

## Scoring

Entries will be scored on performance measures and on subjective measures, these are detailed in Table 1. **Points for attempting tasks in multiple missions can be acquired throughout the week. Points for a single multitask mission will only be allocated during the final.**

<b>Performance Measures</b>		<b>Multi mission Task Success</b>	<b>Mission Points For Attempt<sup>1</sup> (From file / From Judge<sup>3</sup>)</b>	<b>Single Mission Task Success</b>
Weight	See Rules			
Pass through Validation Gate		150	150	150
Structure Inspection		200 + 200 + 200	500 / 100 <sup>4</sup> (Tot. 600)	1200
Follow Wall & Find Anomaly + Invite and Arrive*** + Reacquire Anomaly + Report and Receive		250 + 250 + 250 + 250	900 / 100 <sup>4</sup>	2000 (1500 for search AUV if the Report and Receive task is not fulfilled by the collaborator-inspection robot)
Black Box + Map + Surface		250+ 250+ 250	700 / 50 <sup>4</sup>	1500
Bonus – Collaborator <sup>2</sup>				750
Bonus - Dual Black Box <sup>5</sup>				250
Missing person		100 + 300	300 / 100 <sup>4</sup>	800
<b>Subjective Measures</b>		<b>Max. Points</b>		
Journal Paper (J) + Video (V)			200 (J) 100 (V)	
Technical Merit (From Journal Paper, Static Judging + Observations)			250	
Craftsmanship (From Journal Paper, Static Judging )			250	
Safety of Design (From Journal Paper, Static Judging )			250	
Innovation (From Journal Paper, Static Judging )			250	
Impress the judges			250	
Discretionary Points (Awarded After Last Competition Run)			150	

**Table 1: Scoring Matrix**

<sup>1</sup>Note that an ‘attempt’ must appear in the Log file or, in the opinion of the judges, be an obvious attempt to complete that part of the mission.

<sup>2</sup>Points for the arrival, re-acquisition of the anomaly, and the reporting about the light are

available to the collaborator robot.

The Log file points will be allocated after the run when the log file of the vehicle is used to replay the mission in simulation and evidence of autonomous decision making (i.e. not luck) is demonstrated.

<sup>3</sup> These points are added to the bonus for chained tasks into the Finals.

<sup>4</sup> The total maximum points from the file (e.g. 500 for structure inspection) add to the total maximum points from the judges observation (e.g. 100 for structure inspection).

<sup>5</sup> Dual Black Box means that the Black Box needs to be search by two methods as the Rules describe.

*Journal Paper*, These points are for the production of the journal paper, ensuring all sections are included and the amount of thought and care that has gone into its production.

*Technical Merit*, The vehicle will be assessed on overall design, software algorithms, mission planning, design choices addressing the problem and construction.

*Craftsmanship*, These considerations will account for any components of the design that are or could be (in the judges' opinion) commercially available or do not include a significant contribution by team members. In other words, if you use a well-built, well-designed, off-the-shelf computer, your team does not get points for the computer's good technical design, etc. You will get points in the Technical merit section for selecting a computer that is well-suited to the engineering needs of the design, in the opinion of the judges. Efficient and novel use of cheap 'every day items' will also gain points.

*Safety of Design*, Points will be awarded for knowledge and resolution of potential hazards in the vehicle's design. Judges will be looking for the teams recognition of potential hazards and how these hazards have been removed or managed in both the design choices and final vehicle.

*Innovation* What makes your vehicle unique? This section is looking for the new ideas, be it something built specifically for the competition or a novel use of existing equipment.