# Idea Generation

1. Anti-slip rubberized sides
2. Will allow for expansion/ addition of modules
3. Controls will be a "drop and go" system
4. internal cable free design
5. Detect seismic vibrations
6. Intuitive prompts
7. Keep moving parts covered by a barrier 4 cm away
8. Location services
9. Assembly will be quick and easy
10. Test turbidity of the water
11. Flat stable bottom surface
12. App/ Mobile interface
13. Device will have a wireless control system
14. Lightweight modules for easy lifting
15. Simplified UI
16. Low voltage internal system
17. Structure will withstand pressure
18. Graph Visualization
19. Test pH of the water through an electronic probe
20. Battery Ejection
21. Data logs
22. Glow in the dark
23. Swappable battery
24. Test temperature of the water
25. Alert Systems
26. Sound Sensor
27. Device will have LED status indicators
28. Overheat protection system
29. Device will have rudders to steer
30. Auto return
31. A land rover that maps out terrain
32. Compact and lightweight form
33. Environmentally friendly operations
34. Salinity Sensor
35. A device that reacts to environmental hazards
36. Environmentally neutral materials
37. Exploration of enclosure
38. Provide warning for sudden spike in measurements
39. Textured grip areas

40. Corrosion resistant
41. Something that senses invisible fields (magnetic, emf, etc)
42. Gyroscopic sensor to keep device oriented
43. Provide wireless feedback on measurements
44. Pulsing leds to indicate ready
45. Device will be easy to rinse and maintain
46. Low emission design
47. Led color changes
48. Thermal insulation
49. Device will have a buoy for easy retrieval
50. Analog microphone
51. Device will float if dropped
52. Accelerometer for navigation
53. Metal detection coil
54. Motors for underwater exploration
55. Buoyant in water
56. Proximity sensor
57. Device will have a depth gauge
58. Device will have no open ports
59. Tether attachment
60. 3D Seafloor mapping
61. Ethical design
62. Device will have a heat sensor to detect marine life
63. Device will operate quietly
64. Camera Relay
65. Distance sensor pointed down by edges of the device
66. Device will have a ultrasonic distance sensor
67. Low power mode
68. Does not disrupt environmental ecosystems
69. Device will have auto-inflation device in case of loss of power at depth
70. Gyroscope for ensuring balance of robot
71. Mostly 3d printable for easy repair-ability
72. Magnetometers for finding cardinal directions
73. Device will have pressure release system for depth control
74. Fast charging
75. Video and operation recording
76. Leak/Water detection sensors
77. Dual battery slots
78. Fish avoidance system
79. Device low battery indicator

80. Battery percent visual
81. Obstacle avoidance system
82. Wireless connection through floating antenna
83. Self Diagnosis
84. Bright colors for easy detection
85. Components sealed in a water proof tube
86. Wireless charging
87. Long term water and pressure exposure
88. Chemical tracking/testing
89. Device will be portable
90. 360 degree movement
91. Glows in the dark
92. Wildlife priority interrupts
93. Data Dashboard
94. Sonar for mapping and storage device to ensure we save the maps
95. Areas that are dangerous to touch while machine is active colored red
96. Emergency Event interrupts
97. looks like a fish for tagging animals
98. Quick start guides
99. Device will be modular
100. Controls will be autonomous
101. Areas risky to touch while machine is active in yellow
102. Video and Printed instructions for the device.
103. Areas safe to touch colored blue
104. Ink mode
105. Chemical coating so it tastes bad when eaten
106. Device will be waterproof

# Ordered Features

## 1. Product Design & Physical Build
Antislip rubberized side
Will allow for expansion/addition of modules
Internal cable free design
Flat stable bottom surface
Assembly will be quick and easy
Lightweight modules for easy lifting
Compact and lightweight form
Device will be easy to rinse and maintain
Environmentally neutral materials
Device will have a buoy for easy retrieval
Device will float if dropped
Corrosion resistant
Device will have no open ports
Low emission design
Thermal insulation buoyant in water
Components sealed in a water proof tube
Mostly 3d printable for easy repair-ability
Device will be portable
Device will be modular
Device will be waterproof
Looks like a fish for tagging animals

## 2. User Experience & Interface
Controls will be a "drop and go" system
Intuitive prompts
App/ Mobile interface
Simplified UI
Graph Visualization
Device will have a wireless control system
Data logs
Glow in the dark
Alert Systems
Device will have LED status indicators
Glow in the dark (duplicate entry)
Pulsing led to indicate ready
Led color changes

Camera Relay
Ethical design
Device low battery indicator
Wireless connection through floating antenna
Video and operation recording
Data Dashboard
Battery percent visual
Quick start guides
Video and Printed instructions for the device.
Bright colors for easy detection
Self Diagnosis
Ink mode
Provide wireless feedback on measurements

## 3. Sensors & Data Acquisition
Detect seismic vibrations
Test turbidity of the water
Test pH of the water through an electronic probe
Test temperature of the water
Salinity Sensor
Sound Sensor
Something that senses invisible fields (magnetic, emf, etc)
Device will have a heat sensor to detect marine life
Analog microphone
Metal detection coil
Device will have a ultrasonic distance sensor
Proximity sensor
Distance sensor pointed down by edges of the device
Sonar for mapping and storage device to ensure we save the maps
Chemical tracking/testing

## 4. Movement, Navigation & Logic
Location services
Device will have rudders to steer
Motors for underwater exploration
Gyroscopic sensor to keep device oriented
Accelerometer for navigation
Gyroscope for ensuring balance of robot
360 degree movement
magnetometers for finding cardinal directions

Auto return
Exploration of enclosure
Obstacle avoidance system
Fish avoidance system
Wildlife priority interrupts
Controls will be autonomous
A land rover that maps out terrain (niche/different product idea)

## 5. Safety, Durability & Environmental Impact
Keep moving parts covered by a barrier 4 cm away
Low voltage internal system
A device that reacts to environmental hazards
Provide warning for sudden spike in measurements
Environmentally friendly operations
Structure will withstand pressure
Overheat protection system
Device will have a depth gauge
Device will have auto-inflation device in case of loss of power at depth
Device will have pressure release system for depth control
Tether attachment
Leak/Water detection sensors
Components sealed in a water proof tube
Doesn't disrupt environmental ecosystems
Areas that are dangerous to touch while machine is active colored red
Areas risky to touch while machine is active in yellow
Areas safe to touch colored blue
Emergency Event interrupts
Chemical coating so it tastes bad when eaten
Device will operate quietly
Long term water and pressure exposure

## 6. Power & Battery Management
Battery Ejection
Swappable battery
Low power mode
Wireless charging
Dual battery slots
Fast charging

# Ranked Features

## 1. Product Design & Physical Build

Device will be waterproof: Highest mission criticality; baseline requirement.

Components sealed in a waterproof tube: Core operational feasibility for electronics protection.

Corrosion resistant: Essential for long-term water exposure and durability.

Device will be modular/Allow for expansion: High innovation; allows for 2026 "evergreen" hardware updates.

Mostly 3D printable: High user value for field repairs and sustainable manufacturing.

Device will have no open ports: Critical for waterproofing feasibility.

Device will float if dropped / Buoyant in water: Safety failsafe for equipment recovery.

Compact and lightweight form / Portable: User value for field deployment.

Environmentally neutral materials: High ethical innovation for 2026 standards.

Device will have a buoy for easy retrieval: Practical mission recovery safety.

Internal cable-free design: Operational feasibility; reduces mechanical failure points.

Anti-slip rubberized sides / Flat stable bottom: Ergonomic user value.

Thermal insulation / Low emission design: Specialized operational needs.

## 2. User Experience & Interface

Self-Diagnosis: Highest mission criticality; prevents deployment of compromised hardware.

Alert Systems / Device low battery indicator: Essential safety feedback.

App / Mobile interface: Primary user value for 2026 remote operation.

Data Dashboard / Graph Visualization: High user value; turns raw data into insight.

Provide wireless feedback on measurements: Operational feasibility for real-time monitoring.

Controls will be a "drop and go" system: High innovation in autonomous onboarding.

Simplified UI / Intuitive prompts: User value; reduces human error.

Battery percent visual / LED status indicators: Basic operational feasibility.

Camera Relay / Video and operation recording: High user value for mission auditing.

Ethical design: High-level 2026 framework requirement.

Bright colors / Glow in the dark: Low effort safety for visual tracking.

Quick start guides / Video instructions: Standard user support.

## 3. Sensors & Data Acquisition

Sonar for mapping: Mission critical for navigation and primary data value.

Chemical tracking/testing: High innovation; essential for modern environmental monitoring.

Test pH / Salinity / Turbidity / Temp: Operational baseline for water quality devices.

Ultrasonic distance sensor / Proximity sensor: Critical for mission safety and obstacle avoidance.
Detect seismic vibrations: High-value niche innovation.
Heat sensor to detect marine life: User value for biological research.
Senses invisible fields (EMF): Specialized high-effort innovation.
Sound sensor / Analog microphone: Secondary environmental data.

## 4. Movement, Navigation & Logic
Obstacle avoidance system: Highest mission criticality to prevent collisions.
Controls will be autonomous: 2026 standard for operational feasibility in remote zones.
Auto return: Vital safety feature for device recovery.
Location services (GPS/GNSS): Essential for data mapping and recovery.
Gyroscopic sensor / Gyroscope for balance: Operational feasibility for stability.
Accelerometer / Magnetometers: Foundational navigation sensors.
Fish avoidance / Wildlife priority interrupts: High innovation in ethical AI logic.
360 degree movement / Motors / Rudders: Physical operational feasibility.
Exploration of enclosure: Specific software logic innovation.

## 5. Safety, Durability & Environmental Impact
Structure will withstand pressure: Critical mission feasibility for depth.
Long-term water and pressure exposure: Baseline durability requirement.
Emergency Event interrupts: Human and hardware safety priority.
Leak/Water detection sensors: Mission critical "early warning" system.
Doesn't disrupt environmental ecosystems: 2026 regulatory/ethical priority.
Overheat protection / Pressure release system: Hardware safety failsafe.
Auto-inflation device: High effort/high reward safety for equipment recovery.
Keep moving parts covered (4cm barrier): User/wildlife physical safety.
Safety coloring (Red/Yellow/Blue): Standardized visual safety.
Device will operate quietly: Innovation in stealth/non-disruptive monitoring.
Chemical coating (tastes bad): Specialized wildlife protection innovation.

## 6. Power & Battery Management
Low power mode: Mission critical; ensures the device can "phone home" when failing.
Swappable battery / Dual battery slots: High user value for continuous field work.
Wireless charging: High innovation; allows for a completely sealed waterproof chassis.
Fast charging: User value; reduces operational downtime.
Battery Ejection: Niche safety feature for emergency weight shedding.