PIDS Alarm Response System

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SYSTEM OVERVIEW

PIDS ALARM RESPONSE SYSTEM - MHMBPL PIPELINE , HPCL

INPUT

Select Range	SV13-SV15
Enter Alarm OD	201

COORDINATES

Latitude	12.93924062
Longitude	76.13393847

ALARM DETAILS

Neares KMP Board	60
Alarm Chainage	5.61
Nearest Object (WB/BB/KMP/TLP)	TLP NO 9 CH NO 5.699
Alarm position with respect to object	91 metres towards Mysore
Description of Terrain	Farm land,High tension tower and Trees

Date	12/07/2021
Enter Name of receiver	MVR Sir
Enter Whatsapp Number	+919611589859

Create Message | Clear Message | Choose Language for Message: English-Kannada

Send to above number

Line Walker Name	Sumanth BP
Device Number	7624966172
Contact Number	+917760923395

Send Whatsapp to Line Walker

Supervisor Name	Swamy
Supervisor Contact	+917022549558

Send Whatsapp to Supervisor

Day patrolling	Santosha KN
Contact Number	+919343732520

Send Whatsapp to Day Patrolling

Alarm Message

ಚೈನೇಜ್ 53.041 ನಲ್ಲಿ ಅಲಾರಂ ಪರಿಶೀಲಿಸಿ
ಹತ್ತಿರದ ಕೆಎಂಪಿ ಮಂಡಳಿ 53
ಕೆಎಂಪಿ 53 ಡಬ್ಲ್ಯೂಬಿಯಿಂದ ಅಲಾರಂ ದೂರವು ಹಾಸನದ ಕಡೆಗೆ 41
ಅಲಾರ್ಮ್ ಕಕ್ಕೆಗಳು: 12.54183076,76.24847672
https://www.google.com/maps/place/12.54183076,76.24847672
ಎಂಆರ್ಎಸ್ ನಿಯಂತ್ರಣ ಕೊಠಡಿ

Check alarm at Chainage 53.041
Nearby KMP Board 53
Alarm distance from KMP 53 WB is 41 metres towards Hassan
Alarm Coordinates:12.54183076,76.24847672
https://www.google.com/maps/place/12.54183076,76.24847672
MRS Control Room

Google Map Link

https://www.google.com/maps/place/12.54183076,76.24847672

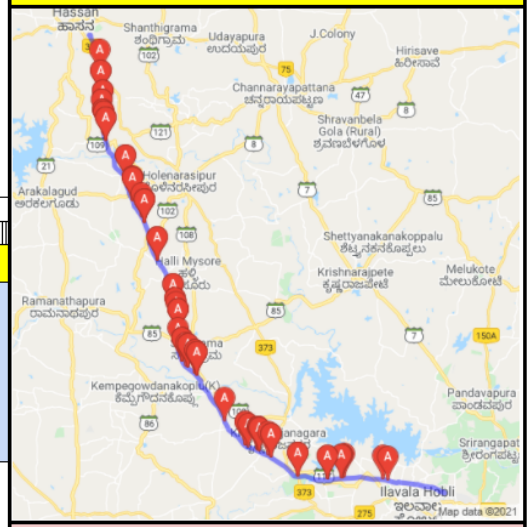
Press for Instructions

Form link: https://docs.goo

Latest Alarm Details

Message Sent to Line Walker Raghu N for alarm at CH53.041 and OD 7890 in section SV13-SV15 Time:Thu Jun 10 2021 15:38:15 GMT+0530 (India Standard Time).

ROU MAP

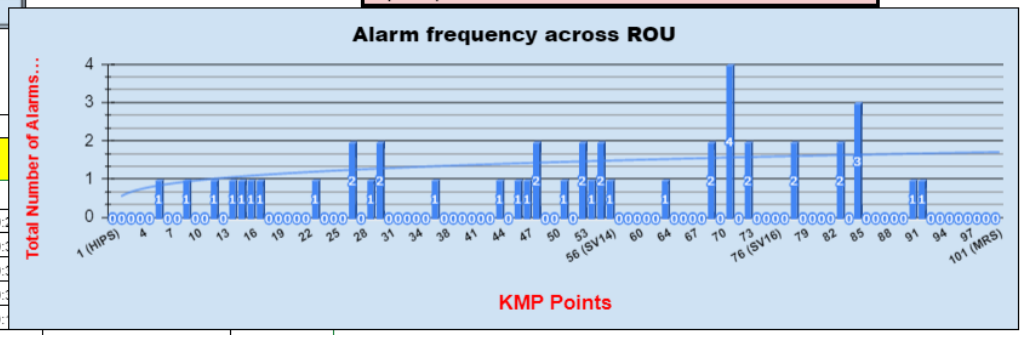


Map last updated at 3:38:20 PM

Last Time: 4 Hrs

Alarm Statistics

SNo.	Section	OD	Chainage	Message sent to	Category	Date	Time
1	SV13-SV15	5056	55.665	ShivaKumar CM	LineWalker		09:2
2	SV13-SV15	31763	29.841	Veerabhadra	LineWalker		09:1
3	SV13-SV15	12492	48.483	Swamy	Supervisor		09:1
4	SV13-SV15	12492	48.483	Swamy	Supervisor		09:1
5	SV15-Mysore	11446	71.383	Mahesh K J	DayPatrolling		10:1



BACKGROUND

- **Pipeline Intrusion Detection System (PIDS)** is deployed across the pipeline network of HPCL to ensure safety and security of ROU. It detects any activity that occurs on the ROU and generates alarms in the client machines present in the control room which are then communicated to the concerned line walker/patrolling vehicle for physical verification by the control room officer/engineer. However, the system does not display the exact Chainage value of the alarm and rather displays the Optical Distance (OD), section (based on controller) and GPS coordinates.
- The Chainage is manually calculated using a calibration sheet by the C/R officer and then communicated to the respective line walkers by calling and explaining them the alarm details (Chainage, section, nearby Warning Board/TLP Box/KMP Board etc.). This activity is often time consuming and prone to human error increasing the response time, directly impacting the safety of the pipeline.

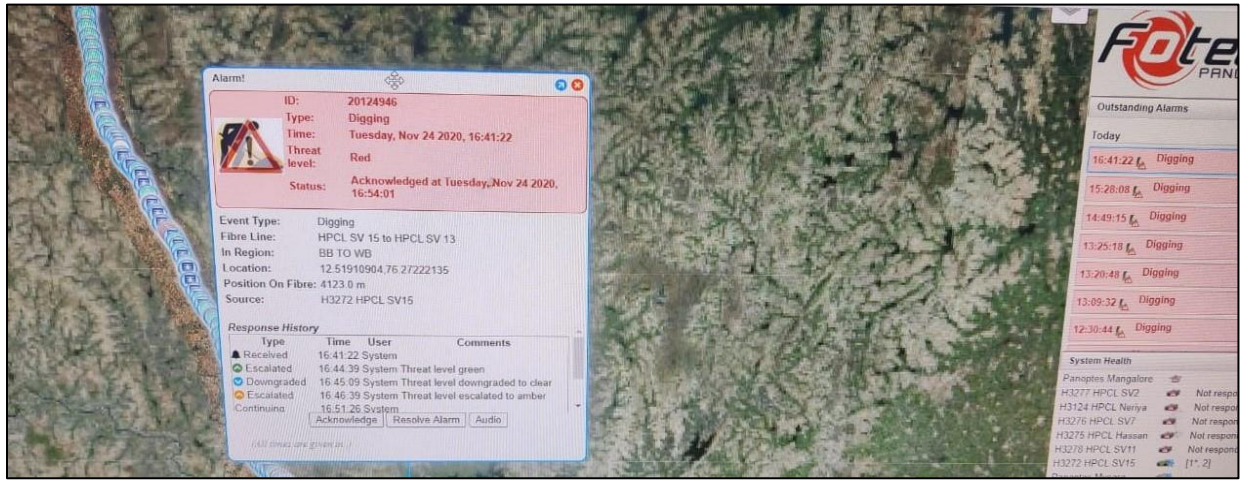
OBJECTIVES

- To automate and expedite the process of Chainage calculation of alarms generated via PIDS System.
- To inform the concerned field authorities (Line Walkers/Supervisors/Day Patrolling) about the alarm details more efficiently along with exact GPS coordinates of the alarm point for higher accuracy.
- To develop a low cost, user friendly, multi lingual and a system with analytical capabilities for enhancing the surveillance capabilities of the pipeline security teams.
- To provide faster and smarter response to alarms generated using technology, thus **enhancing overfall safety of the pipeline network**.

INPUTS

- Choose alarm section (HIPS – SV13, SV13- SV15 or SV15- Mysore) and enter Alarm Optical Distance (OD) and displayed in PIDS System.

INPUT	
Select Range	SV13-SV15
Enter Alarm OD	4123
Enter GPS Coordinates	
Latitude	12.51862502
Longitude	76.27276539



Output – Alarm Details

Based on the above inputs, the following information is calculated and displayed:

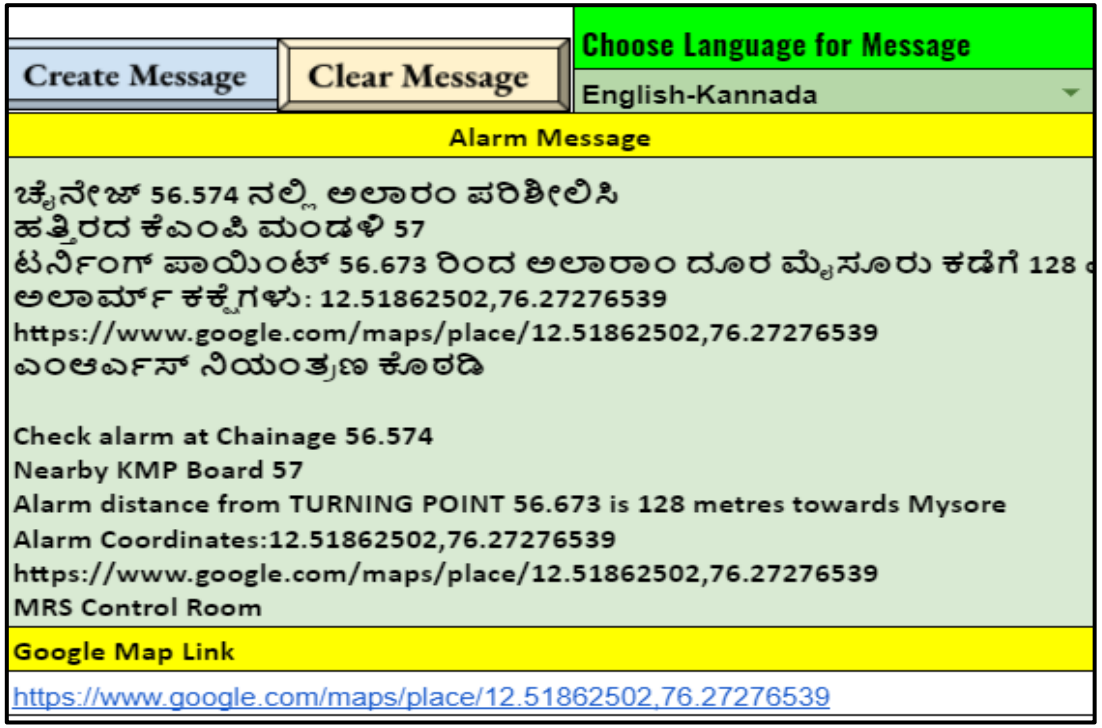
- Alarm Chainage (0 – 100)
- Nearest KMP Board
- Alarm GPS Coordinates
- Nearest Object (TLP Box/Warning Board/Bend Board/KMP board)
- Alarm position with respect to the nearest object for identification
- Description of location and terrain

ALARM DETAILS	
Neares KMP Board	57
Alarm Chainage	56.574
Nearest Object (WB/BB/KMP/TLP)	TURNING POINT 56.673
Alarm position with respect to object	128 metres towards Mysore
Description of Terrain	Farm land

Alarm Response Features

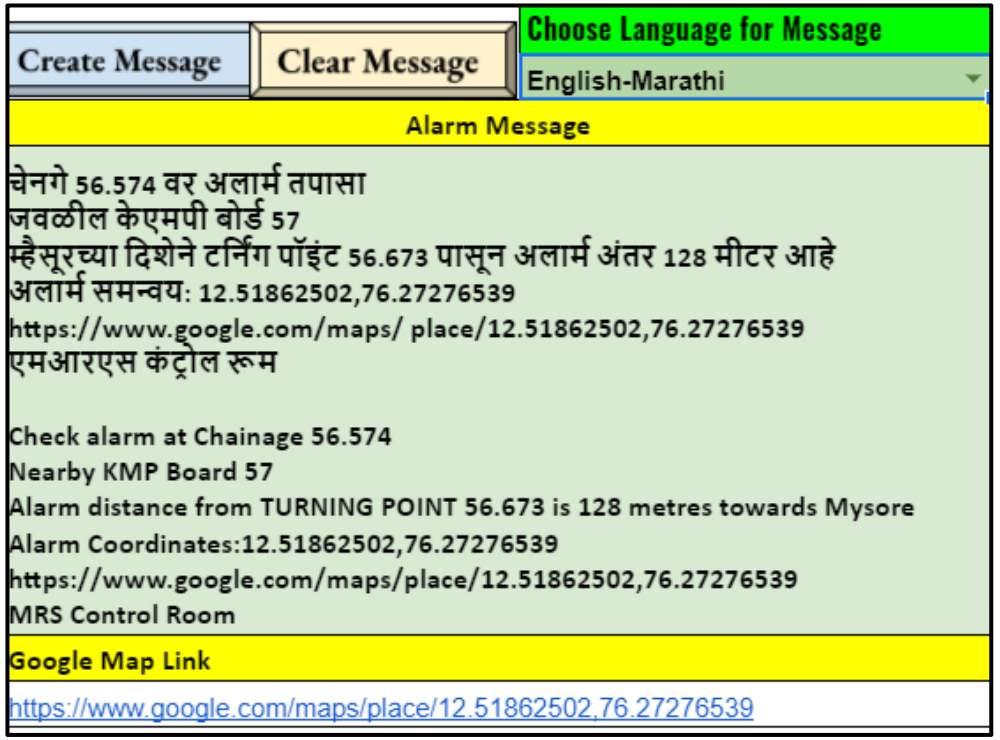
- Automatically create a message containing complete details of Alarm point along with google map link of the alarm location for higher accuracy.

- Press ‘Clear Button’ to delete old message if applicable.
- Choose desired Language of the message from dropdown populated with alarm details.
- Then select Create message to generate the message.

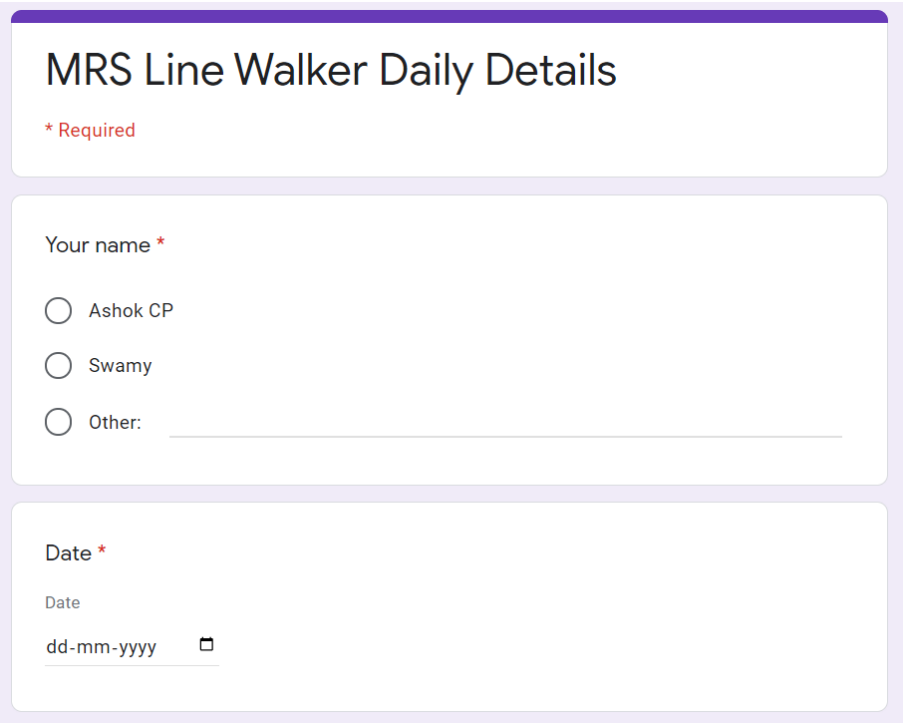


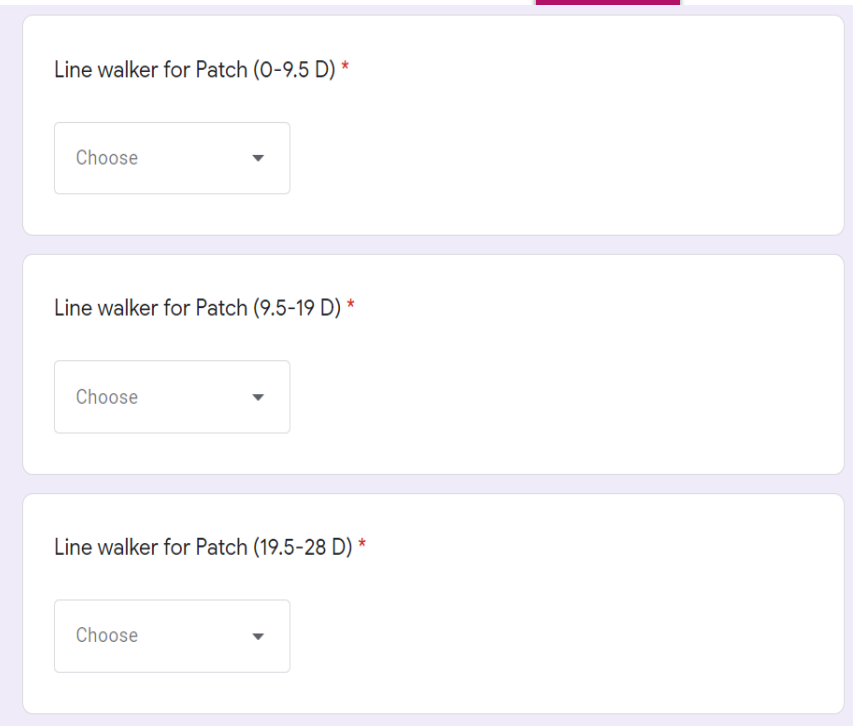
- Auto generated alarm message contains Chainage, nearby KMP board, Alarm distance from the nearby object, Alarm Coordinates and the google map link in the selected language.
- Check the message and modify accordingly if needed.

- A message in the selected language is auto created with all alarm details.

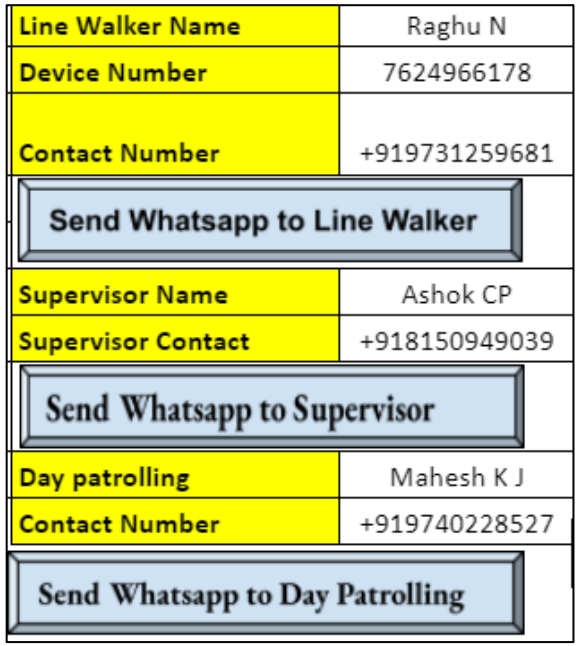


- The contact details of all the line walkers / supervisors are already entered into the system.
- The supervisor has to just select the name of the particular line walker for that patch on that day in a simple form every morning.





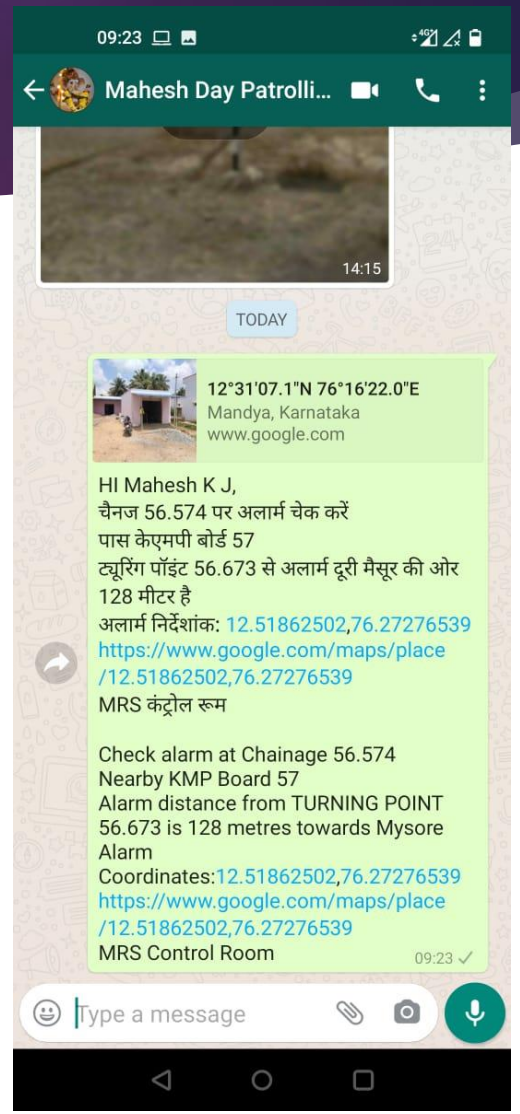
- The name and contact details of the concerned Line Walker/Supervisor based on the alarm chainage gets displayed.
- For Eg: Chainage 56.57 comes under by Line Walker of patch 42-57 who is Raghu N and hence his name and contact details are displayed.



Sending Alarm Details

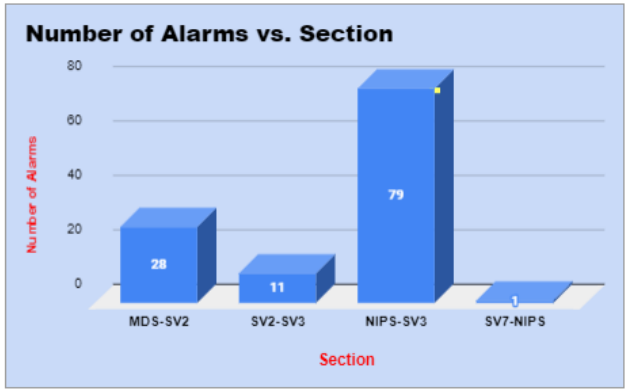
- Send the previously created message to the Line Walker, Supervisor or Day Patrolling through WhatsApp account of IS Phone in the Control Room by pressing the respective “Send Button”.
- Additionally, alarm details can also be sent to a user-desired number by entering the number in the input box and pressing the button given below.

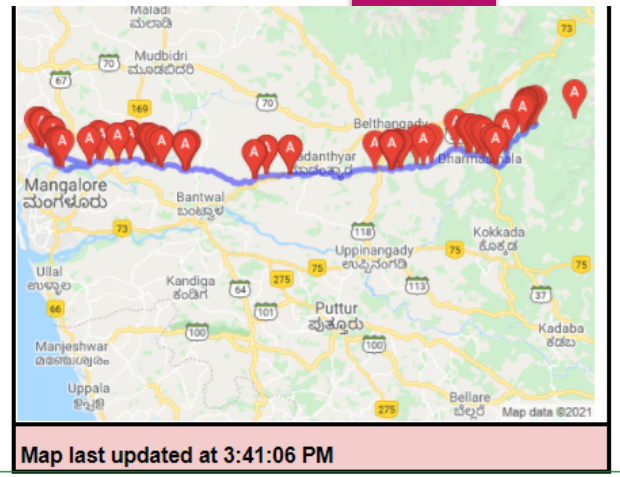
Date	16/04/2021
Enter Name of receiver	MVR Sir
Enter Whatsapp Number	+91 9687644634
Send to above number	
Line Walker Name	Raghu N
Device Number	7624966178
Contact Number	+919731259681
Send Whatsapp to Line Walker	
Supervisor Name	Ashok CP
Supervisor Contact	+918150949039
Send Whatsapp to Supervisor	
Day patrolling	Mahesh K J
Contact Number	+919740228527
Send Whatsapp to Day Patrolling	

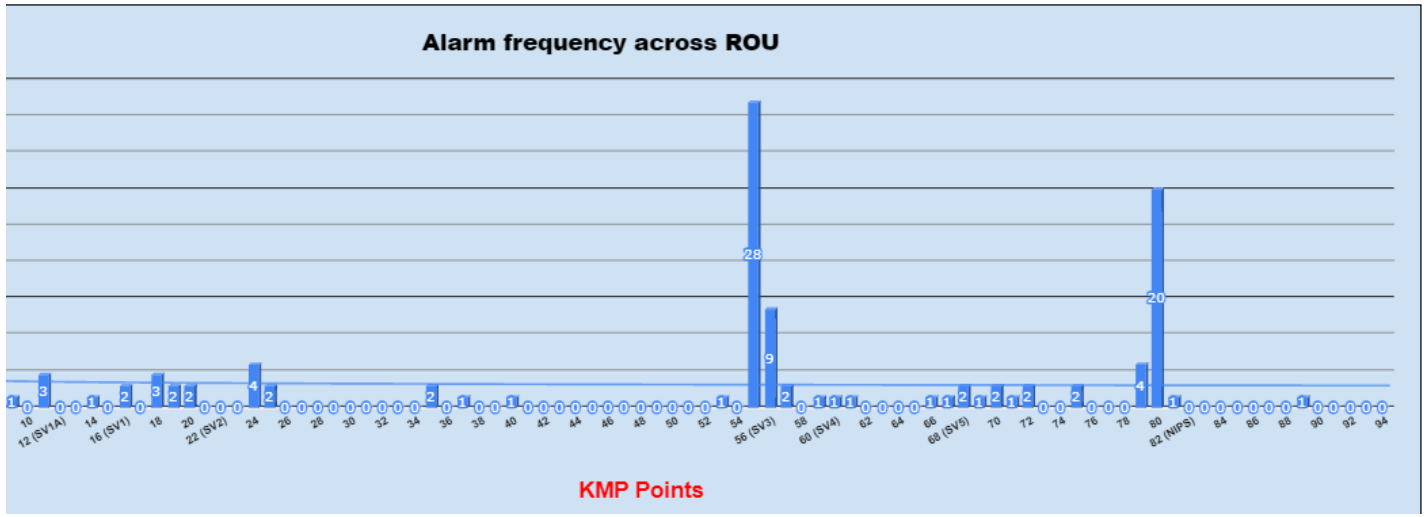


- **User-friendly**:Several user prompts are also included to make the UI user friendly like Instructions button , prompts when user tries to send a message even when GPS coordinates are empty or when clearing the message body etc.
- **Data analytics** of generated alarms is also possible through **alarm logger, map visualization and various graphs** in the system. Alarm message is **multi-lingual** enabling smooth communication and faster response to enhance the **safety** of the pipeline.

- **Open source:** System is developed using open source software and hence completely **free of any operational costs**







THANK YOU