## 2020 MATE ROV COMPETITION TECHNICAL DOCUMENTATION SCORE SHEET - RANGER AND EXPLORER

Judge Name (First Last): Competition Class:

Company #:

See Instruction Tab
See Instruction Tab

COMPANY/SCHOOL NAME: N/A

Final Score Safety Score

MATE ROV

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible by category	Raw %	Weight	Category Score	Comments
Overall Report				0	44	0%	15%	0.00	
•	Document specifications								
	All 4 requirements met = 4 points 3 requirements met = 3 points 2 requirements met = 2 points 1 requirement met = 1 point	Document met the following requirements: length no more than 25 pages, inclusive of SID, safety checklist, and all appendices. Font size of at least 12 points, table of contents included, all measurements are in SI units (except things traditionally specified in other units, e.g. PVC diameter)  Note: Linked or attached documents will not be judged as part of the technical report score.		0					
	Use same scale as above	Title page met the following content requirements: company name, organization/school name and location (city, state, country), team members and their roles, and mentor name(s)  Abstract provided clear, concise summary of work in 250 words or less		0					
	Use of images and data			_				•	
		Photo(s) of vehicle was included Effective use of images, diagrams, and data to communicate the design and thought process Photos accompanied by appropriate captions Diagrams and drawings used sensible labeling of signals, dimensions and components		0 0 0 0					
	Document Design	Components		_					
	Document Design	Thorough attention to grammar and spelling Document was thoughtfully prepared, with thorough attention paid to messaging strategy and aesthetic presentation		0 0					
	Acknowledgements and References			_				•	
		Document provided a properly documented list of references - books, journals, web sites, etc. used as sources; documented contributions of companies, individuals who contributed funds, equipment, and/or technical/moral support		0					
-		Document provided adequate acknowledgement of contributions of companies and individuals that contributed funds, equipment, and/or other support to the team		0	40	00/	400/	0.00	
Teamwork	Project Management				12	0%	10%		
	Project management	Included a description of the company (overview or company profile) and personnel (individual members and their roles and responsibilities)  Developed a schedule to aid in building the vehicle  Described how resources, procedures, and protocols were managed to meet mission objectives and solve day to day operational problems		0 0 0					
Design Rationale	This section should include a detaile	d description of the vehicle, tools, and other subsystems		0	92	0%	40%	0.00	
	Engineering Design Rationale	Overall vehicle design presented in clear and logical manner Demonstrated step-by-step planning and design process Design decisions discussed and demonstrate thoughtful and balanced trade- offs		0 0 0					
		Company made innovations or modifications resulting in higher functionality at reduced costs Innovation demonstrated in vehicle design, tools, or other features		0					
	Problem Solving								

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Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible by category	Raw %	Weight	Category Score	Comments
		Described how the company brainstormed ideas		0					
		Used rational process (data, trade study) to evaluate alternatives		0					
	Systems approach								
		Company demonstrated a balanced systems approach to the design: e.g. good integration between vehicle and sensors, holistic approach to vehicle systems		0					
	Vehicle structure			_					
	venicle structure	Described trade-offs and rationale for vehicle cost, size, and weight		0					
	Vehicle systems	Dood live and and rationals for terms of the second ones, and tronging							
		Described logically and clearly how components and materials were selected to perform specific tasks in a cost effective way		0					
	a	Described how the design evolved to meet the mission specifications		0					
	Control/Electrical system	Described the vahiole's electronic design and publing		0					
		Described the vehicle's electronic design and cabling  Described the control system design (to include code, if applicable)		0					
		Demonstrated understanding of tether design and requirements		0					
		Developed and described a tether management protocol		Ö					
	Propulsion								
		Explained rationale for number, type, and placement of thrusters		0					
		Described trade-offs to balance power consumption, cost, performance and mission requirements		0					
	Buoyancy and Ballast								
		Description of buoyancy system that demonstrates application of buoyancy principles		0					
	Payload and Tools			٥					
		Explained rationale for number, type, and placement of cameras  Payload tools were designed to meet mission requirements  Sensors were designed or selected to meet mission requirements		0 0 0					
	Build vs. buy, new vs. used	ochsors were designed or selected to meet mission requirements							
	Dana vo. bay, now vo. acca	Explained build (in-house) vs. buy (outsource) decisions and how they related to mission requirements		0					
		Explained new vs. re-used/inherited decisions and how reused components meet requirements for this year		0					
SID					1	0%	5%		
	System Integration Diagrams								
	Max 1 point	SID was included with the report Note: Pre-competition safety inspectors will review and score in greater detail		0					
Safety				0	12	0%	10%	0.00	
	Content								
		Described the safety rationale, including how it covers personnel, equipment, and operational safety		0					
		Highlighted safety features and other vehicle-specific safety precautions related to tasks		0					
	Safety procedures								
<b>A</b>		Document included a checklist for construction and operation		0	40	001	4001	0.00	
Critical Analysis	Teeting and Troubleshooting				12	0%	10%		
	Testing and Troubleshooting	Described vehicle testing methodology		0					
		Described troubleshooting strategies and techniques used		0					
		Described use of prototyping and testing to evaluate design options		0					
		1 71 0g							

Judge Name (First Last):   Company of Contact Contact Contact Contac	2020 MATE ROV COMPETITION TEC	CHNICAL DOCUMENTATION SCORE SH	HEET - RANGER AND EXPLORER							
Company 9:		See Instruction Tab						0		MATE ROV
Category  Criteria  Sea suspensental info tab for more information  Budget  Through and accurate description of budget planning and following Read accurate description or budget planning and following Read accurate Read Read accurate description or budget planning and following Read accurate Read Read accurate Read Read accurate Read Read Read Read Read Read Read Rea		See Instruction Tab					Safety Score	0		COMPETITION
Accounting Sos supplemental info to for more information by the sensor information in the formation in the f	Company #:		COMPANY/SCHOOL NAME: N/A							
Accounting 'See augmented into tab for more information  Budget  Toods accounting  Cost accounting with through and accounter  A claim distinction supprishe estimates were provided  Cost accounting with through and accounter  A claim distinction was purchased, re-steed, and donated  A claim distinction was purchased, re-steed, and donated  A claim distinction was purchased, re-steed, and donated  A cocurring reflects effective use of funds   Cost	Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Possible	Raw %	Weight		Comments
Thorough and accurate description of budget planning and following Reasonable travel expense estimates were provided  Overall accounting  Overall accounting was thorough and accurate  A clear distinction was made between items purchased, re-used, and donated A lone distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between items purchased, re-used, and donated A clear distinction was made between themse purchased, re-used, and donated A clear distinction of themse services, and time) are reasonable  Discretionary Points  Discretionary Po	Accounting*		formation		0		0%	10%	0.00	
Overall accounting was thorough and accurate A clean distinction was made between items purchased, re-used, and donated All income sources were acknowledged and estimates of the fair market value of donations (terms, services, and time) are reasonable Accounting reflects effective use of funds										
A clear distinction was made between tems purchased, re-used, and donated All income sources were acknowledged and estimates of the fair market value of characteristic times, services, and time) are reasonable Accounting reflects effective use of funds    Compared to the compared to th		Cost accounting								
All income sources were acknowledged and estimates of the fair market value of donations (Rems, services, and line) are reasonable  Accounting reflects effective use of funds    1			Overall accounting was thorough and accurate		0					
of donations (tems, services, and time) are reasonable Accounting reflects effective use of funds    197   100%   0.00   198					0					
Accounting reflects effective use of funds    Component of the vehicle   Component designed implemented by a commercial or mon-team members   Significant overuse of commercial or reused components without adequate   Justification   Justif					0					
Discretionary Points  Document described exceptional design of vehicle, sensors, instruments, software, looks or other features component of the vehicle semakable features of the testing adaptation of software to create a unique solution. Other (Explanationlexample is required in comments)  Deductions  Deductions  Deductions  Deductions  Deductions  Deductions  Describinary Points  De					0					
Discretionary Points  Discretionary Points  Document described exceptional design of vehicle, sensors, instruments, software, tools or other features Company developed exceptional original software or made exceptional adaptation of software to create a unique solution Document describes remarkable effort to design and manufacture every component of the vehicle Other (Explanation/example is required in comments)  Deductions  Deductions  Components designed/implemented by a commercial company without adequate justification Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant oversuse of commercial or reused components without adequate justification  Journal of the vehicle of the veh					0	197		100%	0.00	Base Score
Document described exceptional design of vehicle, sensors, instruments, software, tools or other features  Company developed exceptional original software or made exceptional adaptation of software or reade a unique solution Document describes remarkable effort to design and manufacture every component of the vehicle Other (Explanation/example is required in comments)  Deductions  Components designed/implemented by a commercial company without adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant oversuse of commercial or reused components without adequate justification  Document described exceptional design of vehicle, sensors, instruments, so of the relative seach  Occurrent of the vehicle of the veh					Raw Score					
software, tools or other features Company developed exceptional original software or made exceptional adaptation of software to create a unique solution Document describes remarkable effort to design and manufacture every component of the vehicle Other (Explanation/example is required in comments)  Deductions  Components designed/implemented by a commercial company without adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  O Final Score	Discretionary Points				0	16		1	0	Discretionary points
adaptation of software to create a unique solution Document describes remarkable effort to design and manufacture every component of the vehicle Other (Explanation/example is required in comments)  Deductions  Components designed/implemented by a commercial company without adequate justification Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  Final Score					0			•		
Document describes remarkable effort to design and manufacture every component of the vehicle Other (Explanation/example is required in comments)  Deductions  Components designed/implemented by a commercial company without adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  Significant overuse of commercial or reused components without adequate justification  To provide the state of the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  To provide the state of the vehicle o			Company developed exceptional original software or made exceptional adaptation of software to create a unique solution		0					
Other (Explanation/example is required in comments)  Deductions  Components designed/implemented by a commercial company without adequate justification Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  Other (Explanation/example is required in comments)  0 12 1 0 Deduction points  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Document describes remarkable effort to design and manufacture every		0					
Components designed/implemented by a commercial company without adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members Significant overuse of commercial or reused components without adequate justification  O  Final Score					0					
adequate justification  Evidence that the work was performed by coaches, mentors, parents, or other non-team members  Significant overuse of commercial or reused components without adequate justification  O  O  O  Final Score	Deductions					12		1	0	Deduction points
non-team members Significant overuse of commercial or reused components without adequate justification  0 Final Score					0					
Significant overuse of commercial or reused components without adequate justification  0  Final Score					0					
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	Other Comments								0	Fillal Score