# iDRILL PACKAGE FEATURES IN DETAIL

| | FEATURE | DESCRIPTION | PERFORMANCE iDRILL | NAVIGATION iDRILL | LINE OF SIGHT AUTOMINE | CONTROL ROOM AUTOMINE | AUTONOMOUS AUTOMINE |
|---|---|---|---|---|---|---|---|
| ONBOARD AUTOMATION | Automated Mast Incline | Automate the rising/lowering of the mast in 5° increments to 20° with the extended mast and 30° with the standard mast. | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Automated Levelling | Brings the drill rig to a stable, level position prior to drilling and unlevels after drilling completes. | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Hole Collaring Automatics | Hole collaring algorithm reduces the chance of hole collapse during drilling. | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Adaptive Auto Drill Functionality | Automatically adjusts drilling parameters during operation based on ground conditions. | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Automated Pipe Add/Removal | Ability to automatically add and remove drill pipe until desired depth is reached. | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Intelligent Hole Finishing Sequence | Automated functionality to clean the finished hole based on the depth and/or the final hole elevation. | ✓ | ✓ | ✓ | ✓ | ✓ |
| NAVIGATION | TIM3D High Precision Navigation | GPS based hole navigation system that assists the operator in positioning the drill bit to within 10 centimeters. | | ✓ | ✓ | ✓ | ✓ |
| | Onboard/Wireless Pattern Creation | Capability to wirelessly transfer drill patterns, load drill patterns via USB, or create a pattern onboard using the current bit position. | | ✓ | ✓ | ✓ | ✓ |
| | Delay Status Tracking* | Ability to track operator/equipment states/reasons throughout a shift based on an operations time utilization model. | | ✓ | ✓ | ✓ | ✓ |
| | Driller's Notes Hole Logging* | Allows the operator to collect and store drilling information at specific depths while drilling. | | ✓ | ✓ | ✓ | ✓ |
| | Measurement While Drilling* | Logging of drilling component measurements for future analysis while drilling. | | ✓ | ✓ | ✓ | ✓ |
| | Onboard Diagnostics | Onboard diagnostics of alarms and system health parameters. | | ✓ | ✓ | ✓ | ✓ |
| REMOTE AUTOMATION | AutoMine® Onboard Kit | Hardware components on the drill allow connectivity and access to the onboard controls and automation features. | | | ✓ | ✓ | ✓ |
| | AutoMine®: ACS Safety System | Safety system with physical safety key lock-out and remote E-stop. | | | ✓ | ✓ | ✓ |
| | AutoMine®: TeleControl | Control of all rig functions with same controls. | | | ✓ | ✓ | ✓ |
| | AutoMine®: InfoDrills | An overview of the key info from all rigs in the fleet and ability to switch control to a different drill (FleetView). | | | ✓ | ✓ | ✓ |
| | AutoMine®: InfoView | High-quality video and audio. | | | ✓ | ✓ | ✓ |
| | AutoMine®: InfoMap | Drill plan view to show location of all rigs and drill patterns with touch-screen move, zoom and rotate. | | | ✓ | ✓ | ✓ |
| | Obstacle Detection System (HW) Kit | Hardware components on the drill providing feedback of area around the drill to the control system for obstacle detection. | | | | ✓ | ✓ |
| | AutoMine®: InfoGeoPhoto | Ability to load georeferenced photos as the background image for the drill map view with on/off toggling. | | | | ✓ | ✓ |
| | AutoMine®: TeleGeofence | Predefined area where remote-operation allowed only inside the area. System prevents moving the rig outside of the area. | | | | ✓ | ✓ |
| | AutoMine®: TeleDetect* | Sandvik Obstacle detection system provides improved awareness of obstacles for remote operator. | | | | ✓ | ✓ |
| | AutoMine®: Autocycle | Autonomous drilling cycle where work proceeds through drilling cycle including hole-to-hole tramming without operator involvement. | | | | | ✓ |
| | AutoMine®: AutoPlanning | Plan the rig work sequence by selecting holes or adding waypoints. System defines the actual tramming path. Planning is enabled while rig is working. | | | | | ✓ |
| | AutoMine®: AutoGeofence | Predefined area where autonomous tramming is allowed only inside the area. Proximity to area boundary stops a rig during auto tramming. | | | | | ✓ |
| | AutoMine®: AutoDetect* | Sandvik Obstacle detection system stops & interlocks tramming when there are obstacles in the STOP-zone. | | | | | ✓ |

*Option