

From the Gulf of Mexico to Jupiter's Moon Europa

NAVIGATOR CLASS SCORE SHEET

Company Name

Company CEO: _____

Product demonstration station officials: _____

Safety Check and Set-Up (up to 10 points total)

- ☐ 5 points – Company presents signed safety inspection sheet.
- ☐ 5 points – Vehicle and control system present no safety hazards.

Examples:

- All power cords, power bars, pressurized cylinders, etc. are secured.
- No hazardous materials are leaking onto the pool deck.
- Vehicle is hand-launched by team members in a safe manner.

Company is cleared for demonstration: _____ (official's initials) _____ total points (out of 10)

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.

Organizational and Operational Effectiveness (up to 10 points total)

- | | | |
|---|---|-------|
| • Up to 2 points – Organization | | |
| ○ Chain of command evident | 1 | _____ |
| ○ Roles clear and executed well | 1 | _____ |
| • Up to 2 points – Task Plan | | |
| ○ Task plan is well thought out to maximize score | | |
| ○ Alternate plans available | 1 | _____ |
| ○ All team members are aware of the plan | 1 | _____ |
| • Up to 2 points – Time Management | | |
| ○ Awareness of time | 1 | _____ |
| ○ Adjusting timeline to adapt to situations | 1 | _____ |
| • Up to 2 points – Team Cooperation | | |
| ○ Composure under pressure | 1 | _____ |
| ○ Supportive of each other | 1 | _____ |
| ○ Team communicates well with each other | | |
| • Up to 2 points – ROV Deployment and Control | | |
| ○ ROV deployed | 1 | _____ |
| ○ ROV deployed and under control to perform tasks | 1 | _____ |

Total points (out of 10) _____

Penalty Points

Tether pulling: Issue a warning for the first infraction. Begin deducting points AFTER the first infraction.

Illegal communication: Company members at the side of the pool may not communicate visual evidence of the ROV status (location, need to turn, etc.).

Debris: Companies that leave debris (e.g. parts of their ROV, including weights and flotation) in the pool such that a diver must retrieve the debris will also receive penalty points. Product demonstration props are NOT considered debris. A company constructed collection basket is considered debris.

Diver Assistance: Diver assistance may or may not be available during regional product demonstration time. If available, any diver assistance will result in a 5 point penalty, even after the product demonstration time has ended.

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.

Bonus points for size**Size bonus, up to 10 points – _____**

- ROV is less than 44 cm – 10 bonus points
- ROV is within 44.1 cm and 54 cm – 5 bonus points
- ROV is greater than 54.1 cm – 0 bonus points

Judge initials: _____**CEO initials:** _____**NAVIGATOR Product Demonstration Task Scoring Breakdown:****Task #1: Mission to Europa****Scoring – up to 50 points**

Judges' Notes: Companies MUST complete the steps of Task #1 in order. Companies may alternate between this and the other tasks (2 – 5). If a company cannot complete a step, they can continue on to the later steps, but cannot go back at a later time to complete a missed step

1.1 5 points – retrieving the ESP's cable connector from the elevator _____**1.2 up to 20 points (10 points each)** – laying the cable through two waypoints _____**1.3 5 points** – opening the door on the power and communication hub _____**1.4 20 points** – inserting the cable connector into the port on the hub _____**TOTAL POINTS FOR TASK #1** _____**Task #2: Mission-Critical Equipment Recovery****Scoring – up to 30 points**

Judges' Notes: Companies may alternate between this and the other tasks. The proper serial numbers must be identified before the CubeSat can be placed in the collection basket.

2.1 up to 15 points (5 points each) – finding and identifying the serial numbers of the three mission-critical CubeSats _____**2.2 up to 15 points (5 points each)** – recovering the CubeSats and placing them in the collection basket _____**TOTAL POINTS FOR TASK #2** _____

Task #3: Forensic Fingerprinting**Scoring – up to 40 points**

Judges' Notes: Companies may complete the steps of Task #3 in any order and may alternate between this and the other tasks.

3.1 up to 10 points (5 points each) – collecting one sample from two oil mats _____

3.2 up to 10 points (5 points each) – returning the samples to the surface _____

3.3 up to 20 points (10 points each) – analyzing gas chromatographs to determine the samples' origin _____

TOTAL POINTS FOR TASK #3 _____

Task #4: Deepwater Coral Study**Scoring – up to 30 points**

Judges' Notes: Companies may complete the steps of Task #4 in any order and may alternate between this and the other tasks.

4.1 up to 15 points (5 points each) – collecting three corals from the seafloor _____

4.2 up to 15 points (5 points each) – returning three coral samples to the surface _____

TOTAL POINTS FOR TASK #4 _____

Task #5: Rigs to Reefs**Scoring – up to 50 points**

Judges' Notes: Companies MUST complete the steps of Task #5 in order. Companies may alternate between this and the other tasks. Companies that cannot complete one of the steps cannot continue with the remaining steps of Task #5.

5.1 10 points – installing a flange on the top of the wellhead _____

5.2 10 points – securing the flange with a bolt _____

5.3 10 points – installing a wellhead cap over the flange _____

5.4 20 points (10 points each) – securing the cap with two bolts _____

TOTAL POINTS FOR TASK #5 _____

Please use the scoring summary worksheet below to verify and tally scores.

SCORING SUMMARY WORKSHEET

SAFETY CHECK & SET-UP			
Signed safety inspection sheet	0	5	
Vehicle and control system present no hazards	0	5	
ORGANIZATION	0	1	2 3 4 5
Company is effectively organized to undertake the product demonstration	6	7	8 9 10
Safety check, set-up, and organization point total:			
SIZE Bonus			
Size bonus	0	5	10
Task #1: Mission to Europa (up to 50 points)			
Retrieving the ESP's cable connector from the elevator	0	5	
Laying the cable through two waypoints	0	10	20
Opening the door of the power and communications hub	0	5	
Inserting the cable connector into the port	0	20	
Task #1 point total:			
Task #2: Mission Critical Equipment Recovery (up to 30 points)			
Finding and identifying the serial numbers of the three critical CubeSats	0	5	10 15
Recovering the CubeSats and placing them in the collection basket	0	5	10 15
Task #2 point total:			
Task #3: Forensic Fingerprinting (up to 40 points)			
Collecting one sample of two oil mats on the seafloor	0	5	10
Returning the samples to the surface	0	5	10
Analyzing gas chromatographs to determine the samples' origin	0	10	20
Task #3 point total:			
Task #4: Deepwater Coral Study (up to 30 points)			
Collecting three coral samples from the seafloor	0	5	10 15
Returning three coral samples to the surface	0	5	10 15
Task #4 point total:			
Task #5: Rigs to Reefs (up to 50 points)			
Installing a flange on top of the wellhead	0	10	
Securing the flange with a bolt	0	10	
Installing a wellhead cap on top of the flange	0	10	
Securing the cap to the flange with 2 bolts	0	10	20
Task #5 point total:			
PENALTY POINT DEDUCTIONS			
Illegally pulling tether _____ infractions X - 5			
Illegal communication _____ infractions X - 5			
Leaving debris in the pool _____ infractions X - 5			
Diver assistance _____ - 5			
Exceeded 5-minute demobilization period _____ minutes X - 1 =			
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 PRODUCT DEMONSTRATION SCORE			

Official's initials: _____

Company CEO's initials: _____