Jet City: Aircraft, Earthquakes and Energy

Company CEO: Product demonstration station officials:	Company Name		ne
Floudet demonstration station officials.			
Check here if the company presented you with a JSA (Job S	Safety Analysis	;)	
Safety Check and Set-Up (up to 10 points)	Points		7
			1
Company presents safety card or signed safety inspection sheet.	0	5	7
Vehicle and control system present no safety hazards.	0	5	1
Examples: 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) Note: An official's decision to disqualify a company due to safety concerns is final. If there is a	safatu sansarn nlagsa	contact the	Total
lead safety inspector or competition coordinator.	sujety concern, pieuse	contact the	
read sujety inspector or competition coordinator.			_
Organizational and Operational Effectiveness (up to 10 points)	Points		٦
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	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	1 ,		
ROV is under control of pilot and prepared to perform tasks	0	1	1
Total Organizational and Operational Effectiveness (out of 10)			Total
Popus points for size and weight	Points		٦
Bonus points for size and weight	Points		-
Size bonus (up to 10 points)	0 5	10	-
ROV is less than 64 cm – 10 bonus points	U 3	10	-
ROV is within 64.1 cm and 75 cm – 5 bonus points	Judge initials:		
ROV is within 75.1 cm and 92 cm – 0 bonus points			Total
Vehicles larger than 92 cm may not compete	CEO initials:		-
Weight bonus (up to 10 points)	0 5	10	
ROV is less than 17 kg – 10 bonus points			1
ROV is between 17.01 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:		

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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 100 points)	Points					
Judges' Notes: Companies must complete the steps of this task in order and cannot skip any steps. Companies that cannot accurately complete step 1.1 only get 1/2 points for the remainder of the Aircraft tasks.						
1.1 10 points – using flight data to determine the search zone for the wreckage		0		10		
1. 2 20 points – identifying the aircraft using the tail section		0		20		
1.3 up to 45 points – removing debris from the engine using a lift bag						
 5 points – attaching the lift bag to the debris 5 points – inflating the lift bag to raise the debris 5 points – moving the debris from the wreck area up to 30 points – releasing the lift bag from the debris 5 points – a manual release 10 points – a magnetic / reed switch release 20 points – a WiFi or Bluetooth release 30 points – a frequency-selective acoustic release 	0	0 0 0 5	10	5 5 5 20	30	
o 10 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 and inflating o 10 points – returning the engine to the surface, side of the pool		0	-5	10 10		
Note: Companies dragged to the surface by the engine lift bag will be penalized 5 points						Total
1.5 5 points – returning all lift bags to the surface, side of the pool Total Task # 1 (out of 100)		0		5		iotai

Task # 2: Earthquakes (up to 80 points)	Points			1
Judges' Notes: Companies must power the OBS before attempting to level it. Companies unable to power the OBS MAY NOT come back at a later time to complete this step is other steps of Task 2 have been completed.				
Companies must level the OBS before seismograph data is displayed. Companies unable to level the OBS WILL NOT receive seismograph data.				
2.1 up to 25 points – powering the seismometer via inductive coupling]
5 points – inserting the power connector into the port on the OBS	0		5	
20 points – lighting the power indicator LED	0		20	
2.2 up to 25 points – leveling the OBS using data transmitted by the following:	0	5	25	
 25 points – WiFi data transmitted by the OBS 				
o 5 points – the bubble level				
2.3 up to 30 points – receiving and accurately displaying seismograph data transmitted by the				1
OBS via WiFi				
10 points – receiving seismograph data via WiFi	0		10	
10 points – displaying the seismograph on a video monitor	0		10	
10 points – seismograph display is accurate	0		10	
				<u> </u>
Total Task # 2 (out of 80)				

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Task # 3: Energy (up to 80 points)		Points	
Judges' Notes: Companies must first use the tidal data to determine the optimum location for the	2		
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 – c alculating 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	
			Total
Total Task # 3 (out of 90)			
Total Task # 3 (out of 80)			

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.		
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
Total Penalty Points	(total a + b + c + d) X 5 =	Total

EXPLORER CLASS SCORE SHEET

TIME BONUS (1 point for ever	y minute and 0.01 point for every second unde	r 15 minutes)	
Duration of Product Demonstrati	on:		
Minutes under 15 remaining:	X 1 point =		Total
Seconds remaining:	X 0.01 point =		
Time bonus			
			Grand Total
TOTAL PROI	OUCT DEMONSTRATION SCORE		