

# 83D

# RANA

## Real-time Armoured Navigation & Awareness

### OPERATIONAL PROBLEM

Armoured formations require synchronized maneuvering and real-time command visibility. Current system Challenges:

- Lack integrated vehicle health reporting
- Do not provide geofencing alerts
- Depend on fragmented communication channels
- Offer limited real-time command updates

This creates tactical delays and reduced formation cohesion.

### THE RANA SOLUTION

- Unified armoured vehicle tracking, status, and secure messaging system
- Secure, EW-resilient tactical network
- Synchronized movement and coordination of units
- OODA loop compressed to 2-5 seconds for rapid awareness
- Provides real-time vehicle status reporting (health, position, movement)



## CORE CAPABILITIES

- Real-time tracking of tanks and armoured vehicles
- Command instruction transmission
- Geofencing alerts
- Vehicle health status dropdown:
  - Fuel
  - Ammunition
  - Gas
  - Radio
  - Injury status
  - Battery
  - Food & water levels

## OPERATIONAL ADVANTAGE

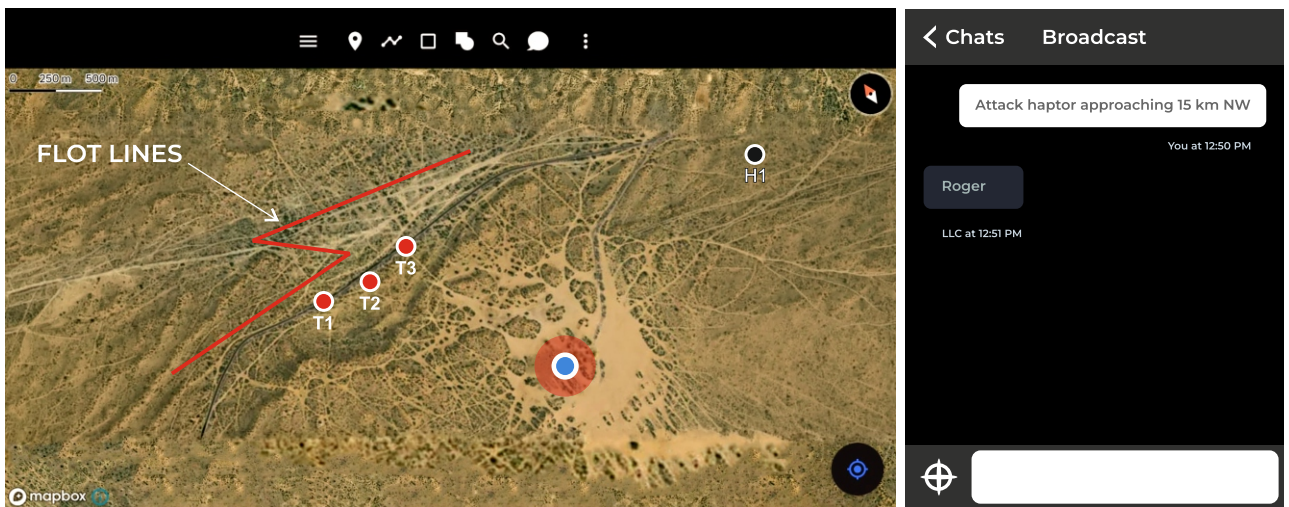
- Enhanced formation integrity
- Faster maneuver synchronization
- Improved logistical visibility
- Reduced response time to vehicle distress
- Command-level battlefield visualization



## HOW THE SYSTEM WORKS

- Situational Communication System
  - Digital Radio Device + Android display + App
  - See live location of each other
  - Text to All OR 1 to 1
  - Send Tact symbols/Markers in Group / 1 to 1
  - Users: Armed forces, NSG, Spl Forces

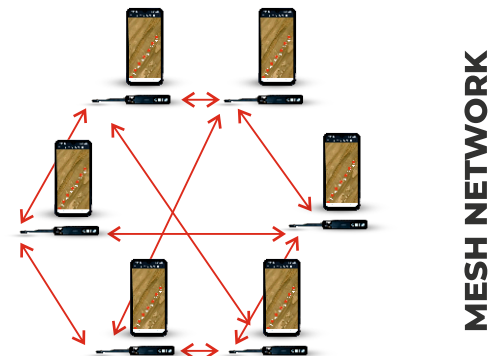
2



3



4



## INDUCTED IN

- Northern Command • Western Command • Eastern Command • Special Forces (Para SF)
- Central Command • Cobra, CRPF • ARTRAC

## 1. Physical Characteristics

**Connection with PDA:** Situational Awareness App  
**Security:** AES256 or higher  
**Data Transfer:** Information overlay exchange for line diagrams, circles, symbols, and messaging within app  
**Map:** Satellite map and map download  
**Protocol:** Mesh Networking  
**Hop Limit:** 6

**Bluetooth Connectivity:** BLE 4.0+ or higher  
**Weight (including battery):** ≤ 100 gm  
**USB Port:** Micro USB 2.0 or higher  
**Ingress Protection:** IP68 or better

## 2. Tech Specification

### A) Receiver

**Frequency:**

UHF 445 to 480 MHz (User selectable)

**Channel Spacing:**

7.28 KHz, 11.8 KHz (User selectable)

**Frequency Stability (-30°C to +60°C):**

2.5 ppm or better

**Digital Sensitivity (1% BER, 6.25 KHz):**

-116 dBm or better

**Sensitivity (1% BER, 25 KHz):**

-107 dBm or better

### (B) Transmitter

**Power Output:** 0.5W to 5W (27dBm, 30dBm, 37dBm) – User selectable

**Digital Modulation:** 4GFSK or better

### (C) Environmental Specification

**Operating Temperature:** -20°C to +35°C

### (D) Battery

**Type:** Lithium Based

**Backup (Standby):** 30 hours or higher

**Backup:** Up to 9 hours or higher

**Capacity:** 450 mAh, 3.51 Whr or higher

**Charging Time:** Minimum 3.5 hours

**Battery Bank:** Minimum 20000 mAh

### (E) SAS-PDA

**Display:** 1080 × 2408 pixels (6.6 inches), PLS LCD

**RAM:** Minimum 4 GB

**Weight:** Less than 200 gm

**Battery:** Minimum 4000 mAh

**OS:** Android 12 or above

**CPU:** Octa-core

**Internal Memory:** Minimum 64 GB

**Camera:** Minimum 50 MP

**Connectivity Support:** WiFi, Bluetooth & LE

**Charger:** Type-C & Micro USB support

**Additional Sensors:** Accelerometer & Compass

### (F) Deployment Box

**Weight (Empty):** Maximum 12 kg

**Function:** Storage & charging of 30 radio sets

### Battery

**Backup:** Minimum 1.5 hours

(20 fully discharged radio sets)

**Charging Time:** Max 10 hours

**Type:** Lithium based

**Power Input:** 110/220V AC

**Auxiliary Input:** 10–18V DC (Car charger port)

### Additional Features

**Display:** Minimum 7" (Touchscreen)

**Resolution:** 1280 × 720 or better

### Capabilities:

- Config & issue of soft frequencies
- Encryption key generation
- Team location tracking
- Messaging
- Device status
- Distance tracking (commander to team member)
- Overlay lines/objects sharing

**USB Ports:** Minimum 3

**Internal Storage:** Minimum 32 GB

**External Storage:** Micro SD slot

**Connectivity:** WiFi

### (G) Additional Specification

**Mesh Networking Protocol:** Aspen Grove

**Hop Limit:** Minimum 6 or higher

**Jamming Resistance:** Highly resistant within its band

**Spectrum:** Built-in spectrum

**Graphical UI:** Displays graphical image on PDA

**GPS:** PDA has GPS information

**SW Color Coding:** Color coding for users (IFF identification)

**Compatibility:** Compatible with Indian Army radios (Harris, StarsV, etc.) for data transmission & screen recreation

# OUR OTHER PRODUCTS

## Expanding the Tactical Ecosystem

### **INFANTRY** : SIVAS (Situational Intelligence Visualization & Awareness System)

A secure, infrastructure-independent battlefield communication and awareness platform. Designed for real-time asset tracking, encrypted team coordination, and tactical visualization, it delivers resilient performance in contested, remote, and GPS-denied environments.

### **INTELLIGENCE** : NETRA (Networked Electronic Tactical Reconnaissance & Awareness)

A covert, infrastructure-independent communication and tracking system designed for intelligence and surveillance operations. NETRA enables secure team coordination, real-time asset visibility, and low-signature data exchange through resilient mesh networking, ensuring reliable performance in denied, urban, and high-risk environments.

### **SPL FORCES** : NISAN (Networked Intelligence Situational Awareness & Navigation)

A low-signature tactical coordination system for special operations forces. NISAN delivers real-time team tracking, encrypted communication, and structured threat awareness in denied and high-risk environments, ensuring secure mission execution without infrastructure dependence.

### **ENGINEERS** : LEGS (Logistics & Engineering Geo-navigation System)

A terrain intelligence and logistics-support system designed for combat engineering units. LEGS enables real-time hazard marking, route validation, material tracking, and stores management, improving safety, efficiency, and operational control in complex environments.

### **ARTILLARY/AAD** : RANN (Real-time Artillery Network & Navigation)

A digitized fire coordination and artillery networking solution that connects OPs, CPs, and gun systems into a unified operational picture. RANN enhances precision targeting, fire correction workflows, secure messaging, and real-time friendly-force awareness.

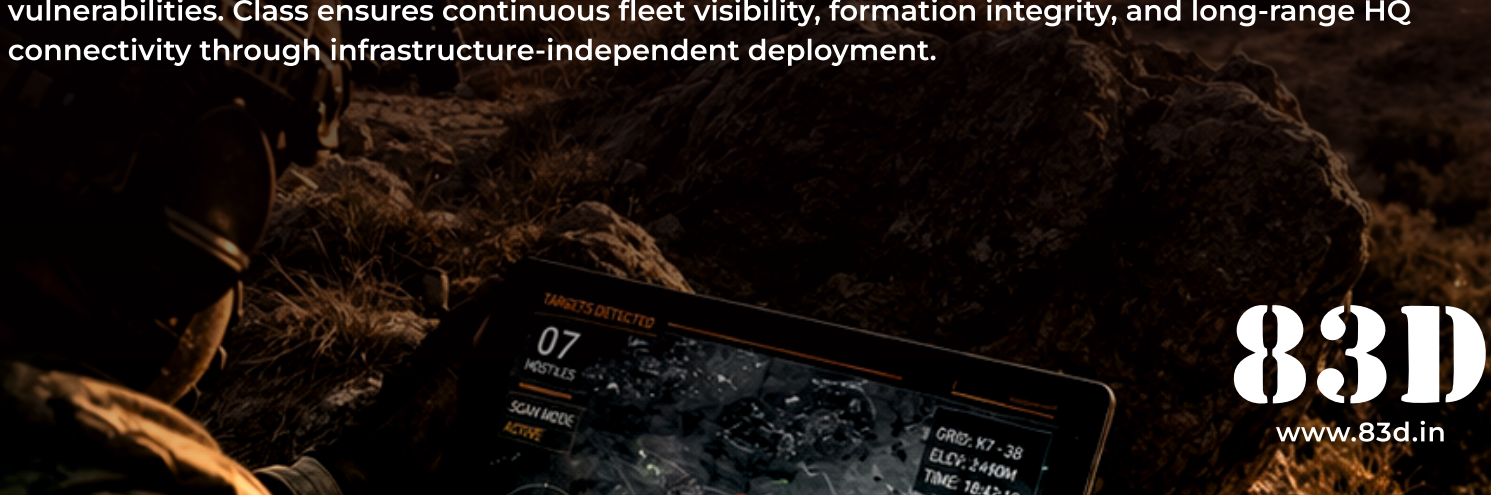
### **EME/ASC** : ARV-SAS (Armoured Recovery Vehicle – Situational Awareness System)

A dedicated recovery and sustainment platform for armoured formations, ARV-SAS enables real-time tracking of disabled vehicles, coordinated recovery operations, and seamless integration with EME and TRAC units. It enhances battlefield resilience by ensuring rapid recovery, efficient repair workflows, and continuous operational readiness in contested environments.

## SPECIAL SOLUTIONS

### **CONVOY** : CLASS (Convoy Loc Awareness & Situation Status)

A hybrid convoy intelligence and resilient communication system designed to eliminate dead-zone vulnerabilities. Class ensures continuous fleet visibility, formation integrity, and long-range HQ connectivity through infrastructure-independent deployment.



# 83D

[www.83d.in](http://www.83d.in)