

Company CEO: _____

Company Name

Product demonstration station officials: _____

Check here if the company presented you with a JSA (Job Safety Analysis)

Safety Check and Set-Up (up to 10 points)	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"> o All power cords, power bars, pressurized cylinders, etc. are secured. o No hazardous materials are leaking onto the pool deck. o Vehicle is hand-launched by team members in a safe manner. 		
Company is cleared for demonstration: _____ (official's initials)		
Total Safety Check and Set-Up (out of 10)		Total
<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>		

Organizational and Operational Effectiveness (up to 10 points)	Points	
Up to 2 points – Organization		
Chain of command evident	0	1
Roles clear and executed well	0	1
Up to 2 points – Task Plan		
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 – Time Management		
Awareness of time	0	1
Adjusting timeline to adapt to situations	0	1
Up to 2 points – Team Cooperation		
Composure under pressure	0	1
Supportive of each other and communicate well with each other	0	1
Up to 2 points – ROV Deployment and Control		
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
Total Organizational and Operational Effectiveness (out of 10)		Total

Bonus points for size and weight	Points	
Size bonus (up to 10 points)		
ROV is less than 60 cm – 10 bonus points	0	5 10
ROV is within 60.1 cm and 75 cm – 5 bonus points		
ROV is within 75.1 cm and 85 cm – 0 bonus points		
		Judge initials: _____
		CEO initials: _____
		Total
Weight bonus (up to 10 points)		
ROV is less than 12 kg – 10 bonus points	0	5 10
ROV is between 12.01 kg and 17 kg – 5 bonus points		
ROV is between 17.01 kg and 25 kg – 0 bonus points		
		Judge initials: _____
		CEO initials: _____
		Total

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 80 points)	Points	
Judges' Notes: Companies must complete the steps of this task in order and cannot skip any steps.		
1.1 10 points – using flight data to determine the search zone for the wreckage	0	10
1.2 5 points – identifying the aircraft using the tail section	0	5
1.3 up to 35 points – removing debris from the engine using a lift bag		
o 10 points – attaching the lift bag to the debris	0	10
o 10 points – inflating the lift bag to raise the debris	0	10
o 5 points – moving the debris from the wreck area	0	5
o 10 points – releasing the lift bag from the debris	0	10
1.4 up to 25 points – 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 5 points – returning the engine to the surface, side of the pool	0	5
Note: Companies dragged to the surface by the engine lift bag will be penalized 5 points		-5
1.5 5 points – returning all lift bags to the surface, side of the pool	0	5
Total Task # 1 (out of 80)		
		Total

Task # 2: Earthquakes (up to 80 points)	Points				
Judges' Notes: Companies must disconnect the OBS cable connector and place it in its holder before releasing the OBS from the anchor.					
The size and weight judges will evaluate the OBS for step 2.1 and complete that section of the score sheet.					
Divers will deploy the company built OBS during the 5-minute setup period.					
2.1 20 points – OBS follows MATE specifications and guidelines	0				20
Reminder: The size and weight judge will score this.					
					Judge initials: _____
2.2 5 points – disconnecting the OBS cable connector from the power and communications hub	0				5
2.3 5 points – placing the cable connector in its holder	0				5
2.4 5 points – closing the door of the power and communications hub	0				5
2.5 up to 40 points – releasing the OBS from the anchor using ...	0	10	20	30	40
o 10 points – a manual release					
o 20 points – a magnetic / reed switch release					
o 30 points – a WiFi or Bluetooth release					
o 40 points – a frequency-selective acoustic release					
2.6 5 points – returning the OBS to the side of the pool	0				5
Total Task # 2 (out of 80)					
					Total

Task # 3: Energy (up to 100 points)	Points		
Judges' Notes: 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.			
3.1 up to 20 points – using tidal data and nautical charts to determine the optimal location for a tidal turbine			
10 points – determining the optimum location	0	10	
10 points – calculating the maximum possible megawatt generation	0	10	
3.2 up to 15 points – installing an array of tidal turbines at the optimum location			
5 points – installing the tidal turbine base on the bottom	0	5	
5 points – installing the array onto the base	0	5	
5 points – latching the array in place	0	5	
3.3 up to 10 points – installing an I-AMP to monitor the area			
5 points – transporting the I-AMP to its stand	0	5	
5 points – locking the I-AMP onto the stand	0	5	
3.4 up to 15 points – placing a mooring a given distance from the base of the turbine			
up to 10 points – measuring the distance from the base	0	10	
o 10 points – distance is within 10 cm			
o 0 points – distance is not within 10 cm			
5 points – placing mooring on the bottom	0	5	
3.5 up to 20 points – suspending an ADV at a given height on the mooring line			
up to 10 points – measuring the given distance from the bottom	0	10	
o 10 points – distance is within 10 cm			
o 0 points – distance is not within 10 cm			
10 points – attaching the velocimeter to the mooring line	0	10	
3.6 up to 20 points - eelgrass habitat monitoring and restoration			
up to 10 points (5 points each) – collecting two samples of eelgrass and returning them to the surface, side of the pool	0	5	10
up to 10 points (5 points each) – transplanting two eelgrass frames to a previously disturbed area	0	5	10
Total Task # 3 (out of 100)			
			Total

Penalty Points (deduct 5 points for each infraction)	No. of Infractions		
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. 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	
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 during diver assistance.		d	
	(total a + b + c + d)		
Total Penalty Points	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

Official's initials: _____

Company CEO's initials: _____