

# Engineering & Communication: Technical Report

**Team name and # AS IT APPEARS ON THE TEAM LIST:**

**Judge's name:**

**1 0 = Yes (1) or No (0)    2 1 0 = 2: Excellent, 1: Good, 0: Poor or missing**

**SCORE**

**Overall Presentation**

**8 pts max**

- Report is 20 pages or less
- Measurements are in SI units (exceptions include 1/2-inch PVC, etc.)
- Report is well thought out, organized, and professional
- Report is "professional" and well written (e.g. attention to spelling, grammar, sentence structure)
- Report makes good use of references, contains a minimum of 2 citations, and properly attributes information to its original source

1 0  
1 0  
2 1 0  
2 1 0  
2 1 0

**Title Page Contains**

**4 pts max**

- Project/ROV name
- School, club, or team name
- List of team members
- Names of instructor(s) and/or mentors

1 0  
1 0  
1 0  
1 0

**Abstract**

**3 pts max**

- Is 250 words or less
- Concise and clear summary of the teams work

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**Photos of ROV**

**5 pts max**

- Complete, intact vehicle photo
- Photo descriptions accompany photos
- A mechanical drawing or sketch is included (may be of a sub-system)

1 0  
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2 1 0

**Budget/Expense Sheet**

**4 pts max**

- Math accurate
- Detailed accounting of funds, e.g. incomes and expenditures properly accounted
- Donations listed, including fair market value

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1 0

**Electrical Schematic**

**5 pts max**

- Neatly hand-drawn or created using CAD
- Discloses presence of fuse/circuit breaker
- Clearly represents the electrical system

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1 0  
2 1 0

**Design Rationale**

**12 pts max**

- Documents features to accomplish missions
- Presented in a clear and logical manner
- Demonstrates step-by-step planning and design process
- Describes technical rationale for design of systems or selection of components
- A flowchart describes the software flow OR rationale is provided describing why a hardware only approach was selected
- Describes safety features of vehicle, or safety precautions necessary while handling/operating the vehicle

2 1 0  
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**Vehicle Systems (score one)**

**4 pts max**

- Team presents own, original work
- Team mentions that work was done by commercial companies and/or instructors or mentors
- Team demonstrates understanding of vehicle systems and operations

2 1 0  
0 -1 -2  
2 1 0

**Challenges**

**4 pts max**

Describe at least one challenge faced	2 1 0	
Method used to overcome the challenge	2 1 0	
<b>Troubleshooting Techniques</b>	<b>4 pts max</b>	
Explains a troubleshooting technique(s)	2 1 0	
What was used to identify and solve the problem	2 1 0	
<b>Payload Description</b>	<b>4 pts max</b>	
Design and function of payload tools is clearly described	2 1 0	
Discussion of tooling alternatives is provided	2 1 0	
<b>Future Improvement</b>	<b>2 pts max</b>	
Thoughtful and logical discussion for one improvement	2 1 0	
<b>Lessons Learned</b>	<b>4 pts max</b>	
Lesson learned or skill gained relating to the process – technical	2 1 0	
Lesson learned or skill gained relating to the process – interpersonal	2 1 0	
<b>Information presented about the Loihi seamount</b>	<b>3 pts max</b>	
Includes appropriate photos or graphics	1 0	
Description is well-written, informative and shows a relationship to the competition mission	2 1 0	
<b>Reflections</b>	<b>4 pts max</b>	
Personal or professional accomplishments from competition participation	2 1 0	
Point of view includes the team as a whole or its individual members	2 1 0	
<b>Teamwork</b>	<b>7 pts max</b>	
Team demonstrates that the vehicle (and the report) was a team effort	2 1 0	
Team designed and built vehicle, particularly electrical and software	2 1 0	
Team developed specific assignments to design/build the vehicle	2 1 0	
Team developed a schedule to aid in building the vehicle	1 0	
<b>Acknowledgements</b>	<b>3 pts max</b>	
Companies, individuals who contributed funds, equipment, and/or technical/moral support are acknowledged	2 1 0	
Recognizes donations of funds, supplies and time	1 0 -1	
<b>Technical Report Score:</b>		
<b>Discretionary Points</b>	<b>5 pts max</b>	
Bonus points for extraordinary work - grammatically correct, showed extra effort to overcome obstacles, etc.	5 4 3 2 1	
<b>Deductions</b>	<b>-5 pts max</b>	
Lacks software block diagram or flow chart, if applicable	-2	
Over use of appendices	-3	
<b>Technical Report Total Score:</b>		

Note: The intent is to deem excellence if the drawing/sketch is particularly well done

Note: Two points if both a technical and a non-technical challenge are described

Note: Two points if both a technical and a non-technical method are described