

Company CEO: \_\_\_\_\_

Company Name

Product demonstration station officials: \_\_\_\_\_

<b>Safety Check and Set-Up (up to 10 points)</b>	Points	
Company presents safety card or signed safety inspection sheet.	0	5
Vehicle and control system present no safety hazards.	0	5
Examples: <ul style="list-style-type: none"> <li>o All power cords, power bars, pressurized cylinders, etc. are secured.</li> <li>o No hazardous materials are leaking onto the pool deck.</li> <li>o Vehicle is hand-launched by team members in a safe manner.</li> </ul>		
Company is cleared for demonstration: _____ (official's initials)		
<b>Total Safety Check and Set-Up (out of 10)</b>		<b>Total</b>
<i>Note: An official's decision to disqualify a company due to safety concerns is final. If there is a safety concern, please contact the lead safety inspector or competition coordinator.</i>		

<b>Organizational and Operational Effectiveness (up to 10 points)</b>	Points	
<b>Up to 2 points – Organization</b>		
Chain of command evident	0	1
Roles clear and executed well	0	1
<b>Up to 2 points – Task Plan</b>		
Task plan is well thought out to maximize score	0	1
Alternate plans available and all team members are aware of the plan	0	1
<b>Up to 2 points –Time Management</b>		
Awareness of time	0	1
Adjusting timeline to adapt to situations	0	1
<b>Up to 2 points – Team Cooperation</b>		
Composure under pressure	0	1
Supportive of each other and communicate well with each other	0	1
<b>Up to 2 points – ROV Deployment and Control</b>		
ROV deployed by the end of the set-up period	0	1
ROV is under control of pilot and prepared to perform tasks	0	1
<b>Total Organizational and Operational Effectiveness (out of 10)</b>		<b>Total</b>

<b>Bonus points for size</b>	Points	
<b>Size bonus (up to 10 points)</b>	0	5
ROV is less than 48 cm – 10 bonus points		10
ROV is within 48.1 cm and 60 cm – 5 bonus points		
ROV is greater than 60.1 cm – 0 bonus points		
	Judge initials: _____	<b>Total</b>
	CEO initials: _____	

**Fuses:** If a vehicle blows the MATE power supply in-line fuse, the company is allowed one spare. If the vehicle blows the second MATE fuse, the product demonstration performance period is over. The company will receive points for the product demonstration tasks that they have completed up to that point but will not receive a time bonus score.

Task # 1: Aircraft (up to 60 points)	Points	
<b>Judges' Notes:</b> Companies must complete the steps of this task in order. If they skip task 1.1, 1.2 or 1.3, they can go on, but cannot return to these steps at a later time.		
<b>1.1 10 points</b> – using flight data to determine the search zone for the wreckage	0	10
<b>1.2 5 points</b> – identifying the aircraft using the tail section	0	5
<b>1.3 5 points</b> – placing a marker buoy at the wreck site	0	5
<b>1.4 up to 10 points</b> – removing debris from the engine		
o 5 points – lifting the debris from the engine	0	5
o 5 points – moving the debris from the wreck area	0	5
<b>1.5 up to 30 points</b> – returning the engine to the surface side of the pool using a lift bag		
o 10 points – attaching the lift bag to the engine	0	10
o 10 points – inflating the lift bag	0	10
o 10 points – returning the engine to the surface, side of the pool	0	10
<b>Total Task # 1 (out of 60)</b>		
		<b>Total</b>

Task # 2: Earthquakes (up to 60 points)	Points	
<b>Judges' Notes:</b> Companies may deploy the seismometer first, or connect the seismometer to the power and communications hub first. The four steps of deploying the seismometer must be done in order. Companies may open the door of the hub first, or may lay the cable through the waypoints first.		
<b>2.1 up to 30 points</b> – deploying the ocean bottom seismometer (OBS)		
o 5 points – Pulling the pin to release the OBS from the elevator	0	5
o 5 points – removing the OBS from the elevator	0	5
o 10 points – deploying the OBS into the designated area on the seafloor	0	10
o 10 points – leveling the OBS	0	10
<b>2.2 up to 30 points</b> – connecting the seismometer to the power and communications hub		
o 10 points – opening the door of the power and communications hub	0	10
o up to 10 points (5 points each) – laying the seismometer through two waypoints	0	5 10
o 10 points – inserting the seismometer cable connector into the port on the hub	0	10
<b>Total Task # 2 (out of 60)</b>		
		<b>Total</b>

Task # 3: Energy (up to 70 points)	Points		
<b>Judges' Notes:</b> Companies must first use the tidal data to determine the optimum location for the tidal turbine. Companies may skip this step, but may not come back and complete it at a later time. Eelgrass tasks can be done at any time.			
<b>3.1 5 points</b> – using tidal data and nautical charts to determine the optimal location for a tidal turbine	0	5	
<b>3.2 up to 10 points</b> – installing an array of tidal turbines at the optimum location			
<b>5 points</b> – installing the tidal turbine base on the bottom	0	5	
<b>5 points</b> – installing the array onto the base	0	5	
<b>3.3 up to 10 points</b> – installing an I-AMP to monitor the area			
<b>5 points</b> – installing the I-AMP onto its stand	0	5	
<b>5 points</b> – locking the I-AMP onto the stand	0	5	
<b>3.4 up to 15 points</b> – placing a mooring a given distance from the base of the turbine			
<b>up to 10 points</b> – measuring the distance from the base	0	10	
o <b>10 points</b> – distance is within 10 cm			
o <b>0 points</b> – distance is not within 10 cm			
<b>5 points</b> – placing mooring on the bottom	0	5	
<b>3.5 10 points</b> – attaching an Acoustic Doppler Velocimeter (ADV) onto the mooring	0	10	
<b>3.6 up to 20 points</b> - eelgrass habitat monitoring and restoration			
<b>up to 10 points (5 points each)</b> – collecting two samples of eelgrass and returning them to the surface, side of the pool	0	5	10
<b>up to 10 points (5 points each)</b> – transplanting two eelgrass frames to a previously disturbed area	0	5	10
<b>Total Task # 3 (out of 70)</b>			<b>Total</b>

Penalty Points (deduct 5 points for each infraction)	No. of Infractions		
<b>Tether Pulling:</b> Company members cannot pull on the tether to assist in moving or turning the vehicle. Judges should issue a warning for the first infraction and begin deducting points AFTER the first infraction.		a	
<b>Illegal communication:</b> Company members at the side of the pool may not communicate visual evidence of the ROV status such as location of vehicle, need to turn, that the vehicle is stuck, etc.		b	
<b>Debris:</b> Companies that leave debris (e.g. parts of their ROV, including weights and flotation) in the pool at the end of the product demonstration time, or leave debris that a diver must retrieve will receive penalty points. Product demonstration props are NOT considered debris. A company constructed collection basket is considered debris if it is still in the water when product demonstration time ends.		c	
<b>Diver Assistance:</b> Any diver assistance (if available) must be requested by the company and will result in a 5 point penalty. The clock does not stop during during diver assistance.		d	
	(total a + b + c + d)		<b>Total</b>
<b>Total Penalty Points</b>	X	5	=

**TIME BONUS (1 point for every minute and 0.01 point for every second under 15 minutes)**

Duration of Product Demonstration: \_\_\_\_\_

Minutes under 15 remaining: \_\_\_\_\_ X 1 point = \_\_\_\_\_

Seconds remaining: \_\_\_\_\_ X 0.01 point = \_\_\_\_\_

**Time bonus**

<b>Total</b>

<b>Grand Total</b>

**TOTAL PRODUCT DEMONSTRATION SCORE**

Official's initials: \_\_\_\_\_

Company CEO's initials: \_\_\_\_\_