

Modification history

Release	Comments
Release 1	This version released with SFI Seafood Industry Training Package Version 2.0.

SFIAQU4X4	Operate remotely operated vehicle technology
Application	<p>This unit of competency describes the skills and knowledge required to operate remotely operated vehicle technology.</p> <p>The unit applies to individuals who operate remotely operated vehicle technology such as for fisheries or aquaculture processes.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
Use Prerequisite Unit	Nil
Unit Sector	Aquaculture

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan the use of a remotely operated vehicle	1.1 Determine the dive task, the suitability and the conditions of the dive site and whether the conditions are suitable for the use of a remotely operated vehicle 1.2 Assess personnel skill level requirements and if whether the personnel available are sufficiently trained for vessel management, piloting, tether handling, vehicle maintenance, recording data or controlling an inspection 1.4 Consider the suitability of your remotely operated vehicle for the task requirement and conditions
2. Prepare to operate remotely operated vehicle technology	2.1 Determine activity to be undertaken, the available launch method and identify potential hazards and risks and work health and safety (WHS) standards 2.2 Identify the operational features of the remotely operated vehicle technology and its use in fisheries or aquaculture 2.3 Conduct remotely operated vehicle technology routine pre-operational checks 2.4 Determine the site conditions and the affect this will have on the dive task
3. Operate remotely operated vehicle technology	3.1 Conduct pre-check and start-up procedures in accordance with workplace practices 3.2 Operate remotely operated vehicle technology to meet activity requirements in accordance with manufacturer specifications and WHS standards 3.3 Maintain remotely operated vehicle technology position within the range and level of exposure to prevailing and anticipated environmental conditions 3.4 Manage the tether effectively according to environmental conditions 3.5 Monitor remotely operated vehicle technology for performance with regard to activity requirements and conditions 3.6 Identify environmental and biosecurity implications associated with use of remotely operated vehicle technology and undertake processes to minimise impact 3.7 Continually monitor hazards and risks and ensure safe use of technology

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Complete use of remotely operated vehicle technology	4.1 Establish return heading and communicate intentions with the tether handler and vessel coxswain 4.2 Locate the tether and follow it to the return positions while taking the tether in and ensuring to take out the tether turns 4.3 Surface and power down, disarming after the vehicle is secure and recover to deck or shore 4.4 Rinse with freshwater and carryout post-dive checks and maintenance in accordance with manufacturer specifications 4.5 Store remotely operated vehicle technology in line with workplace procedures 4.6 Identify and report faults irregular performance or damage in accordance with workplace procedures 4.7 Document findings following the use of remotely operated vehicle technology

Foundation Skills	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets relevant manufacturer specifications
Writing	<ul style="list-style-type: none"> Records remotely operated vehicle technology performance with appropriate technical detail
Navigate the world of work	<ul style="list-style-type: none"> Interprets and follows workplace requirements, and seeks clarification or other assistance when required
Get the work done	<ul style="list-style-type: none"> Plans and organises own work activities and resources Combines workplace goals with the use of technology

Unit Mapping Information			
Code and title current version	Code and title previous version	Comments	Equivalence status
SFIAQU4XX Operate remotely operated vehicle technology	N/A		New unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273
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TITLE	Assessment requirements for SFIAQU4X4 Operated remotely operated vehicle technology
Performance Evidence	
<p>An individual demonstrating competency must satisfy all of the elements, performance criteria and foundation skills in this unit.</p> <p>There must be evidence that the individual has operated remotely operated vehicle technology in fisheries or aquaculture on at least two occasions.</p> <p>In doing the above, evidence must also include:</p> <ul style="list-style-type: none">• identifying hazards• monitoring the use of remotely operated vehicle technology• fault finding/trouble shooting• observing manufacturer specifications, WHS standards and workplace policies• using remotely operated vehicle technology features, including:<ul style="list-style-type: none">• video cameras• lights• sonar systems	

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Knowledge Evidence

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An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements, performance criteria and foundation skills of this unit. This includes knowledge of:

- suitability of the shore or vessel launch method, including:
 - space to handle vehicle and tether
 - power (if required)
 - shelter from sun and weather for personnel and control system
 - access to water
 - position relative to dive task
- sufficiently trained personnel for:
 - vessel management
 - piloting
 - tether handling
 - vehicle maintenance
 - recording data
 - controlling an inspection
- site conditions:
 - maximum water depth
 - current or tide
 - in water approach for the vehicle/obstacles
 - in water visibility (gradings from 1 to 5 - 1 being perfect visibility)
- remotely operated vehicle suitability for task and conditions:
 - vehicle depth rating
 - tether length and buoyance
 - camera image quality (video, stills)
 - light (luminosity and position)
 - vehicle/system endurance
 - bollard pull -available thrust (in all directions)
 - lift capacity of the task involves recovery
- remotely operated vehicle suitability:
 - launch and recovery - water access, lifting and lowering of the vehicle
 - tether management - vessel propellers or thrusters
 - swell and wind waves (sea)
 - tether trim/float requirements
- remotely operated vehicle dive processes:
 - compass checking
 - position determination (ascending/descending)
 - avoiding stirring up soft silt on the bottom
 - use of all available information (sonar, shadows in shallow clear water, sand ridges in the seabed, weed trailing in current, tether position)
- tether management:
 - communication with relevant personnel, briefing the handler on what is required
 - marking the tether to determine how much has been deployed
 - assessing the tether's trim and buoyancy
- the general features and capabilities of remotely operated vehicle technology, including:
 - video cameras
 - sonar systems
 - articulating robotic arms
 - high-torque motors
 - live remotely control and data sharing
 - configurable sensor suite to measure depth, temperature, orientation and GPS
 - battery life
 - lighting
 - computer systems
- remotely operated vehicle pre-project visual, physical and functional check of every aspect of the system, including:
 - video
 - still capture
 - trim check

- battery voltages
- remotely operated vehicle care and maintenance processes:
 - vehicle washing with fresh water
 - thorough post dive physical and visual inspection
 - keeping vehicle and tether out of direct sunlight when possible
 - vacuum seal integrity testing (during every pre-dive, after each occasion when opening a water-light housing and during pre-project inspection and functional tests)
 - replacement or dry-out camera housing desiccant
 - inspection and lubrication of all o-ring seals
 - maintenance of waterproof connectors (never mate them without lubricating first)
- operational processes in fisheries or aquaculture:
 - underwater survey missions
 - environmental and compliance monitoring
 - marine growth survey
 - stock location
 - observational studies
 - zooplankton patches inspection
 - scour and debris survey
 - seabed survey
 - offshore structure cleaning
 - vessel hull inspections
 - net inspection and repair
 - net cleaning
- operation of position fixing equipment and methods
- relevant manufacturer specifications
- fishery or aquaculture WHS standards
- environmental and biosecurity impacts of remotely operated vehicles
- stock location processes
- aquaculture risk and hazards associated with the use of remotely operated vehicle technology
- visual indication of stock concentration
- state and, territory and national legislation and regulations relevant to aquaculture.

Assessment Conditions	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> • physical conditions: <ul style="list-style-type: none"> • skills must be demonstrated in a fisheries or aquaculture setting or an environment that accurately represents workplace conditions • resources, equipment and materials: <ul style="list-style-type: none"> • access to remotely operated vehicle technology • specifications: <ul style="list-style-type: none"> • access to relevant manufacturer specifications. <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	

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