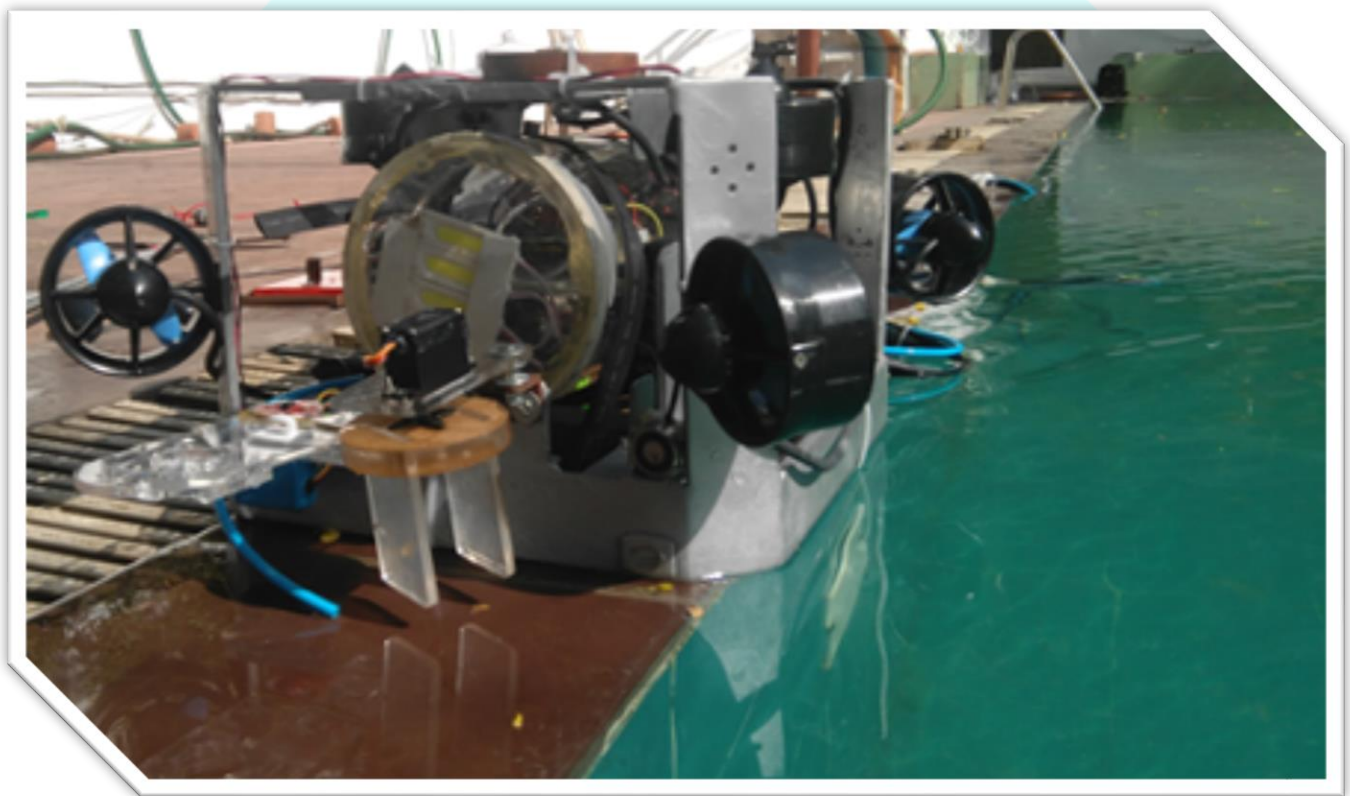


Job Safety Analysis (JSA)

-TEAM SCREWDRIVERS

STRATODIVER



Development of ROV

Operation	Task	Potential Hazards	Risk Mitigation Method(s)	Responsible
Developing Circuit Board	Soldering	Skin Burn	<ol style="list-style-type: none"> 1. Use soldering iron under expert supervision only 2. Turn off soldering iron when not in use 3. Place soldering iron on its holder after each use to avoid unwanted touch with iron which can cause skin burn 	_____ Sign
		Fume inhalation	<ol style="list-style-type: none"> 1. Wear respirators while soldering to avoid inhaling fumes 2. Perform soldering in a well-ventilated area only to avoid suffocation 	
	Waterproofing	Skin Damage	<ol style="list-style-type: none"> 1. Wear protective gloves while using epoxy 	
		Respiratory Irritation	<ol style="list-style-type: none"> 1. Epoxy odor can cause temporary respiratory irritation, to avoid that one must use respirators and work in a well-ventilated area 	
Heavy/ Power tools use	<ol style="list-style-type: none"> 1. USE HEAVY/POWER TOOLS ONLY UNDER EXPERT SUPERVISION 2. Do no use power tools in explosive atmosphere 3. Three pronged cords must be plugged into a properly grounded installed outlet 4. The wire gauge and the length of the cord must be able to handle the amps of the tool 5. Turn off the tool immediately after use and keep the tool at a safe distance 6. Always wear Electrical Hazards (EH) rated footwear while operating power tools 			

Operation	Task	Potential Hazards	Risk Mitigation Method(s)	Responsible
	Mechanical work	Respiratory Irritation	1. Wear respirators to avoid inhaling dust, smoke etc. (airborne particulate matter)	Sign
		Skin Burn	1. Avoid touching freshly cut or drilled pieces to prevent skin burn 2. Always wear protective gloves while cutting or drilling pieces	
		Hearing Damage	1. Power tools produce sound levels high enough to damage hearing, to prevent hearing loss always wear earplugs or muffs	
		Saw Injury	1. Check condition of the machine/ tool before use. 2. Maintain safe distance from moving blades or drilling bits 3. Turn off machine immediately after use 4. Touch blades or bits only after they have completely stopped	

Required Training	Required Protective Equipment
1. Use of Soldering Iron 2. Use of Heavy/ Power tools 3. Using epoxy	1. Protective Gloves 2. Respirators 3. Earplugs or muffs

Note: Always keep a Medical Kit handy to address any injury

Post Development

Stage	Potential Hazards	Risk Mitigation Method(s)	Responsible
Transportation	Heavy Load Strain	1. While transporting the ROV, do not carry the ROV alone to avoid back strain.	_____ Sign
	Mishandling	1. Handle the ROV with care. 2. Transport the ROV on a transportation cart.	
Pre-launch/ Assembling the ROV	Hand Injury	1. Use safety certified hand-holds only 2. Keep your hand at a safe distance from thrust avoid injury	_____ Sign
	Eye Damage	Wear safety glasses before operating the ROV and entering the pool.	
	Slipping	Wear non-slip or closed-toed shoes near the pool to avoid slipping while carrying the ROV	
	Overvoltage	Set appropriate operating voltage	
ROV Demo (Dry Run)	ROV body damage	Keep the ROV on a table/ stand to avoid any physical damage to ROV body.	_____ Sign
	Electrical Connections	Check all the connections, voltage etc. before switching ON the ROV to avoid any electrical damage.	

Stage	Potential Hazards	Risk Mitigation Method(s)	Responsible
Launch	Electrocution	<ol style="list-style-type: none"> 1. Before placing the ROV in pool, ensure all the connections are switched off 2. Ensure all the connections are properly wired and dry 	<hr/> Sign
	Finger Damage	<ol style="list-style-type: none"> 1. Use safety certified hand-holds only 2. Keep your fingers at a safe distance from thrusters avoid injury 	
	Drowning	Wear life jacket before entering the pool	
	Electrocution	In case of leak/ short circuit, immediately switch off the power supply	
Retrieval	Hand Injury	Before retrieving the ROV, ensure that the ROV is off to avoid injury caused by touching thrusters etc.	<hr/> Sign
	Heavy Load Strain	<ol style="list-style-type: none"> 1. Avoid lifting the ROV alone 2. Lift the ROV in a proper body posture to avoid muscle strain due to heavy load 	

Required Training	Required Protective Equipment
<ol style="list-style-type: none"> 1. Transporting the ROV 2. Assembling the ROV 3. Setting up wiring and voltage 4. Launching the ROV 5. Retrieving the ROV 	<ol style="list-style-type: none"> 1. Close-toed shoes while transporting the ROV 2. Non- Slip near Pool 3. Safety glasses 4. Protective Gloves 5. Life Jacket

