







ROV



- ROV stands for Remotely Operated Vehicle.
- ROV is an unoccupied underwater robot that is connected to a ship by a series of cables.
- Allows the operator to transmit command and control signals to the ROV, allowing remote navigation of the vehicle.
- Used when working in deep water where diving is impractical or to investigate submerged hazards.











M -



History of ROV

1960s

- Mantis is introduced (Industrial grade ROV)
- Developed for the oil and gas industry by Westinghouse

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1970s

- Upgrade the functionality of the ROVs for underwater construction and maintenance
- Other functions are added such as color cameras, manipulator arms, and sonar systems

1980s

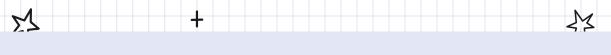
- Evolved for heavy duty tasks.
- More usage for the oil and gas industry.
- Widespread functionality of exploration, inspection, maintenance, and repair of subsea construction

1990s

- Limitations are upgraded to explore the higher depth of the sea.
- Added control systems, better sensors, and data processing







Applications



- Special Recovery Operations
- Waterborne Improvised Explosive Device (WIED) Intervention
- Submarine Rescue
- Hydrography
- Sea and Limpet Mine Intervention

Aquaculture

- Aqua life monitoring and inspection
- Cleaning and management of aquariums
- Wildlife documentation
- Water inspection







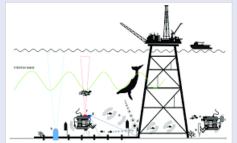






Applications

Offshore Energy (Oil & Gas, Hydroelectric)



- General Visual Inspection
- Infrastructure Deployment and Recovery
- Close Visual Inspections (Study the underwater infrastructure closely)
- Control Manifold Interventions

Underwater Exploration

- Sample collection and data processing
- Monitor the underwater environment
- Search and rescue mission
- Marine life research

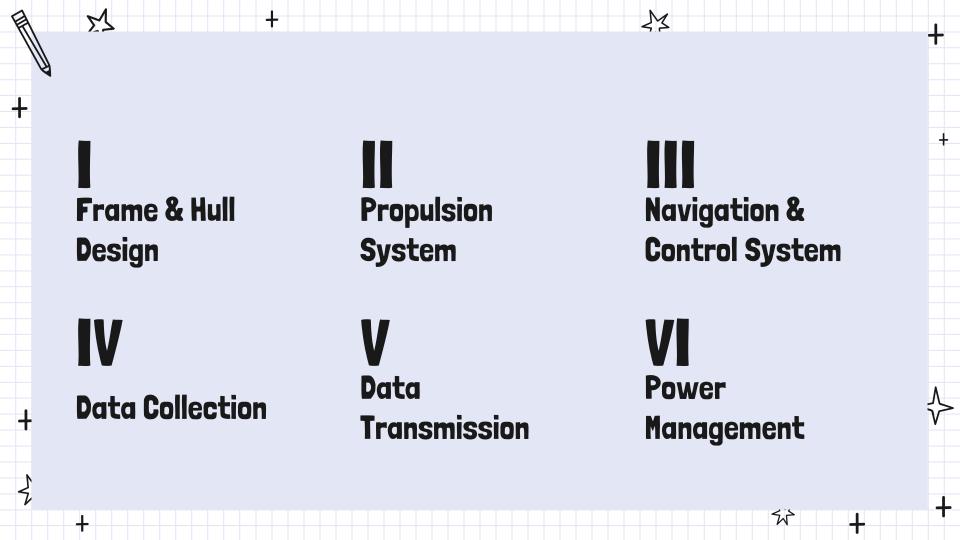












I. Frame & Hull Design







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Torpedo Hull









II. Propulsion System

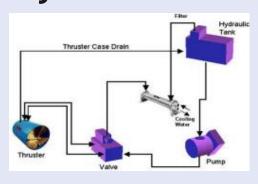
Electric Thruster



Water Jets



Hydraulic Thruster



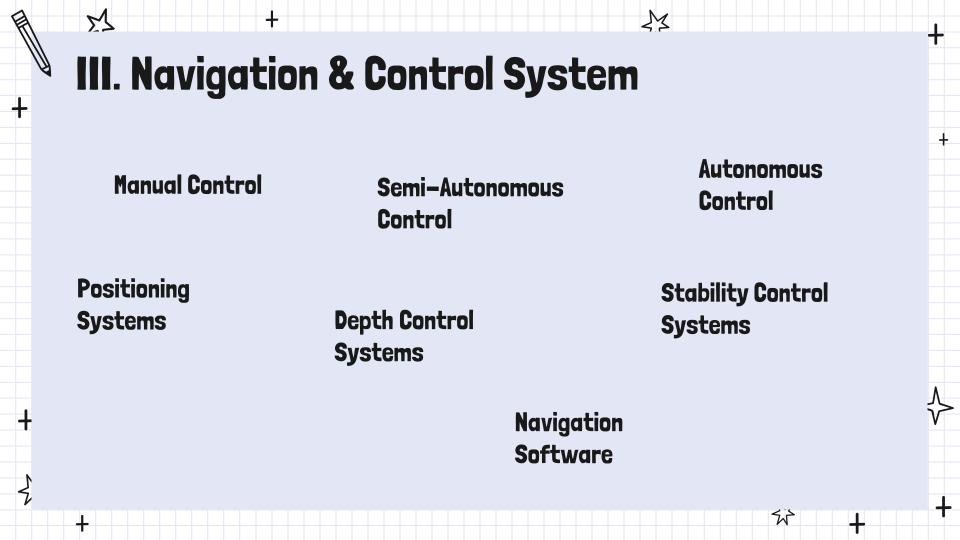
Fin Propulsion













IV. Data Collection

Sensors	Actuators
Sonar	Sampling Tools
Cameras	Manipulator Arms
Environmental Sensors	
Magnetometers	
Hydrophones	
Laser Scanner	

