

Company CEO: _____

Company Name

Product demonstration station officials: _____

Safety					
<p>Check here if the company has their PASSED safety inspection card</p> <p>Companies without their safety inspection PASSED card cannot participate in the product demonstration.</p>	<input type="text"/>				
<p>Check here if tamper seal on fuse is still intact</p> <p>Companies with a broken tamper seal on their fuse must see the safety inspectors before their ROV enters the water.</p>	<input type="text"/>				
<p>Check here if the company presented you with a JSEA (Jobsite Safety Environmental Analysis)</p>	<table border="1"> <thead> <tr> <th colspan="2">JSEA Points</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> </tr> </tbody> </table>	JSEA Points		0	5
JSEA Points					
0	5				
<p>Check here if vehicle (and float) matches photo taken at safety inspection</p> <p>Companies must use the same vehicle, float, and other devices that went through the safety inspection.</p>	<input type="text"/>				
<p>Total Safety (out of 5)</p>	<table border="1"> <thead> <tr> <th>Total</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> </tr> </tbody> </table>	Total	<input type="text"/>		
Total					
<input type="text"/>					

Organizational and Operational Effectiveness (up to 10 points)	Points			
Up to 4 points - Teamwork/Collaboration & Communication				
Chain of command evident	0	1		
Roles clear and executed well	0	1		
Composure under pressure	0	1		
Supportive of each other and communicate well with each other	0	1		
Up to 2 points - Project Management				
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		
Up to 2 points - Problem Solving & Ability to Deal with Obstacles				
Awareness of time	0	1		
Adjusting timeline to adapt to situations	0	1		
Up to 2 points - System Design & Control/Electrical				
ROV deployed by the end of the 5-minute set-up period	0	1		
ROV is under control of pilot and prepared to perform tasks	0	1		
<p>Total Organizational and Operational Effectiveness (out of 10)</p>	<table border="1"> <thead> <tr> <th>Total</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> </tr> </tbody> </table>		Total	<input type="text"/>
Total				
<input type="text"/>				

Bonus points for weight	Points				
Weight bonus (up to 10 points)	0	5	10		
ROV is less than 15 kg – 10 bonus points	<p>Judge initials: _____</p> <p>CEO initials: _____</p>				
ROV is between 15.01 kg and 20 kg – 5 bonus points					
ROV is between 20.01 kg and 25 kg – 0 bonus points					
Vehicles heavier than 35 kg may not compete					
	<table border="1"> <thead> <tr> <th>Total</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> </tr> </tbody> </table>			Total	<input type="text"/>
Total					
<input type="text"/>					

Fuses: ROV systems are allowed one replacement fuse during the product demonstration. In the event that the ROV system blows the second fuse during the demonstration, time will stop, the demonstration run will be over, and no additional points will be earned. Companies should have adequate replacement fuses on hand, MATE will not provide replacements.

Task # 1: Shipwrecks, Spotter Buoys and Flying Fish (up to 160 points)		Points				
1.1 up to 60 points – Shipwrecks						
up to 35 points – use visual clues to determine the identity of an unknown shipwreck						
5 points – determine the type of ship		0		5		
up to 10 points – determine the length of the ship						
10 points – within 5 cm of true length		0	5	10		
5 points – between 5.01 and 10 cm						
0 points – not within 10 cm						
up to 10 points – determine the cargo that the ship carried						
5 points – remove the cover and determine the type of cargo		0		5		
5 points – Replace the cover		0		5		
10 points – identify the shipwreck		0		10		
-5 points each, up to 25 penalty points – coming in contact with the shipwreck (not including the cargo container)		-5	-10	-15	-20	-25
up to 25 points – create a 360 photosphere image of the shipwreck environment						
25 points – create a 360 photosphere image showing all 7 targets						
15 points – create a 360 photosphere image showing 5 to 6 targets						
10 points – create a 360 photosphere image showing 3 to 4 targets		0	10	15	25	
10 points – display still images of all 7 targets						
1.2 up to 45 points – Smart Buoys						
up to 30 points – replace a damaged thermistor on the subsurface Smart buoy						
5 points – release the top end connection point		0		5		
5 points – release the bottom end connection point		0		5		
10 points – attach the top end connection point		0		10		
10 points – attach the bottom end connection point		0		10		
up to 15 points – Install a pCO2 sensor to the subsurface Smart buoy						
5 points – place the pCO2 sensor in the designated area		0		5		
10 points – connect pCO2 sensor to subsurface Smart buoy		0		10		
1.3 up to 55 points – Lake Acidification and Invasive Carp						
10 points – collect a water sample		0		10		
up to 10 points – determine the pH of the water sample						
10 points – in situ		0	5	10		
5 points – on the surface						
5 points – measure the dissolved CO2 levels of the water sample		0		5		
10 points – determine if the unknown sequences include invasive carp		0		10		
up to 20 points – model invasive carp moving into the Illinois River watershed over time						
20 points – computer model		0	10	20		
10 points – manually						
Total Task # 1 (out of 160)						Total

Task # 2: Marine Renewable Energy (up to 120 points)		Points		
2.1 up to 60 points – Produce Power				
5 points – retrieve the power connector		0	5	
up to 15 points – install the power connector into the hub				
5 points – remove the cover from the connection port		0	5	
10 points – install the connector		0	10	
up to 25 points – replace a sacrificial anode				
10 points – disconnect the old sacrificial anode		0	10	
15 points – connect the new sacrificial anode		0	15	
up to 15 points – mitigate corrosion				
5 points – conduct a visual inspection of the base structure		0	5	
10 points – apply an underwater epoxy patch to the corroded area		0	10	
2.2 up to 60 points – Monitor Environmental Impact				
up to 10 points – collect polyp stage jellies attached to the solar panel array				
10 points – collect 4 or more polyps		0	5	10
5 points – collect 1 to 3 polyps				
5 points – visually determine medusa jelly is in open water		0	5	
15 points – collect the medusa jelly		0	15	
up to 10 points – collect fish species aggregated underneath the solar panel array				
10 points – collect 4 or more fish species		0	5	10
5 points – collect 1 to 3 fish species				
5 points – remove the hydrophone from the platform		0	5	
10 points – place the hydrophone in the designated area		0	10	
5 points – pull the pin to release the hydrophone from its base		0	5	
Total Task # 2 (out of 120)				Total
Task # 3: MATE Floats! 2025 (up to 70 points)		Points		
3.1 up to 70 points – Design and construct an operational vertical profiling float				
5 points – prior to the competition, building an operational vertical profiling float		0	5	
5 points – float communicates with the mission station prior to descending		0	5	
up to 25 points – vertical profile 1				
up to 10 points – float completes first vertical profile				
10 points – using a buoyancy engine or		0	5	10
5 points – using a different mechanism				
5 points – float communicates data to the mission station		0	5	
10 points – data verifies the float maintains depth of 2.5 meters for 45 seconds		0	10	
up to 25 points – vertical profile 2				
up to 10 points – float completes first vertical profile				
10 points – using a buoyancy engine or		0	5	10
5 points – using a different mechanism				
5 points – float communicates data to the mission station		0	5	
10 points – data verifies the float maintains depth of 2.5 meters for 45 seconds		0	10	
10 points – profile graphed as depth over time		0	10	
NOTE: If a company does not design and construct a float, or the float does not communicate data to the mission station, companies may graph MATE-provided data. Companies may still get points above for completing vertical profiles. The following replaces all communication, maintaining depth at 2.5 meters, and graphing the data points above.				
10 points – MATE-provided data is used to graph depth over time		0	10	
Total Task # 3 (out of 70)				Total

Penalty Points (deduct 5 points for each infraction)	No. of Infractions
Safety: Product demonstration officials may deduct points for safety violations. Minor violations are a 5 point penalty. Major violations may be 10 or more points. Product demonstration officials may also disqualify a company for extreme safety violations. 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.	
Tether Pulling: 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
Illegal communication: 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
Debris: 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. Mission props deployed into the pool ARE NOT considered debris. Unless otherwise noted, mission items to be recovered or replaced ARE considered debris. A company constructed collection basket is considered debris if it is still in the water, not under control of the ROV, when product demonstration time ends.	c
Diver Assistance: 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 diver assistance.	d
Note: Do not include penalty points for touching the shipwreck. Those penalty points should be included into the point total for Task #1.	
Total Penalty Points	(total a + b + c + d) plus safety violations
	X 5 =
	Total

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	Total

TOTAL PRODUCT DEMONSTRATION SCORE	Grand Total
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Official's initials: _____

Company CEO's initials: _____