

COMMAND FOR UNDERGROUND



IMPROVE SAFETY AND UTILIZATION WITH SEMI-AUTONOMOUS OPERATION.

Safety and equipment utilization are key factors in any underground mine. Cat® Command for underground relocates operators to a safe, comfortable operating station on the surface. That improves utilization by reducing the last-to-first-bucket time during shift changes. It all adds up to more material moved and more profit for your mine's bottom line.

LHD SYSTEMS

- **Line-of-Site Remote Control Loading** – A portable controller lets operators work from a safe distance while the machine loads under an unsupported roof.
- **Remote + Guidance Operation** – An advanced Remote Operator Station enables control from the surface or an off-site location. Basic system remotely controls load, tram and dump functions. A guidance upgrade supplements steering to minimize drive wall impacts.
- **Semi-Autonomous Operation**
 - Copilot Mode** – Operators monitor machine location on a mine map as they load, tram and dump, providing directional input using joysticks.
 - Autopilot Mode** – Allows the machine to tram, dump and return autonomously. The operator then takes control of the loading process.
- **Autonomous Operation** – Combining Autodig functionality with Autopilot Mode provides completely autonomous Load-Haul-Dump cycles.

BENEFITS

RELOCATE operators to a safe, comfortable location underground or on the surface.

PREVENT collision damage caused by LHD machines contacting tunnel walls.

IMPROVE operator comfort, employee retention and operator recruitment.

CONTINUE operation through seismic events.

ENABLE control of multiple machines from a single Remote Operator Station.

OPTIMIZE shift changes by enabling hot-seat operator exchanges on the surface.

MONITOR operations through video, with real-time location and status data.

ELIMINATE exposure to noise, dust, seismic activity and other underground hazards.

RETURN to work quickly after a blast to get production back on track.

CONFIGURE zones to regulate machine speed and to establish exclusion areas.

For more information, go to www.cat.com/minestar or contact your local dealer.