

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.

| Organizational and Operational Effectiveness (up to 10 points)               | Points |   |              |
|------------------------------------------------------------------------------|--------|---|--------------|
| <b>Up to 4 points - Teamwork/Collaboration &amp; Communication</b>           |        |   |              |
| 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 |              |
| <b>Up to 2 points - Project Management</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 - Problem Solving &amp; Ability to Deal with Obstacles</b> |        |   |              |
| Awareness of time                                                            | 0      | 1 |              |
| Adjusting timeline to adapt to situations                                    | 0      | 1 |              |
| <b>Up to 2 points - System Design &amp; Control/Electrical</b>               |        |   |              |
| 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 |              |
| <b>Total Organizational and Operational Effectiveness (out of 10)</b>        |        |   | <b>Total</b> |
|                                                                              |        |   |              |

**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: Seabed 2030: A Kaleidoscope of Corals in Cold Water (up to 50 points) | Points |   |    |
|---------------------------------------------------------------------------------|--------|---|----|
| <b>1.1 up to 20 points – Collect species from a coral garden</b>                |        |   |    |
| 5 points each, 10 points total – collect two basket stars                       | 0      | 5 | 10 |
| up to 10 points – collect a coral species                                       |        |   |    |
| 10 points – collect coral species by the substrate only                         | 0      | 5 | 10 |
| 5 points – collect coral species NOT by the substrate                           |        |   |    |

Task 1 continued on next page

|                                                                                                                                                                                                                                                                                                                                                                                                                          |   |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------|
| <b>1.2 up to 30 points – Coral Garden Ridge Modelling</b><br><b>up to 30 points</b> – manually (CAD) create a scaled 3D model of the coral garden<br><b>10 points</b> – measure the length of the coral garden (within 5 cm)<br><b>10 points</b> – measure the height of the coral garden (within 5 cm)<br><b>10 points</b> – create a scaled 3D model of the coral garden displaying the length and height measurements | 0 | 10           |
|                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 | 10           |
|                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 | 10           |
|                                                                                                                                                                                                                                                                                                                                                                                                                          |   |              |
| <b>or</b>                                                                                                                                                                                                                                                                                                                                                                                                                |   |              |
| <b>up to 20 points</b> – manually (paper) create a 3-view technical drawing of the coral garden<br><b>5 points</b> – measure the length of the coral garden (within 5 cm)<br><b>5 points</b> – measure the height of the coral garden (within 5 cm)<br><b>10 points</b> – create a technical drawing on paper of the coral garden including measured length and height with at least 3 views (top, front, and side)      | 0 | 5            |
|                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 | 5            |
|                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 | 10           |
|                                                                                                                                                                                                                                                                                                                                                                                                                          |   |              |
| <b>Total Task # 1 (out of 50)</b>                                                                                                                                                                                                                                                                                                                                                                                        |   |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                          |   | <b>Total</b> |

| <b>Task # 2: SmartAtlantic (up to 100 points)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Points |    |    |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|--------------|
| <b>2.1 up to 15 points – Mitigate Invasive Species</b><br><b>10 points</b> – determine the number of invasive European Green crabs<br><b>5 points</b> – upload the data to the invasive species form                                                                                                                                                                                                                                                                                                                                                                                                      | 0      | 10 |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  |    |              |
| <b>2.2 up to 25 points – Iceberg Tracking</b><br><b>up to 10 points</b> – survey the iceberg at 5 points around its perimeter<br><b>10 points</b> – survey all five points<br><b>5 points</b> – survey one to four points<br><b>up to 15 points</b> – use the location and heading to determine the threat level of the iceberg to the four area oil platforms<br><b>15 points</b> – correctly report the threat level to all four platforms<br><b>10 points</b> – correctly report the threat level to only three platforms<br><b>5 points</b> – correctly report the threat level to only two platforms | 0      | 5  | 10 |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  | 10 | 15           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |              |
| <b>2.3 up to 15 points – Testing Whale Safe Fishing Gear</b><br><b>5 points</b> – turn handle to simulate acoustic release of the retrieval buoy<br><b>up to 10 points</b> – recover the lobster pot to the surface, side of the pool<br><b>5 points</b> – recover the lobster pot off the bottom<br><b>5 points</b> – return the lobster pot to the surface, side of the pool                                                                                                                                                                                                                            | 0      | 5  |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |              |
| <b>2.4 up to 15 points – Recover the Buoy Anchor</b><br><b>10 points</b> – attach a recovery line to the buoy anchor<br><b>5 points</b> – return the line to the surface, side of the pool                                                                                                                                                                                                                                                                                                                                                                                                                | 0      | 10 |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  |    |              |
| <b>2.5 up to 30 points – Service the Holyrood Subsea Observatory</b><br><b>up to 15 points</b> – recover the old eDNA sensor<br><b>5 points</b> – recover the old sensor to the surface, side of the pool<br><b>10 points</b> – analyze the sensor's data to determine the percent frequency<br><b>up to 15 points</b> – install a new eDNA sensor<br><b>5 points</b> – place the new eDNA sensor in the designated area<br><b>10 points</b> – connect the new eDNA sensor to the Holyrood subsea observatory                                                                                             | 0      | 5  |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 10 |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 5  |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0      | 10 |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |              |
| <b>Total Task # 2 (out of 100)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |    |    |              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    | <b>Total</b> |

| Task # 3: <i>Wind-Powered Offshore Oil Platform</i> (up to 30 points)             | Points |              |
|-----------------------------------------------------------------------------------|--------|--------------|
| <b>3.1 up to 30 points – Powering an Oil Platform From a Wind Farm</b>            |        |              |
| <b>10 points</b> – retrieve the power connector from the wind farm subsea station | 0      | 10           |
| <b>10 points</b> – lay the power connector cable through a waypoint               | 0      | 10           |
| <b>10 points</b> – install the power connector into the oil platform port         | 0      | 10           |
| <b>Total Task # 3 (out of 30)</b>                                                 |        | <b>Total</b> |
|                                                                                   |        |              |

| Task # 4: <i>MATE Floats Under the Ice</i> (up to 60 points)                                    | Points |   |    |    |              |
|-------------------------------------------------------------------------------------------------|--------|---|----|----|--------------|
| <b>3.1 up to 60 points – Design and construct an operational vertical profiling float</b>       |        |   |    |    |              |
| <b>5 points</b> – prior to the competition, design and construct a vertical profiling float     | 0      |   |    |    | 5            |
| <b>5 points</b> – deploy the float in the designated area                                       | 0      |   |    |    | 5            |
| <b>up to 40 points</b> – float completes two vertical profiles                                  |        |   |    |    |              |
| <b>Up to 20 points - Vertical Profile #1</b>                                                    |        |   |    |    |              |
| <b>20 points</b> – using a buoyancy engine, independent of surface control                      |        |   |    |    |              |
| <b>15 points</b> – using a buoyancy engine, operating autonomously, but tethered to the surface |        |   |    |    |              |
| <b>10 points</b> – using a buoyancy engine, operating manually                                  | 0      | 5 | 10 | 15 | 20           |
| <b>15 points</b> – using another mechanism, independent of surface control                      |        |   |    |    |              |
| <b>10 points</b> – using another mechanism, operating autonomously, but tethered to the surface |        |   |    |    |              |
| <b>5 points</b> – using another mechanism, operating manually                                   |        |   |    |    |              |
| <b>Up to 20 points - Vertical Profile #2</b>                                                    |        |   |    |    |              |
| <b>20 points</b> – using a buoyancy engine, independent of surface control                      |        |   |    |    |              |
| <b>15 points</b> – using a buoyancy engine, operating autonomously, but tethered to the surface |        |   |    |    |              |
| <b>10 points</b> – using a buoyancy engine, operating manually                                  | 0      | 5 | 10 | 15 | 20           |
| <b>15 points</b> – using another mechanism, independent of surface control                      |        |   |    |    |              |
| <b>10 points</b> – using another mechanism, operating autonomously, but tethered to the surface |        |   |    |    |              |
| <b>5 points</b> – using another mechanism, operating manually                                   |        |   |    |    |              |
| <b>up to 10 points</b> – MATE provided data is graphed as depth over time                       |        |   |    |    |              |
| <b>10 points</b> – graph is plotted using a computer program                                    | 0      | 5 | 10 |    |              |
| <b>5 points</b> – graph is plotted by hand on paper                                             |        |   |    |    |              |
| <b>Total Task # 4 (out of 60)</b>                                                               |        |   |    |    | <b>Total</b> |
|                                                                                                 |        |   |    |    |              |

| Penalty Points (deduct 5 points for each infraction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No. of Infractions                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Safety:</b> 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. <b>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.</b>                                                                                                      |                                               |
| <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. Mission props deployed into the pool <b>ARE NOT</b> considered debris. Unless otherwise noted, mission items to be recovered or replaced <b>ARE</b> 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                                             |
| <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 diver assistance.                                                                                                                                                                                                                                                                                                                                                                                         | d                                             |
| <b>Note:</b> Do not include penalty points for the float breaching the surface or touching the ice. Those penalty points should be included into the point total for Task #4.                                                                                                                                                                                                                                                                                                                                                                                                |                                               |
| <b>Total Penalty Points</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (total a + b + c + d ) plus safety violations |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | X 5 =                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Total</b>                                  |

| 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 = _____                                          |
| <b>Time bonus</b>                                                                      |
| <b>Total</b>                                                                           |

|                                          |                    |
|------------------------------------------|--------------------|
| <b>TOTAL PRODUCT DEMONSTRATION SCORE</b> | <b>Grand Total</b> |
|                                          |                    |

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

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