



# INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X

Impact factor: 4.295

(Volume 4, Issue 2)

Available online at: [www.ijariit.com](http://www.ijariit.com)

## Catch Me If You Can – IoT based System

Dr. S Padma Priya

[padmapriya.sha@gmail.com](mailto:padmapriya.sha@gmail.com)

Prathyusha Engineering College, Tiruvallur, Tamil  
Nadu

Hemanth Krishna S P

[sphemanthkrishna@gmail.com](mailto:sphemanthkrishna@gmail.com)

Prathyusha Engineering College, Tiruvallur, Tamil  
Nadu

A L A Vishnu Sai

[anchevishnusai@gmail.com](mailto:anchevishnusai@gmail.com)

Prathyusha Engineering College, Tiruvallur, Tamil  
Nadu

B V Rama Pulla Rao

[ramu1018pullarao@gmail.com](mailto:ramu1018pullarao@gmail.com)

Prathyusha Engineering College, Tiruvallur, Tamil  
Nadu

### ABSTRACT

*Catch me if you can is a project with the main idea to protect the lives of the fishermen by ensuring their safety when they are travelling into sea for fishing. We propose to track and monitor them using a different approach. Most of the fishermen cross the borders knowingly. So this cannot be prevented. Instead, we can have a single point check to make sure the required devices are in their possession and some other things can be checked by scanning them using SCANDIT SDK which is integrated to smartphone to ensure fishermen safety as well as national security. Also, we will provide an IOT device so that we can track the location of their boats and send alerts to them who may cross the border unknowingly through which may save them from get caught by neighboring country's coast guards.*

**Keywords:** SCANDIT SDK, Single Point Check, IoT Device, Alerts.

### 1. INTRODUCTION

One of the major problems that the present day the country is facing is the problem with the safety of the fishermen and are taking various measures in order to safeguard them. Generally, the sea police look after the illegal activities and the fishermen, boats but still this type of monitoring is not that reliable because they cannot ensure the total security. The government provides 70% of subsidy to fishermen to buy the safety equipment. These equipment are to be ensured to be present on each boat that sails into the sea, but the fishermen are ignoring to take them into the sea with them resulting in the malicious activities happening which may affect the national safety as well as the fishermen lives. Every year many fishermen are getting caught by the other country coast policemen because of the crossing the borders. Still, many measures are being taken in order to eradicate this issue and many state governments are working collectively to solve it.

### 2. RELATED WORKS

By the study we carried out, we came to know that ensuring the presence of some devices in-turn ensures the safety of fishermen. For example, ensuring the presence of an Emergency Position Indicating Radio Beacon or EPIRB, ensures the rescuing of fishermen in distress or emergency and also came to know the various current scenarios between the fishermen and government. By having discussions with one of the navy men we came to know about how to install a single point check.

Also, we referred to a paper by J. Thomas, J. Robble, and N. Modly, named "Off-grid communications with android meshing the mobile world" through which we learned how to track the location in the absence of the mobile network by the concept of Off-Grid Communication.

### 3. PROBLEM IDENTIFICATION

The existing system for monitoring the location of the fishermen was done by patrolling the sea. Coastguards are currently using their ships to physically check their presence. Also, they are manually checking the list of items that were carried by them into the sea that was given by the government. Due to this, there are many cons like there might be many fishermen still crossing the borders

because all the coastguards cannot be monitored with their ships. Due to the lack of a storing system for the list of items that are to be carried compulsorily cannot be checked to the mark.

#### 4. PROBLEM SOLUTION

There will be a single point in every port through which the boats sail into the sea. The main objective is to place a check at that point to make sure of the following criteria. The devices could be scanned using any Smartphone with a decent camera and the unique id could be updated with the boat number on to the database for monitoring. This could also be used to make a survey about "Whether the government subsidy is used properly or not?"

For the existing manual checking system, we are developing a mobile application from which the barcodes on each item that are to be carried by them into the sea. The existing system has many flaws and so we are proposing a tracking system for the coastguards with the help of which they can actively monitor the location of the fishermen from their computer. Through which for the existing manual checking system, we are developing a mobile application from which the barcodes on each item that are to be carried by them into the sea. The existing system has many flaws and so we are proposing a tracking system for the coastguards with the help of which they can actively monitor the location of the fishermen from their computer.

#### 5. DIAGRAMS

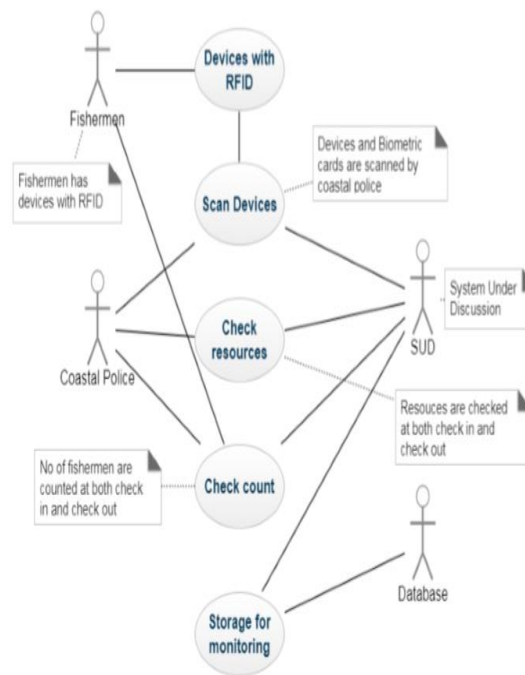


Figure 1: Use Case Diagram (Application)

Figure 1 explains the interaction between the users and the system. Also explains how the devices can be scanned by the coastal police and also the kit that the fishermen carry into the sea and how the items checklist and the count of the fishermen are stored and maintained in the database.

Figure 2 explains how the entire project flow and we can observe how the fishermen and coastal police interact with the software and the hardware in order to get a proper and desired outcome.

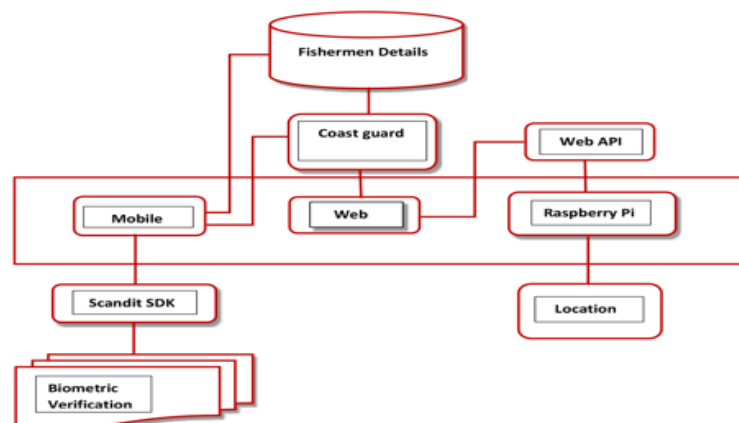


Figure 2: Application Architecture Diagram

## 6. SOFTWARE USED

### 6.1 For DATABASE

We use MONGODB ATLAS. Using C#, .NET and Java drivers we connect DB to the Mobile and Web respectively. Initially, we create a cluster and a database, later on, we import the data through uploading from mobile/web which can be viewed afterward.

### 6.2 For MOBILE APP

The mobile application basically for Android and iOS will be used by an official at the single point check to update the info about fishers. It uses the smart phone's camera to scan the QR Codes or Barcodes that are printed on the biometric ID's of the fishermen. Further, they can add the details about the devices they carry into the sea. We integrated the Scandit SDK, the highest quality mobile barcode scanning solution for smartphones, tablets, and wearable devices for scanning the codes. After scanning the details, they are added to the DB. Later, they can be retrieved when needed.

### 6.3 For Web

This is a WEB interface used by the coast guard to track the location of the fishermen and alert them if they are crossing the country's border. Apart from the location tracking, we can also view the details of the fishermen and the time spent by them fishing in the sea with their boats. A web page is created using struts which shows the location of the boat and which also has an integrated search engine created using Apache Lucene.

### 6.4 IoT

We wrote a python script for tracking the location of each boat in which the Raspberry Pi (IOT Setup) is installed. The script is made to run at regular intervals during the startup of the Pi and so that the location is updated regularly. A web URI is written which allows the Pi to post the location to the web interface.

## 7. PROGRAM OUTCOME

We can develop a mobile application which has a separate login for the coast guard officials and also integrated Scnadit SDK into it which can be used to scan the items that they carry into the sea,



Figure 3: Login Page

Figure 3 is the login page which is used by the coastguard officials to sign in and to update and view the details of the fishermen.



Figure 4: Main Page

Figure 4 is the main page which is used by where by selecting the first option the scanner opens and thus items can be scanned and their details can be stored. By tapping on the second option they can view the details that are retrieved from the database.



**Figure 5: Scanner**

The above figure is the scanner which is integrated into the mobile application which scans the checklist of items.

## **8. CONCLUSION**

This invention helps to improve the coast guard officials to monitor the location of the fishermen in the deep sea. It reduces the physical presence of the coastguard to keep tracking of the fishermen. Ensuring the presence of these device in-turn ensures the safety of fishermen. Illegal activities can be easily carried out through seaways. So by having the count of a number of boats and the fishermen the national security is also obtained.

## **9. REFERENCES**

- [1] J. Thomas, J. Robble, N. Modly, "Off-grid communications with android meshing the mobile world", Homeland Security (HST) 2012 IEEE Conference on Technologies for., pp. 401-405, 2012.
- [2] Sanga Son, Yongtae Shin, " Design of Smart Shopping Application Using Barcode Scanning and Location Based Coupon Service", Global Internet of Things Summit (GIoTS), 2017.
- [3] Mohamed Afifi, Mohamed F. Abdelkader, Atef Ghoneim, "An IoT system for continuous monitoring and burst detection in intermittent water distribution networks", Innovative Trends in Computer Engineering (ITCE), 2018.
- [4] Mohamed Mirza, Yasser Asrul Ahmad, Teddy Surya Gunawan, "Low altitude balloon IoT tracker Smart Instrumentation", Measurement and Application (ICSIMA), 2017.
- [5] Bharath Sai Pochampally, Jiangbo Liu, "A secure tracking mobile app development", Industrial Electronics and Applications (ICIEA), 2017