2024: Observing Our Oceans: Understanding Our World and Creating Our Future   PIONEER CLASS SCORE SHEET

Company CEO: _____

Product demonstration station officials: _____

Company Name

Safety

Check here if the company has their PASSED safety inspection card

Companies without their safety inspection PASSED card cannot participate in the product demonstration.

Check here if tamper seal on fuse is still intact

Companies with a broken tamper seal on their fuse must see the safety inspectors before their ROV enters the water.

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

Check here if vehicle (and float) matches photo taken at safety inspection

Companies must use the same vehicle, float, and other devices that went through the safety inspection.

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
	Total	
Total Organizational and Operational Effectiveness (out of 10)		

Bonus points for weight	Points		
Weight bonus (up to 10 points)	0	5	10
ROV is less than 18 kg – 10 bonus points			
ROV is between 18.01 kg and 25 kg – 5 bonus points	**Judge initials:**		
ROV is between 25.01 kg and 35 kg – 0 bonus points		**Total**	
Vehicles heavier than 35 kg may not compete	**CEO initials:**		

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: OOI: Coastal Pioneer Array (up to 50 points)	Points		
1. 1 up to 50 points – Release the multi-function node			
10 points – "trigger" the release of the multi-function node	0		10
5 points – visually determine that the recovery has failed	0		5
10 points – pull a pin to release the failed recovery float to the surface	0		10
5 points – return the failed recovery float to the surface, side of the pool	0		5
20 points – connect a recovery line to the bale on the multi-function node for manual recovery	0		20

	Total
Total Task # 1 (out of 50)	

Task # 2: SMART Cables for Ocean Observing (up to 70 points)	Points		
2.1 up to 70 points – Deploy a SMART Cable			
up to 20 points – deploy SMART cable through three waypoints			
5 point each – deploy SMART cable through two waypoints located on the bottom of the seafloor	0	5	10
10 points – deploy SMART cable through a waypoint located on top of a seamount	0		10
10 points – place the SMART repeater in the designated location	0		10
5 points – return the ends of the cable to the surface, side of the pool	0		5
up to 15 points – measure the temperature to check the SMART cable sensor readings			
15 points – within 1 degree C **5 points** – between 1.01 and 2 degrees C	0	5	15
up to 20 points – connect the AUV docking station to the SMART cable repeater			
5 points – retrieve the power connector from the AUV docking station	0		5
15 points – install the power connector	0		15

	Total
Total Task # 2 (out of 70)	

Task # 3: From the Red Sea to Tennessee (up to 160 points)	Points		
3.1 up to 30 points – Probiotics 2			
10 points – place a probiotic irrigation system in the designated area	0		10
10 points – deploy the probiotic sprinkler on the coral head	0		10
10 points – activate the irrigation system	0		10
3.2 up to 40 points – Coral Restoration			
10 points – transplant branching coral	0		10
up to 30 points – transplant brain coral			
30 points – autonomously **10 points** – manually	0	10	30
3.3 up to 40 points – 3D Coral modelling			
up to 40 points – via photogrammetry, autonomously create a scaled 3D model of the coral restoration area			
20 points – create a 3D model of the coral restoration area	0		20
10 points – measure the length of the coral restoration area (within 5 cm)	0		10
5 points – scale the 3D model using the length of the coral restoration area	0		5
5 points – use the properly scaled 3D model to estimate the height of the coral restoration area (within 5 cm)	0		5

or		
up to 30 points – manually (CAD) create a scaled 3D model of the coral restoration area		
10 points – measure the length of the coral restoration area (within 5 cm)	0	10
10 points – measure the height of the coral restoration area (within 5 cm)	0	10
10 points – create a scaled 3D model of the coral restoration area displaying the length and height measurements	0	10
or		
up to 20 points – manually (paper) create a 3-view technical drawing of the coral restoration area		
5 points – measure the length of the coral restoration area (within 5 cm)	0	5
5 points – measure the height of the coral restoration area (within 5 cm)	0	5
10 points – create a technical drawing on paper of the coral restoration area, including the measured length and height measurments with at least 3 views (top, front, and side)	0	10
3.4 up to 50 points – Determine the location of sturgeon spawning grounds		
10 points – recover an acoustic receiver	0	10
up to 20 points – determine the location of a potential spawning site		
15 points – create a graph of sturgeon locations from the acoustic receiver data	0	15
5 points – determine the potential spawning site	0	5
up to 20 points – characterize the habitat at potential spawning site		
10 points – place an ADCP	0	10
10 points – recover a sediment sample	0	10

	Total
Total Task # 3 (out of 160)	

Task # 4: *MATE Floats! 2024* (up to 70 points)	Points		
4.1 up to 70 points – *MATE Floats!*			
5 points – prior to the competition, building an operational vertical profiling float	0		5
5 points – deploy the float into the designated area	0		5
10 points – float communicates with the mission station prior to descending	0		10
up to 50 points – float completes two vertical profiles			
Vertical Profile #1			
10 points – float completes 1st vertical profile using a buoyancy engine or **5 points** – float completes 1st profile not using a buoyancy engine	0	5	10
5 points – float communicates data to the mission station	0		5
10 points – data is graphed as depth over time	0		10
Vertical Profile #2			
10 points – float completes 2nd vertical profile using a buoyancy engine or **5 points** – float completes 2nd profile not using a buoyancy engine	0	5	10
5 points – float communicates data to the mission station	0		5
10 points – data is graphed as depth over time	0		10
NOTE: If a company does not design and construct a float, or the float does not communicate at all to the mission station, companies may graph MATE-provided data. The following replaces all communication and graphing points above. **10 points** – MATE-provided data is used to graph depth over time	0		10

	Total
Total Task # 4 (out of 70)	

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. Product demonstration props are NOT 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

Total Penalty Points

(total a + b + c + d) plus safety violations	Total
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 = _____

	Total
Time bonus	

TOTAL PRODUCT DEMONSTRATION SCORE

Grand Total

Official's initials: _____   Company CEO's initials: _____