2018 MATE ROV COMPETITION ENGINEERING PRESENTATION SCORE SHEET - RANGER AND EXPLORER

Judge Name (First Last):

Competition Class:

Team #:

COMPANY/SCHOOL NAME: N/A

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible by category	Raw %	Weight	Category Score	Comments
Safety				0	20	0%	10%	0.00	
	Content								
		Presentation highlighted safety features and philosophy		0					
	Safety procedures								
		Described safety protocols and procedures for dealing with safety issues		0					
		Described the development and use of a safety checklist		0					
	Safety measures								
		Noted warning labels and safeguards on potentially hazardous parts		0					
		Described other vehicle-specific safety precautions		0					
Team Presentation				0	60	0%	25%	0.00	
	Preparation								
		All team members participated in the presentation		0					
		Team was well prepared for the presentation		0					
	Delivery								
		Presentation was dynamic, clear, and informative		0					
		"Sold" judges on purchasing the product		0					
	Insight/Creativity								
		Clearly described technical challenges and innovative, thoughtful solutions during design and implementation		0					
		Clearly described organizational challenges and innovative, thoughtful solutions during design and implementation		0					
	Understanding								
		Demonstrated an understanding of their ROV system design, specifications, and functions		0					
		Described key technical specifications of major components (COTS or built)		0					
	Resources/Budget								
		Described process for developing and adhering to budget		0					
		Acknowledgement of donors of funds, materials, equipment		0					
		Described sound and informed choices about where to invest time and resources		0					

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible	Raw %	Weight	Category Score	Comments
	Teamwork								
		Described skills gained to improve capabilities and meet challenges		0					
		Demonstrated project was a team effort with clear roles and influence of each team member		0					
		Team seems cohesive, inclusive, and supportive		0					
		Team demonstrates self-teaching/mentoring among team members		0					
Theme/Tasks				0	16	0%	10%	0.00	
	Content								
		Presentation clearly linked to the theme and mission tasks		0					
		Described the real world mission behind the tasks		0					
	Understanding								
		Demonstrated detailed understanding of the science/industry mission		0					
		Demonstrated an understanding of how their ROV's systems, specifications, and functions were designed to perform to the mission tasks		0					
Overall Design/Workmanship				0	20	0%	10%	0.00	
	Content								
		Overall design is team's own, well-conceived, and implemented (both functionally and aesthetically)		0					
		Implementation is robust and shows skillful execution		0					
		Design is modular and serviceable, i.e. readily field repairable		0					
		Demonstrates thought to marketability/usability by others		0					
		Discussed the extent to which the vehicle was tested prior to the event		0					
Build vs. Buy, New vs. Used				0	16	0%	20%	0.00	
	Justification								
		Provided justifications for build vs. buy decisions		0					
		Provided justifications for new vs. re-used decisions		0					
	Understanding								
		Demonstrated comprehension of engineering principles of both their built and bought components		0					
		Demonstrated comprehension of engineering principles of both their new and re-used components		0					

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible	Raw %	Weight	Category Score	Comments
System Design				0	124	0%	25%	0.00	
	Engineering Design Rationale								
		Overall vehicle design presented in clear and logical manner		0					
		Demonstrates step-by-step planning and design process		0					
		Functional design decisions discussed and sensible		0					
		Individual design choices demonstrate thoughtful and balanced trade-offs		0					
	Originality								
		Team made innovations or modifications resulting in higher functionality at reduced costs		0					
		Innovation demonstrated in vehicle design, tools, or other features		0					
	Describes problem solving process								
		Thoroughly describes how the company brainstormed ideas		0					
		Evaluated ideas against competing alternatives		0					
		Used rational process (data, trade study) to evaluate alternatives		0					
	Systems approach								
		Team demonstrates a balanced systems approach to the design: e.g. good integration between vehicle and sensors, wholistic approach to vehicle systems		0					
		System reflects significant and thoughtful design, i.e., is not simply an integration of mostly purchased parts		0					
	Material and component decisions								
		Discussed process and factors for making material, component, and other choices		0					
		Provided sound reasoning for their choices		0					
	Vehicle structure								
		Described trade-offs and rationale for vehicle cost, size, and weight		0					
	Vehicle systems								
		Described logically and clearly how components and materials were selected to perform specific tasks in a cost effective way		0					
		Described how the design evolved to meet the competition requirements		0					

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible	Raw %	Weight	Category Score	Comments
	Control/Electrical system								
		Control scheme as designed by the team is sensible, efficient, and logical		0					
		Provides good description of control system design (to include code, if applicable)		0					
		Provides good description of electronic design and cabling		0					
		Demonstrates complete understanding of control system functions and features (electrical and code, if applicable)		0					
		All team members understand control system design		0					
		Demonstrated understanding of tether design and requirements		0					
		Developed and presented a tether management protocol		0					
	Propulsion								
		Sensible rationale provided for number, type, and placement of thrusters		0					
		Made reasonable trade-offs to balance power consumption, cost, performance and mission requirements		0					
	Buoyancy and Ballast								
		Demonstrated understanding of buoyancy and ballasting principles		0					
		Sensible rationale for the type of buoyancy used		0					
	Payload and Tools								
		Sensible rationale provided for number, type, and placement of cameras		0					
		Payload tool designs meet functional and mission requirements		0					
		Sensors used are appropriate for vehicle operation and tasks		0					
		Demonstrated a complete understanding of theory and design of sensors/instrumentation		0					
				0	**256**	**100%**		**0.00**	**Base Score**
				Raw Score	Max Points (cat)	Total % (check:100)			

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible	Raw %	Weight	Category Score	Comments
							Weight		
Discretionary Points			**0-4 pts each**	0	12		1	0	Discretionary points
		Exceptional design and innovation demonstrated in vehicle design, tools, or other feature		0					
		Team developed exceptional original software or made exceptional adaptation of software to create a unique solution		0					
		Team demonstrated remarkable effort to design and manufacture every component of the vehicle		0					
Deductions			**0-4 pts each**	0	12		1	0	Deduction points
		Significant interference by coaches, mentors, parents providing assistance during presentation and/or design process (with exception of language barriers)		0					
		Significant overuse of commercial components without adequate justification		0					
		Significant overuse of re-used components without adequate justification		0					
								0	Final Score

Other Comments

Scoring Rubric (applies to all score Items)	Outcome	Criteria	Score
	Missing	Not included, can't evaluate	**0**
	Needs work	Effort made, meets some key requirements. Understanding or treatment of key requirements needs more depth. Judges had to question deeply to find answers.	**1**
	Partially meets requirement	Response demonstrates understanding and addresses most key requirements. Simple prodding from judges encouraged team to answer.	**2**
	Meets requirement	Response demonstrates thorough understanding and addresses all key requirements. Team addressed topic without prompting.	**3**
	Exceeds requirement	Response extends beyond key requirements, demonstrating exceptional depth and breadth of understanding	**4**

Discretionary Points Rubric	Degree	Points
Criteria: **- Novelty** **- Depth of Understanding** **- Depth of Analysis** **- Effectiveness (functions as intended)** **- Quality of Implementation**	**None**	**0**
	Minor	**1**
	Fair	**2**
	Good	**3**
	Extraordinary	**4**

Deductions Rubric	Degree	Deduction
Criteria: **- Extent to which team relied on outside help, existing work and/or purchased components and services**	**None**	**0**
	Minor	**1**
	Fair	**2**
	Medium	**3**
	Extreme	**4**