



Australian Government

RIIARO405 Optimise automated drilling operations

Release: 1

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Modification History

Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 9.0. Newly created unit.
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Application

This unit describes the skills and knowledge required to optimise the performance of automated drilling operations to meet performance targets relating to quality, efficiency, and safety. It includes optimising automated drilling system performance and outputs, monitoring automated drilling systems and processes, and responding to abnormal situations.

The unit applies to those who manage multiple automated drilling rigs at locations remote from the control centre.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Coal mining

Metalliferous mining

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element
1. Optimise automated drilling system performance	1.1 Undertake drill path planning and sequencing in accordance with machine capability, working conditions, requirements of the drill pattern, and organisational requirements 1.2 Coordinate multiple drills on the same drill pattern in line with requirements for quality, safety, and efficiency 1.3 Control access to drilling areas in accordance with entry and exit procedures to ensure the safety and efficiency of people and equipment undertaking operations in vicinity of automated drill rigs 1.4 Confirm that scheduled timing for replenishment of consumables aligns with system data on usage and take

ELEMENT	PERFORMANCE CRITERIA
	action where necessary
2. Monitor automated drilling systems and processes	2.1 Monitor control system gauges to maintain drill rotation speed and pressure, feed force and penetration rates within required parameters 2.2 Monitor drill rig sensors, camera feeds and positional data to confirm drills are operating according to plan 2.3 Monitor drill operations in higher risk areas to enable timely intervention when needed 2.4 Monitor people and equipment in the drilling area and the boundaries between automated and manned equipment to ensure functional safety 2.5 Monitor completed blast holes against specific quality requirements in the drill plan, and identify and record anomalies
3. Respond to abnormal situations	3.1 Prioritise and resolve alarms, warning devices and systems in accordance with organisational procedures 3.2 Compensate or adjust to potential adverse situations within designated level of own responsibility 3.3 Confirm obstacle detection readings using drill rig cameras and request site personnel to investigate if drill operations are likely to be impacted 3.4 Respond to changed conditions in drilling area in a timely manner and follow escalation protocols according to the situation

Foundation Skills

This section describes those language, literacy, numeracy, and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Interprets and uses a range of mathematical information relating to drilling systems and their gauges

Unit Mapping Information

No equivalent unit. Newly created unit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>