



GERBONG 04



LINKING MINING IN MOTION

End to End Coal Logistics Solution

One platform to monitor the entire KA Log coal transport chain — from stockpile, trucking, and rail, to barge loading. Every stage, every asset, every liter of fuel — monitored and fully auditable.

Tara MineLink

CC 206 13 41

OPERATIONAL CHALLENGES

Tara MineLink is built to solve your coal logistics chain challenges

Nine risk points across 13 process stages — from IUP stockpile to barge loading — that, until now, have only become visible once they turn into a problem.

VISIBILITY

Delays Without Early Warning

Train, truck, or vessel delays are only discovered after they happen — with no early warning across the loading-to-unloading chain.

LOSSES

Tonnage Loss & Shrinkage

Coal tonnage loss between points goes undetected until final reconciliation, and stockpile volume/quality data carries the risk of dead stock.

SAFETY

Safety Incidents

Fatigue and speeding incidents are only known after they happen — without consistent driver behavior monitoring.

FUEL

Fuel Leakage & Waste

Fuel waste and leakage at both equipment and depot go undetected, leaving the door open to diesel fraud in the field.

DEMURRAGE

Bottlenecks & Demurrage Risk

Queues at the CY and dock are only felt once vessel schedules slip; loading rate and progress aren't monitored in real time, raising the risk of vessel demurrage.

THE SOLUTION

Tara MineLink — One Platform for the Entire Chain

Tara MineLink is an end-to-end monitoring solution purpose-built for multimodal coal transport chains — from IUP stockpile, trucking & CY handling, to rail transport and barge loading at port. Built on proven components, the platform unifies GPS/geofence tracking, RFID/QR, and fuel monitoring into a single auditable dashboard.

Multimodal

Real-time

Fuel Reconciliation

RFID/QR

Control Tower

Auditable



Site & CY geofence — every work zone and unit monitored in a single view.

SENSORS & HARDWARE

From the Field to the Cloud — Every Asset and Sensor Connected

Tara MineLink integrates sensors across every asset involved in the chain — dump trucks (DT), excavators (EXC), reach stackers (RS), flat-deck trucks (FL), weighbridge loaders (WLD), and bulldozers (BDZ) — streaming through a secure network to the cloud application server and your monitoring dashboard.

ON-VEHICLE HARDWARE — DUMP TRUCK (DT) INTEGRATED SENSOR & TELEMATICS

IN-CAB INTELLIGENCE

Multi-Function Display

Tracking System

Driver Verification
Sensor

ADAS Camera

ON-BOARD SENSORS

Outdoor Camera
Monitoring

Blind Spot Detection

Load Sensor

Fuel Monitoring

SECURED NETWORK - Encrypted Uplink

MONITORING DASHBOARD - Real-time Fleet View

Dump truck (DT) — hauling. A complete sensor suite from cabin to on-board, connected to the cloud monitoring dashboard.

ON-EQUIPMENT HARDWARE — EXCAVATOR (EXC)

LOADING STOCKPILE SENSOR SUITE

OPERATOR INTERFACE

Machine Display

Job Status

Alarm & Event Log



ON-BOARD SENSORS

GPS/GNSS Position

Boom & Bucket
Tilt Sensor

Fuel Level Sensor

Running Hour Meter

EDGE DEVICE - LTE/4G Uplink

FLEET PLATFORM - Real-time View

Excavator (EXC) — loading stockpile.

ON-EQUIPMENT HARDWARE — REACH STACKER (RS)

CONTAINER YARD SENSOR SUITE

OPERATOR INTERFACE

Lift Control Display

Job Queue

Event Log



SENSORS & DEVICES

GPS/GNSS Position

Running Hour Meter

Fuel Level Sensor

RFID/QR Reader
- Container ID

EDGE DEVICE - LTE/4G Uplink

OPERATIONS PLATFORM - Real-time View

Reach stacker (RS) — container yard.

ADDITIONAL FOCUS

Fuel Monitoring End-to-End

Every fuel refill is logged and automatically reconciled against each unit's tank — from the fuel depot to every asset (DT, RS, FL, EXC, WLD, BDZ, and more). Missing fuel is traced to the exact point of loss, with operational conditions visible daily, not monthly.

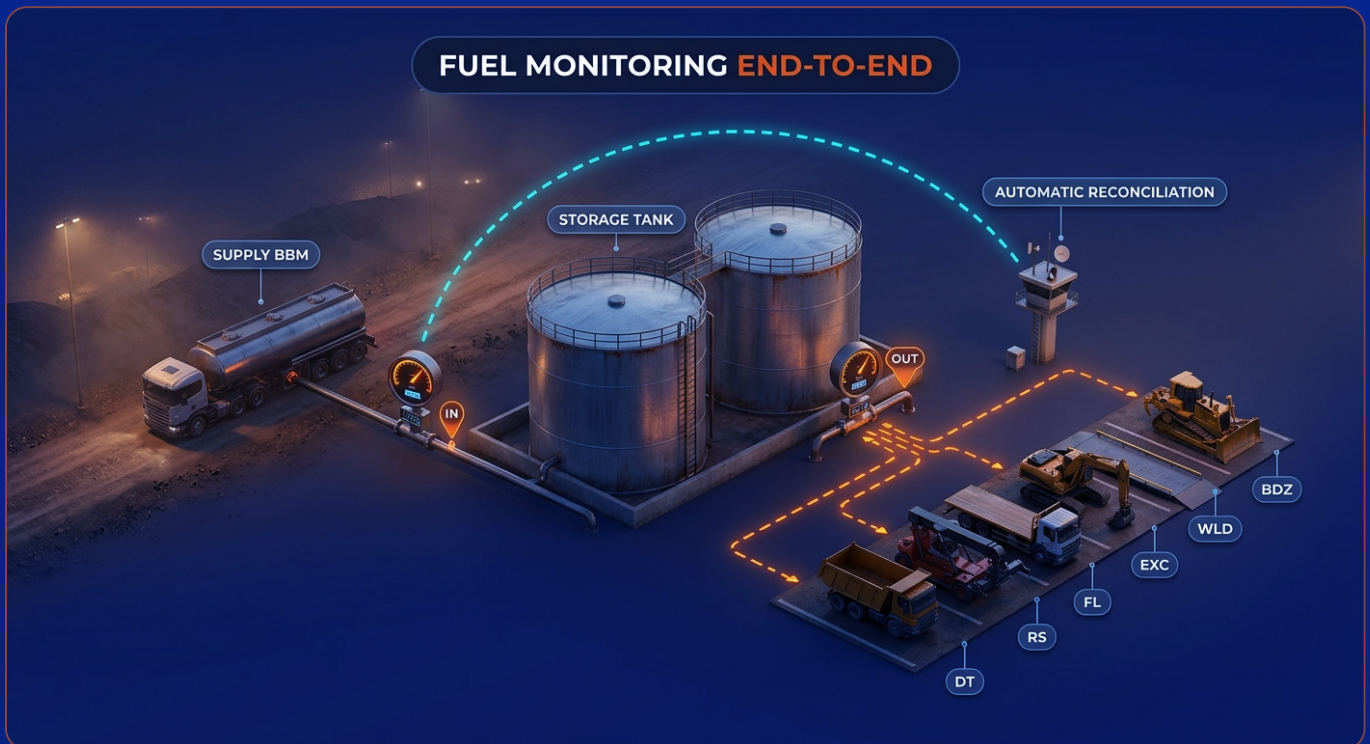
Tank level sensor

Flow meter in/out

Operator RFID card

Shelter CCTV

Automatic reconciliation



Storage tank with in/out flow meters & automatic reconciliation across every operational asset.

ADDITIONAL FOCUS

Availability Engine — Automated PA · UA · MA · EU

Every unit's operating hours are automatically classified into Working (W), Standby (S), and Repair (R) — then rolled up into physical, use, mechanical, and effective-utilization availability. No manual timesheets, and fully configurable if your standards change.

W = Working Hours

S = Standby Hours

R = Repair Hours

T = W+S+R



Working, Standby, and Repair states across the haul road, loading point, and workshop — with PA/UA/MA/EU KPIs calculated automatically.

CORE CAPABILITY

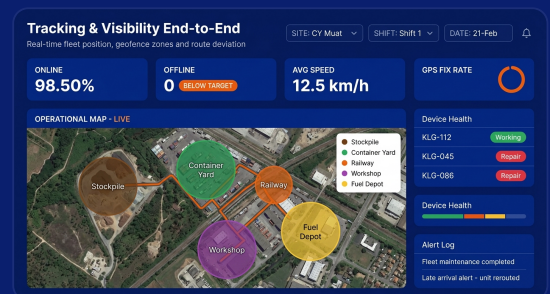
Six Pillars of Tara MineLink Capability

From position tracking to automated reporting — every function needed to run a coal logistics chain, integrated into one system.

01 Tracking & Visibility End-to-End

Know every unit's position and the status of every stage — from stockpile to vessel, with geofencing per work zone and integrated train position data from KAI.

- GPS/geofence per asset
- Train position integration (KAI API)
- RFID/QR checkpoints at CY & dock gates
- Device health monitoring



13 stages monitored end-to-end

02 Dwell Time & CY Productivity

Automatically measure container dwell time and reach stacker utilization at every CY — both loading and unloading sides.

- RFID/QR scan per container lift
- Dwell time per handling point
- Automated equipment utilization
- Tonnage validation per transfer

Dwell time measured at every CY handling point



03 Fuel Monitoring & Reconciliation

Fuel-level sensors on every piece of heavy equipment and in/out flow meters at the fuel depot connect into a single automatic reconciliation system.

- Fuel level sensor per asset
- Depot tank & flow meter
- Automatic in/out reconciliation
- Consumption anomaly detection

End-to-end fuel reconciliation from depot to asset

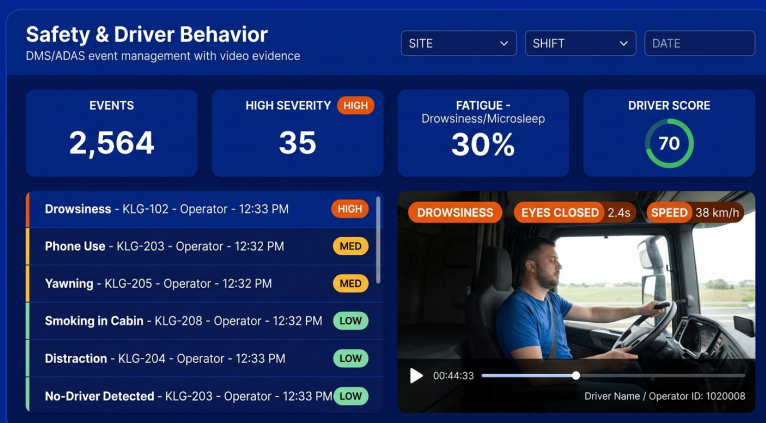


04 Safety & Driver Behavior

ADAS and DMS on flat-deck trucks and dump trucks detect fatigue, distraction, and safety violations early, backed by video evidence.

- Drowsiness · distraction · no-driver
- Forward collision & lane departure
- Video evidence per event
- Driver scorecard & ranking

Early detection of safety incidents via video



05 Reporting, Audit Trail & Integration

One cross-role dashboard with automated reporting and a full audit trail — ready to integrate with the KAI/ERP API.

- Role-based dashboard
- Automated reports (PDF/Excel)
- RBAC + full audit trail
- KAI/ERP API integration

Full audit trail for reporting to the IUP & government



06 Availability & Classification

PA, UA, MA, and EU are calculated automatically for every unit and every shift — no manual timesheets, broken down per unit with a full shift timeline.

- Automated PA-UA-MA-EU
- Per-unit & per-shift breakdown
- W/S/R timeline per unit
- Loss analysis & 14-day trend

Per-unit PA/UA/MA/EU, recalculated every shift



POTENTIAL IMPACT

What You Can Rely On With Tara MineLink

≤6s

Real-time unit position
update interval

99.5%

Platform uptime (written
SLA)

≥90 days

Video evidence retention
(ADAS/DMS)

4

Core sensor categories
monitored

POTENTIAL SAVINGS · ILLUSTRATIVE ESTIMATES

±18%

potential fuel-cost savings

±80%

potential reduction in workplace
safety incidents

The figures above are illustrative placeholders pending validation against KA Log's operational data; not a guaranteed outcome.



One Dashboard, **the Entire Coal Chain**

From stockpile to vessel — monitored, reconciled, and fully auditable.
Optimize your coal logistics chain with an end-to-end integrated solution.



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