

Company CEO: \_\_\_\_\_

Company Name

Product demonstration station officials: \_\_\_\_\_

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

<b>Safety Check and Set-Up (up to 10 points)</b>	Points	
Company presents signed safety inspection sheet.	0	5
Vehicle and control system present no safety hazards.	0	5
Examples: <ul style="list-style-type: none"> <li>o All power cords, power bars, pressurized cylinders, etc. are secured.</li> <li>o No hazardous materials are leaking onto the pool deck.</li> <li>o Vehicle is hand-launched by team members in a safe manner.</li> </ul>		
Company is cleared for demonstration: _____ (official's initials)		
<b>Total Safety Check and Set-Up (out of 10)</b>		<b>Total</b>
<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>		

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

<b>Bonus points for size and weight</b>	Points	
<b>Size bonus (up to 20 points)</b>	0    5    10    20	
ROV is less than 58 cm – 20 bonus points		
ROV is within 58.1 cm and 64 cm – 10 bonus points		
ROV is within 64.1 cm and 70 cm – 5 bonus points		
ROV is within 70.1 cm and 85 cm – 0 bonus points		
	<b>Judge initials:</b> _____	<b>Total</b>
	<b>CEO initials:</b> _____	
<b>Weight bonus (up to 20 points)</b>	0    5    10    20	
ROV is less than 17 kg – 20 bonus points		
ROV is between 17.01 kg and 19 kg – 10 bonus points		
ROV is between 19.01 kg and 22 kg – 5 bonus points		
ROV is between 22.01 kg and 25 kg – 0 bonus points		
	<b>Judge initials:</b> _____	<b>Total</b>
	<b>CEO initials:</b> _____	

**Penalty Points:**

**Tether Pulling:** Teams cannot pull on the tether to assist in moving or turning the vehicle. 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 such as 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 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.

**Diver assistance:** Diver assistance will be available at the international competition, but must be requested by the company. Diver assistance will result in a 5 point penalty per assist.

**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.

<b>Task # 1: Commerce: Hyperloop Construction (up to 60 points)</b>	Points			
<b>Judges' Notes:</b> Companies must complete the steps of this task in order and cannot skip any steps.				
<b>1.1 up to 10 points (5 points each)</b> – inserting two rebar rods into position in the steel baseplate	0	5	10	
<b>1.2 20 points</b> – installing the frame onto the baseplate	0		20	
<b>1.3 5 points</b> – removing a pin to release the chains holding the frame	0		5	
<b>1.4 10 points</b> – transporting and positioning the hose for pouring concrete into the frame	0		10	
<b>1.5 up to 15 points (5 points each)</b> – retrieving the three positioning beacons and returning them to the surface	0	5	10	15
<b>Total Task # 1 (out of 60)</b>				<b>Total</b>

<b>Task # 2: Entertainment: Light and Water Show Maintenance (up to 60 points)</b>	Points			
<b>Judges' Notes:</b> Disconnecting power and stopping the flow of water tasks must be done before disengaging the locking mechanism and removing /installing the fountain. Reconnecting the power and restoring the flow of water must be done after installing the new fountain and re-engaging the locking mechanism. The old fountain can be returned to the surface at any time after removing it from the platform.				
<b>2.1 5 points</b> – disconnecting the power cable from the platform	0		5	
<b>2.2 10 points</b> – turning the valve to stop the flow of water to the platform	0		10	
<b>2.3 5 points</b> – disengaging the locking mechanism at the base of the fountain	0		5	
<b>2.4 5 points</b> – removing the old fountain	0		5	
<b>2.5 5 points</b> – installing the new fountain	0		5	
<b>2.6 5 points</b> – re-engaging the locking mechanism at the base of the fountain	0		5	
<b>2.7 10 points</b> – turning the valve to restore the flow of water to the platform	0		10	
<b>2.8 10 points</b> – reconnecting the power cable to the platform	0		10	
<b>2.9 5 points</b> – returning the old fountain to the surface, side of the pool	0		5	
<b>Total Task # 2 (out of 60)</b>				<b>Total</b>

Task # 3: Health: Environmental Cleanup (up to 60 points)	Points		
<b>Judges' Notes:</b> Companies must determine which area is contaminated before collecting samples or capping the contaminated area.			
<b>3.1 5 points</b> – using a simulated Raman spectrograph to determine if contaminants are present in two sediment samples	0	5	
<b>3.2 up to 10 points (5 points each)</b> – returning two clam samples to the surface	0	5	10
<b>3.3 up to 30 points</b> – collecting and returning a sediment sample to the surface	0	10	30
<ul style="list-style-type: none"> <li>o <b>30 points</b> – 150 ml or more of agar</li> <li>o <b>10 points</b> – between 10 ml and 149.9 ml of agar</li> <li>o <b>0 points</b> – less than 9.9 ml of agar</li> </ul>			
<b>3.4 15 points</b> – placing a cap over the contaminated area	0	15	
<b>Total Task # 3 (out of 60)</b>			<b>Total</b>

Task # 4: Safety: Risk Mitigation (up to 80 points)	Points				
<b>Judges' Notes:</b> Companies may complete the steps of Task #4 in any order.					
<b>4.1 5 points</b> – locating the four cargo containers	0	5			
<b>4.2 up to 40 points</b> - determining the contents and risk-level of each container					
<ul style="list-style-type: none"> <li>a. <b>up to 20 points (5 points each)</b> – activating each container's RFID by shining a light into the port and activating the bluetooth</li> </ul>	0	5	10	15	20
<ul style="list-style-type: none"> <li>b. <b>up to 20 points (5 points each)</b> – obtaining RFID via Bluetooth. Using the container ID number to determine the contents and if the contents are high risk</li> </ul>	0	5	10	15	20
<b>4.3 10 points</b> – attaching a buoy marker to the highest risk cargo container	0	10			
<b>4.4 up to 15 points (5 points each)</b> – determining the direction and distance from the highest risk cargo container to the other three cargo containers	0	5	10	15	
<b>4.5 10 points</b> – using the distance and direction to make a survey map	0	10			
<b>Total Task # 4 (out of 80)</b>					<b>Total</b>

Penalty Points (deduct 5 points for each infraction)	No. of Infractions		
<b>Illegal Tether pulling:</b> Issue a warning for the first infraction. 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 (location, need to turn, etc.).	b		
<b>Debris:</b> 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.	c		
<b>Diver Assistance:</b> Diver assistance may or may not be available during regional product demonstration time. Any diver assistance will result in a 5 point penalty. At the international competition diver assistance will be available, and will result in a 5 point penalty.	d		
<b>Total Penatly Points</b>	(total a + b + c + d)	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 = \_\_\_\_\_

**Time bonus**

<b>Total</b>

<b>Grand Total</b>

**TOTAL PRODUCT DEMONSTRATION SCORE**

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

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