PANIMALAR ENGINEERING COLLEGE

An Autonomous Institution

[JAISAKTHI EDUCATIONAL TRUST]

Approved by AICTE | Affiliated to Anna University | Recognized by UGC

All Eligible UG Programs are Accredited by NBA

Bangalore Trunk Road,Varadharajapuram, Poonamallee, Chennai- 600 123

TECHDIVATHON

Empower, Innovate, Elevate: Code the Future Together

Domain: DEFENCE

Problem Statements:

S.No	Title	Problem Statement	Description
1	Portable Signal Jammer	Unauthorized communications can compromise security in critical zones.	Blocks unauthorized communication signals, ensuring secure and controlled operations.
2	Surveillance Drone for Border Security	Monitoring vast border areas is resource-intensive and limited by terrain.	Streams live footage and monitors activities along borders, enhancing security and awareness.
3	Secure Communication Helmet	Soldiers in the field need secure and reliable communication systems.	Integrates encrypted communication tools within a helmet, enabling safe and efficient communication.
4	Disaster-Resilient Emergency Kit	Communication systems often fail during natural disasters and crises.	Provides tracking and communication capabilities in critical zones, ensuring effective response.
5	Solar-Powered Field Surveillance Device	Maintaining surveillance in remote areas is challenging due to limited power sources.	Operates autonomously for extended periods using solar power, ideal for remote monitoring.
6	Advanced Night Vision Goggles	Limited visibility in low-light conditions hampers operations.	Enhances visibility in dark environments, improving situational awareness for defense personnel.
7	Wearable Soldier Health Tracker	Monitoring soldier health in real time during operations is challenging.	Tracks vital signs and sends alerts for immediate medical attention when needed.
8	Autonomous Mine Detection Robot	Manual mine detection is dangerous and time-consuming.	Detects and locates mines using ground-penetrating sensors, ensuring safety and efficiency.
9	Rapid Deployment Radar System	Setting up radar systems during emergencies is time-sensitive and complex.	Provides real-time tracking of movements with quick deployment features for critical scenarios.
10	IoT-Enabled Smart Ammunition Tracker	Tracking ammunition usage manually can lead to inefficiencies.	Monitors and reports ammunition usage in real time, enhancing inventory management.
11	AI-Powered Threat Detection System	Identifying threats in surveillance footage manually is inefficient.	Analyzes surveillance footage using AI to detect anomalies and potential threats.

12	Secure Communication App for Defense Teams	Ensuring secure communication among defense teams is critical.	Facilitates encrypted and safe communication for seamless collaboration during missions.
13	AI-Driven Mission Planning Dashboard	Planning missions manually can lead to suboptimal resource allocation.	Uses AI to optimize resource allocation and mission planning, improving operational efficiency.
14	Predictive Analytics for Supply Management	Anticipating supply shortages is critical for mission success.	Provides predictive insights into supply needs, ensuring timely replenishment and readiness.
15	Border Surveillance Management Tool	Coordinating data from multiple sensors at borders is complex.	Centralizes data from various devices, enabling comprehensive border security management.
16	Real-Time Alert System for Cyber Threats	Detecting and responding to cyber threats in real time is challenging.	Monitors networks and issues real-time alerts to mitigate potential cyber breaches.
17	Satellite Data Analysis Tool	Analyzing satellite data manually for strategic planning is inefficient.	Processes satellite data to provide actionable insights for defense operations.
18	Training Simulator for Defense Personnel	Real-world defense training is costly and sometimes impractical.	Offers realistic virtual simulations to prepare personnel for various defense scenarios.
19	AI-Enhanced Reconnaissance Planning	Identifying critical areas for reconnaissance is resource-intensive.	Leverages AI to pinpoint areas requiring patrols, optimizing reconnaissance efforts.
20	Encrypted Field Reporting App	Transmitting field reports securely during missions is essential.	Ensures secure transmission of mission updates, maintaining data integrity and safety.
21	Autonomous Surveillance Drone System	Monitoring borders requires autonomous and intelligent solutions.	Combines AI and drones to patrol borders autonomously, providing live updates and analytics.
22	Wearable Defense Communication Unit	Soldiers need integrated tools for health tracking and communication.	Tracks vitals and provides encrypted communication, ensuring safety and connectivity.
23	AI-Powered Combat Robot	Reconnaissance and basic defense tasks need autonomous robotic support.	Assists in reconnaissance missions and simple defense tasks using AI-driven decision-making.
24	Mobile Command and Control System	Coordinating multiple data streams during missions is cumbersome.	Integrates data from various sources into a unified mobile app for real-time mission control.
25	Defense Field Monitoring Kit	Tracking soldier positions and identifying threats in real time is challenging.	Provides continuous updates on soldier locations and potential threats, enhancing situational awareness.