

Fatigue, visibility and risk escalation

A comprehensive journey management framework

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Fatigue, Distance and Environment

Driver fatigue

FIFO shift patterns, long driving hours, remote camp schedules — fatigue is the hidden multiplier

Remote environment

No mobile coverage, unsealed roads, extreme weather, limited rescue response time

Non-gazetted roads

Mine haul roads, wellpads, and private infrastructure invisible to consumer navigation apps

Inconsistent oversight

Multiple supervisors, contractor workforces, no single source of truth for journey status

~25-30% of mining fatalities are vehicle-related

65% of haul truck accidents attributed to fatigue

64% of FIFO mining workers report poor sleep quality during working shifts

Sources: ICMM Safety Performance Insights 2024, Caterpillar Global Mining / Fatigue Science, Int'l Archives of Occupational & Environmental Health 2022



An integrated JMS platform



Planning & Control

Journey Management Plans

Structured JMPs with risk approval workflows, vehicle checks and departure authorization.

Automated Escalation

Overdue journey alerts, missed check-in notifications, supervisor escalation chains



Navigation & Connectivity

Private Navigation

Trimble CoPilot integration — private roads, wellpads, custom routing rules, no public map exposure

Satellite Connectivity

Garmin/inReach devices for zero-coverage zones — ensuring visibility in the most remote sites



Governance & Security

Enterprise Security

Dedicated AWS hosting, federated authentication (PingID/SSO), fully branded mobile apps

Reporting & Audit Trail

Full journey history, compliance reporting, incident evidence, continuous risk insights

One system connecting planning, tracking, and escalation



From manual workflows to **secure, policy-driven journey control**

The problem

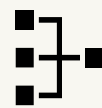
- Manual, paper-based workflows
- No real-time visibility or escalation
- Inconsistent processes across sites
- Exposure via public navigation tools



Fragmented and high-risk

What Quartex delivered

- Digitised JMPs to enforce governance
- Private navigation (no public maps)
- Custom routing aligned to policy
- Secure AWS + federated authentication



Policy-driven, integrated system

Operational impact

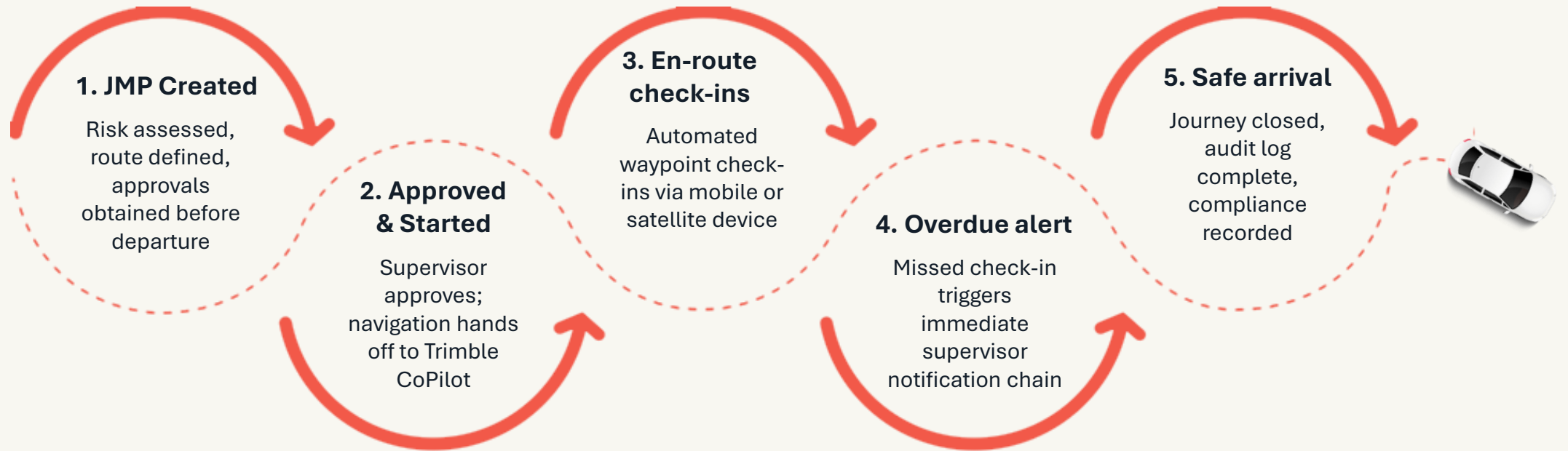
- Consistent, auditable journey governance
- Complete control over routing and infrastructure
- Sensitive infrastructure fully protected
- Policy-aligned routing on private infrastructure



Secure. Controlled. Scalable.



From departure to safe arrival



Every journey step is logged — creating a complete, auditable record that supports duty-of-care and regulatory obligations.



Demonstration

What good journey management delivers



↓ Incidents

Fewer journey-related incidents through proactive risk assessment and route governance.



↑ Compliance

Documented approval trails satisfy regulatory and due-diligence requirements.



↑ Visibility

Real-time journey tracking removes supervisor blind spots across remote operations.



↑ Response time

Automated escalation cuts time-to-response when a worker is overdue or non-contactable.



↑ Data control

Sensitive infrastructure stays private — no exposure to public mapping platforms.



↑ Scalability

Unified system supports growth from single site to global multi-country operations.

Thank you

 Quartex



**RUN
EVERY
SITE
RIGHT**