



# Breaking Thought Barriers



# About CSM

Over the last two decades, CSM has pushed the frontiers of technological innovation to deliver large scale impact. Our partnership with plementing government agencies, public sector units, multilateral donors & corporates has enabled tech for sustainable growth and symbiotic development of our customers. As we move forward to strengthen our portfolio and expand our footprint across the globe, we invite you to join us in our journey!

Year of  
Establishment

**1998**

Employee  
Strength

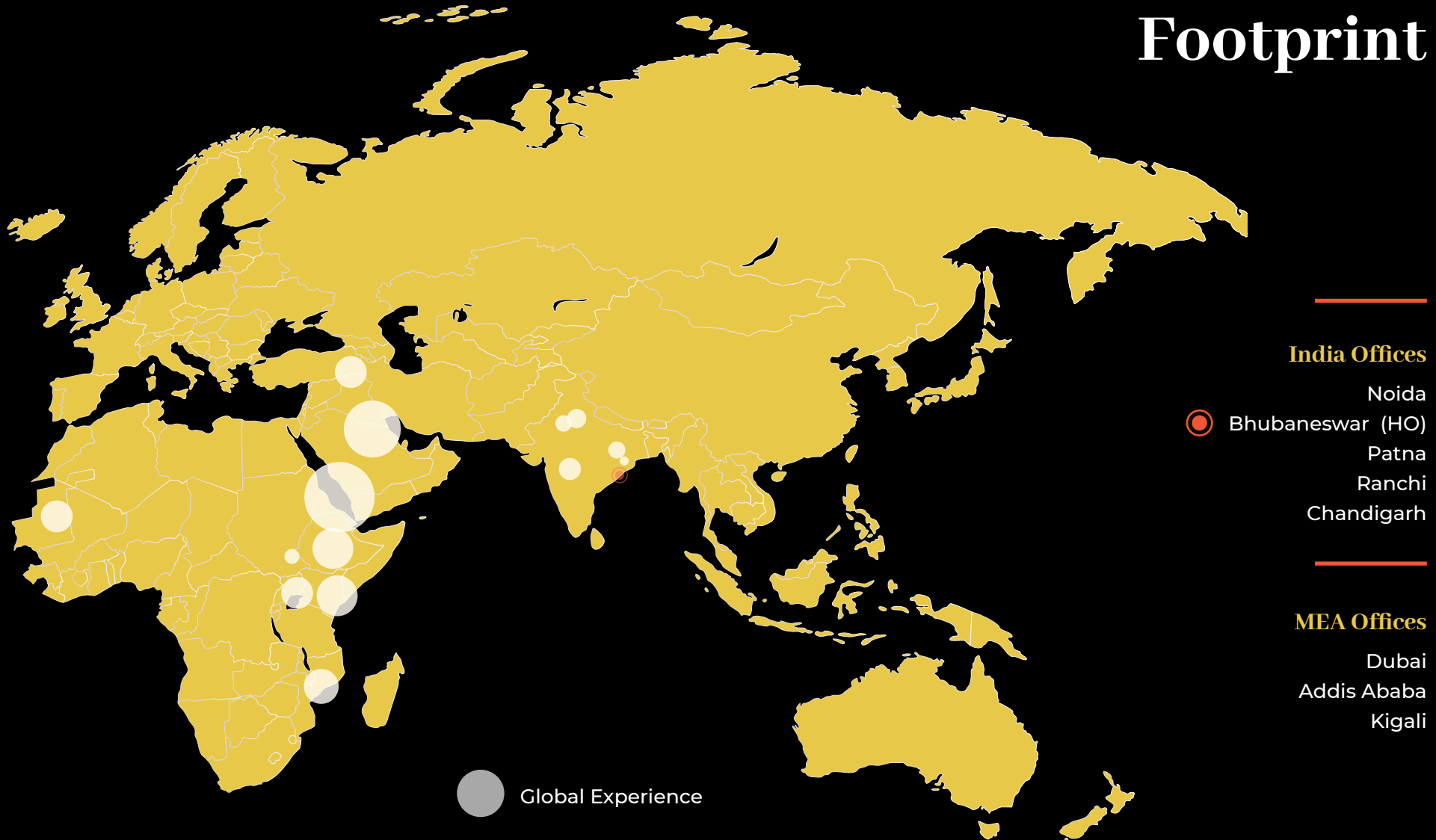
**700+**

Certified  
As

**CMMIL5**



# Our Global Footprint



# Our Services

## What We Do



### Enterprise Applications & Solutions

- New Development & Maintenance
- Mobility Solutions
- System Integration
- Legacy App Upgrade & Modernization
- Cloud Solutions
- Project Management & Control



### Digital Services

- Digital Operations
- Digital Customer Experience
- Digital Workplaces
- Digital Marketing
- Digital Infrastructure



### Emerging Technologies

- Big Data
- Advanced Analytics
- Cloud Analytics
- Augmented & Virtual Reality
- Robotic Process Automation
- Cognitive & Artificial Intelligence
- Machine Learning



### Technology Services

- Consulting
- IT Support & Services
- Server & Storage Management
- Integrated Command & Control Centre
- Data Protection Consulting & Implementation



### Enterprise Resource Planning

- Sales
- Operations
- Finance
- Human Resources
- Manufacturing
- Website Marketing & Campaign
- Communication
- E-Signature
- Customizations





# Mining Operations

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In the wake of COVID-19, the global mining industry has exhibited immense resilience and is serving as a bedrock for economic recovery. This has been possible because of the continuous focus on innovation" and future proofing by all stakeholders of the mining value chain (reconnaissance, extraction, processing of ore & dispatch).

Recognizing the importance of mining for guaranteeing employment, energy security, industrial growth & non tax revenues for the State, regulatory authorities are equally invested in transparent, efficient & sustainable value chains.

CSM's expertise of over 11 years in the mining vertical enables both public & private sectors to achieve ease of doing business & enhance mining throughput in compliance with laws of the land.



# Our Portfolio in Mining

## Regulatory Solutions

*for governments*

- Mines and Mineral Management solution
- Mineral Concession Management
- Drone-based survey, surveillance and Mapping

## Productivity Solutions

*for mining enterprises*

- Logistics & Process Automation
- Mining ERP Solutions
- Connectivity & Security
- Surveillance & Analytics
- Modeling & Forecasting



Dept. of Steel & Mines, Odisha



Dept. of Mines & Geology, Jharkhand



Dept. of Mines & Geology, Bihar



Directorate of Geology & Mines, Chhatigarh



Odisha Mining Corporation Ltd



Tata Steel Ltd



JSW Group



Essel Mining Ltd





## Digital Logistics Management x Unmanned weighbridge solution

Administration, governance and enforcement of mining rules are crucial for the ensuring sustainable and regularized mining operations. The authorities at the regional level are usually conferred with the power to allow the purchase, transfer and movement of mineral ore after mineral royalties are paid by the concerned parties.

Mines and Mineral Management system, is a unified, single window solution for managing all these operations concerning the state's role regularising mining operation and curbing illegal mining.



## Solution Components

Multi-modal logistics management solution includes the following major modules and areas of functionalities:

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### Dispatch Planning

This module encompasses the following functionalities

- Plant/end-user wise dispatch planning and management of monthly plan for dispatch.
- Material requisition, mines-wise production and dispatch planning for each grade and type of ore product
- Logistics planning – for mode, route, capacity and the cost for each requisitions received.
  - Port terminal handling for material receipt and forward movement
  - Railway siding management for material receipt and forward movement
- Monitoring of actual inventory, running permits, production, stack prepared and order fulfillment





## Transporter Management

This module encompasses the following functionalities:

- Transporter Enumeration, profiling and vehicle profile
- Fleet & driver management
- Truck verification and vehicle specific data such as fitness etc. through crowd sourcing and integration with third party system
- Transporter Loading Slip tagged with the Permit and Dispatch Order
- Permit data capture from permit management system (i3MS or similar system for permit management) and Permit assignment to transporter and tagging with trip and route details (optional in case of non-miners)
- Complete visibility on permit-wise vehicle assignment and trip details

## Entry and Parking Management

- Validation of driver and vehicle by security personnel against data displayed in application
- RFID based entry of vehicle upon authentication with Traffic light and boom barrier for access control
- Vehicle Entry permission monitoring based on capacity
- Provision for capturing 'EMPTY OUT' details in case vehicle returns without load
- Parking-IN and Parking-OUT Management by verification of Transporter slip and RFID for access control inside mines/plant premise



### Stack Management and Quality Control

- Monitoring stack lifecycle and management – from creation to dispatch
- complete visibility on permit positions and stack profile – type, grade, Maximum tolerance information for Silica, Alumina, cost implication against each stack
- Data capture for quality and grade at each stage of stack creation
- Geo-fence enabled backward provenance tracking to pit/quarry as per plan for quality assurance
- Provision for data capture of random sampling at the time of, railway siding QC checks etc.

### Unmanned weighbridge management

- Plug-and-play, fully automated module for unassisted operation of weighbridges; due to modular nature, unmanned weighbridge management is also a part of our other offerings such as **Stockyard Management**.
- IoT and Controller-based system for reducing manpower & errors and increasing
- End-to-end tracking & monitoring of activities from Mineral production to dispatch for miners and from material receipt to dispatch for non-miners

### In-mine trace and track automation

- In-mine navigation for mineral carrier using RFID and LED display-based wayfinding modules
- GIS integration for locating on-field mobile assets
- Provision for GPS/LoRaWAN-based trace and track of mineral carrier in-mine and ex-mine (optional feature)





### Loading point operations

- Geofence enabled loading point operations through mobile app for supervisors
- RFID-enabled triangulated approach to ensure right material from the right stack to the right carrier
- Confirmation by supervisor for type, grade and stack info against the running permit

### Vehicle exit and document automation management

- Automatic generation and printing of e-Transit pass post gross weighment
- SAP ERP syncing for invoice and e-way bill generation
- Provision for e-Transit Pass scanning at destination for capturing electronic proof of delivery



### Railway Dispatch Management

- Siding identification, siding-wise load monitoring, despatch scheduling and siding-wise indent status identification Transporter wise notification of indent schedule and rake allotment
- Railway siding availability monitoring based on engagement of indents
- Mobile based, permit -wise material receipt at the railway siding (public or private)
- Near real-time visibility of dispatch progress against each permit
- Railway Rake lifecycle management starting from placement to loading to dispatch.
- In-built rake ad loading process audits from the beginning to the end.



## Port Management

- Port Master management
- Integration with SAP ERP and port system for visibility on Bill of Lading and other document for port dispatch
- Port-wise mineral receiving, STO, stock calculation/updation and mineral assignment to vessel
- Visibility on vessel loading status

## Remote Operation Centre (ROC)

- Dedicated video wall for remote operations
- End-to-end visibility and analytics dashboard for all modules
- Real-time monitoring of fleet movement, traffic and congestion
- Alerts and notifications in case of any process deviations





# Contact Us

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