AutoNav

Scalable and agnostic solutions for equipment automation

Epiroc

Get all the benefits from automation

Enhance your operation's safety and productivity with our proven brand-agnostic automation solutions, meaning they can be seamlessly integrated with any machine, regardless of age, make, or model. This enables you to unlock the full potential of your existing and future fleet, optimizing and safeguarding your critical workflows, no matter the equipment type.

Move your mine into the future

Advancements in technology are unlocking safer, smarter, and more efficient ways to operate, driving progress and transforming what's possible on site. We help you transition from manual machine operation to seamless automation, tailored to the readiness of your operation. Our AutoNav system delivers five scalable levels of automation, from the simplest to the most comprehensive.

Technology capabilities

Digitization
Digitizing the mining environment to support machine control and data capture.

Adaptability
Ability to customize our solution to suit clients' specific mining operations.

Interoperability
Technology that can be applied across any make and model of equipment.

Scalability
Offer flexible and adaptive pathways to higher levels of automation and control.

Information
Leveraging our interoperable platform to harvest data across the various mobile equipment fleet.

Integration
Seamlessly connect new and existing systems to create a unified, streamlined operation.

Comprehensive services

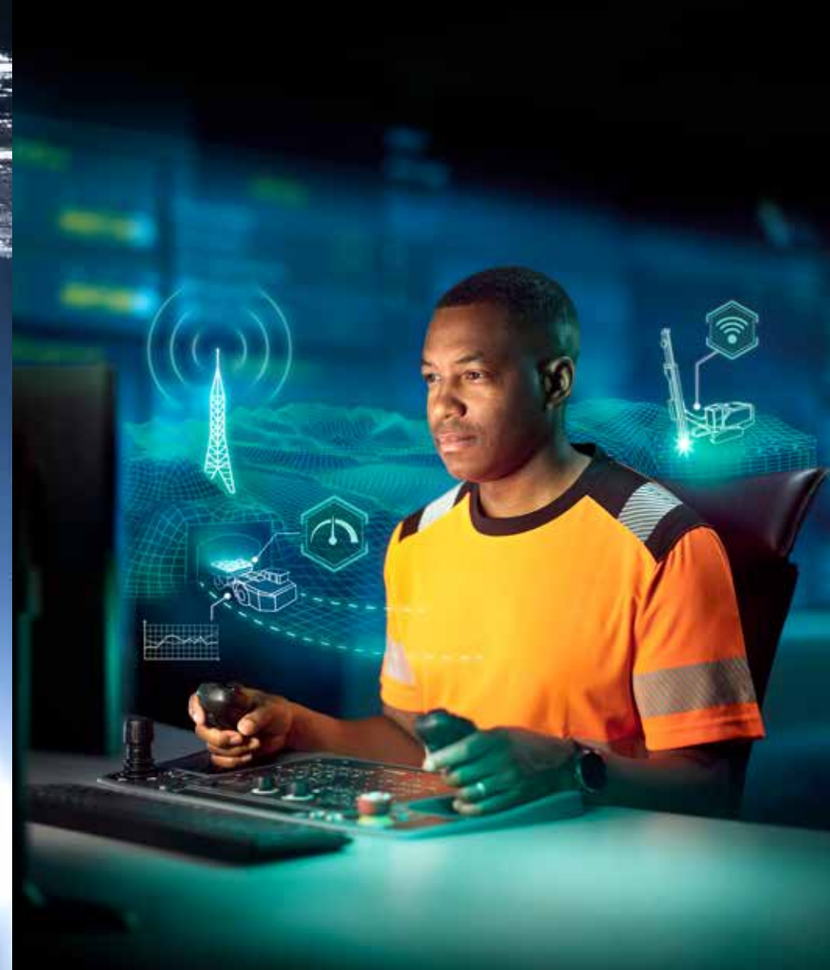
Backed by our leading support network, we deliver tailored solutions and expert guidance to boost safety, efficiency, and performance.

From feasibility studies to site audits, we help optimize technology and operations for maximum safety and productivity.

Our specialists tackle operational challenges of any size with custom solutions that drive improvement.

Hands-on courses empower operators and maintenance teams with practical knowledge for self-sufficient, efficient sites.

AutoNav is a technology coming from our acquired company, RCT.



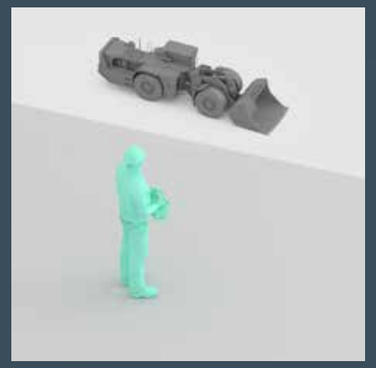
Main benefits

Increase your yearly profit by increasing run time on machines, producing more buckets per day, reducing machine damage, eliminating unplanned downtime, experiencing less wear and tear, and increasing fuel efficiency.

Expand productivity and minimize downtime by operating multiple machines, enabling faster tramming, facilitating hot-seat transitions, reducing disparity between operators, improving overall efficiency, and achieving faster cycle times.

Enhance operational safety and reduce equipment damage with our easy-to-use system. It improves operator health, prevents unforeseen accidents, enhances working conditions, reduces fatigue, and incorporates anti-collision intelligence.

AutoNav for underground machines



LEVEL 1

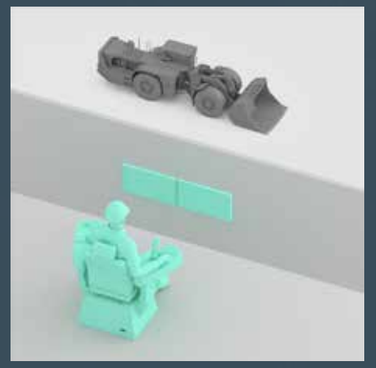
AUTONAV LOS

Line-of-sight control

Operators control the machine from up to 200 meters (656 feet) away using a handheld remote.

Included features:
ATX handheld remote

Additional add-ons:
Video assist
Machine containment system



LEVEL 2

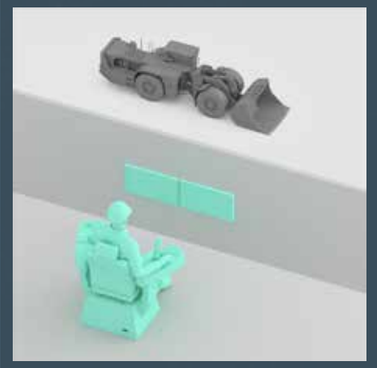
AUTONAV TELE

Tele-remote

Relocate operators to a secure room to control machines remotely via cameras and sensors.

Included features:
AutoNav Lite Center
Machine containment ready[1]

Additional add-ons:
AutoNav dash
InSite



LEVEL 3

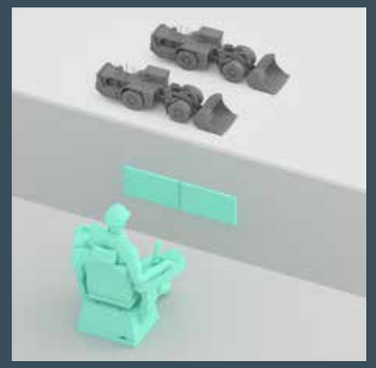
AUTONAV LITE

Semi-automation

Ideal for early-stage automation rollouts, providing direct, one-to-one machine operation control.

Included features:
AutoNav Lite Center
Machine containment ready[1]

Additional add-ons:
AutoNav dash
InSite
Tram assist
Autonomous tramming



LEVEL 4

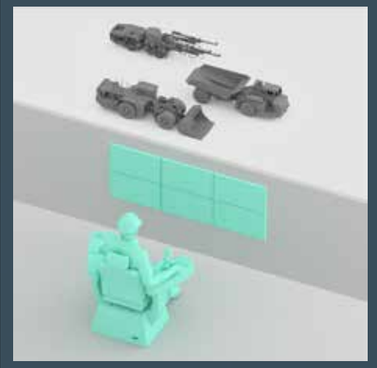
AUTONAV

Multi-machine automation

Multi-machine automation Expand operational capabilities by enabling a single operator to oversee several machines at once.

Included features:
AutoNav Center
Machine containment ready[1]
AutoNav dash
Tram assist
Autonomous tramming

Additional add-ons:
InSite
Multi-machine select
Multi-machine control
Autonomous tramming plus
AutoDig[2]
AutoDump
AutoNav data



LEVEL 5

AUTONAV PLUS

Fleet automation

Most comprehensive solution for automated mining fleets, enabling operators to manage entire production areas.

Included features:
AutoNav Center
Machine containment system
AutoNav dash
Tram assist
Autonomous tramming
Multi-machine select
Multi-machine control
Multi-fleet select

Additional add-ons:
InSite
Autonomous tramming plus
AutoDig[2]
AutoDump
AutoNav data
Traffic management
Mega wall streaming

1 Laser barrier hardware for machine containment is not included and must be purchased separately.
2 Feature only available for loaders.

AutoNav features for underground

1 Available for underground and surface
2 Available for underground only

AutoNav Lite Center[1]

All machine controls are built directly into the operator's chair. Monitors deliver live camera feeds for full situational awareness, with options to customize the number and layout of screens.

AutoNav Center[1]

A purpose-built operator chair designed for advanced automation, unlocking autonomous functions while giving operators complete, real-time visibility of the work area.

Multi-machine select[1]

An operator can switch between up to 5 machines of the same type, across different work areas or levels. Only one machine is actively controlled at a time.

Multi-machine control[1]

An operator can simultaneously control up to 3 machines of the same type, improving productivity and optimizing machine utilization per operator.

AutoNav dash[1]

Delivers real-time information such as speed, RPM, articulation angle, wall distance, waypoints, gear, direction, signal strength, and pitch and roll to give operators complete situational awareness.

AutoNav data[1]

Continuously gathers diagnostics and production-related data, delivering actionable insights to improve machine performance and productivity.

ATX handheld remote[1]

The operator controls the machine using the ATX handheld remote, supported by a comfortable single-sided shoulder harness, with real-time feedback shown on a graphical display.

Machine containment[1]

Ensures that remote-operated machines stay within designated areas and keeps personnel out of restricted zones.

Video assist[1]

Provides operators with an enhanced view of machine movements, streaming directly to an LCD screen mounted on the ATX handheld remote.

Mega wall streaming[1]

Bring your entire operation to life, where staff can observe and monitor data.

Autonomous tramming[1]

Enables machines to travel independently between predefined locations with no operator input, reducing operator fatigue. The system controls machine speed, articulation, and braking.

Multi-fleet select[1]

An operator can switch between any machine across an entire fleet, across different work areas or levels.

InSite[1]

The touch display automatically switches between active machines, giving operators instant visibility of vital parameters such as engine temperature, oil pressure, fuel level, and operating hours.

Traffic management[1]

Ensures collisions don't occur by issuing commands based on machines that could intersect whilst tramming. These commands then determine the action the machine will take. Once this task is given, the system decides which machine has right of way when other machines are approaching a particular segment.

Tram assist[2]

Keeps the machine centered in the drive to prevent wall contact and reduce wear. Operators maintain control of machine speed and articulation.

Autonomous tramming plus[2]

Uses advanced algorithms to continuously map the machine's position in the drive, extending autonomous tramming runtime and boosting productivity.

AutoDig[2]

Will ensure the operator is in the optimal position for the ideal dig, ensuring their bucket is filled on the first time, every time.

AutoDump[2]

Trains the machine to dump into a stockpile, fixed point, ore pass, or even a truck.

AutoNav for surface machines

LEVEL 1

AUTONAV LOS

Line-of-sight control

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Included features:
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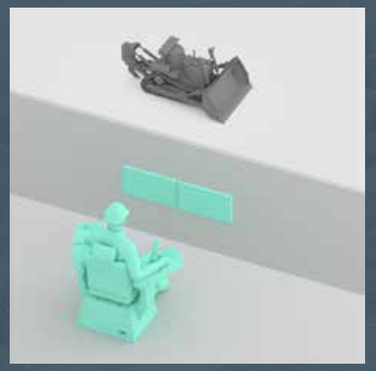
Additional add-ons:
Video assist
Machine containment system



LEVEL 2

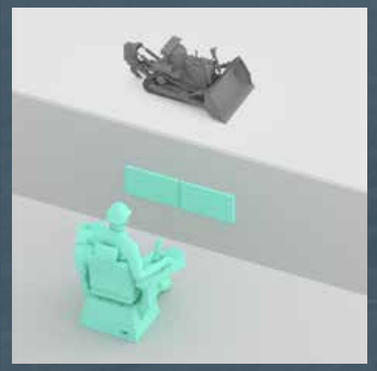
AUTONAV TELE

Tele-remote

Relocate operators to a secure room to control machines remotely via cameras and sensors.

Included features:
AutoNav Lite Center
Machine containment ready[1]

Additional add-ons:
AutoNav dash
InSite
Surface manager



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AUTONAV LITE

Semi-automation

Ideal for early-stage automation rollouts, providing direct, one-to-one machine operation control.

Included features:
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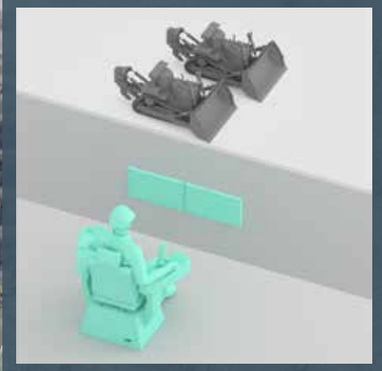
Machine containment ready[1]

Additional add-ons:
AutoNav dash
InSite
Autonomous tramming
Surface manager



LEVEL 4

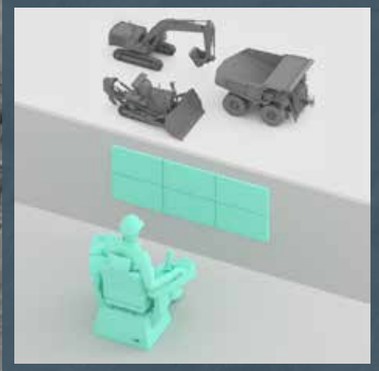
AUTONAV

Multi-machine automation

Expand operational capabilities by enabling a single operator to oversee several machines at once.

Included features:
AutoNav Center
Machine containment ready[1]
AutoNav dash
Autonomous tramming

Additional add-ons:
InSite
Multi-machine select
Multi-machine control
AutoNav data
Surface manager
Advanced automation2
Advanced safety[2]
Geozoning
Geofencing
Auto blade control[2]
Beacon & safety interface
CAS integration
High-precision GPS



LEVEL 5

AUTONAV PLUS

Fleet automation

Most comprehensive solution for automated mining fleets, enabling operators to manage entire production areas.

Included features:
AutoNav Center
Machine containment system
AutoNav dash
Autonomous tramming
Multi-machine select
Multi-machine control
Multi-fleet select

Additional add-ons:
InSite
AutoNav data
Mega wall streaming
Surface manager
Advanced automation[2]
Advanced safety[2]
Geozoning
Geofencing
Auto blade control[2]
Beacon & safety interface
CAS integration
Third-party FMS integration
High-precision GPS

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2 Feature only available for dozers.

AutoNav features for surface

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2 Available for surface only

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Multi-fleet select[1]

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Autonomous tramming[1]

Enables machines to travel independently between predefined locations with no operator input, reducing operator fatigue. The system controls machine speed, articulation, and braking.

AutoNav Lite Center[1]

All machine controls are built directly into the operator's chair. Monitors deliver live camera feeds for full situational awareness, with options to customize the number and layout of screens.

AutoNav Center[1]

A purpose-built operator chair designed for advanced automation, unlocking autonomous functions while giving operators complete, real-time visibility of the work area.

Surface manager[2]

Quickly define a machine's work area and travel path within a protected geofence. This intuitive tool streamlines setup and ensures machines operate

Auto blade control[2]

Adaptive blade technology learns from each task to optimize dozer performance for stockpiling, tailings management, and reclamation activities – delivering smoother, more efficient results.

AutoNav dash[1]

Delivers real-time information such as speed, RPM, articulation angle, wall distance, waypoints, gear, direction, signal strength, and pitch and roll to give operators complete situational awareness.

AutoNav data[1]

Continuously gathers diagnostics and production-related data, delivering actionable insights to improve machine performance and productivity.

Advanced automation[2]

Automate critical dozer functions including track packing, auto reversing, and point-topoint tramming to boost productivity and consistency across operations.

Geofencing[2]

Establish virtual boundaries to keep machines operating within approved areas, while restricting access to hazardous or off-limit zones.

ATX handheld remote[1]

The operator controls the machine using the ATX handheld remote, supported by a comfortable single-sided shoulder harness, with real-time feedback shown on a graphical display.

Machine containment[1]

Ensures that remote-operated machines stay within designated areas and keeps personnel out of restricted zones.

Advanced safety[2]

Soft ground detection automatically identifies unstable conditions. If the machine's pitch or roll angle exceeds safe limits, the system triggers an automatic reverse to prevent potential rollovers.

Geozoning[2]

Define precise work zones and trigger realtime alerts based on machine location to enhance safety, minimize risk, and maintain operational efficiency.

Video assist[1]

Provides operators with an enhanced view of machine movements, streaming directly to an LCD screen mounted on the ATX handheld remote.

Mega wall streaming[1]

Bring your entire operation to life, where staff can observe and monitor data.

High-precision GPS[2]

Provides centimeter-level accuracy for superior control, positioning, and task repeatability in all mining environments.

Collision avoidance system integration[2]

Seamlessly connects with collision avoidance technologies to further reduce incident risk and improve overall site safety.

Traffic management[1]

Ensures collisions don't occur by issuing commands based on machines that could intersect whilst tramming. These commands then determine the action the machine will take. Once this task is given, the system decides which machine has right of way when other machines are approaching a particular segment.

InSite[1]

The touch display automatically switches between active machines, giving operators instant visibility of vital parameters such as engine temperature, oil pressure, fuel level, and operating hours.

Advanced beacon and safety interface[2]

Integrates with site beacons and safety systems to provide enhanced situational awareness and operator protection.

Third-party FMS integration[2]

Compatible with a wide range of fleet management systems, enabling data sharing, performance tracking, and unified operational oversight.

United in performance. Inspired by innovation.

Performance unites us, innovation inspires us, and commitment drives us to keep moving forward. Count on Epiroc to deliver the solutions you need to succeed today and the technology to lead tomorrow.

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