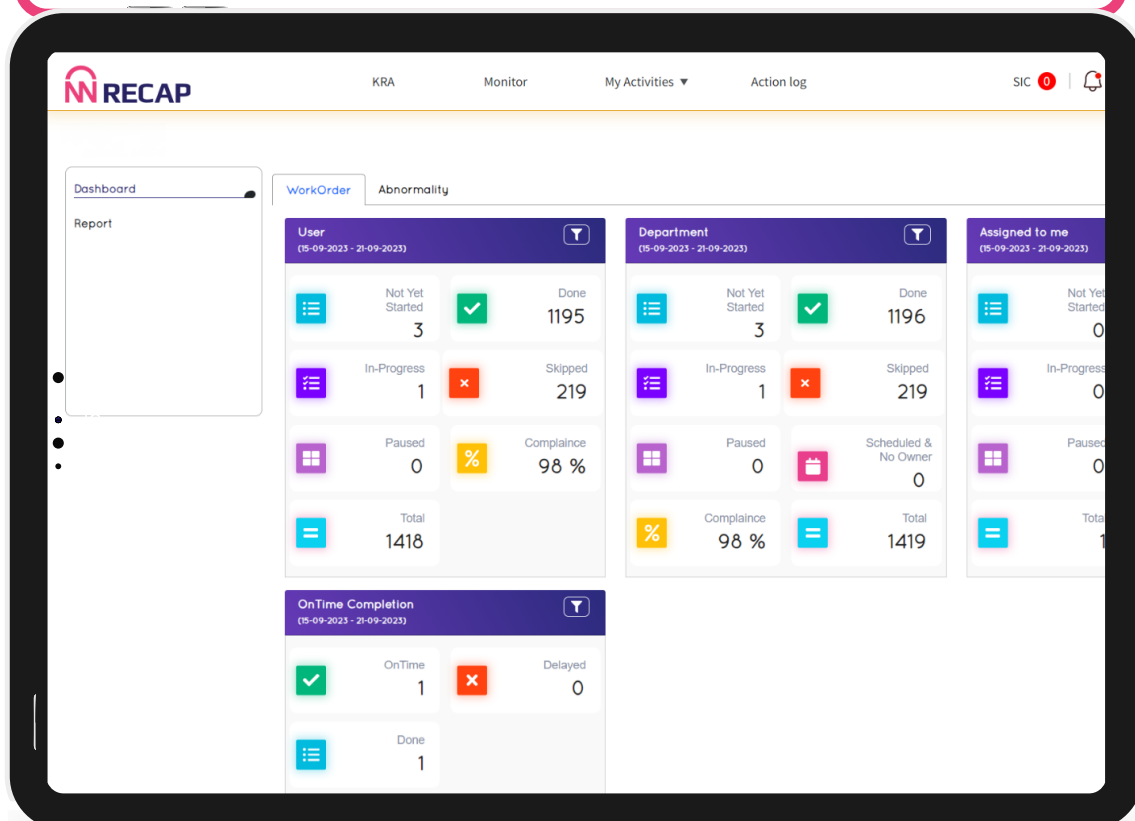
## For the Reliable Shop Floor: Bring rigor and effectiveness to your preventive maintenance practices

RECAP improves shop floor **RE**liability and **CAP**ability with well-organized scheduled and preventive maintenance activities. Your manual preventive systems like process parameter checks can now be made more effective with calendarized workflows. Our auto-ticketing system for easy tracking, resolution, and closure of abnormalities from each checklist makes it easy to provide proof of compliance.

## What do you get from RECAP?

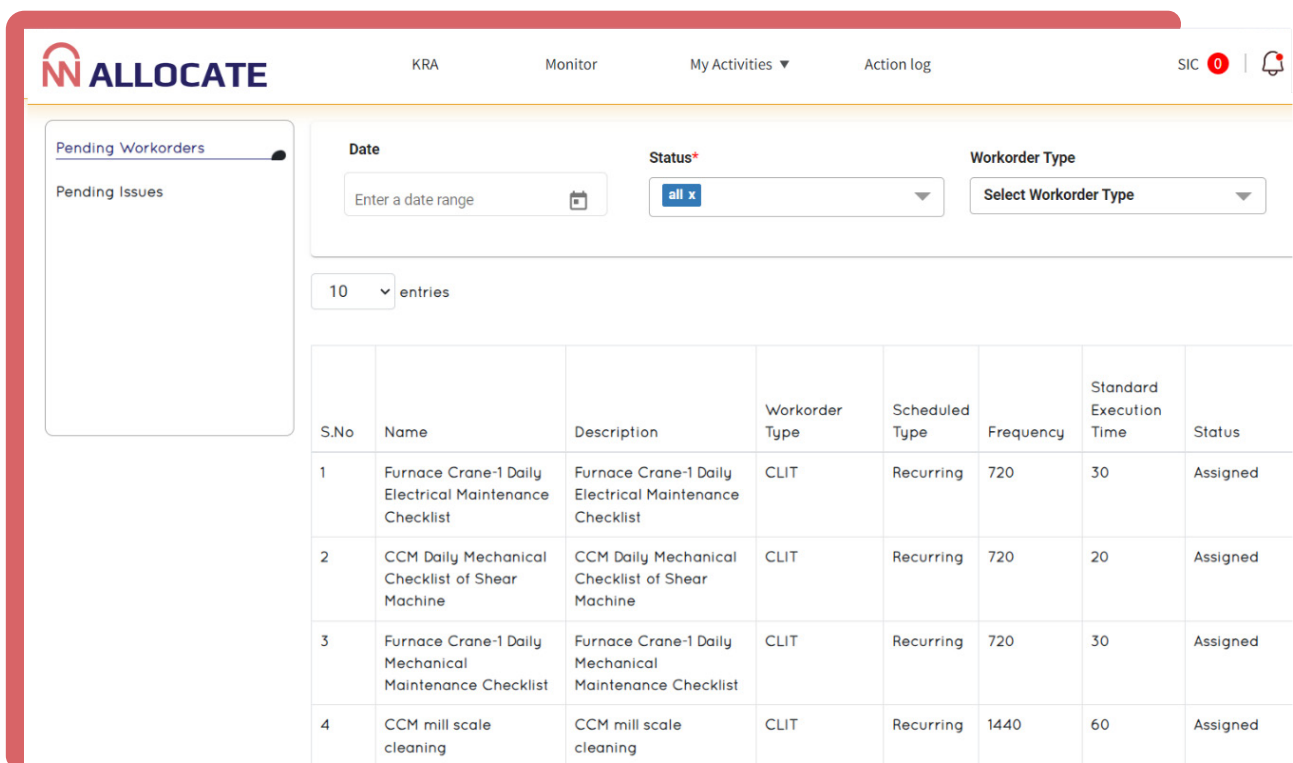
It can be customized for any of your critical preventive activities:

Lining change checklist for furnace	⇒⇒	Improved lining life by <b>22%</b> Reduced sintering heat time by <b>30%</b>
Daily crane health checkup checklist	⇒⇒	Effective charging rate improving melting per minute
Heat gap checklist for caster	⇒⇒	Reduced minor stoppages Reduced metal loss due to breakouts, billet puncture & flow disturbance
Daily roll health checkup checklist	⇒⇒	Increased roll life by <b>30%</b>



## For the Productive Shop Floor - Allocate & execute daily and hourly tasks

Allocate and execute daily or hourly tasks for shop floor micro-organizations and ensure quick problem resolution. With custom dashboards for different organizational roles, managers in the production, maintenance, roll mill, and other departments can easily assign inter and intra departmental tasks.



The screenshot displays the ALLOCATE web application interface. The top navigation bar includes the ALLOCATE logo, user roles (KRA, Monitor), and navigation links (My Activities, Action log). A sidebar on the left shows 'Pending Workorders' and 'Pending Issues'. The main content area features a filter section with 'Date' (a date range input), 'Status' (a dropdown menu showing 'all x'), and 'Workorder Type' (a dropdown menu showing 'Select Workorder Type'). Below the filters, a table displays a list of workorders. The table has columns for S.No, Name, Description, Workorder Type, Scheduled Type, Frequency, Standard Execution Time, and Status. The table shows 4 entries, all with a status of 'Assigned'.

S.No	Name	Description	Workorder Type	Scheduled Type	Frequency	Standard Execution Time	Status
1	Furnace Crane-1 Daily Electrical Maintenance Checklist	Furnace Crane-1 Daily Electrical Maintenance Checklist	CLIT	Recurring	720	30	Assigned
2	CCM Daily Mechanical Checklist of Shear Machine	CCM Daily Mechanical Checklist of Shear Machine	CLIT	Recurring	720	20	Assigned
3	Furnace Crane-1 Daily Mechanical Maintenance Checklist	Furnace Crane-1 Daily Mechanical Maintenance Checklist	CLIT	Recurring	720	30	Assigned
4	CCM mill scale cleaning	CCM mill scale cleaning	CLIT	Recurring	1440	60	Assigned

## What do you get from ALLOCATE?

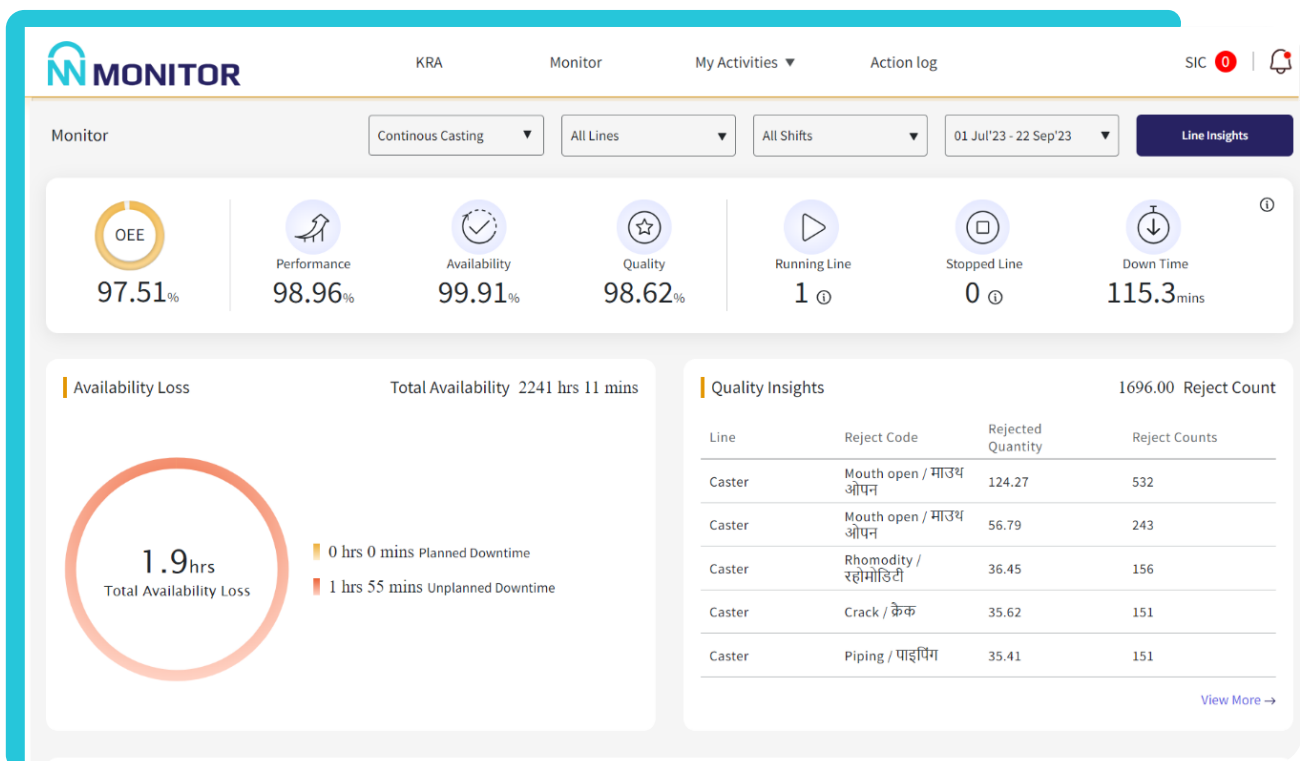
ALLOCATE allows for seamless tracking of tasks across the shop floor.

- Easily view who the task has been assigned to
- Understand real-time status of daily and hourly tasks
- Abnormalities can be continuously tracked till closure
- Observe an increase in productivity and performance



## For the Efficient Team - Benefit from custom dashboards for 4 organizational roles

MONITOR is tailored for the rebar industry and has KPI-based dashboards for 4 organizational roles including operators, supervisors, managers, and leaders. View real-time, limited, and relevant performance data on the intuitive dashboard. The customizable KPI dashboard improves awareness and facilitates immediate interventions as well as corrective actions for performance improvements.



## What do you get from MONITOR?

With MONITOR, you get section-wise and role-wise KPIs that are relevant and actionable

### Operator (Rolling mill)

- Roll changeover time
- Random loss %

### Manager (Rolling mill)

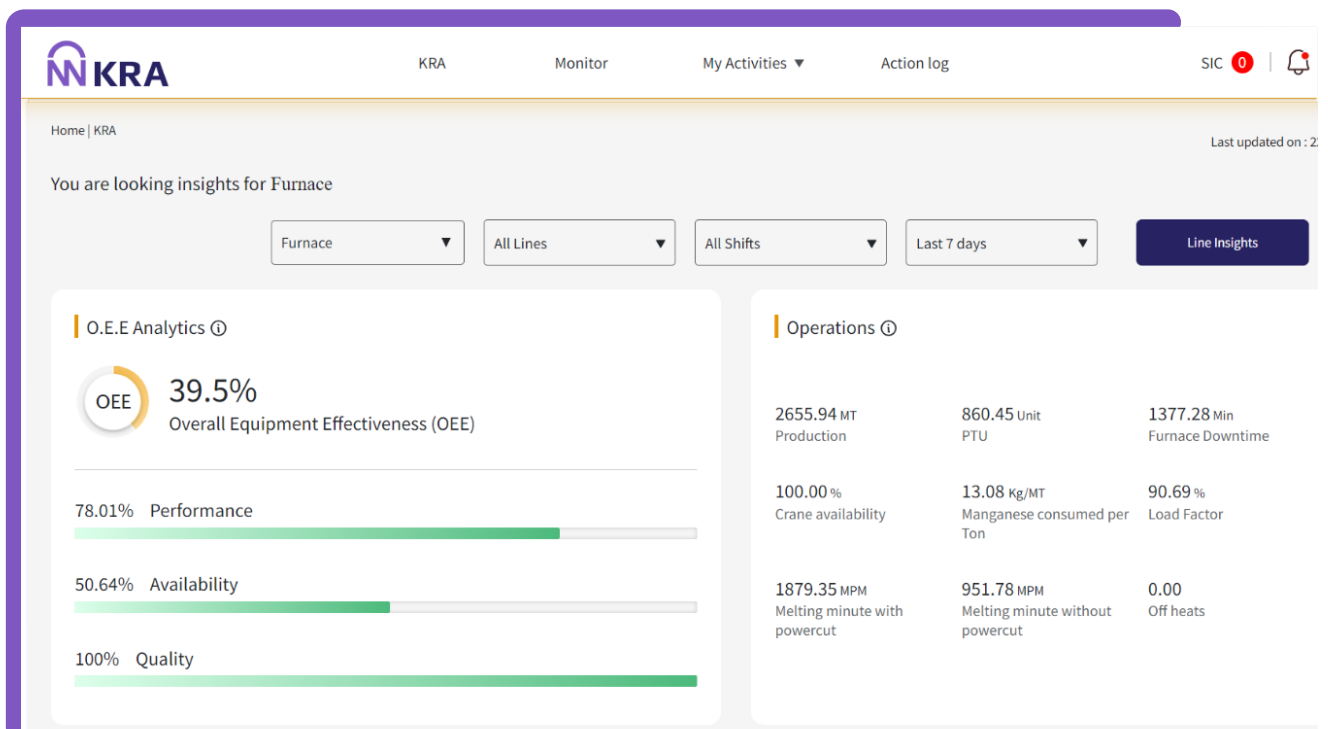
- Roll mill availability %
- Miss roll %
- Hot rolling %
- Rolling mill production (MT)

### Plant head (Rolling mill)

- Rolling mill production (MT)
- TMT inventory

## For the Performing Team - Assess the real-time performance of every employee

Unlike monthly, quarterly, or annual performance reports, KRA allows you to track all your employees performance in real-time with a balanced scorecard! Dashboards are tailored to the rebar industry's requirements and have KPIs relevant to each role and workstream. You can track performance, quality, availability, and much more and create a continuous feedback loop.



## What do you get from KRA?

Get defined KRA bands and KPI dashboards

### Plant Head can view Operations Performance:

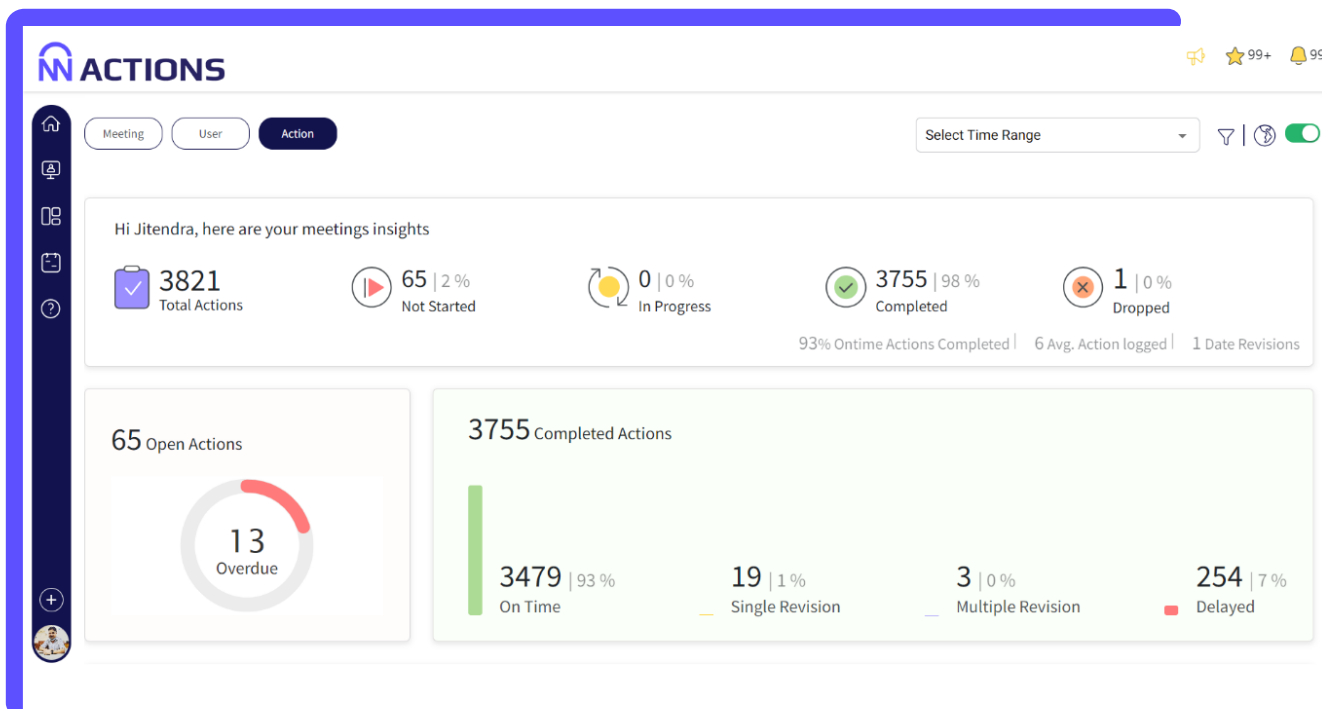
- OPE (Overall Production Effectiveness)
- Average scrap inventory
- TMT inventory
- Load factory

### System compliance dashboard includes:

- Compliance % of preventive maintenance
- Status (closed or open) of abnormalities
- Service level measurement for coordination activities
- Heat gaps activity compliance %
- Shop floor meeting effectiveness score %
- Average number of open/closed actions per meeting

## For the Accountable Team - Encourage performance dialogue & decentralized work management

Review meetings are the real gemba for managers and leaders. With ACTIONS, you gain a comprehensive snapshot of what each user has to focus their efforts on. Insights such as meeting attendance, adherence, punctuality, and more are clearly tracked. Effective meeting management can improve accountability for performance in the short term and build a culture of continuous improvement in the long term.



## What do you get from ACTIONS?

3-tier performance dialogue system in each section.

### Customized meetings that drive productivity:

- Furnace daily review meeting
- Daily problem-solving meeting
- Daily plant head review meeting
- Weekly plant head meeting

### A typical furnace head daily problem-solving meeting will cover:

- Heat-wise recipe compliance
- Heat-wise MPM
- Heat-wise power consumption
- Crane availability
- Manganese consumption



## Connect 4.0 Success

ConnectFacts was developed by the team behind Levers for Change. We are not your routine manufacturing consulting company. As your digital partner on the shop floor, we facilitate a 360° transformation using lean management principles. Connect with us to learn how we can help you!



**Subhabratha Nath Sharma**  
Associate Partner



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### Disclaimer

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