



WORK REPORT ON TRAINING PROGRAM

Topic: Working Principles of Transponders

Date: 18-03-2025

Venue: Fishermen Union Hall, Malpe

1. Introduction

A training program on the “**Working Principles of Transponders and Two-Way Communication System**” was successfully conducted on 18th March 2025 at the Fishermen Union Hall, Malpe. The program was organized by the **Department of Fisheries – Government of Karnataka**, in association with **Small Pelagic Purse Seine Fisheries (Karnataka State FIP)** and **Avantel Ltd.**

This program was conducted under the framework of the **Central Sector Scheme of PMMSY**, which aims to install two-way communication and vessel tracking systems on Indian fishing vessels for improved safety, monitoring, and productivity.

2. Objective

The primary objective of the program was to provide fishermen and association leaders with detailed knowledge about:

- **Functionality and working principles of marine transponders.**
- **Two-Way Communication System** launched by Hon’ble Prime Minister Shri Narendra Modi on **30th August 2024**, benefiting fishermen across India.
- **Practical applications** in safety at sea, vessel monitoring, communication with authorities, and productivity enhancement.



3. Proceedings of the Program

- The session was presided over by **Mr. Vivek, Joint Director of Fisheries, Malpe Fishing Harbour**. In his inaugural address, he emphasized the role of advanced navigation and communication systems in ensuring the safety and welfare of the fishing community.
- The training was led by **Mr. Premanath Pandey, DGM – Customer Support, Avantel Ltd.**
- Technical aspects were explained, including:
 - o Role of **satellite-based vessel tracking terminals** operating on **ISRO's Geo-Stationary S-Band Satellite**.
 - o **Two-way communication features** enabling boat-to-shore and shore-to-boat messaging.
 - o **Safety features**: SOS alerts, international boundary alerts, weather updates, PFZ (Potential Fishing Zone) advisories.
 - o Integration with **Nabhamitra App** for multilingual messaging, weather alerts, and trip monitoring.
 - o Guidelines on installation, maintenance, and troubleshooting.
- A **live demonstration** was conducted on fishing vessels, showcasing installation, operation, and real-time functioning of the systems.
- An **interactive session** allowed fishermen to raise queries on system use, emergency procedures, and costs.



4. Participants

The training witnessed enthusiastic participation from:

- **Officials** from Department of Fisheries, Government of Karnataka
- **Fishermen community members** from Malpe and nearby regions.
- **Leaders of fishermen associations**, who represented their respective groups and ensured the dissemination of knowledge further within their communities.



5. Key Outcomes

- Enhanced awareness among fishermen about the **significance of transponders** in improving **safety, monitoring, and communication** while at sea.
- First-hand exposure through **on-vessel demonstrations** provided practical learning and boosted confidence among participants.
- Strengthened collaboration between the **Department of Fisheries, and fishermen associations** for effective implementation of modern technologies.
- Participants expressed interest in **adopting transponder systems** in their fishing vessels for improved operational efficiency and safety.
- **Clarity on national-level initiatives**, including the Rs. 364 crore investment under PMMSY, covering one lakh fishing vessels (with 15,414 already completed, benefiting 1.5 lakh fishers).





Karnataka State FIP
Small Pelagic Purse Seine Fisheries

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YASHASWI FISH MEAL AND OIL COMPANY

No. 9 - 184B, Post Pithrody, Udyavara,
Udupi District & Taluk, Karnataka, India - 574 118.

Branch 2

Plot No. IP-25A, Mangalore SEZ, Permude Village,
Mangalore, Dakshina Kannada, Karnataka, India - 574 509.



6. Conclusion

The training program on the “**Working Principles of Transponders & Two-Way Communication System**” was highly impactful and well-received. By combining theoretical knowledge with live demonstrations, the Department of Fisheries and its partners successfully created awareness on modern communication and navigation technologies that enhance **fishermen safety, maritime vigilance, and productivity**.

The program marks an important step toward **digitization of fisheries operations and improved maritime security**, ensuring long-term benefits for the fishing community of Karnataka

END OF REPORT





Government of Karnataka
Fisheries Department

Office of the Deputy Director of Fisheries Udupi
Maple- 576108

Contact number: 0820-2537044

e-mail: ddfudupi@gmail.com

NO :MEF/TRANSPONDER/1/2024-25

DATE:05.03.2025

To,

Mr.Premanath Pandey,
DGM, Customer Support,
AVANTEL Ltd.

Dear Sir,

Subject:- Organising an awareness programme regarding two-way
Communication system

With regard to the above subject, the Fishermen Union of Malpe have requested to provide a training programme to the Fishermen, boat owners and Thandels on the working principles of the installed transponders. So it is kindly requested you to organise a training programme in Malpe harbour at Fishermen Union Hall on 18.03.2025 at 11.00 A.M. However, Resource person preferably in Kannada would be relatable to the audience

Thanking you,

Yours' Sincerely,


Joint Director of Fisheries,
Udupi



ಕರ್ನಾಟಕ ಸರ್ಕಾರ
(ಮೀನುಗಾರಿಕೆ ಇಲಾಖೆ)

ಮೀನುಗಾರಿಕೆ ಇಲಾಖೆ ನಿರ್ದೇಶಕರ ಕಛೇರಿ,
ಉಡುಪಿ ಮಲ್ಟಿ - 576108

ದೂರವಾಣಿ ಸಂಖ್ಯೆ: 0820- 2037044

e-mail: ddindupli@gmail.com

ಸಂಖ್ಯೆ:ಎಂ.ಇ.ಎಫ್/01/ಬ್ರಾನ್ಸ್‌ಪಾಂಡರ್/2024-25

ದಿನಾಂಕ:17.03.2025

ರಿಗೆ,

1. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಮಲ್ಟಿ ಮೀನುಗಾರರ ಸಂಘ, ಮಲ್ಟಿ
2. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ರೇಪ್ ನೀ ಫ್ರಾಲ್ ಅಸೋಸಿಯೇಷನ್, ಮಲ್ಟಿ
3. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಮಲ್ಟಿ ಕರ್ನೀಸ್ ಮೀನುಗಾರರ ಸಂಘ, ಮಲ್ಟಿ
4. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಫ್ರಾಲ್ ಬೋಟ್ ಮೀನುಗಾರರ ಸಂಘ, ಮಲ್ಟಿ
5. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಅಳಸಮುದ್ರ ತಾಂಡೇಲರ ಸಂಘ, ಮಲ್ಟಿ
6. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಸಾಂಪ್ರದಾಯಿಕ ನಾಡದೋಗೆ ಮೀನುಗಾರರ ಸಂಘ, ಮಲ್ಟಿ
7. ಅಧ್ಯಕ್ಷರು/ಕಾರ್ಯದರ್ಶಿ ಸದ್ದಾ ಫ್ರಾಲ್ ಬೋಟ್ ಮೀನುಗಾರರ ಸಂಘ, ಮಲ್ಟಿ
8. ಅಧ್ಯಕ್ಷರು, ತಾಂಡೇಲರ ಸಂಘ, ಮಲ್ಟಿ
9. ಕಾರ್ಯದರ್ಶಿ, ಕರ್ನಾಟಕ ಮೀನುಗಾರಿಕಾ ಅಭಿವೃದ್ಧಿ ನಿಗಮ, ಮಲ್ಟಿ/ಗಂಗೋಳಿ
10. ಕಾರ್ಯದರ್ಶಿ, ರ.ಕೆ ಮತ್ತು ಉಡುಪಿ ಹೆಲ್ಪ್ ಸಹಕಾರಿ ಮುಖಾಂತರ ಮಹಾಸಮಾಜ, ಮಲ್ಟಿ
ಶಾಖೆ/ಹಬ್ಬಮಾಡಿ/ಹಂಗಾರಕಟ್ಟೆ/ಗಂಗೋಳಿ
11. ಕಾರ್ಯದರ್ಶಿ, ಮಲ್ಟಿ ಯಾಂತ್ರಿಕ (ಬ್ರಾನ್ಸ್) ದೋಗೆ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ಸೇವಾ ಸಹಕಾರಿ ಸಂಘ
(ಸಿ), ಮಲ್ಟಿ
12. ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಹಣಾಧಿಕಾರಿ, ಬರ್ಲಿನ್ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ಸೇವಾ ಸಹಕಾರಿ ಸಂಘ (ಸಿ)
ಕೋಟ, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಮಲ್ಟಿ ಶಾಖೆ
13. ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಹಣಾಧಿಕಾರಿ, ಮಲ್ಟಿ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ಸಹಕಾರ ಸಂಘ (ಸಿ), ಮಲ್ಟಿ
14. ಕಾರ್ಯದರ್ಶಿ, ಅಳಸಮುದ್ರ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ಸೇವಾ ಸಹಕಾರಿ (ಸಿ), ಮಲ್ಟಿ
15. ಕಾರ್ಯದರ್ಶಿ, ಗಂಗೋಳಿ ಮೀನುಗಾರರ ಸಹಕಾರಿ ಸಂಘ (ಸಿ), ಗಂಗೋಳಿ
16. ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಹಣಾಧಿಕಾರಿ, ಬರ್ಲಿನ್ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ಸೇವಾ ಸಹಕಾರಿ ಸಂಘ (ಸಿ)
ಕೋಟ, ಗಂಗೋಳಿ ಉಪವಿಭಾಗ
17. ಕಾರ್ಯದರ್ಶಿ, ನಾಡದೋಗೆ ಮತ್ತು ಯಾಂತ್ರಿಕ ದೋಗೆ ಮೀನುಗಾರರ ಪ್ರಾಥಮಿಕ ವಿವಿಧೋದ್ದೇಶ
ಸಹಕಾರಿ ಸಂಘ (ಸಿ), ಮಲ್ಟಿ

ಮಾನ್ಯರೇ,

ವಿಷಯ: ಯಾಂತ್ರಿಕ ದೋಗುಗಳಿಗೆ ಬ್ರಾನ್ಸ್‌ಪಾಂಡರ್ ಆಳವಡಿಸಿದ ಕುರಿತು
ದಿನಾಂಕ:18.03.2025 ರಂದು ಮೀನುಗಾರರಿಗೆ ತರಬೇತಿ ವಿರ್ಪಡಿಸುವ ಬಗ್ಗೆ.

ಮೇಲಿನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಈಗಾಗಲೇ ಯಾಂತ್ರಿಕ ದೋಗುಗಳಿಗೆ
ಬ್ರಾನ್ಸ್‌ಪಾಂಡರ್ ಆಳವಡಿಸಲಾಗಿದೆ. ಈ ಕುರಿತು ದಿನಾಂಕ:18.03.2025 ರಂದು ಬೆಳಿಗ್ಗೆ 10:30 ಕ್ಕೆ
ಮೀನುಗಾರರ ಸಮುದಾಯ ಭವನ, ಮಲ್ಟಿ ಜಲ್ಲಿ ತರಬೇತಿ ವಿರ್ಪಡಿಸಲಾಗಿದೆ.

ಅದ್ದರಿಂದ ಸದ್ರಿ ಸಭೆಗೆ ಬೋಟಿನ ತಾಂಡೇಲರಿಗೆ ಹಾಗೂ ಬೋಟಿನ ಮಾಲಿಕರಿಗೆ ಸಭೆಗೆ ಹಾಜರಾಗುವಂತೆ ತಿಳಿಸಿ, ತಾವುಗಳು ಸಭೆಗೆ ಹಾಜರಾಗುವಂತೆ ಕೋರಿದೆ.

ತಮ್ಮ ನಂಬುಗೆಯ,

ಮೀನುಗಾರಿಕೆ ಜಂಟಿ ನಿರ್ದೇಶಕರು,
ಉಡುಪಿ. (ಪೂರೈಕೆ)

ಪ್ರತಿಯನ್ನು: ಗೌರವಗಳೊಂದಿಗೆ ಮೀನುಗಾರಿಕೆ ನಿರ್ದೇಶಕರು ಬೆಂಗಳೂರು ರೆವರಿಗೆ ಸಲ್ಲಿಸಿದೆ.
ಮೀನುಗಾರಿಕೆ ಉಪನಿರ್ದೇಶಕರು, ಬಂದರು ಮಲ್ಲೆ/ಗಂಗೊಳ್ಳಿ | ಸದ್ರಿ ಸಭೆ
ಮೀನುಗಾರಿಕೆ ಸಹಾಯಕ ನಿರ್ದೇಶಕರು, ಉಡುಪಿ/ಕುಂದಾಪುರ | ಹಾಜರಾಗಲು ಸೂಚಿಸಿದೆ.



Installation of Two Way Communication System for Indian fishing vessels

(A Central Sector Scheme under PMMSY)

25^h February 2025

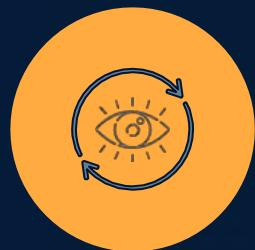
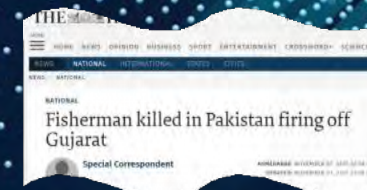
Department of Fisheries
Government of Karnataka, Udupi

Two Way Communication System

- Launched by Hon'ble Prime Minister Shree Narendra Modi on August 30, 2024.
- Investment of Rs. 364 crore, for one lakh fishing vessels..
- 15,414 has been completed till date benefiting 1.5 lakh fishers.
- Enabling two-way communication and offering vital information on fishing zones and weather alerts.
- This is expected to improve safety for fishermen and optimize fishing efforts.
- Enable the fishermen to send short text messages during any emergency covering entire EEZ.

- **Satellite Based Vessel Tracking Terminal to enable two-way** communication (Boat-to-shore & shore-to Boat)
- Real-time tracking and monitoring of fishing vessels in deep sea.
- Designed to operate on **ISRO's Geo-Stationery S-Band satellite**.
- Light in weight and compact in size.
- It can be securely **mounted on at flat surface** or on a **pole**.

Need for Two-Way communication system



National Security

Hostile neighbours,
history of terror attacks,
better border vigilance
& safeguarding of
interests in Exclusive
Economic Zone



Fishermen Safety

Life safety, SOS, Aid in Search
& rescue missions
Weather info, International
boundary alerts, Messaging



Maritime Vigilance

Identification, Tracking,
monitoring of fishing vessels.
Better co-ordination amongst
maritime security agencies



Enhance Productivity

Access to modern
technology, PFZ info,
2-way messaging, quicker
monetization, reduce idle
time, minimize losses



Fiscal Efficiency

Better utilization of govt.
subsidies & state
resources.
Digitization of boat,
crew & trip records

FEATURES



Compact, light weight terminal with flexible mounting options



Android app for two-way messaging configuration, control and data



IRNSS (NavIC) and GPS multi-mode tracking



Software upgrade Over the Air (OTA)



IP 67 Compliant casing to operate in harsh marine environment



Separate physically connected SOS unit



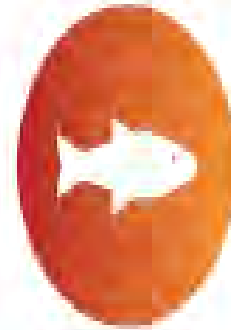
Android Version
11.0 (Android 11.0)

Benefits to Stakeholders



Fishermen

Send distress signal in emergency
Get weather and fishing zone alerts



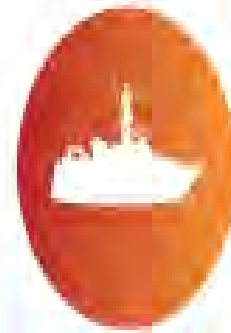
Fisheries Dept.

Broadcast emergency alerts to the boats
Tracking of boats



Boat Owners

Real-time location tracking of boats
Communication with boat crew

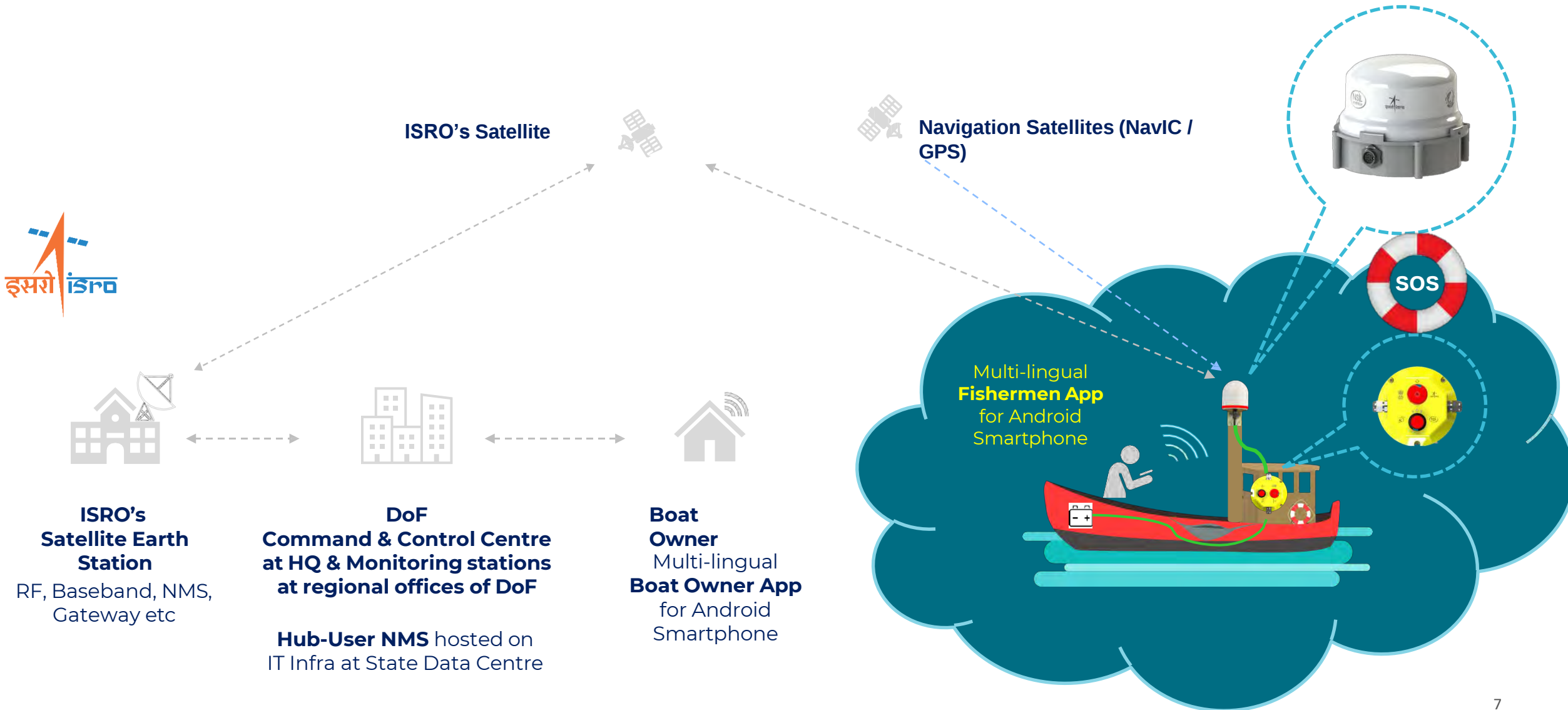


Maritime Security

Monitoring of boats for coastal security
Aid in search and rescue operations

Two way MSS Network for Vessel Tracking & Fishermen Safety

Tracking & Monitoring | Two-way Messaging | SoS | Weather alerts & PFZ info | Productivity



Two Way Communication System specifications

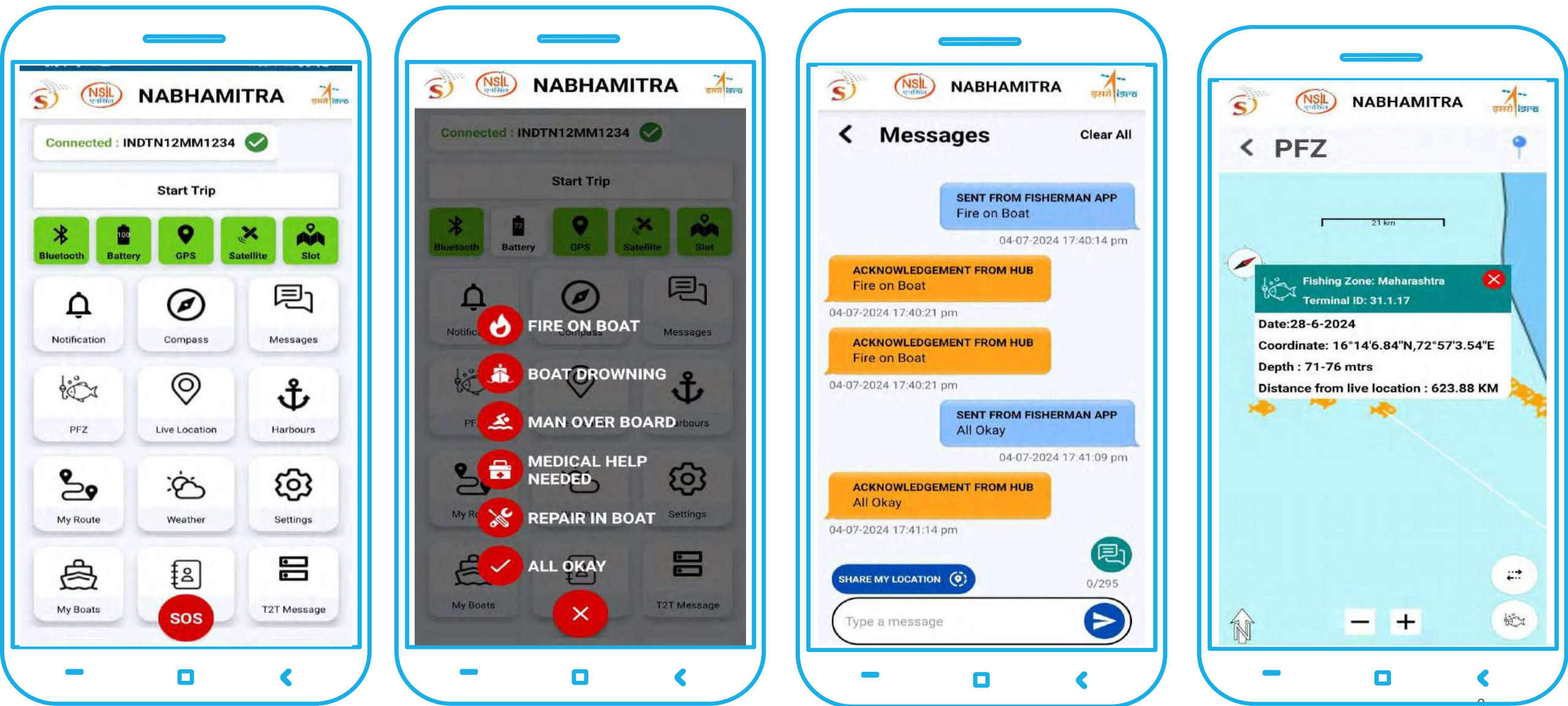
Outdoor device



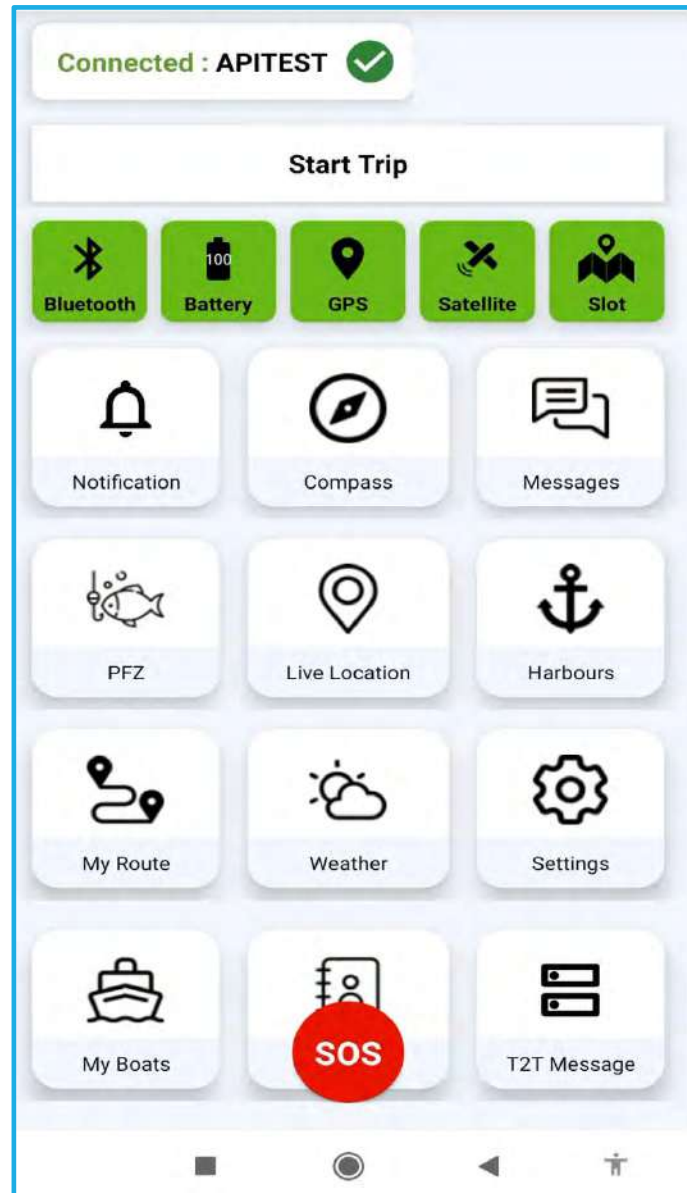
Indoor device

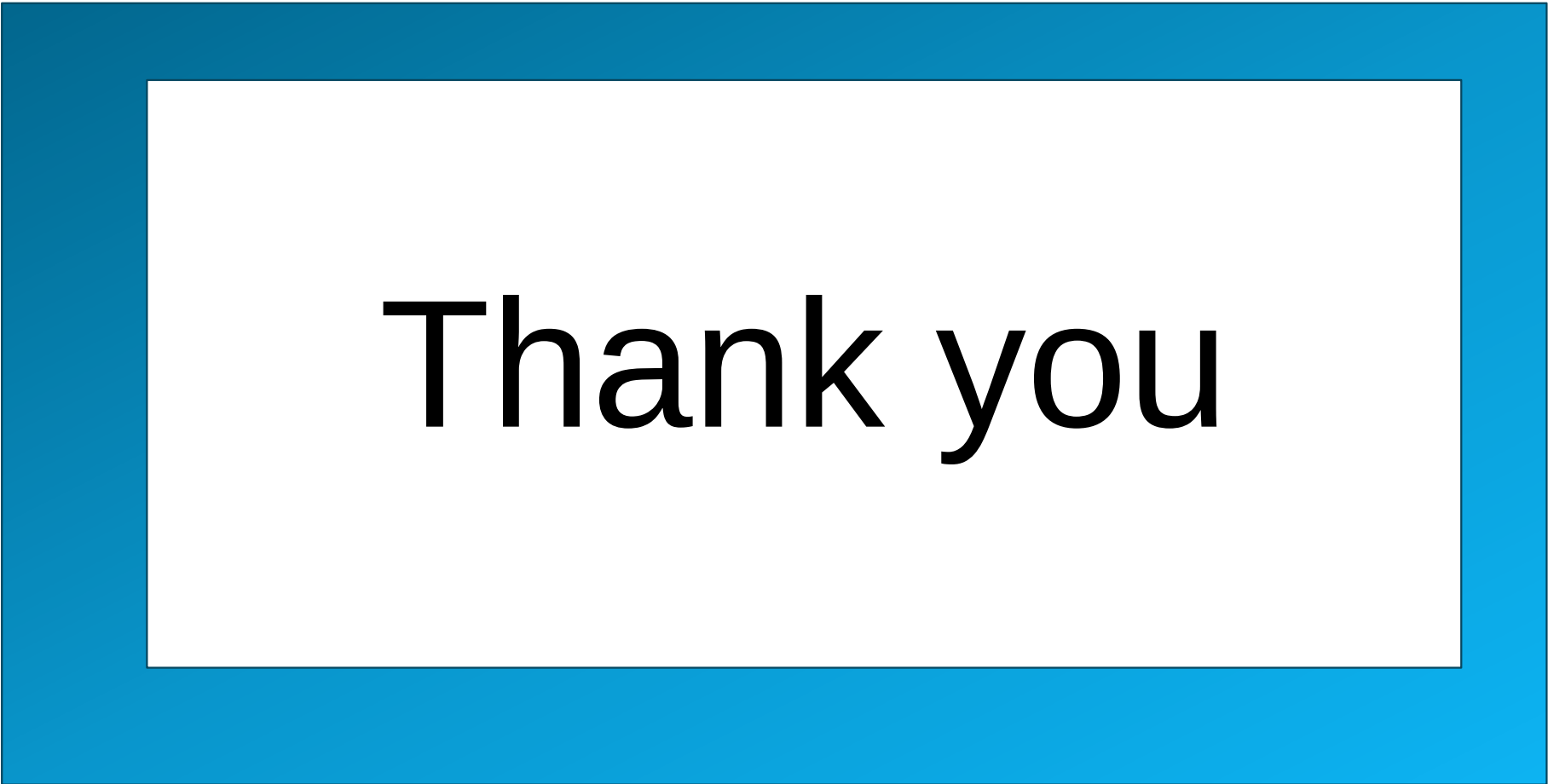


Nabhamitra Application (Fishermen App)

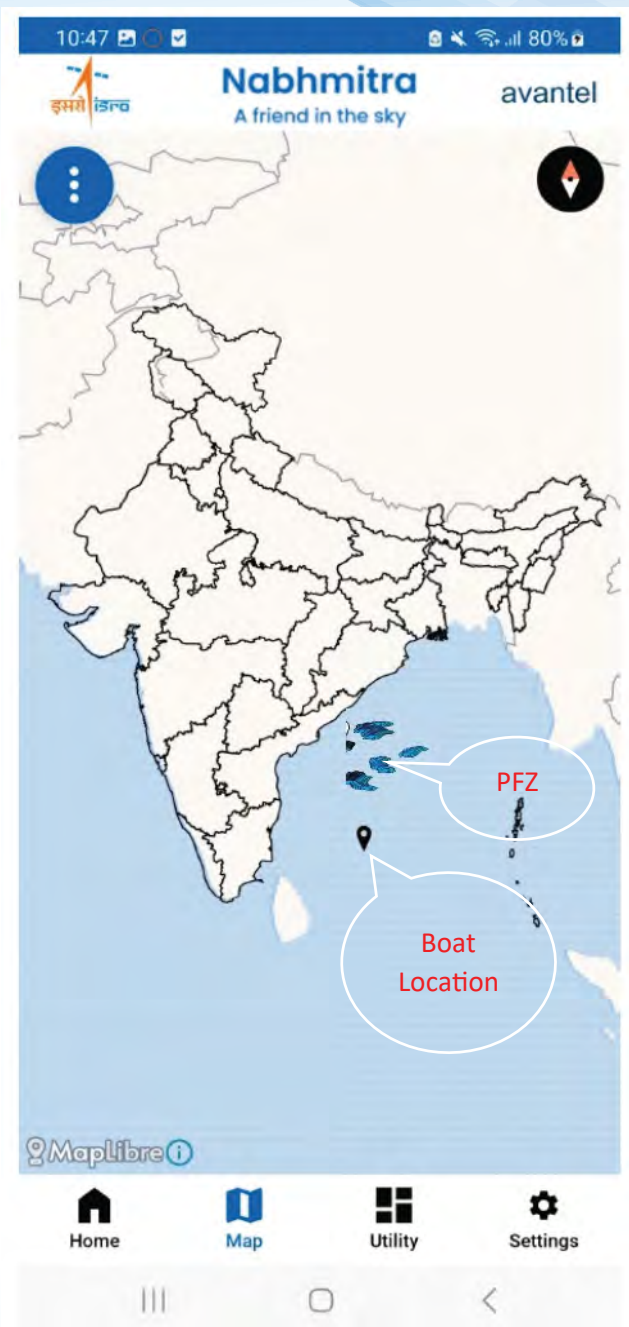


Nabhamitra Application





Thank you



Nabhmitra System

Designed & Developed by

avantel



Avantel Limited

REGD. OFFICE & PRODUCTION UNIT-1

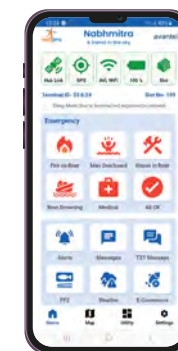
Plot No.47/P, Sy. No.141, APIIC Indl Park, Anandapuram
Mandal, Gambheeram Village, Visakhapatnam - 531 163,
Andhra Pradesh, India.

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Web: www.avantel.in

Nabhmitra

Nabhmitra System is an Indian Satellite-based communication system for Monitoring, Control, and Surveillance (MCS) of Mechanized and Motorized fishing vessels in deep sea. It helps fishermen for positional reporting, two-way emergency messaging, SOS signalling from boats and to locate potential fishing zones (PFZ) through an android based Nabhmitra app installed in a smartphone.

Nabhmitra System consists of MSS Terminals (Xponders), Indoor unit and an Android App.



Nabhmitra System Components

a. MSS Terminal (Xponder): It is an outdoor unit and will be installed on top of boat to ensure clear sky above the terminal. It transmits and receives data through Satcom network.

b. MSS Xponder-IDU : It is an indoor unit receives alerts from Xponder unit and generates an audio indication for alerting fishermen. It also has a SOS button. Upon pressing the button for 3 seconds, one manual emergency message will be transmitted to control Station along with position information. This will help rescue team to react promptly and accurately.

c. Nabhmitra App : It is an Android application that will be installed in the fishermen's mobile phone and it connects to Xponder unit over WiFi and receives data from control station and displays to Operator. Operator is allowed to send and receive various types of messages, monitor the system and view reports.

Features

- Nabhmitra Android APP connects to Xponder through Wi-Fi link.
- Fishing vessel tracking in deep sea locations.
- Automatic reporting of periodic position.
- Transmission of distress alert & text messages.
- Geo-fencing alarms to fishermen when boat crosses maritime boundary.
- Reception of weather alerts, potential fishing zone from control station.
- Emergency Siren, SoS manual switch & low battery buzzer on IDU.
- Built-in battery with power backup upto 24 hrs.
- Tamper detection alerts control centre for physical un-mounting and power supply removal.

Nabhmitra – Android Application



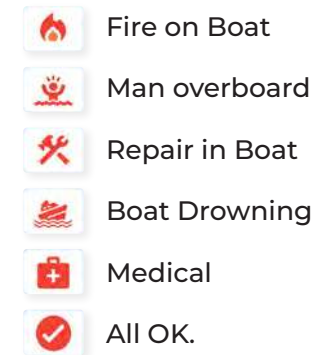
Fig: Home screen of the app

Download App

1. On your device, open the Google Play Store.
2. Search or browse for Nabhmitra.
3. Select Install
4. Follow the on-screen instructions
5. Enter Mobile Number

Status Panel : The Status Panel indicates status of Hub link, GPS, WiFi, Battery, Slot allocation status, and terminal ID.

Emergency Messaging Panel: It provides the following icons for sending emergency messages:



When user taps on any of these icons, the app will ask for confirmation of message transmission. If user confirms with Ok, the app will transmit the corresponding emergency message to control centre.

Utility panel: It provides various options to view received alerts from Control Centre, view and send text message to Control Centre/ Terminals or a mobile number, E-Commerce messages, alerts like Potential Fishing Zone (PFZ) and Weather data. The home screen of the app is shown below:

Bottom panel: It provides icons for navigating to Map, Utility and system settings. If user taps on Map icon on home screen, following screen is displayed with boat current location: