Assignment 02

Smart Sonar Surveillance System (4S)

1. **Stakeholders' Needs:**
   - **System Administrator:** Reliable Setup, Calibration, Easy Maintenance.
   - **Security Operator:** Clear Interface, Real Time alerts, Ease of use
   - **Project Team:** Access to Sensor Data, Feedback, Low Cost, Upgradable
   - **Defense and Security Organizations:** Affordable, Adaptable, Reliable, Deployable.

2. **Requirements Analysis:**
   - The system **SHALL** provide continuous scanning in a semi-circular arc (0–180°).
   - The system **SHALL** provide both visual (radar display) and audible (alarm) alerts.
   - The system **SHALL** detect objects at a minimum range of 2 meters.
   - The system **SHALL** refresh detection results every 1–2 seconds.
   - The system **SHALL** include calibration and diagnostic tools.
   - The system **SHALL** be portable and rapidly deployable in diverse environments.

3. **Use Case Diagram:**
   Actors:
   - System Administrator
   - Security Operator
   - Defense and Sec. Organizations.

   Use Cases:

   - Configure and Calibrate the System
   - Start Scanning
   - Monitor Radar Display
   - Respond to Alerts
   - Diagnose System
   - Deploy in Operational Theater

Smart Sonar Survellience System

- Deploy in Operational Theaters
- Configure and Calibrate the System
- Maintain the System
- Deploy In Operational theatre
- Start Scanning <<Extension>> Sensor fails (Retry)
- Respond to Alerts
- Monitor Display

System Administrator

Security Operator

Defence and Sec. organizations