2016 MATE ROV Competition Product Presentation Rubric

Class (circle one): NAVIGATOR SCOUT Judge:_____ Team#:_____ School Name and #:_____

Category	Scoring Criteria				Points
Safety Inspection	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Warning labels and safeguards on potentially hazardous parts, other vehicle specific safety precautions, passed safety inspection	Clearly marked warning labels, safeguards clearly in place, fuses in place, thoroughly described other safety precautions, passed safety inspection	Warning labels, safeguards in place, not as well marked as could be, fuses in place, mentioned safety precautions, passed safety inspection	Some warning labels, safeguards in place, fuses in place, no mention of safety precautions, did not pass safety inspection	No warning labels, did not pass safety inspection	

Comments:

Team Presentation					
Category	**Scoring Criteria**				**Points**
Teamwork	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Preparation of presentation and required documentation	Strong whole team effort, exceptionally prepared, documentation very strong	Clearly prepared, organized, articulate, contribution from all members, documents in order	Prepared, fairly organized, partial team effort, good documentation	Underprepared, unorganized, lack of whole team effort, poor or missing documentation	
Originality/Salesmanship					
Style of presentation, effective salesmanship and tied to theme/mission	Dynamic presentation, team went beyond expectations, tied presentation well into theme	Good presentation, satisfied expectations, make links to theme	Lackluster presentation, below expectations, vague mention of theme	Poor presentation, lacked any salesmanship or connection to theme	
Insight/Creativity					
Innovations, challenges faced, lessons learned, determination to resolve challenges	Innovative/creative solutions presented to well described challenges and lessons learned, tenacity quite evident	Interesting solutions, not necessarily novel, described challenges faced, demonstrated tenacity	Solutions demonstrated for challenges faced, but not particularly creative, did not demonstrate tenacity	Did not face challenges well, did not understand challenges or solutions well enough to describe	
Understanding					
Demonstration of ROV systems, science, operation and mission theme	Strong understanding of ROV systems, provided much detail of underlying science, and application to theme	Good understanding of ROV systems, provided some detail of underlying science, and application to theme	Some understanding of ROV systems, underlying science, and application to theme	Little understanding of ROV systems, underlying science, and application to theme	
Corporate Team Memory					
Team	Described how team evolved in people and roles to meet challenges	Describes influences from past or new team members	Little corporate memory, people, roles	This is not a cohesive team	

Budget/Acknowledgements					
How was budget developed and acknowledges all levels of support	Description of budget, acknowledgement of donations, excellent use of funds	Some issues with budget description, acknowledgement of donations, good use of funds	Loose description of budget, mediocre use of funds	Poor description, poor use of funds, no acknowledgement of donations	

Comments:

Category	Scoring Criteria				Points
Design/Workmanship	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Strengths of the overall design, aesthetically pleasing, and application to mission	Excellent overall design, well-conceived, elegant design, robust design, aesthetically pleasing in addition to excellent functionality; clearly understands the mission and reflected it in vehicle design	Very good overall design, nice features to make the vehicle aesthetically pleasing as well as functional and durable; somewhat understands the mission and reflected it in vehicle design	Good overall design, functional, but some better design choices could have been made, as well as a bit more effort to make the vehicle aesthetically pleasing as well as functional and durable; vehicle design does not strongly correlate to the mission	Poor overall design, many better decisions could have been made, very clunky, aesthetically unpleasing design; no attention to mission requirements with respect to design	
Conception, design, build and troubleshooting	Team clearly described how the company brainstormed ideas, their design and troubleshooting process, and why their solution is mission specific	Team provided some description of the thought process, design and troubleshooting, but not fully clear, no strong attention to mission specific choices	Team provided vague description of thought process, design, and troubleshooting process	No detail provided, skeptical of whole team effort or potential over involvement of an adult	

Comments:

System Design and Vehicle Inspection					
Category	**Scoring Criteria**				**Points**
Engineering design rationale	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Description of how design or component selection allowed the vehicle to complete the missions	Excellent description in a clear, logical manner of how vehicle was built to perform specific tasks	Good description of how vehicle was built to perform specific tasks, could have been more organized and detailed in descriptions of decision-making	Fair description of how vehicle was built to task, descriptions needed more detail or made weak design choices or materials choices, better organization needed	Poor description or understanding of vehicle design	

New vs. used, original vs. commercial	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Original vs. commercial components explanation, especially those which are mission specific	The majority of the components were designed and built by the team and for the commercial components used, team provided a reasonable/believable/logical make v buy explanation	Many of the components were designed and built by the team and for the commercial components used the team provided an acceptable make v buy rationale	A few of the components were designed and built by the team and for the commercial components used the team provided a weak make v buy rationale provided	None of the components were designed by the team and no make v buy rationale was provided	
New vs. re-used and decisions for use of components	The majority of components are new this year and for those that were reused, the team provided an excellent and reasonable/logical new v. reused rationale	Some components are new this year and for those that were reused, the team provided a good new v. reused rationale	A few components are new this year and the team was unable to provide a new v. reused rationale	Same vehicle as last year, it was clear that no one on the team or only one team member understood any decisions	
Control System	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Control scheme	Well-conceived, well organized, designed logically, efficient, able to describe system, has unique features	Organized, designed logically, efficient, able to describe, nothing novel or unique	Organized, but inefficient and/or other design flaws	Poorly conceived, inefficient	
Buoyancy and Ballast	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Description of system and rationale	Accurately describes how the system works and application and importance to mission, full demonstration of knowledge of selection and use of system	Provides a description of the system and importance to vehicle, demonstration of knowledge of selection and use of system	Provides a description of the system, demonstration of knowledge of system	Cannot provide a substantive description of the system, cannot provide a substantive demonstration of knowledge of the system	
Propulsion	**Total = 2 points**				
Thruster location and rationale	Thrusters securely attached	Yes (1 point)	No (0 points)		
	Do not obstruct water flow	Yes (1 point)	No (0 points)		
Tether	**Total = 3 points**				
Tether management system	Tether is securely attached	Yes (1 point)	No (0 points)		
	Tether is neatly bundled	Yes (1 point)	No (0 points)		
	Tether management protocol developed	Yes (1 point)	No (0 points)		
Payload Tools	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**0 – Poor or missing**	
Payload tools used and apply to mission	Payload tools are original, designed, built by team or unique modifications and very useful to mission	Some payload tools are original And useful to mission	COTS tools used and do not strongly correlate to mission, no modifications to mission	No payload tools	
				Score Sub-Total (50 points max)	

Discretionary Points (9 points max)				
Originality	**3 - Excellent**	**2 - Very Good**	**1 - Good**	**Points**
Vehicle and/or systems exhibit unique concepts or innovations	Exceptional innovation demonstrated in vehicle design, tools, or other feature	Very clever innovation in vehicle design, tools or other feature	Interesting innovation in vehicle design, tools or other feature	
Vehicle design and manufacture	Team demonstrated remarkable effort to design and manufacture every component of the vehicle	Team demonstrated effort to design and manufacture every component, not all components durable	Team demonstrated effort to design and manufacture all vehicle components however experienced component failure	
Other – please provide written comments/explanation in the appropriate cell to the right				
Deductions (-15 points max)				
Deductions	**- 5 Extreme**	**- 3 Moderate**	**- 1 Minor**	
Commercial assistance	Vehicle was designed/created by a commercial company and lack of any justification	Some assistance was provided by a commercial company and some justification	Minor assistance was provided by a commercial company and with justification	
Interference	Significant interference by coaches, mentors, parents providing assistance during presentation (with exception of language barriers)	Some interference by coaches, mentors, parents providing assistance during presentation (with exception of language barriers)	Minor prompting by coaches, mentors, parents providing assistance during presentation (exception of language barriers)	
Overuse of components	Significant overuse of commercial components without adequate justification and/or overuse of re-used components without adequate justification	Overuse of commercial components without adequate justification and/or overuse of re-used components without adequate justification	Some use of commercial components without adequate justification and/or overuse of re-used components without adequate justification	
			TOTAL PRODUCT PRESENTATION SCORE	

Sample Questions:

What was your company's "work breakdown structure" (tasks, time, and people)?
What were the greatest constraints (schedule, budget, equipment, labor, logistics, etc.) on your design process?
What were the most important design decisions you made and why?
Did you have a noteworthy troubleshooting experience?