2018 MATE ROV COMPETITION TECHNICAL DOCUMENTATION SCORE SHEET - SCOUT

JUDGE NAME:

COMPETITION CLASS: Scout

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
Overall Presentation				0	56	0%	20%	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 Use same scale as above	Is our report 10 pages or less? Did we use a font size of at least 12 points? Did we use Times New Roman, Arial, or Calibri font? Did we list all measurements in SI units (except things traditionally specified in other units, e.g. PVC diameter)?		0					
		Does our title page include the following: company name, organization/school name and location (city, state), team members and their roles, and mentor name(s)?		0					
		Did we include an abstract that clearly summarizes our work in 150 words or less?		0					
	Use of images								
		Did we include a photo of our completed vehicle?		0					
		Did we use photos and/or sketches to show our ROV's design features?		0					
		Did we include a descriptive caption with each photo and/or sketch?		0					
		Did we label the parts of our ROV, including any special or safety features, and include dimensions where appropriate?		0					
	Understanding								
		Did we convince the judges that we understand the science and technology behind designing and building our ROV?		0					
		Did we convince the judges that we understand how we designed and built our vehicle and how it works?		0					
	Document Design								
		Did we check for spelling, punctuation, and grammar mistakes?		0					
		Did we think through how to communicate information to the judges, paying attention to how the words flow and making sure to include the major points?		0					
		Does our document look professional or was it put together last-minute? Does our report describe our team and ROV in a way that makes us look professional?		0					
	Acknowledgements and References								
		Did we include a list of references - books, journals, web sites, etc. - that we used as sources? Did we list contributions of money, materials, and equipment?		0					
		Did we thank the people and organizations who gave us money, materials, equipment, and cheered us on?		0					
Teamwork				0	16	0%	10%	0.00	
	Company Effort								
		Did we convince the judges that our ROV and report were done by us, and not our teachers, mentors, or parents?		0					

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible by category	Raw %	Weight	Category Score	Comments
	Project Management								
		Did we describe how we developed and kept to a schedule?		0					
		Did we explain how we organized our team meetings and planned out our design and building activities?		0					
		Did we explain how we managed money, materials, and people to stay on schedule and solve day to day (meeting to meeting) problems?		0					
Design Rationale				0	40	0%	30%	0.00	
	Content								
		Did we convince the judges that we followed a logical, step-by-step design and building process?		0					
		Did we describe how we came up with ideas, compared or tested ideas, then picked the one(s) that we used?		0					
		Did we describe the science (e.g. seafloor spreading) and technology (e.g. tidal turbines) that's involved with the mission tasks in the real world?		0					
		Did we describe any trade-offs that we made (e.g. homemade PVC gripper instead of a store-bought one) to keep our ROV at a certain cost or size?		0					
	Understanding								
		Did we describe the theme and tasks in a way that shows that we understand them?		0					
		Did we describe how we designed and built our ROV specifically to solve the mission tasks?		0					
	Build vs. buy, new vs. used Justification								
		Did we explain why we chose to buy certain ROV parts and/or build others?		0					
		Did we explain why we chose to re-use certain old parts and/or build others?		0					
	Understanding								
		Did we convince the judges that we understand how the parts that we bought and those that we built work?		0					
		Did we convince the judges that we understand how the parts that we re-used and the parts that we built work?		0					
SID				0	8	0%	5%	0.00	
	System Integration Diagrams								
	All 4 requirements met = 4 points 3 requirements met = 3 points 2 requirements met = 2 points 1 requirement met = 1 point	Does our SID show the difference between what's on the surface and what's on the ROV? Does it include a fuse and where it's located? Does it use recognized electrical, hydraulic, and/or pneumatic symbols? Did we neatly draw it by hand or make it using CAD?		0					
		Does our SID have enough detail? Or is it too complex or confusing?		0					

Category	Criteria	Scoring Requirements	Enter your scores here	Raw Score	Points Possible by category	Raw %	Weight	Category Score	Comments
Safety				0	12	0%	10%	0.00	
	Content								
		Does our report describe our ROV's safety features and our team's safety practices?		0					
		Did we describe how our ROV was designed and built to meet the competition's safety requirements (i.e., shrouds on motors)?		0					
	Safety procedures								
		Did we describe safety protocols (e.g. safety checklist) and how we handled any safety issues (e.g. cut or other injury)?		0					
Critical Analysis				0	28	0%	10%	0.00	
	Testing and Troubleshooting								
		Did we describe how we tested and practiced with our ROV before the competition?		0					
		Did we describe how we approached troubleshooting?		0					
	Challenges								
		Did we describe at least one technical challenge and how we solved it?		0					
		Did we describe at least one teamwork or project management challenge and how we solved it?		0					
	Lessons Learned								
		Did we explain lessons we learned when it comes to technical skills (i.e., don't eat solder!)?		0					
		Did we explain lessons we learned when it comes to working as a team and organizing and managing a project?		0					
		Did we describe the skills that we learned in order to design and build our ROV and prepare for the competition?		0					
Future Improvements				0	4	0%	5%	0.00	
	Reflection								
		Did we think through and explain at least one improvement that we would make to our ROV, the design and building process, or how we managed our project?		0					
Accounting*	*See supplemental info tab for more information*			0	12	0%	10%	0.00	
	Budget								
		Did we include how much our ROV cost and how we paid for it?		0					
		Did we list what parts were purchased, what parts were re-used, and what parts were donated?		0					
		Did we list the individuals and/or organizations who donated the parts?		0					
				0	176	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 by category	Raw %	Weight	Category Score	Comments
Discretionary Points		0-4 pts each		0	8		1	0	Discretionary points
		Is there something really unique about our ROV (design, tool, or other feature) that we highlighted in our document?		0					
		Did we design and build (rather than buy or re-use) the majority or our ROV parts and highlight that in our document?		0					
Deductions		0-4 pts each		0	8		1	0	Deduction points
		Do the judges think that our teachers, mentors, and parents built most of the vehicle and wrote our report for us?		0					
		Did we use a lot of pre-built parts or parts from previous teams without explaining why?		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	**1**
	Partially meets requirement	Response demonstrates understanding and addresses most key requirements	**2**
	Meets requirement	Response demonstrates thorough understanding and addresses all key requirements	**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**

Technical Report Rubric Supplemental Information

PHOTOGRAPH OF YOUR COMPLETED ROV

In your technical documentation you must include at least one photo(s) of your completed, assembled vehicle, in addition to any photos of individual systems and/or payload.

You are permitted to make modifications that may change the look of your vehicle between the time you submit your report and the competition.

NOTE: Reports will not be re-evaluated and rescored for any changes to your vehicle from the time that you submit your documentation and the competition.

SID

See the Design and Building Specifications section of the competition manual for guidance on creating your system interconnetion diagram (SID).

ACCOUNTING

Budget

At the beginning of the project, companies should establish a budget.

A budget is different than a project costing sheet (see the next bullet) in that it is a projection of the cost of the project.

Companies should create categories and realistically estimate what they think that they will spend in each.

If well-thought through, the project costing will align with the budget (i.e., the amount budgeted for a certain category will be the actual amount spent!).

The budget can be included as an appendix.

Budgets typically don't provide estimates for every part, either just the overall categories or the categories and larger purchases.

How the budget is split up will be different for each company, though it is suggested that the company goes further than just a budget of parts and travel (for example, break it up into the overall components, chassis, electrical, travel, etc.)

Including items being re-used in the budget can be helpful to figure out how much the team estimates it will need to raise funds for.
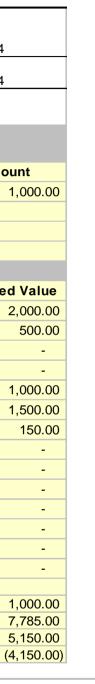
Example Budget:

Budget

			Reporting period
School Name:		Zande High School	From: 12/1/2014
Instructor/Sponsor:		Jill Zande	To: 5/28/2014

Income
Income at start of project (if any)

Source				Amount
Zande High School Grant				$ 1,000.00

Expenses

Category	Type*	Description/Examples	Projected Cost	Budgeted Value
Hardware	Purchased	PVC pipe, tees	$ 2,000.00	$ 2,000.00
Electronics	Purchased	Control boards, wire	$ 500.00	$ 500.00
	Re-used	Logitech Extreme 3D Pro	$ 35.00	$ -
	Donation	2 SeaBotix Thrusters	$ 2,600.00	$ -
Sensors	Purchased	Lights Camera Action SS-AquaCam	$ 1,000.00	$ 1,000.00
Travel	Purchased	1 round-trip airfare to St. John's	$ 1,500.00	$ 1,500.00
General	Purchased	Marketing material, transportation packaging	$ 150.00	$ 150.00
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -

*Items must fall into one of the following:

Purchase - defined as items that will be purchased new or services paid for.
Re-use - defined as items that were purchased in previous years. Amount MUST be listed as the current market value.
Donation - defined as equipment, materials, and time that were contributed to your company.

Total Income:	$ 1,000.00
Total Expenses:	$ 7,785.00
Total Expenses-Re-use/Donations:	$ 5,150.00
Total Fundraising Needed:	$ (4,150.00)

Project costing

Project costing is an accounting of your income, donations, and expenditures.

Items must be listed as one of the following: purchased, re-used, parts donated, or cash donated.

For re-used or donated items, report the item's current market value and note the source or organization that made the donation.

Example Project Costing:

PROJECT COSTING

					Reporting period	
School Name:			Zande High School		From: 12/1/2014	
Instructor/Sponsor:			Jill Zande		To: 5/28/2014	

Funds

Date	Type*	Category	Expense	Description	Sources/Notes	Amount	Running Balance
12/1/2014	Purchased	Hardware	PVC	PVC pipe, tees	Used for vehicle frame	$ (200.00)	$ (200.00)
12/5/2014	Re-used	Electronics	Joystick	Logitech Extreme 3D Pro	Used for control system	$ (35.00)	$ (235.00)
1/10/2015	Parts donated	Sensors	Camera	Lights Camera Action SS-AquaCam	Won at a previous competition	$ (600.00)	$ (835.00)
1/31/2015	Purchased	Travel	Airfare	1 round-trip airfare to St. John's	Chaperone's ticket	$ (900.00)	$ (1,735.00)
2/2/2015	Cash donated	General		Funds donated by local Rotary Club	Used for general vehicle construction	$ 500.00	$ (1,235.00)
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
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							$ -

*Items must fall into one of the following:			
Purchased - defined as items that are purchased new or services paid for.	Total Raised	$ 500.00	
Re-used - defined as items that were purchased in previous years. Amount MUST be listed as the current market value.	Total Spent	$ (1,735.00)	
Parts donated - defined as equipment, materials, and time that were contributed to your company. Do NOT include items given to your school for general use.	Final Balance	$ (1,235.00)	
Cash donated - defined as funds contributed to your company. Do NOT include funds given to your school for general use.			