

AUTONAV

Scalable, brand-agnostic automation.





Proven interoperable automation.

Moving 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.

Our automation path allows the combination of all the latest technology available to deliver a fully autonomous solution for your mine



RCT's technology capabilities



Digitization

Digitizing the mining environment to support machine control & 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.



Information

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



Scalability

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



Integration

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

Get all the benefits from automation

RCT is revolutionizing the mining industry as a trusted technology partner by modernizing operations with its industry-leading Automation and Control solutions. When operations are automated, machine performance improves dramatically because discrepancies are eliminated. RCT Automation implementation boosts productivity and safety within the operation, resulting in increased corporate profitability.

⊕ Increase your yearly profit by

- Increased run time on machines
- More buckets per day
- Reduce machine damage
- Eliminate unplanned downtime
- Less wear and tear
- Increase fuel efficiency

⊕ Expand productivity and minimize downtime

- Operate multiple machines
- Faster tramming
- Hot-seat transition
- Remove disparity between operators
- Improved overall efficiency
- Faster cycle times

⊕ Improve operational safety and equipment damage

- Better operator health
- Easy-to-use system
- Avoid unforeseen accidents
- Improved working conditions
- Reduced fatigue
- Anti-collision intelligence



AutoNav for underground machines



LEVEL 1

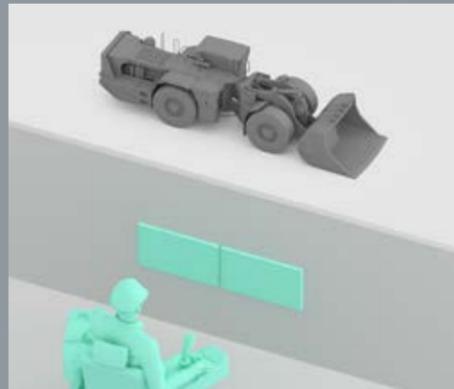
AUTONAV LOS

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

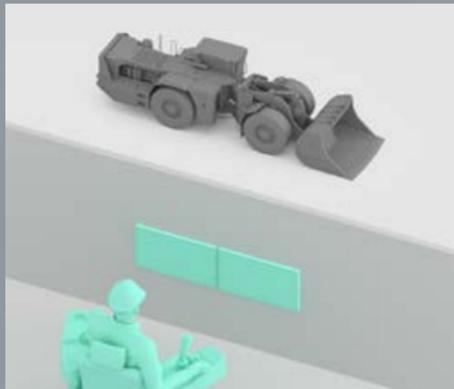
AUTONAV TELE

Tele-remote

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

Included features:
AutoNav Lite Centre
Machine containment ready¹

Additional add-ons:
AutoNav dash
InSite



LEVEL 3

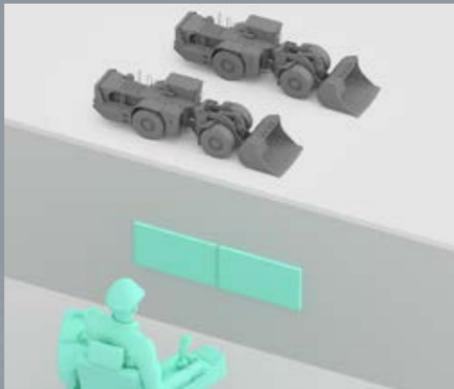
AUTONAV LITE

Semi-automation

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

Included features:
AutoNav Lite Centre
Machine containment ready¹

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



LEVEL 4

AUTONAV

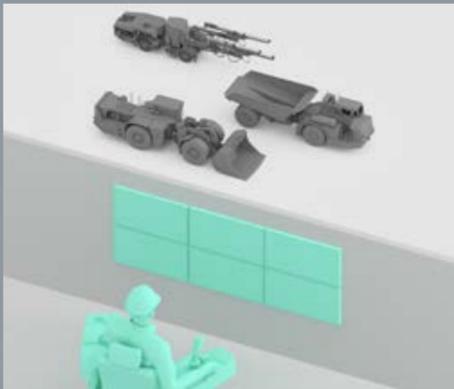
Multi-machine automation

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

Included features:
AutoNav Centre
Machine containment ready¹

AutoNav dash
Tram assist
Autonomous tramming

Additional add-ons:
InSite
Multi-machine select
Multi-machine control
Autonomous tramming plus
AutoDig²
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 Centre
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
AutoDig²
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 for surface machines



LEVEL 1

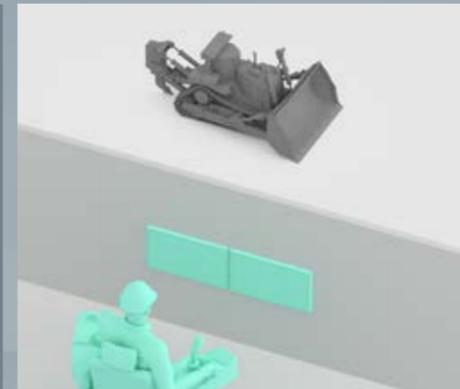
**AUTONAV
LOS**

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

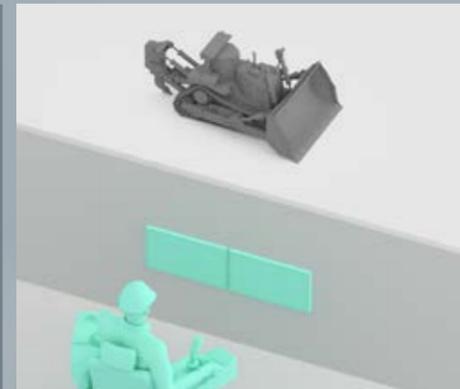
**AUTONAV
TELE**

Tele-remote

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

Included features:
AutoNav Lite Centre
Machine containment ready¹

Additional add-ons:
AutoNav dash
InSite
Surface manager
Beacon & safety interface



LEVEL 3

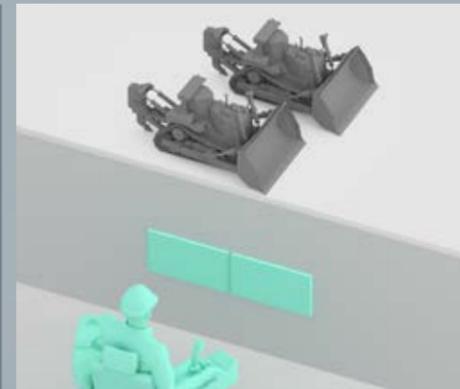
**AUTONAV
LITE**

Semi-automation

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

Included features:
AutoNav Lite Centre
Machine containment ready¹

Additional add-ons:
AutoNav dash
InSite
Autonomous tramming
Surface manager
Beacon & safety interface



LEVEL 4

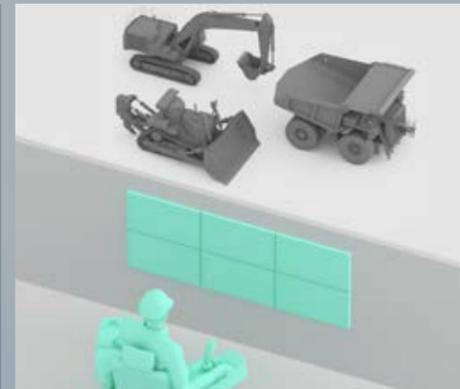
AUTONAV

Multi-machine automation

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

Included features:
AutoNav Centre
Machine containment ready¹
AutoNav dash
Autonomous tramming

Additional add-ons:
InSite
Multi-machine select
Multi-machine control
AutoNav data
Surface manager
Auto-reverse²
Ground stability²
Geozoning
Auto blade control²
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 Centre
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
Auto-reverse²
Ground stability²
Geozoning
Auto blade control²
Beacon & safety interface
CAS integration
Third-party FMS integration
High-precision GPS

¹ Hardware for machine containment is not included and must be purchased separately.

² Feature only available for dozers.

Features

- Available for underground and surface
- Available for surface only
- Available for underground only



AutoNav Lite Centre

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 Centre

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



Autonomous trammig

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



Surface manager

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



Auto blade control

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



Tram assist

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



Multi-machine select

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



Multi-machine control

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



Multi-fleet select

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



Auto-reverse

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



Ground stability

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.



Autonomous trammig plus

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



AutoNav dash

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

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



InSite

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.



Geozoning

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



High-precision GPS

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



AutoDig

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



ATX handheld remote

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

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



Traffic management

Ensures collisions don't occur by issuing commands based on machines that could intersect whilst trammig. 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.



Collision avoidance system integration

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



Third-party FMS integration

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



AutoDump

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



Video assist

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



Mega wall streaming

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



Advanced beacon & safety interface

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

Comprehensive Services

All solutions are backed by RCT's leading support model and ever-expanding service network; aimed at providing local support, using local people.

Site Audit & Consultation

RCT can perform site audits to ensure the safest and most productive approach is taken. RCT provides consultancy services, including feasibility studies and strategies to improve technology and optimize operations.

Customized Solutions

RCT Custom is a department specializing in the delivery of bespoke solutions to address vital operational improvements. The team has the expertise and resources to resolve challenges, regardless of the size or scope of the project.

Skills Training

Industry-recognized courses are tailored to suit operators and maintenance personnel, allowing sites to be more self-sufficient. Supported by practical demonstrations and hands-on experience, relevant content is delivered based on the vast knowledge of our trainers and technicians.

Parts

Keep your operation running without disruptions. RCT, has you covered with its stock of 2,500+ specialized parts that can be shipped anywhere in the world.

Client Testimonials

"With no prior remote experience, my operators embraced the opportunity, quickly adapting to the new technology & the transition was surprisingly quicker than anticipated. This technology allows us to operate safely in a controlled environment outside of harm's way. Also, the multi-machine select feature has proven to be invaluable. During operations, our production is not sacrificed if a machine needs to go offline because we have a standby machine available at the push of a button"
– Western Contracting Services

"All in all, the systems are trouble-free & easy-to-use. It's provided US with the tools necessary to carry out high-risk work, while keeping our people safe, allowing them to operate mobile machinery from either the automation centre or a Toyota Land cruiser troop carrier."
– Grange Resources

"We're working to improve operational continuity – implementing automation for mining equipment for safety & to improve the productivity. For this reason, Codelco worked with RCT."
– Codelco

"RCT are a very professional company with a reliable product – I'm very pleased. The CAT D8R is an older machine & it was a much more intense installation, but RCT did a really good job in setting it up within a couple of weeks."
– Alliance Resource Partners L.P.

"The project provided an opportunity to evaluate technologies and capabilities of AUTONOMOUS systems. It improved safety of mining processes in challenging mining & geological conditions of the Olimpiada Mine."
– Polyus

"This change is obviously safer for the operator but also provides the operation with increased utilization as we can now continue working over shift change resulting in an operational efficiency improvement of 16 per cent."
– Barrick

"The perceived benefits in productivity were estimated between 25-30 per cent, meaning the system would pay for itself in less than six months."
– EldoradoGold

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